Courses of Instruction

Following certain course descriptions in this catalog are the designations: F, Sp, Su, A-O, A-E. These indicate the semester(s) offered. Fall, Spring, Summer, Alternate Odd Academic Years, Alternate Even Academic Years, or Every Semester in which a course is normally offered and are intended as an aide to students planning their programs of study.

ACCOUNTING (009)

201 Principles of Financial Accounting (3) Introduction to financial accounting theory and practice with emphasis on the role of financial information in business decisions. Prerequisite to all other courses in Accounting. 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. Prerequisite: 201. E

311 Accounting for Primary Business Activities (3) Study of financial accounting for the primary activities of a business corporation: primary financial statements; revenue-accounts receivable-cash cycle; cost of goods sold; debt and equity financing. Prerequisite: 202. Prerequisite or Corequisite: Finance 301 and Management 203.

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. Prerequisite: 202. Prerequisite or Corequisite: Management 203. 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. Prerequisite: 202, Management 203, junior standing. Major exam may be given during the last class meetings. F, Sp

411 Financial, Compliance, and Operational Auditing (3) Role of auditing in society from an internal and external perspective, the IIA Code of Ethics, the IIA Standards for the Professional Practice of Internal Auditing, auditing methodology, role of internal control and statistical sampling in auditing, fraud auditing, operational auditing, compliance auditing, and applications of auditing procedures to specific transaction cycles. Prerequisite: 202.

414 Non Business Entities: Acquisitions; Mergers; and Foreign Operations (3) Investments; revenue recognition; accounting changes; error correction; statement of cash flows; introduction to leases, pensions, and deferred taxes; mergers; acquisitions; consolidated financial statements; foreign exchange and translation. Prerequisite: 311 with a C or better.

415 Governmental and Nonprofit Accounting (3) Advanced study of governmental and nonprofit entities. Governmental accounting principles, revenues and expenditures, budgeting, and financial reporting. Accounting principles and reporting models of nonprofit organizations. Integration of economic and social issues with reporting standards. Prerequisite: 311 with a C or better, or permission of the instructor.

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

451 Operational Auditing and Consulting (3) Approaches auditors might use to evaluate an entity’s efficiency and effectiveness in a variety of settings and techniques auditors might use in consulting to provide the entity a competitive advantage.

ADVERTISING (012)

250 Advertising Principles (3) Survey of the role of advertising in American business and society. Relationship between advertising and marketing; fundamental components of the advertising process: research, media, creative, and management.

340 Advertising Research Methods (3) Secondary data and primary research techniques for advertising decisions. Prerequisite: 250 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. Prerequisite: 250, Communications 100 or Speech Communication 100.

360 Advertising Media Strategy (3) Assessment of markets, vehicle audiences and mathematical techniques for advertising planning. Instruction in media planning, buying, and evaluation. Prerequisite: 340.

380 Advertising Professional Seminar (1) Exploration of career choices in mass communications. Resume and letter writing, interviewing, and portfolio preparation. Prerequisite: 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. Prerequisite: 350 and 360.

470 Advertising Campaigns (3) Group-based development of advertising campaign for a regional or national client. Prerequisite: 450.

480 Advertising Issues (3) Examination of the role of advertising in society and controversies surrounding economic, social, cultural and ethical aspects of advertising. Emphasis on written and oral exposition of different viewpoints. Prerequisite: 340.

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

492 Advertising Practicum (1) Experience in a functional area of advertising. Ten hours laboratory each week. May be repeated once. Prerequisite: Progression as a major in the Department of Advertising. Satisfactory/No Credit grading only.

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

AFRICAN AND AFRICAN-AMERICAN STUDIES (022)

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

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

233 Major Black Writers (3) (Same as English 233.)

235 Introduction to African Studies (3) Multidisciplinary approach to the study of African traditions, cultures, religions, political economies, precolonial democracies, and states form the first through the sixteenth century.

236 Introduction to African Studies (3) The multidisciplinary study of Africa and its incorporation into the world economy between the sixteenth and the twentieth century. Includes the rise of nationalism, postcolonial dependency, contemporary problems, and current liberation struggles in various areas of the continent.

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

315 The African Diaspora (3) (Same as Anthropology 315.)

319 Caribbean Cultures and Societies (3) (Same as Anthropology 319 and Latin American Studies 319.)
331 Race and Ethnicity in American Literature (3) (Same as English 331.)
333 Black American Literature and Aesthetics (3) (Same as English 333.)
343 Race and Ethnicity (3) (Same as Sociology 343.)
350 History of Jazz (3) (Same as Music History 350.)
352 African-American Religion in the United States (3) (Same as Religious Studies 352.)
353 Topics in African-American Religion (3) (Same as Religious Studies 353.)
364 Contemporary Issues in African-American Education (3) 1954 to the present. Examines issues rele-
vant to the current dilemma of providing quality educa-
tion for the African-American student including profes-
sional school quotas, intelligence testing, homogeneous grouping, African-American college survival, busing, Black English/Standard English controversy. Writing-emphasis course. (Same as Curriculum and Instruction 364.)
371-372 African History (3,3) (Same as History 371-372.)
372 African Religions (3) (Same as Religious Studies 372 and Anthropology 373.)
379 Geography of Africa (3) (Same as Geography 379.)
381 History of South Africa (3) (Same as History 381.)
420 Family Diversity (3) (Same as Child and Family Studies 420.)
421 Comparative Studies in African and African-American Societies (3) Comparative studies of African and African-American societies in such areas as educa-
tion, religion, and social stratification. Includes the re-
spective views African-Americans and Africans have of each other and the concept of Pan-Africanism. Writing-emphasis course. (Same as History 421.)
429 History and Philosophy of African-American Education (3) Focuses on attempts by African-Ameri-
cans to secure an education for themselves and their children from the era of slavery to the Brown decision in 1954. Examines black perceptions of the importance of education and special obstacles confronting African-
Americans who seek education on the primary, second-
ary, college, or graduate level. Writing-emphasis course.
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.
442 Comparative Poverty and Development (3) (Same as Sociology 442.)
443 Topics in Black Literature (3) (Same as English 443.)
445 The African-American Experience From the Colonial Period to the Present (3) (Same as History 445.)
450 Issues and Topics in African-American Studies (3) Topics vary, but include a variety of problems, issues, and individuals from the field of African-Ameri-
can Studies. May be repeated. Maximum 6 hours.
452 African-American and African Politics (3) (Same as Political Science 452.)
473 Black Male in American Society (3) Examines historical images, myths and stereotypes which have developed concerning African-American males in Ameri-
can society. Includes the impact of such critical factors as Black feminism, violence, concepts of masculinity, the family, white males, white females, homosexuality, nationalism, and athletics on African-American males in America.
480 African-American Communities in Urban America (3) Evaluates the benevolent and historical influence of three major institutions: the church, the family, and the school upon the African-American struggle to survive. Includes political, economic, and social fac-
tors utilized by Black people in developing coping strat-
egies and mechanisms. Writing-emphasis course.
483 African-American Women in American Society (3) Focuses on historical and contemporary social, economic and political factors in American society as they relate to the Black woman. (Same as Women’s Studies 483.) Writing-emphasis course.
491 Foreign Study (1-15) Prereq: 201-202 and consent of instructor.
492 Off-Campus Study (1-15) Prereq: 201-202 and consent of instructor.
493 Independent Study (1-15) Prereq: 201-202 and consent of instructor.
496 Biology of Human Variability (3) (Same as An-
thropology 496.)
AGRICULTURAL AND EXTENSION EDUCATION (042)
201 Field Experience in Agricultural and Extension Education (1) Field observation /experience in poten-
tial agricultural and extension education career fields. Grade requirements: daily journal, formal written report, complete required hours, seminar. Prereq: Consent of instructor (may include off-campus experience). May be repeated if changing concentrations. E
211 Foundations of Agricultural and Extension Educa-
tion (3) History and philosophy of agricultural educa-
tion and extension education. Major areas of emphasis include: pre-agricultural development, agricultural edu-
cation in the public schools and the federal extension education system. Formal and non-formal methods of education used, audiences served, organizational struc-
ture, and programming emphases will be studied by students. Foundation course for departmental majors and service course for those interested in related ca-
ters. Sp
301 Non-Formal Youth Development Programs (1-2) Structured experience in administering, organizing, conducting, and evaluating youth education programs in agricultural and extension education. Prereq: Cons-
tent of instructor. F, Sp
345 Agricultural Education and Program Planning (3) Overview of the historical and philosophical aspects of agriculture education, the role of teacher and learner, emphasis on SAE, FFA, community service, and sum-
mer programs. Prereq: 201, 211 or consent of instructor. Sp
346 Instructional Strategies for Teaching Agricul-
tural Education (3) Methods and techniques for teach-
ing agriculture, preparing lesson plans and units of instruction, development of agriculture pro-
grams, and utilization of resources, multimedia, and com-
ter technology into instruction. Prereq: 201, 211, 345 or consent of instructor. Sp
420 Methods of Teaching Agricultural Mechanics (2) Methods for teaching high school agricultural education students. Special competencies for planning, conduct-
ing and evaluating an agricultural mechanics program. Prereq: Biosystems Engineering Technology 202 or consent of instructor. F, Sp
435-36 Student Teaching in Agricultural and Extens-
ion Education (6,6) Full-time teaching practicum in an approved high school program. Applied practices needed by agricultural education teachers. Prereq: Admission to Teacher Education and AEE 201, 211, 345, and 346. Coreqs: 435 for 436; 436 for 435. F, Sp
492 Internship In Agricultural and Extension Educa-
tion (1-6) Pre-approved off-campus supervised experi-
ence in county Extension offices, agricultural busi-
esses, or agricultural related agencies. (Requires liv-
ing off-campus for a specified time.). May be repeated up to a maximum of 6 hours. Prereq: 211, or Consent of Instructor. E
493 Independent Study (1-3) Individualized study of a special project or problem in Agricultural and Extension Education. Must be selected in consultation with the instructor. Consent of instructor. May be re-peated for credit. Maximum 6 hours. E
AGRICULTURAL ECONOMICS (047)
110 Opportunities in Agricultural Economics and Business (1) Overview of current issues and career opportunity. For majors and non-majors.
210 Introduction to Agricultural Economics (3) Ap-
plication of economic principles of demand, supply, price determination, and market structure to agriculture, marketing, agricultural development, and international trade and development. Economic as-
psects 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
212 The Agribusiness Firm (3) Introduction to agribusiness firm characteristics and decision making. Overview of economic principles and the basic functions of management: planning, organizing, controlling, and decision making. Special topics include firm structure, budgeting, marketing and selling, break-even analysis, use of financial statements, capital investment, supervision, staffing, and evaluation. F, Sp
320 Agricultural Microeconomics (3) Application of con-
tent, firm behavior, and efficiency in the food and fiber industries. Prereq: Economics 201. F
342 Farm Business Management I (3) Principles and pro-
ductive and non-productive assets; markets for agricultural products; institutional aspects of interna-
tional trade effect on agricultural commodity flows; sources of agricultural credit, and financial intermedia-
tion. Prereq: Economics 201. F
355 Agribusiness Marketing and Professional Sell-
ing (3) Role of marketing in the agribusiness organiza-
tion, planning marketing efforts, and the strategic selling process. Topics include identification of market oppor-
tunities, targeting, marketing mix, and personal selling in agribusiness. Prereq: Economics 201. F
410 Seminar in Agricultural Economics and Busi-
ness (1) Primarily for Agricultural Economics and Business majors in their senior year. Analysis of con-
temporary problems in the field. Discussion of career objects, opportunities, and placement process. As-
signments for written and oral presentations. Prereq: 320 or consent of instructor. F
412 Agricultural Finance (3) Macro-finance, financial objects, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrower and lender loan application analysis, financial strategies, construction applications, kinds and sources of agricultural credit, and financial intermedi-
iation. Prereq: Economics 201. F
420 International Agricultural Trade and Marketing (3) introduction to real and monetary aspects of interna-
tional trade effect on agricultural commodity flows; partial equilibrium analysis of international trade in agricultural products; institutional aspects of interna-
tional marketing of agricultural products. Prereq: 320 or consent of instructor. Sp
430 Agricultural Policy (3) Values, goals and policy pro-
cess. Economic rationale and effects of policy. His-
torical development and current implications of policy, com-
modity, credit, food, and trade policy. Prereq: 320 or consent of instructor. Sp
442 Agribusiness Management (3) Applications of advanced decision analysis concepts and tools to ana-
yze management decision scenarios and problems. Emphasis on non-
farm agribusiness settings. Case study work on strate-
gic planning; assessing cost structure using budgeting and financial analysis; determining liquidity, solvency using financial statements; analyzing investments using capital budgeting; etc. Prereq: 342 or consent of instructor. F
450 Agricultural Price Analysis (3) Analytical tools for decision making in the agricultural sector; analysis of commodity supply and demand conditions; economic modeling; market forecasting; analysis of temporal and spatial patterns. Prereq: 350 and Statistics 201 or consent of instructor. F
AIR FORCE AEROSPACE STUDIES (094)

101-102 The Air Force Today (1,1) AS100 is a survey course that focuses on the organizational structure and mission of the Air Force; officering and professionalism; and includes an introduction to communicative skills. A weekly Leadership Laboratory (LLAB) consisting of Air Force customs and courtesies, drill and ceremonies, and drill and ceremonies is mandatory.

103-104 Leadership Laboratory (1,1) Leadership Laboratory includes a study of Air Force customs and courtesies, drill and ceremonies, and giving military commands; instructing, controlling, and evaluating the preceding skills; studying the environment of an Air Force officer; and learning about opportunities available to commissioned officers.

201-202 The Development of Air Power (1,1) AS200 focuses on factors contributing to the development of air power from its earliest beginnings through two world wars; the evolution of air power concepts and doctrine; and an assessment of communicative skills. A weekly Leadership Laboratory (LLAB) consisting of Air Force customs and courtesies, Air Force environment, drill and ceremonies, and field training orientation is mandatory.

203-204 Leadership Laboratory (1,1) Leadership Laboratory includes a study of Air Force customs and courtesies, drill and ceremonies, and giving military commands; instructing, controlling, and evaluating the preceding skills; studying the environment of an Air Force officer; and learning about opportunities available to commissioned officers.

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

301-302 Air Force Leadership and Management (3,3) AS 300 is a study of leadership and quality management fundamentals, professional knowledge, leadership ethics, and communicative skills required of an Air Force officer. Conceptual examination of Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory weekly Leadership Laboratory (LLAB) provides advanced leadership experiences in office-type activities and gives students the opportunity to apply leadership and management principles to this course.

303-304 Leadership Laboratory (0,0) Leadership Laboratory consists of activities classified as advanced leadership experiences. They involve planning, organizing, staffing, coordinating, directing, and controlling the military activities of the cadet corps; preparation and presentation of briefings and other oral and written communications; and providing interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets.

401-402 National Security Forces in Contemporary American Society (3,3) AS 400 examines the need for national security, analyzes the evolution and formulation of American strategy of joint doctrine; investigates the methods for managing conflict; and overviews regional security, arms control, and terrorism. Special emphasis is given to interest focus on the military as a profession, officering, the military justice system, and current issues affecting military professionalism. Within this structure, continued emphasis is given to the refinement of communicative skills. A weekly Leadership Laboratory (LLAB) consisting primarily of advanced leadership experiences in office-type activities is mandatory.

403-404 Leadership Laboratory (0,0) Leadership Laboratory consists of activities classified as advanced leadership experiences. They involve planning, organizing, staffing, coordinating, directing, and controlling the military activities of the cadet corps; preparation and presentation of briefings and other oral and written communications; and providing interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets.

AMERICAN STUDIES (099)

310 Introduction to American Studies (3) Explores dynamics and nature of the culture(s) of the United States through interdisciplinary study and interpretation. Concepts include: "mainstream" and "minority" cultures. Writing-emphasis course.

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

320 American Cultures (3) Same as Anthropology 320.)
330 Animal Nutrition, Feeds, and Ration Formula- tion (4) Properties, functions, utilization, and deficiency symptoms of essential nutrients; properties and functions of feeds and principles of ration formulation. Prereq: Principles of feeds and principles of ration formulation. Prereq: Chemistry 110 or Chemistry 130 and Math 121. 2 hours and 2 labs. F

340 Principles of Animal Breeding (3) Genetic and environmental bases of animal variation. Selection and evaluation systems as mechanisms of genetic change. Planning breeding programs for economically important domestic species. 2 hours and 1 lab. F

361 Meat Animal Evaluation (2) Visual and objective appraisal and evaluation of beef cattle, swine and sheep for functionality and health. Prereq: 260. 2 labs. F

362 Dairy Cattle Evaluation (2) Comparative judging, oral reasons, breed classification programs, economic value of conformation traits. Prereq: 260. 2 labs. Sp

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

380 Animal Health Management (3) Characteristics, symptoms, prevention, and treatment of major diseases and parasites. Immunization, health regulations and symptoms, prevention, and treatment of major diseases. 380 Animal Health Management (3)

391 Animal Production Systems (3) Fundamentals of production and management systems in beef, dairy, pork, and poultry programs. Application of principles of nutrition, breeding, health, and management into enterprise systems. Decision making management practices and information resources, enterprise evaluation, and comparison of production systems. 2 hours and 1 lab. No credit for majors. F

420 Advanced Reproduction (3) Collection, evaluation, and preservation of ova, spermatozoa and embryos; application of methods of natural breeding and techniques of artificial insemination and embryo transfer; herd sire and dam evaluation; pregnancy determination; gestation and parturition; infertility; recent advances in theriogenology. Prereq: 320. 1 hour and 2 labs. F

420 Advanced Ration Formulation (2) Advanced ration formulation for beef and dairy cattle, sheep, horses, swine, poultry, laboratory, zoo, and companion animals. Mathematical and computer solutions and applications to formulating complex rations with constraints. Prereq: 330 and introductory computer science course. 2 labs. Sp

421 Advanced Beef Cattle, Dairy Cattle, Horse, Poutry, Sheep, Swine (4) Advanced ration formulation and evaluation in judging; evaluation, selection and presentation of oral reasons for classes of beef cattle, dairy cattle horses, pork, sheep, and swine. Prereq: Consent of instructor. 2 labs. F, Sp

481 Beef Cattle Production and Management (3) Integration of principles of nutrition, breeding, physiology, and marketing into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and improvement programs. Management evaluated in terms of production response and economic returns. Comparisons made to small ruminant, forage-based production systems. 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, breeding, physiology, and marketing into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and improvement programs. Management evaluated in terms of production response and economic returns. 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 nutrition, breeding, physiology, and marketing into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and improvement program. Management evaluated in terms of production response and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. Sp

484 Poultry Production and Management (3) Integration of principles of nutrition, breeding, physiology, and marketing into complete production and management programs. Systems of production, production practices, and improvement programs. Systems evaluated in terms of production response and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. F

485 Horse Production and Management (3) Integration of principles of nutrition, breeding, physiology and euthanasia into complete production and management programs. Types of enterprises, management of feed and pasture resources, health maintenance and first aid, breeding and foaling, farm structures and equipment. Prereq: consent of instructor. 2 hours and 1 lab. F

489 Companion, Zoo and Lab Animal Management (3) Principles of nutrition, physiology, breeding, handling, and history of breeds of common household pets; zoo animals and animals used in scientific research. Specific species requirements and peculiarities. Laws and agencies governing use of laboratory animals. Laboratory analysis of blood metabolites commonly used to monitor health and nutritional status. Prereq: Consent of instructor. 2 lectures and 1 lab. Sp - AE

492 Animal Science Field Study (1-6) Off-campus work experience approved by the department. Objective is to provide an opportunity to gain experience in the industry. Students must submit official approval form to registration office and must be evaluated on knowledge and skills and must submit a written summary after program completion. E

493 Independent Study in Animal Science (1-3) Approved supervised study in areas not formally presented in a course offered in the department. Written proposal of study is approved by the Department of Animal Science Undergraduate Committee. After completion of study, a written report is required and this report is maintained on file in the reference room of the department. May be repeated for a maximum of 6 credits. Prereq: Senior standing and consent of instructor and department head. F, Sp

494 Animal Science Teaching Assistant (1) Assist the primary instructor in laboratory instruction and demonstrations. Prereq: Senior standing and consent of the instructor and Department Head. S/NC. E

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

496 Veterinary Medical Technology (1) For Animal Science and/or Animal Science Pre-Veterinary Medicine students only. Corequisite of the instructor and completion of at least 60 credit hours. Students will observe and assist clinicians in the College of Veterinary Medicine as they carry out day to day activities in the large and small animal clinics. One lab. Sp

ANTHROPOLOGY (122)

110 Human Origins (3) Survey of humanity’s back- ground, fossil primates, fossil human remains, and living races of humankind. 120 Prehistoric Archaeology (3) Introduction to methods and techniques used to identify and date archaeological cultures, remains and document prehistoric cultural evolution. Overview of the prehistory of Africa, western Europe, southwest Asia, and the Americas from earliest dated human cultures to rise of complex civilizations. 130 Cultural Anthropology (3) Major concepts and methods in the study of culture; survey of cross-cultural similarities and differences in subsistence, social organization, political, and religious institutions and ideas and arts. Contributions of anthropology to resolving contemporary human problems. 210 Principles of Biological Anthropology (3) Mechanisms of biological evolution and adaptation in living and extinct species. Prereq: 110. 302 Anthropology of Religion (3) (Same as Religious Studies 302.) 305 Evolution and Society (3) (Same as Ecology and Evolutionary Biology 305.)

306 Genetics and Society (3) (Same as Botany 306.) 310 North American Indians (3) Comparative overview of Indian cultures of North America. Topical coverage ranges from prehistory and aboriginal lifeways to problems resulting from contact and acculturation. Writing-emphasis course.

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

312 Appalachian Culture (3) Traditional Southern Appalachian subsistence patterns and economy, social organization, beliefs and values, folklore and customs, social-cultural impacts of industrialization and modernization. Prereq: 130 or consent of instructor. Writing-emphasis course.

313 Peoples and Cultures of Mesoamerica (3) Pre-Columbian and Hispanic cultures of Mexico, Guate- mala, Belice, El Salvador and Honduras. Patterns of economic development, and local and na- tional-level political processes. Prereq: 130 or consent of instructor. Writing-emphasis course. (Same as African and African-American Studies 313.)

314 Peoples and Cultures of South America (3) An introduction to contemporary analysis and debate on South America that places the concept ‘culture’ in historical perspective and discusses the anthropologi- cal notion of ‘people’ within the complexity of indig- enous and black social formations. Writing emphasis course. (Same as Latin American Studies 314.)

319 Caribbean Cultures and Societies (2) Anthropo- logical approaches to key aspects of Caribbean history, sociocultural pluralism, racial and class stratification, patterns of economic development, and local and na- tional-level political processes. Prereq: 130 or consent of instructor. Writing-emphasis course. (Same as African and African-American Studies 319 and Latin Ameri- can Studies 319.)

320 American Cultures (3) Anthropological perspec- tives on cultural diversity in America, including the immigrant experience and expressions of ethnicity, intercultural relations, occupational and interest group subcultures, writing emphasis course. (Same as Ameri- can Studies 320.)

321 Indians of Northwest North America (3) Survey of American Indian cultures found in the Northwest Coast, Columbia Plateau, and Northern Great Basin culture areas. Writing emphasis course.

357 Junior Honors in Anthropology (3) Analytical, integrative review of current directions of research and theory in Anthropology. Open to students with an overall GPA of 3.2 who have fulfilled progression requirements to declare a major in Anthropology.

360 North American Prehistory (3) Prehistoric cul- tures of North America from initial occupation of the continent to European contact. Writing-emphasis course.

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

362 Principles of Archaeology (3) Research strate- gies used in developing method and theory, constructing cultural histories, identifying site function and settle- ments, subsistence patterns and economy, early explo- rations of cultural change. Prereq: 120 or consent of instructor.

363 Prehistory of Tennessee (3) Archaeological prin- ciples and theory illustrated in history of archaeological research in Tennessee and through survey of prehis- toric Indian cultures from initial occupation of the state to European contact. Recommended: 360. Writing em- phasis course.


334 Advanced Architectural Structures (3) Philosophical basis 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 Structures in Architecture I (3) Introduction to the structural properties of materials, foundations and simple statically determinate assemblies of buildings. Prereq: 180 and M. Arch Admission.

336 Structures in Architecture II (3) Continuation of analysis and design of simple structures in wood, steel and concrete. Introduction of building codes, loading tables and handbooks for selection of structural members. Prereq: 335 or special permission.

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


345 Principles of Environmental Control I (3) Introduction to heating, ventilating, air-conditioning, solar energy, plumbing, and fire-protection systems. Prereq: 180 and M. Arch Admission.

346 Principles of Environmental Control II (3) Introduction to electrical design and wiring, lighting and acoustics in buildings. Prereq: 345 and M. Arch Admission.


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

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

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

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

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

412 Non-Western and Indigenous Architecture (3) Building responsive to climate, material availability, and economic level, as designed by anonymous builders. Examples from the present include 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 studio work, 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 Medieval Studies 415.)

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


420 American Architecture, 1840-1940 (3) Stylistic periods from the Gothic Revival through the Twentieth Century.

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

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

425 Special Topics in Architecture (1-6) Faculty initiated courses. Topics vary. May be repeated. Maximum credit of 12 hours. Prereq: consent of instructor. F.

431 Structural and Mechanical Applications (3) Case study analysis and selection of structural and mechanical systems, investigating the conceptual integration of technical information into a unified design solution. Prereq: 332, 342, Coreq: 471. F.


433 Computer Applications in Design IV (3) Advanced course that integrates three-dimensional modeling and technical analysis using computers to analyze, develop, and manage design studies, under faculty direction. Prereq: Consent of instructor. Sp.

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 external and internal load dominated buildings. Prereq: 341.

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

445 Advanced Lighting (3) In-depth analysis and innovative concepts in design of lighting. Prereq: 341.

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

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


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

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 selected in KIP and IAP. Architecture 480. Formation and documentation of hypotheses. Preparation of background and program information. Goals and concepts set forth. To be taken semester immediately following 482. F.

481 Advanced Architectural Design Topics (6) Faculty initiated design projects. Advanced architectural topics not covered under 483, 484, 485, 486, or 489. Prereq: 471. F.

482 Comprehensive Design Project II (6) Student selected project under faculty direction. Exploration of design hypothesis which informs the character of a substantial building design. (See Architecture 480.) Completed project will address all issues of environment, structure, enclosure, use, and ethical consideration of design appropriateness. Design is expected to stand up to rigorous scrutiny regarding strength of idea, economy of means, durability for stipulated use, quality of cultural expression, and character of setting. Prereq: 480 and satisfactory completion of all design courses. Sp.

483 Urban Design (6) Urban design projects responding to specific community conditions. Exploration of urban issues in making and understanding the architecture of the city. Prereq: 471. F.


485 Development and Design (6) Exploration of image making, consumerism and the allocation of scarce resources. Issues of finance, economics, urban economics, and marketing are analyzed in relation to urban and architectural design. Application of financial feasibility models. Prereq: 471 and 463 or consent of instructor. F.

486 Design of Sustainable Architecture (6) Architectural design studio emphasizing concern for the environment, consideration of energy conservation techniques, and use of renewable resources. Prereq: 471. F.

489 Structural Innovations (6) Building design with innovative structural configuration and technology. Exploration of new materials, methods, and methods in building construction. Prereq: 471. F.

491 Foreign Study (1-15) Research and design projects conducted in various locations abroad. F, Su.

492 Off-Campus Study (1-15) Studies conducted under direction of architect or expert in an allied profession, in service to public service organizations or agencies of government, and public groups. Not a Design Course elective.

493 Independent Study in Architecture (1-6) Individual studies and projects under faculty direction. Credit adjusted to complexity and level of effort required. May be repeated once. Prereq: consent of dean. F, Sp.

494 Foreign Studies Sketchbook (1-3) Investigations of historic urban fabric and architecture in various locations abroad. Analysis and sketch records in sketchbook format required.

496 Design Studies in Krakow (6) Studio meets in Krakow, Poland. Design projects responding to specific community conditions in an European city.

497 Sketchbook Study of Architecture in Central Europe and Krakow (3) Sketchbook study of architecture and urban traditions. Analysis and sketch records in sketchbook format required. Lectures and field trips make the study more interesting to Krakowian, Polish, and European architecture and urban traditions.

498 Fine Art Studies in Krakow (3) Studio meets in Krakow, Poland. Fine arts investigations related to architectural design.
ART (140)

101 Studio Fundamentals: Drawing and Design (3) Introduction to basic drawing media, concepts and techniques and to the elements and principles of pictorial organization.

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

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

295 Intermediate Design and Color (3) Further exploration of basic techniques of two-dimensional design, with emphasis on color theory and technique. Prereq: 101, 103.

299 Special Topics (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

300 Inter-area Portfolio Review (0) Review of prior studio work. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. (Same as Anthropology 481.)

481 Museology I: Museums, Purpose and Function (3) Purposes, functions and development of museums 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 other related research on or off campus. Prereq: 481 and consent of instructor. May be repeated. Maximum 12 hours. (Same as Anthropology 484.)

491 Forensic Study (1-15)

492 Off-Campus Study (1-15)

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

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.

499 Special Topics (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

ART CERAMICS (135)

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

221 Ceramics: Handbuilding I (3) Introduction to handbuilding, glazing, clay preparation and firing. Prereq: 101 and 103.

222 Ceramics: Throwing I (3) Introduction to throwing, glazing, clay preparation and firing. Prereq: 101 and 103.

223 Portfolio Practicum - Handbuilding (3) Intense post-introductory studio experience to develop work for application to Ceramics Portfolio Review 320. Art majors only. Not repeatable for credit. Prereq: 221, 222, and consent of Department.

226 Portfolio Practicum - Throwing (3) Intense post-introductory studio experience to develop work for application to Ceramics Portfolio Review 320. Art majors only. Not repeatable for credit. Prereq: 221, 222, and consent of Department.

229 Ceramics: Special Topics (3) Student or instructor initiated courses to be offered at convenience of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

300 Ceramics: Portfolio Review (0) Review of prior work in ceramics. Successful completion required prior to registration for junior and senior courses. Prereq: Art 101 and 103, Art History 172 and 173, Art Ceramics 221, all with a grade of C or better. Coreq: Art 295 with a grade of C or better. Coreq: Art Ceramics 222. Satisfaction/No credit only.

321 Ceramics: Handbuilding II (3) Continued investigation of ceramic form with an emphasis on the development of individual ideas and expression. Prereq: 320.

322 Ceramics: Throwing II (3) Continued investigation of throwing with an emphasis on the development of individual ideas and expression. Prereq: 320.


429 Ceramics: Special Topics (3) Student or instructor initiated courses to be offered at convenience of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

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

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.

ART DESIGN/GRAPHIC (136)

151 Graphic Design History (3) Major movements and pivotal artists/designers and directors, 1850 to the present, and their impact on current graphic design trends. (Cannot be used to fulfill art history requirement.)

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

251 Beginning Graphic Design I (3) Introduction to the elements and principles of graphic design including typography and layout. Study of graphic tools, type, materials, and processes. May be repeated. Maximum 6 hours. Prereq: Art 101 and 103, Art Design/Graphic 151, all with a grade of C or better. Coreq: Art Design/Graphic 251. Satisfaction/No credit only.

252 Beginning Graphic Design II (3) Survey of graphic design from concept through production. Emphasis on visual problem-solving. May be repeated. Maximum 6 hours. Prereq: 251 with a grade of C or better.

254 Black and White Illustration (3) Black and white media and production techniques as applied to product and editorial illustration. Prereq: 101.

256 Individual Projects in Graphic Design (3) Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

259 Special Topics: Graphic Design (3) Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

350 Graphic Design Portfolio Review (0) Review of prior work in graphic design. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Coreq: Art Design/Graphic 252. May be repeated. Satisfaction/No credit only.


352 Intermediate Graphic Design II (3) Investigation of sign, symbols, marks and identity systems. Prereq: Art Design/Graphic 351 with a grade of C or better.

354 Color Illustration (3) Flat and process color media and production techniques as applied to product and editorial illustration. Prereq: 254 and successful completion of any portfolio review.

356 Graphic Design Production (3) Traditional and computer-generated techniques for the production of print media in graphic design. Introduction to computer systems, software and techniques.

396 Airbrush Painting (3) Techniques of airbrush painting; skills and creative applications emphasized. Prereq: 211.

405 Computer Enhanced Graphic Design (3) Exploration of new technologies and their significance to graphic design. Prereq: 295 with a grade of C or better and consent of instructor. May be repeated. Maximum 6 hours.

444 Graphic Design Center Practicum (3) Practical work experience in a student-managed, on-site studio. Prereq: 350 and consent of instructor. May be repeated. Maximum 6 hours.

451 Advanced Graphic Design (3) Theory and techniques of visual problem-solving as applied to advanced applications of graphic design. Prereq: 352 with a grade of C or better.

452 Graphic Design Seminar (3) Discussion of design and professional issues including politics, economics, and ethics for the graphic designer. Culminates in a student-initiated project. Prereq: 451 with a grade of C or better.

453 Advertising Illustration (3) Media and techniques as applied to advertising illustration. Prereq: 254 and successful completion of any portfolio review.

454 Editorial Illustration (3) Media and techniques as applied to editorial illustration for books, magazines, and newspapers. Prereq: 254 and successful completion of any portfolio review.

455 Graphic Design Professional Seminar (3) Professional practices including client relationships, design management and business practices. Assembly, organization and editing of the professional portfolio. Prereq: or Coreq: 452.

456 Graphic Design Practicum (3-12) Practical work experience in the graphic design field. Only by pre-arrangement with the department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

459 Special Topics in Graphic Design (3) Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

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

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.

ART DRAWING (137)

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


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.

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: Consent of instructor. May be repeated. Maximum 12 hours.
ART EDUCATION (141)

301 Foundation of Art Education (3) Basic philosophy and structure of art education; teaching activities in two and three dimensional design, art appreciation, and teaching methodology. F, Sp, Su

302 Multiculturalism in Visual Art (3) Selected cognitive and productive experiences involving multicultural visual art. Prereq: 301 and 172 with consent of instructor. Sp

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

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

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

ART HISTORY (139)

162 Art of Africa, Oceania, and Pre-Columbian America (3) Survey of the traditional arts of the cultures of Black Africa, the Pacific and the Americas (focusing primarily on the period before the European conquest). Sculpture, painting, pottery, textiles, architecture and human adornment will all be examined.

172 Western Art (3) Major monuments in Western Art with emphasis on Europe from prehistory through the Middle Ages. Two-hour lecture and one-hour discussion each week.

173 Western Art (3) Major monuments in the history of European and American Art from the Renaissance to the present. Two-hour lecture and one-hour discussion section each week.

177 Honors: Western Art I (3) Consent of Department required. Major monuments in Western Art with emphasis on Europe from prehistory through the Middle Ages. Study grounded in reading, writing, and discussion. Writing-emphasis course.

178 Honors: Western Art II (3) Consent of Department required. Major monuments in the history of European and American Art from the Renaissance to the present. Study grounded in reading, writing, and discussion. Writing-emphasis course.

183 Asian Art (3) Selected works of painting, sculpture, architecture, and other forms in India, China, Japan, and to a lesser extent, Korea and Southeast Asia from antiquity through the 19th Century.

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.

376 Seminar in Art History (3) Variable theme; emphases on methodology and skills in writing. Required for Art History majors. Prereq.: junior or senior standing and completion of at least 12 hours in art history, or consent of instructor. May be repeated for a maximum of 6 hours. Writing-emphasis course.

403 History of Photography (3) Survey of the history of photography from the introduction of the daguerreotype and calotype to more recent trends. Emphasis will be placed on aesthetics and the use of photography as a medium for artistic expression.


415 Art of China (3) A survey of the art and architecture from the Neolithic Period to the 20th. Century. The major achievements of each period are examined in relation to their religious, political, and social contexts. Writing emphasis course.

425 Early Christian and Byzantine Art to 1350 (3) Art in its relation to its religious, political, and social contexts. Writing emphasis course.

426 Early Christian and Byzantine Art to 1350 (3) A survey of the art and architecture of the period from the 4th to the 13th centuries. The major achievements of each period are examined in relation to their religious, political, and social contexts. Writing emphasis course.

427 Medieval Art of the West, 800-1400 (3) Medieval art of the Western world, from the eighth century to the fourteenth. Art in its relation to its religious, political, and social contexts. Writing emphasis course.

431 Medieval Art of the West, 800-1400 (3) Medieval art of the Western world, from the eighth century to the fourteenth. Art in its relation to its religious, political, and social contexts. Writing emphasis course. (Same as Medieval Studies 371 and Judasic Studies 425.)

431 Medieval Art of the West, 800-1400 (3) Medieval art of the Western world, from the eighth century to the fourteenth. Art in its relation to its religious, political, and social contexts. Writing emphasis course. (Same as Medieval Studies 371 and Judasic Studies 425.)

441 Northern European Painting, 1350-1600 (3) From countym art of late Middle Ages to Northern Renaissance. Jan van Eyck, Rogier van der Weyden, and Durer. Writing-emphasis course.

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

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

452 Art of Italy, 1475-1575 (3) Concentrated study of Leonardo da Vinci, Michelangelo, Titian, Raphael, Pontormo, and Giorgione. Writing-emphasis course.

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

454 Renaissance and Baroque Theory (3) Addresses the theory of Western art in the early modern period with emphasis on the development and evolution in European art during the Renaissance and Baroque periods. Prerequisites: Art History 172 and 173 (or their Honors equivalents), or consent of instructor. Writing emphasis course.

461 Art of Southern and Eastern Africa (3) Art traditions of the southern and eastern regions of Africa. Sculpture, painting, imagery, textiles, architecture and human adornment will all be examined. Some ancient Stone and Iron Age traditions will be examined, but the main emphasis will be on the diverse ethnic and regional art traditions practiced in the area from the 19th century to the present. Writing emphasis course.

475 History of 19th Century Painting and Sculpture in Europe (3) Survey of art of the 19th century with emphasis on major movements. Emphasis on analyzing and discussing individual works of art in light of contemporaneous writings by artists and theorists. Prereq.: 172 and 173 (or their Honors equivalents), or consent of instructor. Writing-emphasis course.

476 History of 20th Century Painting and Sculpture in Europe (3) Development of the Modern and Post-Modern movements in Europe. Investigation of the progression of abstraction through major recent conceptual trends. Analysis of the work of individual artists such as Picasso, Matisse, and many others. Writing emphasis course.

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

483 History of American Sculpture (3) American sculpture from prehistory to the 1960's. Writing-emphasis course.


489 Studies in Art History (3) Concentration in individually selected area. Prereq.: Consent of instructor. May be repeated. Maximum 6 hours.

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

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

ART MEDIA ARTS (134)

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

231 Photography I (3) Art of black and white photography. Field and studio shooting, history of photography, darkroom techniques, and printing techniques.

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

236 Introduction to Video Art (3) Development of basic concepts and techniques for the creation of video works as an art form. (Same as Cinema Studies 236.)

239 Special Topics in Media Arts (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.
COURSES OF INSTRUCTION

ART PORTFOLIO REVIEW (0)
Review of prior work in media arts. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172, with a grade of C or better. Satisfactory/No Credit only.

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

PHOTOGRAPHY I (4) Studio course introducing theory and practice of photography using large format view camera. Prereq: 231, 311, and 331; and consent of instructor.

PHOTOGRAPHY III (3-6) Individual development of photographic problems and techniques. Prereq: 232 and 331. May be repeated. Maximum 12 hours.

HISTORY OF MODERN ART AND FILM (3) Study of the development and interaction between the cinematic arts and the visual arts within the context of modern art history. Available for Art History credit. (Same as Cin-ema Studies 433.)

CINEMATOGRAPHY AS ART (3) Continued development of concepts and techniques for the creation of film as an art form with an emphasis on individual projects. Prereq: Art History 172 and 173 with a grade of C or better. Satisfactory/No credit only.

VIDEO ART (3) Continued development of concepts and techniques for the creation of video works as an art form with an emphasis on individual projects. Prereq: 232, 236 and 330 or permission of instructor. May be repeated. Maximum 9 hours. (Same as Cinema Studies 435.)

SPECIAL TOPICS IN MEDIA ARTS (3) Student or instructor initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

PHOTOGRAPHY II (4) Continued exploration of the implications of use of computer in photography. Prereq: 341, and permission of instructor.

PHOTOGRAPHY II (4) Studio course that continues the exploration of the use of the large format camera in photography. Prereq: 342 and permis-sion of instructor.

INDEPENDENT STUDY (1-15) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

INTRODUCTION TO STUDIO ART: VARIOUS MEDIA (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

PAINTING I (3) Capacities of oil and acrylic painting on canvas. Prereq: 101, 103 for art majors; instructor initiated course. Prereq: 214.

PAINTING II (3) Techniques of expression in oil and/or acrylic. Prereq: Painting 213. May be repeated. Maximum 6 hours.


WATERCOLOR II (3) Capacities of transparent watercolor, watercolor on paper, exploration of space, surface, and concept. Prereq: Painting 215. May be repeated. Maximum 6 hours.

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: Consent of instructor. May be repeated. Maximum 12 hours.

PAINTING III (4) Individual expression with varied media on canvas. Prereq: 214 and 314 or consent of instructor. May be repeated. Maximum 8 hours. Total of 12 hours required for students in the Watercolor concentration.

PAINTING PORTFOLIO REVIEW (0) Review of prior work in painting. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Satisfactory/No credit only.

WATERCOLOR III (4) Individual expression with varied water-based media on paper. Prereq: 216 and 316 or consent of instructor. May be repeated. Maximum 8 hours. Total of 8 hours required for students in the Watercolor concentration.

WATERCOLOR PORTFOLIO REVIEW (0) Review of prior work in watercolor. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Satisfactory/No credit only.

CLASSROOM PROJECTS (3) Individual development of concepts and techniques for the creation of film and/or video. Prereq: 232 and 331. May be repeated. Maximum 12 hours.

GRAPHIC DESIGN I (4) Design and implications of use of computer in graphic design. Prereq: 262 and 360 or consent of instructor. May be repeated. Maximum 8 hours.

GRAPHIC DESIGN II (3-6) Individual development of graphic design problems and techniques. Emphasis upon image development and personal concept. Prereq: 264 and 360, or consent of instructor. May be repeated. Maximum 12 hours.

GRAPHIC DESIGN III (3-6) Exploration of individual projects through advanced graphic design methods and combinations with other print media. Prereq: 363, or consent of instructor. May be repeated. Maximum 12 hours.

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.

ART PRINTMAKING (132)

INTRODUCTION TO STUDIO ART: VARIOUS MEDIA (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

METAL CAST SCULPTURE I (3) Metal casting methods for bronze and aluminum. Prereq: 243 and 340 or consent of instructor. May be repeated. Maximum 6 hours.

LITHOGRAPHY I (3) Introduction to lithographic processes including clay modeling, plas-ter construction, moldmaking. Limited work in plastics, wood, or metal.

LIFE SCULPTURE I (3) Exploring basic materials and techniques including clay modeling, plas-ter construction, moldmaking. Limited work in plastics, wood, or metal.

LITHOGRAPHY II (3) Exploration of individual projects through advanced lithographic methods in combination with other print media. Prereq: 263, or consent of instructor. May be repeated. Maximum 12 hours.

INDEPENDENT STUDY (1-15) Prereq: Consent of instructor.

INDEPENDENT PROBLEMS (3) Prereq: Consent of in-structor. May be repeated. Maximum 12 hours.

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.

ART SCULPTURE (143)

INTRODUCTION TO STUDIO ART: VARIOUS MEDIA (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

SCULPTURE I (3) Problems which explore basic material and techniques including clay modeling, plas-ter construction, moldmaking. Limited work in plastics, wood, or metal.

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

SCULPTURE III (3) Further exploration of casting methods for bronze and aluminum. Prereq: 243 and 340 or consent of instructor.

SCULPTURE IV (3) Further exploration of casting methods for bronze and aluminum. Prereq: 245 and 340 or consent of instructor.
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 Fibers (2-4) Beginning to intermediate. May be repeated.

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

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

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

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

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

ASIAN LANGUAGES (144)

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

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

199 Chinese and Japanese Language and World Business (2) Examines the importance of foreign trade at the local, state, and national levels. Interdisciplinary faculty from the Colleges of Business Administration and Arts and Sciences provide an overview of the value of language study and international cultural awareness in the program in Language and World Business. See Director for further information. F

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

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

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


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

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

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

491 Chinese and Japanese Foreign Study (1-15)

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.

121-122 Elementary Modern Standard Arabic I, II (4,4) Taped language program. Must be taken in sequence Enrollment by permission of instructor.

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

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

221-222 Intermediate Modern Standard Arabic I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.

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

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

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

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

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

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

ASTRONOMY (150)

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

217-218 Honors: Introductory Astronomy (4,4) Introduction to astronomy and astrophysics. Historical perspectives in understanding the celestial universe, with emphasis on the laws of physics as they apply to the changing conceptions of the universe; structure of the solar system and celestial motions; evolution and properties of stars; galactic structure and models of the universe; observational technique and interpretation of underlying physical laws in accompanying lab. 3 hours lecture, 2 hours lab. Coreq: Mathematics 141 or 130 or equivalent. Credit given for only one sequence of lower division astronomy. This sequence satisfies the Arts and Sciences requirement for a natural science with laboratory.

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

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

AUDIOLOGY AND SPEECH PATHOLOGY (160)

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

302 Audiotics and Perception (3) Basic audiotics. Introduction to psychoacoustics and speech perception.


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

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

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

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

431 Stuttering (3) Nature, appraisal and treatment. Prereq: 304 or consent of instructor.
401 - 402 Biochemistry-Molecular Biology I, II (3,3) A two-course sequence providing in-depth coverage of biochemistry and molecular biology, intended for Biology majors concentrating in BCBM, but also main track for Biochemistry majors in other concentrations. First semester covers amino acid structure and chemistry, protein structure and chemistry, protein folding, enzyme behavior and function, reaction mechanisms, catalysis and energy transfer, synthetic metabolism including photosynthesis, and protein transport. Second semester covers structure of DNA and RNA, experimental methods in the field of analyzing nucleic acids, mechanisms of RNA and protein synthesis, mechanisms of DNA replication, repair and recombination, chromosome structure and function, regulation of gene expression, genome structure and genomics, and mechanisms of biological regulation. Prerequisites: Biology 240, Chemistry 350-360 and 369.

403 Advanced Genetics Laboratory (2) Experiments illustrating methods in modern genetics, including techniques in classical, cyto- molecular and developmental biology, concepts underlying physiological events in animals. Not available for credit if credit has previously been received for BCMB 401 or 410. F

405-06 Minicourse in BCMB (2, 2) Select advanced topics in biochemistry, cell biology, genetics, neurosciences, or biology concentrations, in time and subject matter. Consult departmental listing for topics offered. Prerequisite: As announced. May be repeated. Maximum 4 hrs may apply toward BCMB major. F

409 Perspectives in Biochemistry and Cellular and Molecular Biology (3) Current issues in biochemistry, cell biology and molecular biology. Emphasis on current developments and their applications, societal and economic impacts, and ethical implications. Writing emphasis course. An oral presentation and a referenced library-research essay are required. A capstone course.

410 Cellular and Comparative Biochemistry (4) Electrolyte behavior, chemistry and structure of proteins; enzyme behavior and biological function; catalysis and energy capture; synthetic metabolism; nucleic acid function; protein synthesis, and biochemistry and genetics; regulation of biological processes. Prerequisites: Chemistry 350-360-369 and Biology 140-240, 3 hours and 1 discussion. Not available for credit if credit has previously been received for BCMB 401. Credit, especially Drosophila and mouse. Prerequisite: Biology 240 and Chemistry 350-360-369.

411 Advanced Cellular Biology (3) Cellular structure and function at the molecular and supramolecular level. Topics include protein structure and function, membrane structure and function, cellular and molecular biology, and cell-cell interactions. Not available for credit if credit has previously been received for BCMB 401. F

415 Foundations in Neurobiology (3) Basic nerve cell physiology, nervous system organization, sensory and motor systems, neural basis of behavior, and nervous system development and plasticity. Prerequisite or corequisite: Physiology 221-222; Chemistry 120; Biology 140; F

416 Neurobiology Laboratory (2) Experiments designed to illustrate concepts of modern neurobiology using electrophysiological, historical, and behavioral neurobiological techniques. Prerequisite or coreq: 415. S

419 Cellular and Comparative Biochemistry Laboratory (2) Experiments with enzymes, nucleic acids, and membranes. Includes such topics as immunohistochemistry, kinetic hybridization, sequencing, and immunochromatography methods. Prerequisite or corequisites: 401 or 410. F

420 Advanced Topics in BCMB (3) Selected Topics of current interest in biochemistry or molecular biology, open to control of protein function, immunochromatography, regulation of gene expression, bioenergetics, etc. Emphasis on original literature and the experimental basis of current knowledge. Historical background and sociopolitical, ethical, and moral implications, and future development of technologies. Written reports required. Prerequisite: 410. F.

421 Cell and Tissue Structure and Function (4) Study of animal and plant tissues at light and electron microscope levels. Prerequisite: Biology 140. 2 hrs and 2 labs.

429 Cell Biology Laboratory (3) A series of open-ended, discovery-based exercises will be developed to design and test new drugs using modern cell biology and computer technologies. Experimental modules include techniques used in cell isolation, purification, culturing, fluorescent microscopy, receptor binding and signal transduction. Prerequisite: 402 or consent of instructor. F


452 Independent Research in Biochemistry (1-8) Special experimental problems under direction of a staff member. Limited to undergraduates and by consent of instructor. May be repeated. Maximum 12 hours. Prerequisite or coreq: 410, 419. F

462 Junior/Senior Seminar (1) Lecture/discussion on the application of biochemical principles and techniques in the research, clinical, diagnostic or therapeutic environment. May not be used toward requirements for major. May be repeated. Prerequisite: F

465 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. Prerequisite: Biology 240.

471-481 Biophysical Chemistry (3,3) Physicochemical principles with applications to biological systems. 471 Thermodynamics; chemical equilibrium; solution chemistry; biological molecules; enzymes; enzyme catalyzed reactions. 481—Elementary quantum chemistry; interactions of light with biological molecules; optical and magnetic spectroscopy; light scattering; case studies of selected macromolecules. Prerequisite: Calculus, Organic Chemistry, General Biology or consent of instructor. (Same as Chemistry 471-81.) F,Sp

480 Physiology of Exercise (3) (Same as Exercise Science 480.)

492 Off-Campus Study (1-15) More than two credits of 492 will count toward the Biological Sciences: BCBM major. Satisfactory/No Credit grading.

BIOLOGY (190)

101-102 Humankind in the Biotic World (4,4) Introduction to the principles of biology from the perspective of the impacts of plants, animals, and microbes on human health and the impacts of the impact of human health on life on Earth. Each course is 3 hours and 1 discussion. Topics include: surveys of biodiversity from the cell to ecosystems, environmental issues including air, water, and soil contamination, the origin of life, cells, energy flow in biological systems, genetics and information flow from generation to generation, regulated and unregulated metabolism, and topics in molecular biology and biotechnology. Credit is not available for students not majoring in the biological or pre-health sciences. 101 surveys life from the cell to topics in human health. Topics include: origins of multicellularity, multicellular plants and animals, ideas about evolution, man’s place in nature, ecosystems, environmental issues including air, water, and soil contamination, the origin of life, cells, energy flow in biological systems, genetics and information flow from generation to generation, regulated and unregulated metabolism, and topics in molecular biology and biotechnology. Credit is not available for students not majoring in the biological or pre-health sciences. 102 focuses on the diversity of the Earth’s biota and the interdependence among components. Topics include: surveys of biodiversity from bacteria to higher plants and animals, genetics and evolutionary processes, population biology, ecology, ecosystems, environmental issues including air, water, and soil contamination, the origin of life, cells, energy flow in biological systems, genetics and information flow from generation to generation, regulated and unregulated metabolism, and topics in molecular biology and biotechnology. Credit is not available for students not majoring in the biological or pre-health sciences.

130 Biodiversity (4) Unifying concepts and principles of biology, illustrated with diversity of life, intended for science majors. Properties of life, molecular basis, origin of life, cells, genetics, introduction to kingdoms, origins of multicellularity, multicellular plants and animals, ideas about evolution, man’s place in nature. Emphasis on common themes in living systems (e.g., metabolism, protein and nucleotide sequence similarities, microbial diversity), phylogenetic relationships, fossils, and the major plant and animal groups. Writing and analysis of lab activities required. 3 hours lecture, 1 hour lab each. Prerequisite: Coreq: 101 and 102. Not available for students with credit for both 101 and 102.

140 Organization and Function of the Cell (4) Topics
include: basic organic chemistry and biomolecules, cell structure—membranes, cell walls, and internal organelles; energetics—respiration and photosynthesis; cell division—meiosis and mitosis; stability and safety of laboratory and equipment, stress basic laboratory skills and procedures such as measuring pipetting and mixing solutions, as well as introduce methods of analysis of organisms ranging from bacteria to complex multicellular organisms such as eukarotic. Prereq: 130, Chemistry 120; coreq: Chemistry 130.

202-203 Inside the Biological Sciences (1,1) Presentations by faculty and other biology professionals about recent research. This course is designed to give advanced students with diverse nature and current applications of biology. Open to freshmen and sophomores. Satisfactory/No Credit only. May be repeated.

240 General Genetics (4) Classical and modern principles of heredity. Topics include meiosis and transmission genetics; molecular genetics and gene expression; population and evolutionary genetics. Laboratories will alternate with problem-solving sessions and will include both computer based simulations and hands-on experiences with model genetic systems. Emphasis on development of analytical skills. Prereq: 130-140 or Bot 110-120; Chemistry 120-130.

250 General Ecology (4) Relations between organisms and their environment, including human environmental problems. Topics include populations, communities, and ecosystems. 3 hours lecture, 1 hour discussion, and 1 hour problem sets. This course fulfills part of the baccalaureate requirements for students in the College of Biological Sciences. Prerequisite: Math 117 or 120 or Math 122 or Math 124 or Math 125 or equivalent. Prereq: 8 hours of 200 or above, admission to an honors program or permission of the instructor. Satisfactory/No Credit only. May be repeated. F, Sp, Su.

379 Honors Seminar on Research Skills (3) Technical and cognitive skills necessary for participation in biological research. Lecture, presentation, and small team demonstrations and discussion. Required of (but not limited to) Threshold Biology Scholars. Prereq: 8 hours of 200 or above. Permission of instructor required. F.

398 Honors Practicum in Biological Research (3-5) Rotation through 3-5 modules of required a distinctive experience in participating laboratories. Required of (but not limited to) Threshold Biology Scholars. Prereq: 8 hours of 200 or above and 397. Permission of instructor required. S.

401 Senior Thesis (3-12) A self-directed research project with a focus on a topic in biology. Prerequisite: Math 123 or 125 or equivalent. 2 hours and 1 lab. F.

402 Biosystems Engineering Design I (3) First course of a capstone design sequence. Review of fundamental engineering principles, time and project management, ethics, contemporary issues in systems engineering, project management, and design generation. Design proposals will include extensive documentation and preliminary analyses. Prerequisite: 451 and senior standing or consent of instructor. Corequisite: 403 or 423 or 430 or 433. F.

402 Biosystems Engineering Design II (6) Culmination of capstone design sequence. Intensive design experience on projects approved in Biosystems Engineering 401. Analysis, construction, testing, evaluation and reporting required. Technical lectures on statistics, engineering software, and technical issues relevant to the design process. Weekly project reports and oral and written reports. Submission of design to external engineering design competition or display required. Prerequisite: 401. 2 hours lecture, 2 hours recitation (weekly project reports) and 4 hour lab. Sp.

403 Machine and Component Design (3) Nature of design; functional analysis; creativity; geometric and kinematic requirements; plane mechanisms, force, stress, deflection, event-time analyses applied to design project components and assemblies. Prereq: 331 or consent of instructor. 1 hour and 2 labs. F.

423 Irrigation and Waste Management System Design (3) Design of irrigation and agricultural waste management systems with consideration given to live-stock waste characteristics, and impact on crop yield and water quality. Design content: 3 hours. Prereq: 315, Engineering Science 210; and 331, or consent of instructor. 1 hour and 2 labs. F.

452 Small Internal Combustion Engines (3) Analysis of basic engineering principles, characteristics of animal manure, techniques for collecting, transporting, storing, and utilizing livestock waste. Prereq: Mathematics 123 or 125 or equivalent. 2 hours and 1 lab. F.

452 Small Internal Combustion Engines (3) Theories and mechanics of small internal combustion engines; theoretical cycles, selection, operation, adjustment, troubleshooting and repair of single-cylinder engines. Prereq: Mathematics 123 or 125 or consent of instructor. 2 hours and 1 lab. F.

462 Agricultural Chemical Application Technology (3) Equipment for application of liquid, solid, and gas-gous agricultural chemicals; system components; operating parameters; production; safety considerations; materials handling and disposal methods. Prereq: Mathematics 123 or 125 or consent of instructor. 2 hours and 1 lab. Sp.

467 Irrigation and Waste Management System Design (3) Design of irrigation and agricultural waste management systems with consideration given to live-stock waste characteristics, and impact on crop yield and water quality. Design content: 3 hours. Prereq: 315, Engineering Science 210; and 331, or consent of instructor. 1 hour and 2 labs. F.

483 Bioprocess System Design and Analysis (3) Design of processing, storage and handling systems for biological materials. Mass and energy balances, product and waste characterization, equipment specifications, economic analyses, capital and operating cost. None. Design content: 3 hours. Prereq: Coreq: 311. 1 hour and 2 labs. F.

470 Special Problems in Biosystems Engineering (1-3) Selection, analysis solution and report of problem. May be repeated. E.

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

BIOSYSTEMS ENGINEERING TECHNOLOGY (194)

220 Materials and Fabrication (3) Properties of materials including wood, metals, concrete, plastics and rubbicides; drafting and plan reading; fabrication techniques; applications of basic engineering principles to agricultural and food processes. Fluid handling, drying, evaporation, thermal processing, heating and cooling, refrigeration systems, and materials handling. Prereq: Physics 101 or 221. 2 hours and 1 lab. F.

221 Surveying (3) Measurement of distances, angles, and areas; differential and profile leveling; topographic surveying and mapping; area computation. Prereq: Math 119 or consent of instructor. 1 hour lecture and 1 lab. F.

242 Food and Process Engineering Technology (3) Analysis and design of processing, storage and handling systems for biological materials. Emphasis on problem formulation, solving and reporting. Systems design incorporating analyses of agricultural and food processes. Fluid, handling, drying, evaporation, thermal processing, heating and cooling, refrigeration systems, and materials handling. Prereq: Physics 101 or 221. 2 hours and 1 lab. F.

432 Agricultural Machinery and Tractors (3) Functions, selection, matching, and management of agricultural machinery systems. Tractor power ratings, engine and transmission systems, hydraulic systems, hitching, and ballasting. Field and material capacity, field efficiency, cost analysis, and machinery replacement strategies. Functional analyses of tillage operations, planters and drills, no-tillage systems, hay harvest systems, forage and small grain harvesting, and cotton harvesting. Crop drying processes, off-road machinery safety considerations, and operating costs. Prereq: Mathematics 123 or 125 or consent of instructor. 2 hours and 1 lab. Sp.

442 Agricultural Waste Management and Pollution Control (3) Analysis and design of agricultural systems to control pollution; characteristics of animal manure, techniques for collecting, transporting, storing, and utilizing livestock waste. Prereq: Mathematics 123 or 125 or equivalent. 2 hours and 1 lab. F.

447 Irrigation and Waste Management System Design (3) Design of irrigation and agricultural waste management systems with consideration given to live-stock waste characteristics, and impact on crop yield and water quality. Design content: 3 hours. Prereq: 315, Engineering Science 210; and 331, or consent of instructor. 1 hour and 2 labs. F.

452 Agricultural Waste Management and Pollution Control (3) Equipment for application of liquid, solid, and gas-gous agricultural chemicals; system components; operating parameters; production; safety considerations; materials handling and disposal methods. Prereq: Mathematics 123 or 125 or consent of instructor. 2 hours and 1 lab. Sp.

BOTANY (198)

110-120 General Botany (4,4) 110 - Introduction to taxonomy through trees; classification; basic organization and function of cells; respiration; photosynthesis; genetics (including meiosis, mitosis, Mendelian inheritance); survey of plant kingdom (bacteria, fungi, mosses, ferns, conifers, and flowering plants). 120-Plant growth, anatomy, growth regulation; uptake and transport; origin of life and mechanism of evolution; ecology, importance to humans and environmental concerns. Students receiving credit for 110-120 may not receive credit for either 130-140 or Biology 101-102, 110-F; 120-Sp.

305 Socio-Economic Impact of Plants (3) Significance of processing, storage and handling systems for biological materials. Mass and energy balances, product and waste characterization, equipment specifications, economic analyses, capital and operating cost. None. Design content: 3 hours. Prereq: Coreq: 311. 1 hour and 2 labs. F.
of plants in origin and development of human cultures, evolution of cultivated plants, and role of plants in present civilization. Occasional field trips. Sp

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 principles involved in deterioration and preservation of an environment in which humans and their cultures may survive.

310 Plant Morphology (4) Morphology, development, natural history, and evolution of non-vascular plants (mosses, algae, fungi, and bryophytes) and vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Prereq: 110-120 or Biology 130-140 or equivalent. F, Su

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

321 Introductory Plant Physiology (4) Organismal physiology of plants; water relations, mineral nutrition, morphogenesis, elements of metabolic processes, effects of age, light, natural rhythms, temperature, and other environmental factors. Lecture and lab. Prereq: One year general chemistry and one year biological science. F, Su

330 Field Botany (3) Principles of taxonomy, basic ecological concepts and the identification, recognition, collection and preservation of local, native and naturalized plants. Prereq: 8 hours in biological sciences. F, Sp, Su

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

400 Tutorial in Botany (1-2) Individual, independent study under supervision of an instructor. Application only. May be repeated with consent of department. Maximum 4 hours.

401 Field Studies in Botany: (Specific Topic to be announced) (1-3) Field experience and taxonomy of special plant groups. Selected field topics will vary and may include: Bryology, Lichenology, Pteridology, special plant groups. Selected field topics will vary and may include: Bryology, Lichenology, Pteridology.

412 Plant Anatomy (3) Cells, tissues and organs; their development in vegetative and reproductive structures of vascular plants—emphasis on seed plants. Prereq: 110-120 or Biology 130-140 or equivalent.

431 Plant Ecology (3) Interactions between individuals, species, communities and their environment. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two weekend field periods. Lecture topics include: population, gene expression and regulation, transformation, transposable elements, plant development, etc. Lab topics include DNA and RNA, molecular hybridization, isolation and preparation of plasmids, PCR amplification of specific sequences, DNA sequencing and transformation. Prereq: Biology 140 and 240 with grade of A or B and consent of instructor. Maximum 4 hours.

412 Plant Anatomy (3) Cells, tissues and organs; their development in vegetative and reproductive structures of vascular plants—emphasis on seed plants. Prereq: 110-120 or Biology 130-140 or equivalent.

431 Plant Ecology (3) Interactions between individuals, species, communities and their environment. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two weekend field periods. Lecture topics include: population, gene expression and regulation, transformation, transposable elements, plant development, etc. Lab topics include DNA and RNA, molecular hybridization, isolation and preparation of plasmids, PCR amplification of specific sequences, DNA sequencing and transformation. Prereq: Biology 140 and 240 with grade of A or B and consent of instructor. Maximum 4 hours.

440 Plant Molecular Biology (4) Instructions to current research in plant molecular biology and to commonly used techniques. Lecture topics include: gene structure, gene expression and regulation, transformation, transposable elements, plant development, etc. Lab topics include DNA and RNA, molecular hybridization, isolation and preparation of plasmids, PCR amplification of specific sequences, DNA sequencing and transformation. Prereq: Biology 140 and 240 with grade of A or B and consent of instructor. Maximum 4 hours.

412 Plant Anatomy (3) Cells, tissues and organs; their development in vegetative and reproductive structures of vascular plants—emphasis on seed plants. Prereq: 110-120 or Biology 130-140 or equivalent.

431 Plant Ecology (3) Interactions between individuals, species, communities and their environment. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two weekend field periods. Lecture topics include: population, gene expression and regulation, transformation, transposable elements, plant development, etc. Lab topics include DNA and RNA, molecular hybridization, isolation and preparation of plasmids, PCR amplification of specific sequences, DNA sequencing and transformation. Prereq: Biology 140 and 240 with grade of A or B and consent of instructor. Maximum 4 hours.

440 Plant Molecular Biology (4) Instructions to current research in plant molecular biology and to commonly used techniques. Lecture topics include: gene structure, gene expression and regulation, transformation, transposable elements, plant development, etc. Lab topics include DNA and RNA, molecular hybridization, isolation and preparation of plasmids, PCR amplification of specific sequences, DNA sequencing and transformation. Prereq: Biology 140 and 240 with grade of A or B and consent of instructor. Maximum 4 hours.

499 Evolutionary Ecology (3) Basic concepts in evolutionary and ecological genetics. Biogeography, climate, population genetics, evolution and natural selection, population growth and regulation, competition, niche, experimental ecology, predation, phylogenetis and biodiversity and conservation. Prereq: General Biology and General Ecology. Students may not receive credit for both 499 and 599. (Same as Ecology and Evolutionary Biology 499.) Sp, A-O

BROADCASTING (202)

275 Introduction to Radio and Television (3) Lecture and lab course providing students with an overview of radio, television, cable, and related technologies. Includes history, trends, regulations, and effects of radio and television on society. Students gain practical experience in radio at WUTK-FM. Prereq: Communications 100 or Speech Communication 100.

310 Radio-TV News (3) Writing and reporting for electronic media. Lecture and lab course with writing emphasis. Includes work experience at WUTK-FM. Prereq: 275.


330 Audio/Video Production (3) Emphasis on the concepts and operation of the primary video and audio tools to develop effective communication. Lecture and laboratory provide experience in studio production process and procedures. Includes concept development, script writing, message design, applied aesthetics, crew management, and producing. Prereq: 275.

360 Radio-TV Performance (3) Development of vocal, visual and performance skills for announcers, interviewers, narrators, reporters, and newscasters. Laboratory hours required. Prereq: 275.

410 Electronic News Gathering (3) Writing, reporting, producing and performing news for television. Lecture and lab course providing students with experience as reporters/producers for a television news program. Includes an overview of electronic news gathering equipment and techniques as well as video editing. Prereq: 310.


430 Electronic Field Production (3) Basic principles of video production on location. Emphasis on the concepts relating to message design, development, and production in the field. Includes concept development, script writing, shooting, graphics, sound design, lighting, and editing. Prereq: 330 or consent of instructor.

440 Corporate Video (3) Examination of special requirements and emergence of new roles for video in consumer, educational and medical uses of video. Management, budgeting, planning, producing, and evaluating projects. Prereq: 430 or consent of instructor.

450 Radio, Television and Society (3) Effects of electronic media on society. Research and theory applied to current issues. Prereq: Communications 100 or Speech Communication 100.

460 Broadcast News Operations (3) Production of news program for broadcast on television stations. Electronic news gathering, editing, news writing, news packages, and studio production. Prereq: 410 or consent of instructor.

470 Cable Television and Emerging Technologies (3) History and structure of the cable television industry. Cable regulations and programming. Examination of the role of telephone companies in the distribution of video. Analysis of all relevant technologies including direct broadcast satellite, cable, videodisc, interactive television and others. Prereq: 275 or consent of instructor.


490 Radio and Television Management (3) Business policies and practices of broadcast operations, departmental functions, cost and income analysis, leadership styles and techniques, with emphasis on mid-level management. Capstone course to be taken in student’s last semester. Prereq: Senior standing.

492 Practicum (1) Work and learning experience at radio, television, cable or non-broadcast facilities. Final written report required. May be repeated once. Prereq: Senior standing and consent of department head. S/NC grading only.

494 Special Topics (3) Salient issues in electronic media. Topics vary. Prereq: Consent of instructor. May be repeated. Maximum of 6 hours.

BUSINESS ADMINISTRATION (205)

220 Business Career Planning (1) Introduction to Business, concentration options, career opportunities. Making the concentration/career decision, preparing for and conducting a job campaign. Satisfactory/No Credit only. Required for satisfactory progression to upper-division level in Business. Prereq: Business Pre-major.


400 Special Topics (1-9) Topics of current interest in business. Topics announced prior to offering. May be repeated for additional credit provided topic is different. Maximum 9 hours. Prereq: consent of instructor.

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

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

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

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

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

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

BUSINESS LAW (216)

301 The Legal Environment of Business (3) Introduces to legal system including legal ethics (jurisprudence), sources of law, steps in lawsuits, constitutional law, civil procedure, business law, contracts, real property, agency, sales, business organization, limitations, products liability, employment-employee relations, white collar crimes and torts. Prereq: Economics 216. Prereq: Junior standing.

401 Law of Business Organizations and Commercial Transactions (3) Introduction to legal implications of business transactions including contracts, propri- etary, negotiable instruments, secured transactions, bankruptcy, suretyship, insurance, and legal liability. Fundamentals of business law required for professional examination preparation (e.g., CPA exam). Major writing requirement. Prereq: 301, E
420 Family Diversity (3) Cultural, socioeconomic, ethnic variations; emerging needs and programs. Prereq: 220, Junior standing or consent of instructor. (Same as African-American Studies 420.)


430 Family Communication (3) Dynamics of interactions within family systems, marriage, and parent-child relationships. Study of verbal and nonverbal communication patterns, problems. Prereq: 220 or Speech 320 or consent of instructor. (Same as Speech 430.)

440 Family Life and Parent Education (3) Emphasis on skills required to develop family life education programs in contemporary settings. Overview of current approaches to the process of parenting and parent education programs. Prereq: Family Studies majors only.

450 Assessment in Early Childhood Programs (3) Methods and principles of assessment of children, birth through 8 years of age. Includes participation. Prereq: 350 and admission to the major or ECE licensure program. (Same as Speech 450.)

451 Early Childhood Education III: Including Exceptional Children (3) Individualized curriculum planning based on knowledge of normative, nonnormative development, assessment, effective teaching strategies for facilitating development. Includes participation. Prereq: 350 and admission to the Child Development major or admission to the Early Childhood Education licensure program.

455 Children and Stress (3) Theory and methods for understanding young children’s life stressors, examining children’s coping strategies, and designing appropriate intervention techniques and learning environments. Prereq: Admission to the Child Development major or the Early Childhood Education licensure program or by consent of instructor. Sp, A

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

470 Student Teaching (6-12) Responsibility for planning and guiding groups of infants, toddler, or preschoolers under supervision of classroom teacher and coordinator. Includes weekly seminar. Prereq: 350 and 351 and admission to the Child Development major or admission to the Early Childhood Education licensure program and completion of all progression requirements. Satisfactory/No Credit only. F and Sp student teaching begins on first day of registration and ends on last day of final examination period (student teacher follows the CDL calendar and does not include Fall or Spring break). Summer student teaching begins the day following 6th, 11th, and 16th weeks and ends on the day before Summer commencement. Priority for summer student teaching is given to students who have completed all program requirements, except student teaching, prior to the Summer session.

471 Practicum in Child Development (3-12) Supervised experiences working with children and families in early childhood settings. Prereq: Admission to the Child Development major or admission to the Early Childhood Education licensure program and consent of the instructor. May be repeated. Maximum 12 hours. Satisfactory/No Credit only.

475 Day Care Administration (3) Theories, methods, and materials for administrators of early childhood education programs; writing funding proposals, staff selection, financial management, recruiting and enrolling children, program development, parent relations, conflict resolution. Includes participation experience. Prereq: 351 and admission to the Child Development major or admission to the Early Childhood Education licensure program or consent of instructor.

480 Internship in Family Studies (9) Supervised experiences in community-based family life programs. Coreq: or Prereq: Completion of Family Studies core, completion of the Instructional Pod and Family and Community Services Pod, including CPS 405 and HS 380. Satisfactory/No Credit only.

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

485 Special Topics in Child and Family Studies (1-9) Personal or professional interest in human development or family studies. Prereq: 9 hours in Child and Family Studies, cumulative GPA of 3.0 or above, Junior standing, or consent of instructor. May be repeated. Maximum 9 hours.

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

CHINESE (249)

131-132 Elementary Chinese I,II (5,5) (Same as Asian Languages 131-132.)

231-232 Intermediate Chinese I,II (5,5) (Same as Asian Languages 231-232.)

311-312 Chinese Literature in English Translation (3,3) (Same as Asian Languages 311-312.)

331-332 Advanced Chinese I,II (4,4) (Same as Asian Languages 331-332.)

431 Readings in Chinese Literature (3) (Same as Asian Languages 431.)

CINEMA STUDIES (251)

235 Introduction to Cinematography as Art (3) (Same as Art 235.)

236 Introduction to Video Art (3) (Same as Art 236.)

261 Introduction to Film Studies (3) (Same as English 261.)

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

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

325 Russian Film (3) (Same as Russian 325.)

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

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

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

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

433 Modern Art and Film (3) (Same as Art 433.)

434 Hispanic Culture Through Film (3) (Same as Spanish 434.)

435 Cinematography as Art (3) (Same as Art 435.)

436 Video as Art (3) (Same as Art 436.)

465 Latin American Film and Culture (3) (Same as Latin-American Studies 465 and Spanish 465.)

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

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

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

CLASSICS (257)

201 Introduction to Classical Civilization (3) Introductory course in the civilization of ancient Greece and Rome. Includes aspects of history, literature, art and archaeology, philosophy and religion. Writing-emphasis course.

221 Early Greek Mythology (3) Archetypal 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 Aeschylos. Writing-emphasis course.

222 Classical Greek and Roman Mythology (3) Use of myth in literature, history, religion and philosophy of Greece and Rome from about 450 B.C. to about 350 A.D. Two foci 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 Christianity. Early Sophocles, Euripides, Roman poetry, and modern scholarship. Writing-emphasis course.

232 Archaeology and Art of Ancient Greece (3) Survey of Greek archaeology from prehistoric times to the fall of the Roman Empire (1000 B.C.-500 A.D.). Reconstruction of the Greek culture from tombs, paintings, and artifacts, development of Roman architecture, and urban planning in Greece and the provinces. Writing-emphasis course.

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

253 Greek and Roman Literature in English Translation (3) Major literature of ancient Greece from Homer to Tactus. Writing-emphasis course.

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

331 Archaeology of the Aegean Bronze Age and Early Greece (3) Includes Troy, the Cycladic Islands, the Greek mainland, Crete, and Cyprus ca. 3000-700 B.C. Discusses the fall of the Mycenaean civilization and the factors that led to that of the Dark Age. For Art, Classical, and Hellenistic periods emphasis on development of architecture, sculpture, and vase painting. Includes minor arts and the relationship between archaeology and art.

332 Archaeology and Art of Etruria and Rome (3) Survey of the archaeology of the Italian peninsula and the Roman World from prehistoric times to the fall of the Roman Empire (1000 B.C.-500 A.D.). Reconstruction of the Etruscan culture from tombs, paintings, and artifacts, development of Roman architecture, and urban planning in Rome and the provinces. Writing-emphasis course.

334 Cities and Sanctuaries of the Greek and Roman World (3) Major cities and sanctuaries in Greece, the Greek Colonies, and the Roman Empire. Approach is archaeological, focusing on physical evidence—landscape, architecture and artifacts as well as descriptions of ancient authors. Cities include various types—planned and unplanned, seaports, caravan centers, government and commercial centers. The sanctuaries also vary in function including prophetic centers, athletic centers, theater centers, and healing centers. Writing-emphasis course.

362 Roman Law (3) This course covers the historical development of Roman law in the Classical period (50 B.C.-A.D. 27) with an emphasis on a case-by-case analysis of case-law in the areas of contract, property, or debt. (Same as Legal Studies 362.)

381 Greek Civilization (3) Major aspects of ancient Greek civilization: religion, fine arts, political life, pan-Mediterranean relations, the prominence of Athens; the role of modern archaeology in interpretation; emphasis on the sixth and fifth centuries B.C. Writing-emphasis course.

382 Roman Civilization (3) Major aspects of ancient Roman civilization: religion, fine arts, political life, pan-Mediterranean relations, the prominence of Rome; the role of modern archaeology in interpretation; emphasis on the sixth and fifth centuries B.C. Writing-emphasis course.

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

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

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. May be repeated for credit. Maximum 9 hours. Prereq: 261.
441 Special Topics in Classical Civilization (1-3)
Topics in art, literature, religion, and society of Greece and Rome. May be repeated up to three times with consent of department.

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

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

COMPARATIVE AND EXPERIMENTAL MEDICINE (262)

411 Undergraduate Research Participation (1-3)
Experience in active biomedical research projects under supervision of foreign or domestic mentors. Students in pre-med core may apply. 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 with consent. Maximum 9 hours. Satisfactory/No Credit only.

COMPUTER SCIENCE (266)

100 Introduction to Computers and Computing (3)
Basic concepts of computer hardware and software. Microcomputer systems and workstations. Networking and the Internet. The interdisciplinary science of computing. Does not satisfy any requirements for Computer Science major or minor. 2 hour lab required.

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computers with emphasis on developing good programming habits, building abstractions with procedures and data, and programming in a modern high-level language. Students who have received credit for 140 or 160 may not also receive credit for 102 without consent of instructor.

140 Data Structures (4) Advanced problem solving and algorithm development, structured programming, data structures and applications, OI techniques, lists, queues, trees, algorithms, files. Prereq: 102. 3 hour lab required.

160 Computer Organization (4) Number systems, Boolean algebra, combinational and sequential circuits, registers, processor functional units and control, computer memory systems, input/output, computer operating systems. Prereq: 102. 3 hour lab required.

291 Lower-Division Special Topics (1-3)
Topics vary. Programming languages, operating systems and application software packages. May be repeated. Maximum 9 hours.


340 Foundations of Software Engineering (3) Principles of analysis and design of information systems. Principles of program design and verification, formal objects, formal specifications. Prereq: 140, 160, 311. 3 hour lab required.

360 Systems Programming (3) Introduction to user-level systems programming; file control, process control, memory management, system utilities, network programming. Prereq: 302. 3 hour lab required.

365 Programming Languages and Systems (3) Language paradigms (procedural, functional, object-oriented, logic), language design and implementation issues and language issues related to parallelism. Prereq: 302.

370 Introduction to Scientific Computing (3) The design, analysis, and implementation of numerical algorithms for solving problems in science and engineering. Enhancing the capability of coursework and research projects. Partial differential equations, computational complexity, scientific computing environments, and high-performance software packages. Prereq: 140, M241, M251. 3 hour lab required.


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

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

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

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

491 Independent Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

COLLEGE SCHOLARS HONORS (509)

317-318 College Scholars Seminar (1,1) Sequence (in any order) limited to and required of all College Scholars each year. May be repeated. Maximum 8 hours.

491 College Honors: Foreign Study (1-15) Limited to College Scholars students.

492 College Honors: Off-Campus Study (1-15) Limited to College Scholars students.

493 College Honors: Independent Study (1-15) Limited to College Scholars students.

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

COMMUNICATIONS (259)

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

150 Communications in an Information Age (3) Overview of current and emerging communication systems including print, broadcast, multichannel video, telephony, and the Internet. Particular emphasis is given to the development of communication systems and their role in society.

300 Mass Communications Research Methods (3) Social science research methods, especially sample surveys, used by communications media. Applications to both internal decision-making and to external communication in media. Prereq: Journalism 200, or Advertising 350, or Broadcasting 310 or 320, or Speech Communication 330 or consent of instructor. (Same as Legal Studies 300.)

400 Mass Communications Law and Ethics (3) Emphasis on legal issues directly affecting the mass media; libel, privacy, free press-fair trial, judicial controls, government regulation. Also includes ethical standards and practices of the mass media in America. Prereq: Journalism 200, or Advertising 350, or Broadcasting 310 or 320, or Speech Communication 330 or consent of instructor. (Same as Legal Studies 400.)

450 On-Line Electronic Publishing (3) Cross-disciplinary approach to design and production of on-line publications. Emphasis on researching, planning, site content and design, and the economic, legal and ethical issues involved in online publishing. Prereq: Senior standing and consent of instructor.

COMPARATIVE LITERATURE (260)

202-203 Cross-Cultural Perspectives in World Literature (3,3) Literary perspectives and values in different time periods and cultures approached from an international context and including an introduction to the theory, methods, and objectives of comparative literature. Variable content. Writing-emphasis course.

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

452 Modern Drama, 1880-1945 (3) (Same as English 452)

454 Twentieth-Century International Novel (3) (Same as English 454)
404 Special Topics (1-3) Instructor initiated course offered at convenience of the department on various topics of current interest. Contact department for listing of topics to be covered. May be repeated. Maximum 15 hours. E

406 ECP Field Work (3) Capstone experience for the Engineering Communication and Performance Minor. Includes instruction, field work, and supervision. Satisfactory/No Credit grading only. Prereq: ECEP 206 and ECEP 306.

410 Sex Role Development: Implications for Education and Counseling (3) Theories and research concerning the development of sexual role and its relevance in educational and counseling settings. (Same as Women’s Studies 410). F, Su

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

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

CULTURAL STUDIES IN EDUCATION (271)

290 Human Motor Behavior (3) Theories and principles explaining motor behavior; psychological factors related to and/or affecting motor skill acquisition and performance. Prereq: At least sophomore standing.

291 Sport in American Society (3) For all undergraduates. Course studies sport in American society from a sociological perspective. (Same as Sociology 291.)

302 School and American Society (3) Historical, philosophical and social perspectives on contemporary educational issues.

321 History of Sport and Physical Activity in Western Culture (3) A study of sport and physical activity from ancient Greek period to modern times, illustrating historical role in western culture. Provides background for growth of sport in education, and explores how modern collegiate divisions, bearing a myriad of titles, developed. Prereq: Progression to the major or consent of instructor.

356 Motor Development (3) Evolution of human motor behavior within the context of structural/functional changes, and with the respect to psychological, sociological, and social-psychological factors related to and/or affecting motor performance/learning; analysis of changes in motor performance and underlying attributes across the lifespan with emphasis upon critical developmental periods. Prereq: Progression to major or consent of instructor.

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

372 Philosophy of Sport (3) Theories of reality and value as they apply to sport with emphasis on ethical issues. Prereq: Progression to major or consent of instructor.

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

391 Psychology of Coaching (2) Major topics and theories dealing with social-psychological factors affecting and relating to sport performance, with practical implications and applications to teaching and coaching. Prereq: Progression to major or consent of instructor.

405 Sociology of Sport (3) (Same as Sociology 405.)

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

466 Motor Development Laboratory (3) Application of selected perceptual-motor development, movement education, and pedagogical concepts to performance assessment. Includes lesson design and presentation to normally developing preschool or primary grade children. Participation in intra- or interdisciplinary research projects. Prereq: Progression to major or consent of instructor.

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

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.

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

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

330 Modern: Level II (2) Instruction and practice in intermediate modern dance styles and techniques. Available to 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.

380 Special Topics (1-3) Selected disciplinary or professional areas of dance. May be repeated.

410 Ballet: Level III (2) Instruction and practice in advanced modern dance techniques. Available to 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 or creative dance in grades K-6. A semester-long laboratory involves in-class instruction and presentation of university dance company. Prereq: Admission to Teacher Education Program. F

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

440 Composition I (2) Coursework emphasizes the basic techniques and concepts of dance composition. This course focuses on the choreography of group works and the technical aspects of produc- tion. Prereq: 440 or approval of instructor.

460 Dance History through the 19th Century (3) Survey of the evolution of major societies and cultures from prehistory through the nineteenth century. Senior standing or graduate status required for graduate credit. Different levels of performance is expected of those registered for graduate credit.

490 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 levels of performance is expected of those registered for graduate credit.

493 Directed Independent Studies (1-3) Independent study in a specialized area with dance. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

495 Dance Pedagogy (3) Principles and methods of the teaching of dance with practical application in a minor or professional area. Prereq: Upperclass or graduate standing and approval of instructor. Senior standing or graduate status required for graduate credit. Different levels of performance is expected of those registered for graduate credit.

EARLY CHILDHOOD EDUCATION (279)

410 Early Childhood Special Education Foundations (3) Introduction to the field of early childhood special education including the nature of disabling conditions; theoretical perspectives in the field; legislation, policies and procedures used in the field. Prereq: Admission to Teacher Education Program.

442 Early Childhood Teaching Methods (6) Methods and materials for teaching in early childhood classrooms focusing on K-4th grade. Emphasis on holistic integrative approaches to curricular development and presentation. Prereq: Pre-K-4th licensure program and admission to Teacher Education.

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

471 Early Childhood Special Education (6) Assessment, curriculum planning and development and teaching approaches used in early childhood special education. Prereq: Admission to Teacher Education Program. F

472 Field Experience in Early Childhood Special Education (2-3) Placement in educational settings serving young children with special needs. Provides experience in assessment, curriculum planning and teaching. Prereq: Admission to Teacher Education Program. May be repeated. Maximum 5 hours. E

ECOLOGY AND EVOLUTIONARY BIOLOGY (278)

202-203 Ecology and Evolutionary Biology Colloquia (1 each) Weekly discussions of current topics in ecology, behavior, and evolutionary biology including undergraduate research and career opportunities, for declared and potential majors. Provides opportunity to familiarize students with the contemporary research and its applications and introduces them to departmental faculty and research. S/NC only. Prereq: Biology 110-120 or equivalent.

240 Human Anatomy (4) Gross and Microanatomy of the human. Credit may not be applied toward Ecology and Evolutionary Biology major. Prereq: Biology 101 or 102 or 130 or 140 or equivalent introductory biology course. 3 hours lecture, 3 hours lab.

305 Evolution and Society (3) Issues and controversies surrounding the teaching and learning of evolution in America today. May not be applied to Ecology and Evolutionary Biology major. Prereq: General Biology or Anthropology 110 or consent of instructor. Writing emphasis course. (Same as Anthropology 305.)

350 Comparative Vertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of vertebrates. Course involves dissection of shark, cat, and selected other vertebrates. 2 hours and 2 labs.

360 Comparative Invertebrate Biology (4) Origins, phylogeny and functional anatomy of invertebrates with emphasis on diversity of life forms and adaptations to special local environments. 2 hours and 2 labs.

370 Ethology and Sociobiology (3) Basic concepts in the evolution of behavior with applications to psychology, the social sciences, and the humanities. (Same as Psychology 370.)

380 General Entomology (3) Introduction to insects: basic structure, physiology, behavior, evolution and classification of insect orders. 2 hours and 1 lab.
ECONOMICS (283)

201 Introductory Economics: A Survey course (4)
Theory of consumer behavior, theory of firms, supply and demand, costs of production, market models, national income and employment theory, money and banking, monetary and fiscal policy, debt, and international economics.

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

311 Intermediate Microeconomics (3) Theories of consumer behavior, production of costs, of price and behavior of firms in perfectly competitive, monopolistic and imperfectly competitive markets, input prices, income distribution, welfare and general equilibrium. Prereq: 201.


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

323 Economic Development (Third World) (3) Overview of international development trends and developing countries and other emerging markets. Theories of growth and policies used to promote economic improvement. Prereq: 201 or permission of instructor.

331 Government and Business (3) Antitrust and regulatory economics, problems in regulation and social control of business organization, oligopoly models. Prereq: 201.

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.


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 problems, regional economic analysis, examination of urban problems. Prereq: 201.

381 Econometrics (3) Methods of specification, estimation, testing and forecasting of economic relationships. Includes specification of models, estimation methods, statistical inference, forecasting procedures and common econometric problems, such as multi-collinearity, heteroscedasticity, and autocorrelation. Prereq: 201, Statistics 201, Mathemat- ics 123-125 or 141-142.

400 Special Topics (3) Topics vary. Prerequisites determined by department each time course is offered. Numerical grade is given to law students. May be repeated when topic varies. Maximum 9 hours. Prereq: 201.

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

415 Western Economics Thought Since the 18th Century (3) Methods of studying doctoral history. Origin of economic evolution, classical theories, neoclassical economics, economic of Keynes and his followers, principal developments of second half of 20th century. Major writing requirement. Prereq: 201 or equivalent and consent of instructor. Not available for graduate credit in History. (Same as History 415)


436 Economics of Health and Health Care (3) Medical care and health status; demand for medical care and insurance; physician and hospital suppliers; government provision of services and insurance; regulation of health care markets. Writing emphasis course.

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

471 Public Finance: Optimal Government Functions and Expenditure Analysis (3) Problems of collective consumption, external effects, public investment, social decision-making. Prereq: 201. Writing-emphasis course.

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

482 Introduction to Mathematical Economics (3) Application of basic mathematical tools (e.g., calculus, matrix algebra, etc.) to major topics of economic theory. Prereq: Economics 311 with a grade of B or better, Mathematics 141-142 or 147-148.

492 Economics Off-Campus Study (1-6) Satisfactory, N/C grading only. Prereq: Consent of instructor.

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

499 Analysis of Economic Problems (3) Study of the effects of economics on modern society and the practice of economics from a multidisciplinary perspective. Students will integrate learning from all fields of economics and other disciplines where appropriate, and work as teams to prepare economic analyses of selected economic problems facing modern society. Prereq: Senior standing and completion of Economics 311, 313 and six other hours of upper division economics. Writing emphasis course.

EDUCATION (289)

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

400 Professional Studies: Teachers, School, and Society (2) Focus on roles and responsibilities of teachers, on how schools are organized and the relationship between schools and the social and political environment. Prereq: or consent of instructor. Coreq: Educational and Counseling Psychology 210. Prereq: Admission to Teacher Education.

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

EDUCATIONAL PSYCHOLOGY (310)


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

404 Special Topics (1-3) Instructor initiated course of study in an area of the major field. May be repeated for various topics of current interest. Contact department for listing of topics to be covered. May be repeated. Maximum 15 hours. E.

431 Personality and Mental Health (3) Same as Counselor Education and Counseling Psychology 431.

432 The disadvantaged Student: Psychoeducational Perspectives (3) Theory and research regarding ecolo- gy, psychosocial behavior and appropriate interventions.
363 Structural Analysis of Aerospace Vehicles (3)

370 Airplane Performance (3)
Characteristics of propulsion devices, predictions of airplane performance, static and dynamic stability and control of aircraft. Coreq: ES 341, Prereq: ME 331, F

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

422 Aerodynamics (3) Theory and design of aerodynamic bodies for desired characteristics. Potential flow theory, viscous effects, compressibility effects. Subsonic, transonic, and supersonic airflows. Prereq: 351, 370, F

424 Astronautics (3) Orbital mechanics, propulsion, atmospheric reentry of space vehicles including reentry thermal protection materials, human factors in space flight, the space environment, and current topics. Coreq: 351, Coreq: ME 344.

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

426 Introduction to Aerospace Design (2) Design process, synthesis, safety, reliability, patents, product liability, economic analysis, optimization, design standards, design studies, Individual design reports required. Prereq: 351, 370, 380, 455, ME 331, E 343, F

429 Aerospace System Design (4) Synthesis and design of a complete aerospace system which may involve economic and technical aspects. Participation in team design effort involves oral presentations and design report. Prereq: 422, 425, 426, 370, F

431 Mechanical Engineering/Aerospace Engineering (1) Seminar (1) Topics related to engineering including formulas. Oral presentations by students on engineering topics. Prereq: Senior standing. F

449 Aerospace Laboratory Engineering (3) Designing, conducting, and reporting results of experimental exercises. Test standards and specifications. Analysis of data and formation of conclusions. 3 hours lab per week. Prereq: 345, 351, 425, Sp

ENGINEERING BIOMEDICAL 
(192)

271 Introduction to Biomedical Engineering (3) Application of the skills developed in Engineering Fundamentals (2, 3) to biomedical engineers. The relationship of anatomy, physiology, and biochemistry to the design of artificial organs, orthopedics implants, medical imaging, and other biomedical applications is explored. Prereq: EF 102.

300 Engineering Physiology (3) The study of human physiology, with an emphasis on making engineering decisions, and the development of computational models. Prereq: Biomedical 110, 111, 112. Coreq: Math 341. F

301 Biomedical Seminar I (1) Engineering Profession- alism and career planning: seminars on current BME topics. Satisfactory/No Credit. Prereq: Junior Standing in BME.

310 Biomechanics (3) The application of mechanics to human anatomy, physiology, and biochemistry to biomedical engineering problems. The special characteristics of living tissue and biological fluids and their effects on computational problems will be introduced. Prereq: ES 231, 341, BME 300.

346 Design of Experiments (3) Study of probability and statistics with design of experiments as applied to biomedical engineering. Application of statistical tools to biomedical experimentation, manufacturing methods, and biomedical research planning. Prereq: BME 300, Math 200, 241.


430 Biomedical Engineering Laboratory (3) This course will focus on the unique problems associated with making measurements and interpreting data in living systems; experiments may include electrical, hydraulic, fluid flow, mechanical testing of biological materials, and human measurements. Prereq: BME 310, BME 346.

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

455 Biomedical Engineering Design I (2) Engineering economics, optimization, design for automation, reliability, patents and product liability; design of biomedical systems. Participation in team design efforts. Requires design report. Prereq: BME 310, Coreq: BME 474.

469 Biomedical Engineering Design II (4) Design of complete biomedical device: documentation includes complete specification, design calculations, preparation of working drawings, and cost analysis. Written and oral reports. Prereq: BME 474.


COURSES OF INSTRUCTION (163)

BME 310, BME 346.


230 Introduction to Chemical Engineering Thermodynamics (3) Introduction to the laws of thermodynamics, state relations, and systems. Idea of a basis, idea of a system, the law of Raoult's law, and deviations from ideal behavior (fugacity and activity). Introduction to the principal of microscopic reversibility. Prereq: BME 310. F

240 Fluid Flow and Heat Transfer (4) Force, energy and mechanical energy balances; flow in tubes, piping systems, packed and fluidized beds; pumping and metering; steady and unsteady state heat conduction; heat transfer in tubes and heat exchangers; radiation. Prereq: 200, Mathematics 241; Coreq: Mathematics 231.

250 Application of Chemical Engineering Thermodynamics (3) Basic concepts related to chemical engineering applications of thermodynamics; emphasis on flow processes, real gases and liquids, estimation of physical properties, phase equilibria of industrial mixtures, compressors, power cycles, and chemical reaction equilibria. Prereq: CHE 200, 230.

301 Chemical Engineering Data Analysis (3) Analysis of experimental data; identification of systematic errors; principles of statistical calculation and error propagation; empirical modeling of processes; statistical process control; optimization techniques. Prereq: Math 200.


340 Mass Transfer and Separation Processes (3) Stagewise operation; application of analytical, graphical and computer methods to design of stagewise separatory operations. Differential operations-application of analytical and computer methods to the design of diffusive processes. Applications include gas absorption, distillation, extraction, humidiﬁcation, ion exchange and membrane separations. Prereq: 200.


380 Seminar (1) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No credit.

394 Chemical Engineering Co-op (1) Co-op experiences in Chemical Engineering. Technical report writing and presentations. Prereq: Permission of instructor. May be repeated.

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

407 Honors Seminar (1) Presentations and discussions on topics of importance to chemical engineers. Prereq: Consent of instructor. Satisfactory/No Credit grading. May be repeated once.

408 Honors Seminar (1) Presentations and discussions on topics of importance to chemical engineers. Prereq: Consent of instructor. Satisfactory/No Credit grading. May be repeated once.

410 Chemical Engineering Laboratory II (3) Laboratory investigations of mass transfer and chemical reaction phenomena in chemical engineering. Prereq: 310, 350.

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


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

447 Honors: Transport Phenomena (3) Overview of momentum, heat and mass transfer processes, the analogies, differential and macroscopic balances, applications involving molecular diffusion, including simultaneous mass transfer and chemical reaction. Prereq: 340 and consent of instructor.

450 Chemical Reactor Fundamentals (3) Homogeneous and heterogeneous reaction kinetics, idealized homogeneous reactor models, both for closed and flow systems; corrections for non-ideal residence time distributions; identification of scaling parameters; catalyst effectiveness factors and conversion in fixed bed catalytic reactors. Prereq: 240, 340, 360, 301.

467 Honors: Engineering Internship in Process Control (4) Selected students work in small groups on industrial process control systems and control. Directed by faculty and engineers from host company. Prereq: 360 and consent of instructor.

470 Honors: Applied Process Automation Laboratory (3) Interfacing flexible batch continuous processes to automation systems. Top down analysis with bottom up implementation, hierarchical structures and object oriented concepts are used to design automation solutions including human-machine-interfaces. Workstations with modern industrial equipment provide an interactive learning environment.


472 Engineering Mathematics (4) Mensuration through application of surveying techniques; theory of errors and their analysis; concepts of horizontal, vertical and angular measurements and control; construction surveys; route surveying, transportation of control, and data reduction curves; and introduction to GIS and GPS. 3 hours, 1 lab. Prereq: Sophomore Standing.

210 Engineering Measurements (4) Mensuration through application of surveying techniques; theory of errors and their analysis; concepts of horizontal, vertical and angular measurements and control; construction surveys; route surveying, transportation of control, and data reduction curves; and introduction to GIS and GPS. 3 hours, 1 lab. Prereq: Sophomore Standing.

261 Structural Analysis I (3) Reactions; shear and moment diagrams; forces in trusses; uniaxial stress and strain; area moments of inertia; torsion. Prereq: Engineering Fundamentals 102.

305 Professional Development I (3) Professional responsibility, communication, and organization. Prereq: 350, 360, 370.


330 Introduction to Soil Behavior (4) Physical and mechanical properties of soils, theory of compaction, seepage, and effective stress. Consolidation theory, time rate and settlement, shear strength of sands and clays, and analysis of foundations. 3 hours. 1 lab. Prereq: 205, 261.

351 Transportation Engineering I (3) Transportation problems and perspectives, rural and urban; use of systematic planning processes; development of alternative solutions; transportation planning; and transportation analysis. Prereq: 205.

352 Transportation Engineering II (3) Transportation planning and construction of highway facilities; covers both geometric and pavement design. Prereq: 205, 261.

356 Advanced Trenching and Sewerage (3) Open-ended, comprehensive project emphasizing team approach to design process. Includes project formulation, site planning, preliminary design, design development, and construction documentation. Prereq: 205, 261, 305.

400 Senior Design Project (3) Open-ended, comprehensive project emphasizing team approach to design process. Includes project formulation, site planning, preliminary design, design development, and construction documentation. Prereq: 205, 261, 305. May be substituted for 490 with consent of instructor and department head. Letter grade only. Prereq: Must be taken during the last 15 hours of the curriculum.

409 Special Topics (1-3) Recent developments and current practice in civil and environmental engineering through field internship and/or self-study. Prereq: Consent of instructor and department head. May be repeated once.

421 Portland Cement Concrete Mix Design and Analysis (3) Aggregate properties and tests, tests of portland cement, concrete mix design, application of statistics to design and construction of civil engineering projects. 2 hours lecture, 1 hour lab. Prereq: 330 or consent of instructor.

435 Foundation Engineering (3) Fundamentals of geotechnics applied to design and analysis of soil structures; subsurface investigation; design of shallow and deep foundations on rock, Lateral earth pressure and retaining structures. Prereq: 261, 330.

440 Civil Engineering Systems Design and Management (3) Methods of data analysis and modeling of civil engineering systems to enhance resource allocation for specific application to problems of transportation, environmental, water resources, structural analysis materials. Emphasis on microcomputer applications. Prereq: Senior standing and Statistics 251.

442 Construction Methods and Equipment (3) Fundamental operations in construction and equipment selection in building productivity, safety, and quality. Focus is on applications of computers and numerical techniques to process of planning, locating and design of highway facilities; covers both geometric and pavement design. Prereq: 205, 261.

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, roadway safety analysis and design. Prereq: 205, 261, 330.

453 Airport/Highway Planning and Design (3) Airport master planning and railroad engineering. Runway configuration, airfield capacity, geometric and terminal layout and design, Railroad capacity, geometric and track layout design. Prereq: 261, 330.

462 Analysis of Framed Structures (3) Vertical and lateral force resisting systems; gravity loads due to dead, live, and snow loads; lateral loads due to earthquake and wind; use of computer in structural analysis, building modeling and analysis. Prereq: 352.

467 Transportation and Traffic Engineering (3) Selection of rolled structural steel beams, design of structural steel members for axial tension and compression loads, reinforced concrete beams; use of standard specifications. Prereq: 261.

472 Steel Design (3) Design of plate girders and composite beams; consideration of members subjected to combined stresses; design of a typical framed building including connections. Prereq: 471.

474 Reinforced Concrete Design (3) Design of continuing...
ous beams, floor slabs, and columns with combined axial loads and bending, footings; and design for torsion. Prereq: 471.

480 Water and Waste Transport (3) Theory and design of water distribution systems, and wastewater collection systems. Prereq: 390.

485 Principles of Hydrogeology (3) (Same as Geol 485.)

486 Air and Waste Management (3) Principles of air quality management, solid waste management and hazardous waste management. Review of regulations, environmental quality, transport of pollutants, and control technologies including treatment and disposal. Prereq: 390 or Chemical Engineering 200 or Agricultural Engineering 243.

490 Water Resources Project Design (3) Development of a multipurpose reservoir and dam project, including data acquisition; spillway and outlet works design; earthen and gravity dam stability analyses; drains and filters; reservoirs and operation principles. Prereq: 390, 395.

495 Water Resources Development and Management (3) Institutional framework including: water law, evaluation and selection among water resources development alternatives, multi-objective planning, principles of engineering economics, benefit-cost ratio, capital cost allocation, and environmental impact assessment procedures; decisions using risk-based methods; case studies. Prereq: Senior standing.

ENGINEERING ELECTRICAL AND COMPUTER (319)

201 Circuits I (3) Fundamental laws of circuit analysis. Ohm's Law, Kirchhoff's current and voltage laws; the law of conservation of energy; circuits containing independent and dependent voltage, and current sources, resistance, conductance, capacitance, and inductance analyzed using nodal analysis, superposition and source of transformations; and Norton's and Thévenin's Theorems. Steady state analysis of DC and AC circuits. Complete solution for transient analysis for circuits with resistive, inductive, and storage elements. Prereq: A grade of C or higher in Math 141 and Math 142. Coreq: Phys 231 and Math 231.


205 Electrical Engineering Computations (3) Linear algebra; complex analysis and phasor calculus; algorithms for linear equations. Prolog programming and use of the application language MATLAB. Includes Level 1 design projects which require laboratory work. Coreq: 201.

251 Small Computer Systems (3) Structured assembly language programming, data collection under the control of the operating system, C compiler using 8085. D/A converter output to CRT displays; on-line, real-time analysis using elementary filters; communications between computer and terminal. Includes Level 1 design projects which require laboratory work. Prereq: 201; or both CS 102 and Math 251.

301 Circuits and Electro Mechanical Components (3) DC and AC Circuits, Transformers, Transformers, Motors, Generators. For non-majors only. Prereq: Math 231, Physics 231.


310 Frequency-Domain Analysis of Signals and Noise (3) Probability and random variables; Fourier series and transforms, power spectral density and autocorrelation, discrete Fourier transform. Prereq: 202; Math 241; 205 or both CS 102 and Math 251.

311 Transient Analysis (3) Transient response analysis of linear time-invariant continuous-time and discrete-time dynamic systems by various methods including Laplace transform, z-transform, and state space techniques; properties of transfer function, root locus, frequency response, Bode plots, and subsystem synthesis; frequency response analysis. Prereq: 202; 205 or both CS 102 and Math 251.

312 Linear System Analysis (3) Introduction to feedback theory of continuous systems using the tools of block diagrams, transforming, root locus, frequency response (Bode, Nyquist, Nichols), state variables, steady state error, system performance characteristics, and stability. Analysis of linear systems. Introduction to system simulation using MATLAB and Simulink. Includes Level 1 design projects which require laboratory work. Prereq: 310, 311.


331 Electronic Devices (3) Basic semiconductor physics, theory of p-n junctions, diodes, transistors, and bipolar transistor operation. Reliability and failure analysis, semiconductor device fabrication; analysis and design of diode switching and rectifier circuits; basic transistor switching circuits and single stage and multistage switching circuits using SPICE. Includes Level 1 design projects which require laboratory work. Prereq: 202. Coreq: 251.

332 Electronic Circuits (3) Multistage transistor amplifier biasing, gain stages, and output stages; frequency and transient response of open loop linear amplifiers; fundamentals of integrated circuits; operational amplifier applications in basic feedback configurations; basic transistors in amplifier circuits. Includes Level 1 design projects which require laboratory work. Prereq: 331.


342 Analog Communication Amplitude and Frequency Modulation (3) Filter design, noise, signal-to-noise ratio, amplitude modulation, frequency modulation. Includes Level 1 design projects which require laboratory work. Prereq: 310, 331.

351 Introduction to Logic Design of Digital Systems (3) Boolean algebra and logic design of combinational and sequential circuits. Gate and flip-flop characteristics and TTL technology. Design of circuits using MSI, FPGAs and VHDL. Includes Level 1 design projects which require laboratory work. Prereq: 202. Coreq: 331.

359 Junior Seminar (1) Presentations and discussions related to professional development, including registra- tion, ethics and current topics in electrical engineering. Prereq: 202. Satisfactory/No Credit.

400 Senior Design (5) A major design project that focuses on professional practice. The student demonstrates an accumulation of background knowledge and professional techniques. Includes Level 1 design projects which require laboratory work. Prereq: 310; 205 or both CS 102 and Math 251.

411 Digital Signal Processing and Filter Design (3) Discrete-time signals and systems, sampling, discrete Fourier transforms, analog filter characteristics, non-recursive and recursive filter design, and CAD tools for filter design. Design projects which require laboratory work. Prereq: 310, 312.

412 Linear Control System Design (4) Classical and modern techniques for design and compensation of linear feedback control systems. Includes Bode design, root locus design, and compensation design projects which require laboratory work. Prereq: 411.

421 Electric Energy Systems (3) Structure and operation of the electrical energy grid; load flow; economic loading; planning; control; reliability. Balanced and unbalanced faults; system protection; system stability. Includes Level 1 design projects. Prereq: 311, 321.


423 Electric Machines (3) Principles of electromagnetic energy conversion. Design procedures for AC and DC machine windings; construction and performance evaluation, applications of commutators, brushes, and commutator mechanisms. Unified vector analysis. Includes Level 1 design projects. Prereq: 312, 321.

431 Operational Amplifier Circuits (3) Linear and nonlinear applications of operational amplifiers. Includes operational, instrumentation, isolation, bridge, rms and logarithmic converters, multipliers and performance evaluation. Overview of complete analog filters, modulation and demodulation, sinusoidal generators. Noise fundamentals and calculations in op- amp circuits. Design for specified pole-zero functions. Emphasis is directed to topics within the field of electrical engineering. Includes Level 1 design projects which require laboratory work. Prereq: 312, 332, 342.

432 Electronic Amplifiers (4) Feedback amplifier principles, coupled and feedback linear low-noise preamplifier design; audio power amplifier design, linear regulated power supply design and switching regulator principles. Introduction to radio frequency amplifier design; oscillator principles. Includes laboratory experiments and projects which require Level 2 design projects which require laboratory work. Prereq: 431.


442 Communication System Design (4) Application of communication theory to system design. Development of a radio communication system simulation utilizing a graphical programming language. Hardware and software design and simulation. Construction and performance evaluation of a complete analog or digital transmitter and receiver or significant subsystems. Includes Level 2 design projects. Prereq: 441.

443 Antennas and Propagation (4) Introduction to antenna theory including fundamental antenna concepts and design techniques. Use of transmission lines, scattering matrices, and signal propagation. Theory and design of linear and loop antennas, arrays, and other simple antennas. Includes Level 2 design projects, which require laboratory work. Prereq: 441.

446 Electromagnetic Compatibility (3) Principles and practices to avoid interference among and within electrical devices. Parameters and coupling for dipole, loop, and dipole, and log-periodic antennas. Radiation, scattering, and frequency effects in circuit elements. Radiated and conducted emissions and susceptibility. Crosstalk, shielding, electromagnetic disturbance, and EMC regulations. Includes Level 1 design projects which require laboratory work. Prereq: 312, 341, and 342.

451 Microprocessors and Microcontrollers in Elec- trical Engineering (3) Project oriented course using a microcomputer kit having a monitor program and development system with cross-assemblers, file management, and emulation capability. Interfacing and hardware/software tradeoffs in interrupt driver applications. Grade is dependent upon number of projects completed, homework solutions, and engineering design notebook. Includes Level 1 design projects which require laboratory work. Prereq: 451.

471 Introduction to Pattern Recognition (3) Design of...
learning and adaptive machines. Elementary decision theory, perceptron algorithm, Bayes classification rule, learning algorithms, elements of syntactic pattern recognition, adaptive filters. Includes Level 1 design projects. Prereq: Senior standing. Non-majors require consent of instructor.


481 Power Electronics (3) Principles and characteristics of power semiconductor devices, single-phase and polyphase phase-controlled converters, controller control, ac phase controller, voltage-fed inverter and dc-dc converter principles and applications. Includes Level 1 design projects which require laboratory work. Prereq: 310, 311, 321, 332.

482 Power Electronics Circuits (4) Voltage-fed inverters, PWM principles, control of inverters, dc-dc converters, dc-motor drives, brushless dc machine principles. Includes Level 2 design projects which require laboratory work. Prereq: 481.

495 Senior Seminar (1) Current topics in electrical engineering. May not be repeated to satisfy senior requirements for graduation. Maximum three hours. Prereq: Completion of all junior EE courses or consent of instructor. Includes Level 1 or Level 2 design projects which may require laboratory work.

495 Senior Seminar (1) Current topics in electrical engineering. May not be repeated. Prereq.: Completion of all junior EE courses or consent of instructor. Satisfactory/No Credit or letter grade.

ENGINEERING FUNDAMENTALS (325)

100 Engineering Skills Development (1) Exercises in the professional and practical skills and standard tools of the engineering profession. This course does not count toward any engineering degree. S/NC grading.

101 Engineering Approaches to Physical Phenomena (6) Engineering problem solving emphasizing graphical and mathematical modeling software applications, team design and projects. Topics to be covered include vectors, forces and moments, equivalent force systems, free-body diagrams, equilibrium, frames, trusses, friction, kinematics, simple harmonic motion, Newton’s laws, work-energy, impulse-momentum, A, B, C, NC grading. Prereq: ENGR 130 or placement in Math 141 or higher.


103 Review of Engineering Fundamentals (3) A review of statics, statics of particles and solid mechanics. This course is intended for engineering technology students requiring additional study before taking ENGR 102. Credit cannot be used towards any engineering degree. S/NC grading. Prereq: Consent of instructor.

108 Engineering Fundamentals Honors Seminar (1) Honors seminar for engineering technology students majoring in electrical engineering with emphasis on integrating the principles of design, the major engineering fields, and the search for solutions to engineering problems. This course is available only to engineering technology students. Prereq: Participation in the University Honors program or consent of instructor.

201 Engineering Design Workshop (2) Introduction to the design process. Project experiences involving working in teams to develop design concepts, and written reports. Prereq: Consent of instructor.

201 Engineering Career Planning and Placement (1) Fundamentals of seeking professional employment, including resume construction, interview preparation, contacting professional networking, business etiquette, and the entire job-seeking process. Intended for last-term juniors. Satisfactory/No Credit. Sp

ENGINEERING INDUSTRIAL (556)

202 Work Methods and Measurement (3) Productivity and work measurement. Techniques for productivity improvement, including flow, activity, and worker machine charts as well as work methods improvement techniques and procedures. Human factors include the re- placement of work methods. Stopwatch time studies, predetermined time systems, and work sampling are used to establish, document, and maintain time standards. Includes learning curves and wage payment systems. 2 hours lecture, 2 hours lab. Prereq: Engineering Fundamentals 101. Coreq: Statistics 251, F, Sp.

300 Engineering Data Analysis and Process Improvement (3) Engineering statistical methods as applied to modern engineering and business environments, process improvement, and design of experiments. Includes introduction to the use of designed experiments to improve process. Lab component emphasizes the use of teams to provide hands-on experiences, enhance learning, and develop skills in group dynamics. 2 hours lecture, 1 lab. Prereq: Statistics 251 or Mechanical Engineering 345 or consent of instructor. F, Sp.

301 Operations Research in Industrial Engineering (3) Determination of system modeling concepts, linear mathematical programming models including the original simplex procedure, transportation and assignment problems, network flow, linear programming, integer programming, parametric linear programming (sensitivity analysis) and integer linear programming. Prereq: Math 200 and 231. Coreq: 300. F, Sp.

302 Mechanical Behavior of Materials I (3) Tensile testing of metals, ceramics and polymers; deformation mechanisms and elastic, plastic, and crystalline and non-crystalline forms; rubber elasticity, viscoelastic behavior, creep, time-temperature superposition in poly- meric materials, failure. Prereq: Junior standing or consent of instructor. F, Sp, Su.

422 Senior Industrial Engineering Problems Analysis (3)capability of solving field assignments in local organizations, including problem definitions, analysis and presentation. Prereq: Expected term of graduation or consent of instructor. F, Sp, Su.

423 Industrial Safety (3) Accident causation, losses, and management of safety technologies. Includes human factors such as noise, lighting, and atmospheric conditions. Focus on designing the task to fit the person. Prereq: Junior standing or consent of instructor. F, Sp. 301-313 coreqs.

424 Process Improvement Through Planned Experimentation (3) Review of fundamentals of continuous improvement, advanced statistical process control techniques and strategies for short production runs. Use of experimental design techniques to improve processes, books and other many including blocking, confounding, and fractional designs. Full factorial designs are compared to fractional designs to balance experimental efficiency with loss of information. Lab component utilizes statistical and simulation software to provide hands-on experience. 2 hours lecture, 1 lab. Prereq: 300. F, Sp.


427 Analytical Engineering (3) Senior Seminar. Satisfactory/No Credit or letter grade.

428 Production System Planning and Control (3) Advanced topics in production system planning and control. Includes network models including PERT-CPM, introduction to nonlinear programming, stochastic processes, and queuing theory. Basic decision techniques and applications in their engineering practice. Prereq: 301. Sp.

429 Manufacturing Materials/Processes (3) Characteristics and applications affecting work, work place, and work environment design. Emphasis on human factors methodology, human input, human outputs, the design of human-machine interfaces, the analysis of stress on performance, environmental factors such as noise, lighting, and atmospheric conditions. Focus on designing the task to fit the person. Prereq: Junior standing or consent of instructor. F, Sp.


403 Production Facilities Design and Material Handling (3) Design of production facilities including plant layout, warehousing, and routing. Includes the whole job of planning, packaging and storage of materials. This includes office layout and service areas. Principles applicable to design of facilities for such diverse groups as hospitals, banking, and industry. Prereq: 306. Coreq: IE 401. Sp.

404 Industrial Engineering Applications (2) To enhance and integrate the industrial engineering educational experience in preparing senior industrial engineering students for their professional practice. Prereq: Term of expected graduation or consent of instructor. F, Sp.


411 Information Systems Analysis and Design (3) Systems engineering approach to analysis, design, development, and implementation of systems of informa- tion to meet business information needs. Topics include industrial engineering systems. Involves utilization of relevant software packages. 2 hours lecture, 1 lab. Prereq: Senior standing or consent of instructor. F.

422 Senior Industrial Engineering Problems Analy- sis (3) Senior Seminar. Satisfactory/No Credit or letter grade.

429-430 Special Topics in Industrial Engineering (3) 3-1-3 Recent developments in Industrial Engineering including new areas of application, new research tech- niques and new methodologies. May be repeated once. Prereq: Senior standing and consent of instructor. F, Sp, Su.

ENGINEERING MATERIALS SCIENCE (638)

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

290-291 Materials Seminar (0,1) Professionalism, ethics, career planning, safety, time management, field trips, industrial speakers, materials science in a global societal context, teamwork, contemporary issues, life-long learning may be repeated. Prereq: Junior standing. Coreq: 290-291 or 292-293. Satisfactory/No Credit grading only. (Either 290 or 291 must be taken each semester by all MSE majors starting with the second year of residence.)

300 Materials Laboratory Procedures (1) Thermom- etry, sample preparation for microscopic examination, word processing and graphics usage, data analysis, report writing. Prereq: 201.

301 Materials Science and Engineering Data Anal- ysis (3) (Same as Chemical Engineering 301.)

302 Mechanical Behavior of Materials I (3) Tensile testing of metals, ceramics and polymers; deformation mechanisms and elastic, plastic, and crystalline and non-crystalline forms; rubber elasticity, viscoelastic behavior, creep, time-temperature superposition in poly- meric materials, failure. Prereq: Junior standing or consent of instructor. F, Sp, Su.

303 Materials Science and Engineering Data Analy- sis (3) (Same as Chemical Engineering 301.)

304 Mechanical Behavior of Materials I (3) Tensile testing of metals, ceramics and polymers; deformation mechanisms and elastic, plastic, and crystalline and non-crystalline forms; rubber elasticity, viscoelastic behavior, creep, time-temperature superposition in poly- meric materials, failure. Prereq: Junior standing or consent of instructor. F, Sp, Su.
320 Diffusion and Phase Transformations (4) Thermodynamics of phase equilibrium; Diffusion in solids; the diffusion equations, point defects, and atomic mechanisms of diffusion. Kinetics and morphology of phase transformations. Prereq: 103, 203, 231. F
340 Principles of Polymeric Materials (3) Synthesis and molecular structure of polymers; polymerization kinetics; molecular characterization; crystalline and glass transitions; crystallization kinetics; mechanical properties; rheology and processing. Prereq: 201. F
360 Principles of Ceramic Materials (3) Characterization of ceramic materials as to their crystal structure, their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing stage. Prereq: 201.
380 Materials Selection in Design (3) Systematic materials selection in design. Review of material properties; use of property selection charts and indices. Materials selection, with and without shape constraints; materials processing in design; case studies. Sources of material property data, utilization of material data bases. Industrial design, aesthetics, economics, regulations, forces related to plane and space mechanical linkages. Prereq: ES 231, Mathematics 231. F, Sp, Su
402 Principles of Metallic Materials (3) Property control through composition, mechanical and thermal processing; ferrous and nonferrous alloys; alloy selection. Prereq: 201.
405 Structural Characterization of Materials (4) X-ray diffraction and electron microscopy; scanning and transmission electron microscopy; microanalytical techniques.
429 Introduction to Ceramic Matrix Composites (3) Constitutive equations, forming operations and limitations, isotropic and anisotropic moduli in various materials; yield criteria; brittle fracture; crazing; plastic strain constitutive equations. Processing operations and limit criteria. Prereq: 302, ES 321, sophomore mathematics.
422 Chemical Process Metallurgy (3) Application of chemical thermodynamics to metallurgical processing. Ferrous and nonferrous pyrometallurgical refining, slag-metal equilibria, solidification, gas-metal processing. Prereq: 303, F
429 Introduction to Ceramic Matrix Composites (3) Characteristics of composites, including ceramic matrix composites; macromechanics and materials design; overview of fabrication techniques; microstructural characterization; physical and mechanical property evaluation; current and potential applications. Prereq: 201 and ES 321, or equivalent (same as Engineering Science 429).
443 Polymer Processing (3) Rheological measurements; flow through tubes and slits, including effects and extrudate swell; selected applications, including screw extension, injection molding, synthetic fiber structures, including structure development, properties.
444 Plastics Fabrication and Design (3) Lectures, laboratories and field trips; unit operations of plastics fabrication; plastics classification; design and selection criteria; processing technology. Prereq: 201, Characterization Laboratory. Sp
470 Environmental Degradation of Materials (3) Mechanisms, measurement techniques and control of environmental degradation processes in metals, polymers, ceramics and composites; materials selection and design considerations. Prereq: 201. Recommended for chemical engineering, mechanical engineering, civil engineering and engineering science and mechanics majors. F
472 Fundamental Principles of Composite Materials (3) Physical principles basic to the design, manufacture and application of fiber reinforced polymers, metals and ceramics. Prereq: 302 or equivalent. (Same as Engineering Science 426) F
474 Biomaterials (3) Metals, polymers and ceramics utilized in orthopedic, cardiovascular, and dental surgical implant devices; corrosion and degradation problems; material responses of interest. Importance of response to synthetic materials. Prereq: 201. Recommended for engineering science and mechanics majors.
475 Fracture-Safe Design (3) (Same as Engineering Science 423).
484 Introduction to Maintenance Engineering (3) (Same as Nuclear Engineering 484).
494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. May be repeated to a maximum of 6 credits. Prereq: 201 and consent of instructor.
495 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. May be repeated once. Prereq: Senior standing or consent of professor.
496 Special Topics in Materials Science and Engineering (1-3) Recent developments in materials research, developments and/or applications. Prereq: Senior standing or consent of instructor.

ENGINEERING MECHANICAL (650)
331 Thermodynamics I (3) Energy and laws governing energy transformations; thermodynamic properties; thermodynamic cycles; applications to engineering problems. Prereq: Chemistry 130, Coreq: Mathematics 241.
332 Thermodynamics II (3) Properties of gases and mixtures; chemical reactions; equilibrium; compressible flow; applications to engineering problems. Prereq: 331.
334 Heat Transfer (3) Heat transfer by conduction, convection, heat and forced convection. Prereq: 331, 391, ES 341, F, Sp, Su
345 Mechanical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards; dynamic characteristics; instrumentation; statistical data treatment; transducers; signal conditioning; strain, pressure, temperature and flow measurements. Coreq: 362; Prereq: ES 341, EE 341, F, Sp, Su
363 Mechanical Vibration (3) Free and forced vibrations of damped and undamped lumped parameter systems; energy methods; free vibration of continuous bodies. Prereq: ES 231, Mathematics 231, F, Sp, Su
402 Fundamentals of Engineering (1) The course reviews topics covered on the Fundamentals of Engineering exam. Letter grade only. Prereq: Senior standing in Engineering
431 Seminar (1) Topics related to engineering including ethics. Formal oral presentation by students on engineering topics. Prereq: Senior standing. F
449 Mechanical Engineering Laboratory (3) Designing, conducting and reporting results of experimental exercises. Test standards and specifications. Analysis of data and formation of conclusions. 3 hours per week. Prereq: 332, 344, 345, Coreq: 475. F, Sp, Su
451 Systems and Controls (3) Analytical models of physical systems; comprised of combinations of mechanical, fluid, electrical, and thermal components; feedback control systems, transient and frequency response, stability analysis; nonlinear control of linear systems; digital filters. Prereq: ME 345, EE 301, F, Sp
455 Introduction to Machine Design (2) Engineering economy, optimization, design for automation, reliability, patents and product liability; design of mechanical engineering topics in mechanical systems. Participation in team design effort; requires design report. Prereq: ME 356, F.
456 Introduction to Thermal Design (2) Engineering economy, optimization for design, automation, reliability, patents and product liability; design of mechanical engineering thermal-fluid systems. Participation in team design effort; requires design report. Prereq: 332, 344, F.
466 Elements of Machine Design II (3) Application of strength and properties of materials, design factors, theories of failure to design of machine elements. Mini design experiences. Prereq: Materials Science 201, ES 321, F.
471 Refrigeration and Air Conditioning (3) Vapor compression and absorption cycles; heat pump systems; psychrometric processes; air washers; cooling towers; solar radiation; building heat transmission. Prereq: 332, 344.
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.
484 Introduction to Maintenance Engineering (3) (Same as Nuclear Engineering 484.)
494–495 Selected Topics in Mechanical Engineering (1-4,1-4) Problems and topics related to developments and practice in mechanical engineering. Prereq: Consent of instructor. F, Sp, Su

ENGINEERING NUCLEAR (716)
200 Introduction to Nuclear and Radiological Engineering (3) Topics related to nuclear and radiological engineering. Satisfactory/No Credit.
304 Nuclear and Radiological Engineering Laboratory (3) Introduction to measurement systems; counting statistics, half-life and decay schemes, gamma spectrometry, heat transfer experiments. Prereq: 342, Coreq: 470.
ENGINEERING SCIENCE


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

323 Mechanical Behavior of Materials (3) (Same as Materials Science 302) Sp

341 Fluid Mechanics I (3) Introduction to fluid flow concepts; hydrostatics; development of mass, momentum, and energy conservation laws in integral and differential form; dimensional analysis and similarity; laminar and turbulent flows in pipes; introduction to boundary layers. Prerequisites: ES 231, Mathematics 241 F, 242 F, Sp, Su

423 Fracture-Safe Design (3) Critical view of variables controlling fracture behavior; fracture mechanics; fracture as a statistical process; energy-based fracture model. Prereq: 321, F

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

429 Introduction to Ceramic Matrix Composites (3) Characteristic properties of composite materials; mechanical testing of ceramic-matrix composites; properties and uses of composites; failure analysis; techniques for determining fracture toughness; analysis of complex fracture problems. Prereq: MSE 201 and MSE 321, or equivalent. (Same as Materials Science 429)

442 Fluid Mechanics II (3) Integral forms of linear and nonlinear equations; boundary layer flow; turbulence; momentum and energy. Prereq: 321, F, Sp, Su

452 Computational Mechanics (3) Integration of fundamental physical laws, mathematical methods and computer software for solving problems in engineering analyses and design capabilities. Finite element method. Prereq: ES 321, F

453 Projects in Design (3) Conceptualization, analysis, design, and presentation of engineering projects. Prereq: Senior standing in ES 301, 302, 303; at least a C average in 231, 321, and 341. Coreq: ME 344, F

454 Computational Mechanics in Design (3) Computational techniques applied to engineering design problems. Prereq: 452, 453, ME 363 Sp

465 Dynamic Data Acquisition (3) Use and calibration of instrumentation for measuring and recording dynamic events. Fourier transform analysis; digital signal processing; transduction, experimental parameter estimation with applications to modal vibration analysis. 2 hours and laboratory. Prereq: EE 301, ME 363 Sp

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

494-495 Special Engineering Science Topics (1-3, 1-3) Problems related to recent developments and practice. May be repeated. Prereq: Senior standing, consent of instructor. F, Sp

ENGLISH (339)

101 English Composition I (3) Strategies for written argumentation, critical reading, and discussion; emphasis on audience analysis, the invention and arrangement of ideas, and revision for style and mechanics; typical assignments include formal essays, in-class essay exams, journals, quizzes and collaborative projects; two individual conferences required. Students receiving a grade below B in 118 will complete a year’s work in English Composition by taking 102, Students receiving a grade of A or B will complete their freshman English requirements by choosing 102, a more advanced literature course in the English Department, or 355. A, B, C, NC grading.

102 English Composition II (3) Critical strategies for reading and writing about literature; emphasis on the documented essay; library skills, and continued development of style and voice in composition and argument; assignments include analytical essays, annotated bibliographies, journals, quizzes, and collaborative projects; two individual conferences required. Students receiving a grade below B in 118 will complete a year’s work in English Composition by taking 102, Students receiving a grade of A or B will complete their freshman English requirements by choosing 102, a more advanced literature course in the English Department, or 355. A, B, C, NC grading.

103 Writing Workshop I (1) Self-paced Writing Center tutorial for students wanting additional instruction while enrolled in English 101 or having ACT English and composite scores at or below 28 (or SAT verbal/composite scores at or below 480). Individual instruction in mechanics, paragraph and composition organization and use of language. Prereq: 101, F

103 Writing Workshop II (1) Self-paced Writing Center tutorial for students wanting additional instruction while enrolled in English 102 or students advised to enroll by their 102 instructors. Individual instruction in critical reading and in developing and documenting the research paper. To receive credit, students must participate at least two hours per week and must also pass the 102 class in which he or she is currently enrolled. S/NC grading.

118 Honors English Composition (3) For students whose ACT English and Composite scores are at or above 28 (or SAT verbal/composite scores at or above 600). Grading scale ranges from A to F. Students may receive credit as an elective. Prereq: 118. Prereq: as an elective. Prereq: as an elective. Prereq: as an elective. Prereq: as an elective. Grading scale ranges from A to F. Students may receive credit as an elective.

121 Academic English for Non-Native Speakers (4) Development of English academic literacy, including reading, writing, vocabulary, and grammar as well as some attention to listening, oral presentation, and pronunciation. Required of all non-native English speaking students who demonstrate on the English Placement Examination a need for work in English structures, grammar, and punctuation. Admission to this course is by the English Placement Exam. Meets four hours a week. A, B, C, F grading.
201 British Literature I: Beowulf through Johnson (3) Major literary works from three periods: Middle Ages, Renaissance, and Restoration and Eighteenth Century. Writing-emphasis course.


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

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

211 Literature of the Western World I: Ancient, Medieval, and Renaissance (3) Writing-emphasis course.

212 Literature of the Western World II: Enlightenment, Romantic, and Modern (3) Writing-emphasis course.

231 American Literature I: Colonial Era to the Civil War (3) Development of American literature from its beginnings to the Civil War. Writing-emphasis course.

232 American Literature II: Civil War to the Present (3) Development of American literature from Civil War to the present. Writing-emphasis course.

233 Major Black Writers (3) Black American literature as a literary tradition. Writing-emphasis course. (Same as African-American Studies 233.)

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

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

251 Introduction to Poetry (3) Poetry as a distinct mode of artistic expression. Critical tools for perceptive reading of poems. Writing-emphasis course.

252 Introduction to Drama (3) Critical tools for perceptive reading of play texts. Writing-emphasis course.

253 Introduction to Fiction (3) Fiction from the eighteenth through the twentieth centuries, emphasis on the novel. Critical tools necessary for judging varieties of fiction. Writing-emphasis course.

254 Themes in Literature (3) Study of important themes in English, American, and World literatures. Some sample themes are religion, crime, law, ecology, science, exploration, revolution, colonization/initiation, education, multi-genre focus. Writing-emphasis course. See Timetable for topic.

263 Introduction to Creative Writing (3) Practice in writing poetry and fiction, combined with study of models and techniques. Writing-emphasis course.

281 Introduction to Film Studies (3) Selected world cinema feature films. Critical techniques necessary for understanding and analysis of narrative cinema. Basic elements of film expression and contours of film history. Writing assignment. (Same as Cinema Studies 281.)

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

301 British Culture to 1660 (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing-emphasis course.

302 British Culture: 1660 to present (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing-emphasis course.

306 Introduction to Shakespeare (3) May not be used by English majors to fulfill the pre-1800 literature course requirement.

331 Race and Ethnicity in American Literature (3) Examines the role of ethnic and racial identity in the literature of the United States. (Same as African and African-American Studies 331.)

332 Women in American Literature (3) Women as writers and as subjects in American literature from its beginnings to the present. (Same as Women’s Studies 332.) Writing-emphasis course.

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. (Same as African and African-American Studies 333.)

334 Film and American Culture (3) American films as both works of art and social documents. Relationship between the medium of film and American culture in the twentieth century. (Same as American Studies 334 and Cinema Studies 334.) Writing-emphasis course.


355 Rhetoric and Writing (3) Strategies of writing on political issues. Intellectuals and the profession of writing. Open to sophomores with instructor’s consent.

360 Technical and Professional Writing (3) For students who need to sharpen their technical communication skills. Writing of definitions, process descriptions, proposals, abstracts, executive summaries, and major reports. Prereq: Junior standing in student’s major or consent of instructor.

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

376 Colloquium in Literature (3) Methods and objectives of literary study; conferences to aid student’s program in major. Prereq: Sophomore literature pack-age or consent of instructor.

381 Introduction to Folklore (3) Essential terms and concepts in modern folklore/folk-life studies. Emphasis on North American materials: folklore, folktong, myth, legend, proverbs, riddles, superstitions, dances, games, and architecture. (Same as American Studies 381.)

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

398 Junior-Senior Honors Seminar (3) Seminar for students admitted to English honors program. Variable content determined by instructor, but usually focused on a particular literary period, genre, or issue. Enrollment limited to 15. See Director of Undergraduate Studies in English for details.

401 Medieval Literature (3) Reading and analysis of selected medieval literary masterpieces in modern English. Writing-emphasis course. (Same as Medieval Studies 405.)

402 Chaucer (3) Reading and analysis of the Canterbury Tales and Troilus and Criseyde in Middle English. (Same as Medieval Studies 406.)

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., 1 Henry IV) and early tragedy (e.g., Hamlet).

405 Shakespeare II: Later Plays (3) Shakespeare’s dramatic achievement after 1601. Selected plays from the great tragedies (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 1560 and 1640. Includes works 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 Literature of the Restoration and Early Eighteenth Century: Dryden to Swift (3) Survey of English literature and culture from 1660 to 1745.

412 Literature of the Later Eighteenth Century: Johnson to Burns (3) Survey of English literature and culture from 1745 to 1800.

413 Restoration and Eighteenth-Century Genres and Modes (3) Study of one major genre or literary mode as drama, novel, poetry, nonfiction, prose, satire, romance, or epic written between 1660 and 1800. May be repeated for credit.

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 Early Victorian Literature (3) May include poetry by Tennyson and the Brother, prose by Carlyle, Newman, and Mill.

417 Later Victorian Literature (3) May include poetry by the Pre-Raphaelites, Arnold, Hopkins, and Hardy; prose by Arnold, Ruskin, and Carroll; plays by Gilbert and Wilde.

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

421 Modern British Novel (3) Authors such as Joyce and Woolf through contemporary British fiction writers.

422 Women Writers in Britain (3) Emphasis on the literature and consciousness of works of women writers in Britain. Course content will vary. Authors covered may include Marie de France, Margery Kempe, Aemlia Lamerton, Elizabeth Cary, Anna Behn, Frances Burney, Mary Wollstonecraft, Mary Shelley, George Eliot, Virginia Woolf, and Doris Lessing. May be repeated. Maximum 6 hours. (Same as Women’s Studies 422.)

431 Early American Literature (3) From the earliest texts to 1830, including exploration and discovery. Native American, colonial, revolutionary, and early national works.

432 American Romanticism and Transcendentalism (3) Prose and poetry of the American Renaissance, from c. 1830 to the end of the Civil War. Includes writers such as Cooper, Poe, Hawthorne, Melville, Emerson, Thoreau, Stowe, Douglass, Whitman, and Dickinson.

433 American Realism and Naturalism (3) Literature from the time of the Civil War to World War I, including such writers as Twain, Howells, James, Twain, Freeeman, Norris, and Norris.

434 Modern American Literature (3) World War II 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 19th Century up to the twentieth century, with particular emphasis on Mark Twain. (Same as American Studies 442.)

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

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

452 Modern Drama, 1880-1945 (3) Survey of British, American, and international drama from the advent of modern drama to the end of World War II. (Same as Comparative Literature 452.)

453 Contemporary Drama (3) Survey of British, American, and international drama post World War II.

454 Twentieth-Century International Novel (3) Fiction in English translation from such writers as Kalka and Camus through contemporary authors. (Same as Comparative Literature 454.)

455 Persuasive Writing (3) Focuses on writing and analyzing persuasive texts in public, private, and academic contexts. Prereq: 355 or consent of instructor.

456 Contemporary/Postmodern Literature (3) Studies in literature written after World War II. Content will vary. May be repeated once with permission of instructor.

460 Technical Editing (3) Editing technical material for publication in manuals, blueprints, computer graphics, layout, and production management. Prereq: 360 or consent of instructor.

462 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and content for science and technology. Prereq: 360 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 Writing Fiction course. Prereq: 364 or consent of instructor.

466 Writing, Layout, and Production of Technical Documents (3) Principles of design for desktop publishing. Production of various documents to be incorporated into a professional portfolio. Prereq: 360 or consent of instructor.

470 Special Topics in Rhetoric (3) Topics vary. May be repeated with consent of department. Maximum 6 hours. Prereq: 355 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 Linguistics 200 or 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 attention to their origins, functions, and implications for cultural pluralism. Prereq: 371 or 372 or Linguistics 200 or consent of instructor. (Same as Linguistics 472.)

474 Teaching English as a Second or Foreign Language I (3) Introduces major issues surrounding teaching ESL/EFL, including political implications of teaching ESL/EFL; introduction to second language acquisition; learner variables in language learning; traditional and innovative approaches to ESL/EFL; basic features of American English grammar necessary for teaching ESL. Prereq: Second year of a foreign language or consent of instructor. (Same as Linguistics 474.)

475 Teaching English as a Second or Foreign Language II (3) Covers issues, principles, and techniques in teaching grammar, speaking, pronunciation, reading, and writing, in ESL/EFL. Includes observations and teaching practice in ESL classes and development of ESL materials and tests. Prereq: 474. (Same as Linguistics 475.)

476 Second Language Acquisition (3) How humans learn second languages. Examines theoretical models and research on such issues as differences between first and second language acquisition; the effect of age; cognitive factors in language acquisition; learner variables; sociocultural factors; and implications for second/foreign language instruction. (Same as Linguistics 476.)

477 Pedagogical Grammar for ESL Teachers (3) Aspects of grammatical and morphological problems presenting difficulties for non-native learners of English. Basic and complex sentence structures; the noun and article system; verb tense, aspect, modality, and complementation. (Same as Linguistics 477.)

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


481 Studies in Folklore (3) Topics vary. 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, Pope, A. E. Housman, Tennyson, Faulkner, Lawrence, Baldwin, or Morrison. May be repeated. Maximum 6 hours.

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

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

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

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

489 Special Topics in Film (3) Content varies. 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.)

490 Language and Law (3) Language in the Anglo-American legal process: focus on differences between spoken and written language; lexical and syntactic ambiguity; pragmatics; speech act analysis; and the language rights of linguistic minorities. Prereq: 371 or 372 or consent of instructor. (Same as Legal Studies 490 and Linguistics 490.)

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

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

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

495 Introduction to Rhetoric and Composition (3) Introduction to the historical, theoretical, and empirical modes of inquiry in rhetoric and composition and their implications for the study of composition. Prereq: 355 or consent of instructor.

496 The Rhetoric of Legal Discourse (3) Applying basic principles of persuasive writing to legal materials. Writing position papers, briefs, and memoranda; student learn issue identification and argument. Critical reading and discussion of both professional and student written, introductory legal research techniques. No prior legal knowledge necessary. Prereq: 355 or consent of instructor. (Same as Legal Studies 496.)

498 Senior Honors Paper (3) Second semester of English honors program. Working individually, the student produces a substantial creative or critical project under the direction of two members of the professorial staff. Prereq: 398.

499 Senior Seminar (3) Intensive study in an author, period, genre, or of problems in language, literary history, or theory. Content varies, but all sections address problems of value from an interdisciplinary perspective. Substantial research paper required. Restricted to majors who have completed 15 upper-hour divisions in English. Writing emphasis course. Capstone experience.

ENGLISH EDUCATION (340)

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

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

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

459 Teaching English in the Secondary School (3) Techniques of teaching composition, language, 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 curriculum. Extensive use of textbooks. Emphasis on middle school and high school. F, Sp, Su

ENTOMOLOGY AND PLANT PATHOLOGY (341)

306 Forest Protection (3) Biological, economic and legal consideration of fire, pathogens, insects, vertebrates, wind, and pollutants in the forest ecosystem. One or more all day or overnight field trips may be required. Prereq: FWF 311, or consent of instructors. 2 hours and 1 lab. (Same as Forestry 306.) Sp, E

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

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

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

410 Diseases and Insects of Ornamental Plants (3) Symptom identification and management of diseases and insect pests that affect plants in greenhouse, nursery, and landscape environments. Prereq: 313 or 321 (or consent of the instructor). 4 hours. Sp, A

EXERCISE SCIENCE (347)

100 Orientation to Exercise Science (1) Overview of professional areas for incoming Exercise Science majors. Must be taken prior to admission to the Exercise Science major.

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

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

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

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

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

350 Disease and Injury: Epidemiologic and Demographic Perspectives (3) Disease and injury mortality and morbidity patterns, trends, differentials and causes are examined from perspectives of population-based sciences of epidemiology and demography. Completion of college course in statistics or mathematics is recommended.
421 Investment Analysis (3) Principles and concepts of asset valuation in competitive and efficient financial markets. Basic analytical tools are developed and used to evaluate various types of securities. Major writing requirement. Prereq: 301.

422 Portfolio Analysis and Management (3) Portfolio theory and evidence of behavior of security returns with a view to determining rational investment policy. Includes estimation of risk and return, construction of efficient portfolios, portfolio evaluation and revision, capital market theory, and extensions of portfolio analysis. Prereq: 301, 421 and Management 333.

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


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

470 Risk Management and Insurance (3) Identification, measurement and decision making with regard to insurance-type risks facing the firm. Emphasizes handling these risks in the most cost-efficient manner. Prereq: 301.

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

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

482 Urban Development and Finance (3) Economic analysis of determination of urban land value and use, and discussion of current urban problems in the United States. Primary and secondary mortgage markets and economic analysis of the effects of these markets on urban development. (Same as Urban Studies 482.) Prereq: 301.

492 Off-Campus Study (3) Satisfactory/No Credit grading. Students may repeat this course for a maximum of 10 hours. Satisfactory/No Credit grading only. Prereq: Progression to the major and consent of instructor. E

540 Food Preservation (3) Principles, methods and equipment used for preservation of foods. Prereq: 140 and 240 or consent of instructor. 2 hours lecture and 1 lab.

541 Food Technology and Science Seminar (1) Individual written group projects on current topics. May be repeated; maximum 3 credit hours. Prereq: Senior standing or consent of instructor.

542 Food Microbiology (2) Physical, chemical and environmental factors moderating growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms affecting quality of foods and their control. Prereq: Microbiology 210. Coreq: 429. F


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

544 Special Topics In Food Science and Technology (1-3) Topics of current concern to the food industry. Major writing requirement. Prereq: Consent of instructor. Letter grade or Satisfactory/No Credit grading. S

545 Science of Dairy Foods (3) Science and technology of the processing of milk and its products. Prereq: 290, 310, 320-29, and 340 or consent of instructor. 2 hours lecture and 1 lab.

546 Meat Products Technology (3) Carcass characteristics of meat animals; product structure and composition, cut identification, curing, freezing and cookery. Prereq: 140 or consent of instructor.

546 Meat Science Lab (1) Slaughter and processing methods for beef, pork, lamb and poultry. Coreq: 460. 1 lab.

547 Food Crop Products (3) Food products from plants emphasizing types, manufacturing systems, quality attributes and utility. Prereq: 340, and 3 hours biological science or consent of instructor. 2 hours and 1 lab. A, Sp

548 Cereal Science and Bakery Products (3) Chemistry and technology of processing cereal grains; interaction with other foods; and quality of baked products. Prereq: 290, 310 and 340 or consent of instructor. 2 hours and 1 lab. A, Sp

549 Food Laws and Regulations (3) A comprehensive examination of the laws and regulations designed to preserve the safety, wholesomeness, and nutritional quality of the United States food supply with an in-depth analysis and discussion of precedent case studies and their implications for food law. Coreq: 200. The course in Food Science and Technology will serve as an essential basis for understanding of material covered in this course. Prereq: 140; non-majors must obtain consent of instructor.

549 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 instructor.

Courses of Instruction 171

FOOD SCIENCE AND TECHNOLOGY (390)

120 The Food Industry (3) Introduction to the food industry and the products of adequate, safe food supply for national and international markets.

220 Field Observations in Food Processing (2) Introduction to, observation and of familiarization with processing, packaging, quality control and distribution of different types of foods. Prereq: 140. Non-majors must obtain permission of instructor. 1 hour and 1 lab.

259 Evaluation and Grading of Dairy Products (2) Evaluation and scoring of milk, ice cream, cheddar cheese, cottage cheese, yogurt and butter. Prereq: 140 or consent of instructor. 75-hour labs.

269 Meat Evaluation and Grading (2) Grading standards for quality and yield; principles for evaluating beef, pork and lamb, and application of standards for institutional meat cuts. Practice grading, judging carcasses and cuts, and application of purchase specifications. F

340 Food Preservation (3) Principles, methods and equipment used for preservation of foods. Prereq: 140 and 240 or consent of instructor. 2 hours lecture and 1 lab.

401 Food Technology and Science Seminar (1) Individual written group projects on current topics. May be repeated; maximum 3 credit hours. Prereq: Senior standing or consent of instructor.

410 Food Chemistry (4) Reactions of water, proteins, lipids, carbohydrates, minerals, enzymes, vitamins, and additives on foods. Prereq: Equivalent to Biochemistry 310. Coreq: Biochemistry 310. 3 hours lecture and 1 lab.

420 Food Microbiology (2) Chemical, physical and environmental factors moderating growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms affecting quality of foods and their control. Prereq: Microbiology 210. Coreq: 429. F


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

442 Special Topics In Food Science and Technology (1-3) Topics of current concern to the food industry. Major writing requirement. Prereq: Consent of instructor. Letter grade or Satisfactory/No Credit grading. S

452 Science of Dairy Foods (3) Science and technology of the processing of milk and its products. Prereq: 290, 310, 320-29, and 340 or consent of instructor. 2 hours lecture and 1 lab.

460 Meat Products Technology (3) Carcass characteristics of meat animals; product structure and composition, cut identification, curing, freezing and cookery. Prereq: 140 or consent of instructor.

469 Meat Science Lab (1) Slaughter and processing methods for beef, pork, lamb and poultry. Coreq: 460. 1 lab.

470 Food Crop Products (3) Food products from plants emphasizing types, manufacturing systems, quality attributes and utility. Prereq: 340, and 3 hours biological science or consent of instructor. 2 hours and 1 lab. A, Sp

480 Cereal Science and Bakery Products (3) Chemistry and technology of processing cereal grains; interaction with other foods; and quality of baked products. Prereq: 290, 310 and 340 or consent of instructor. 2 hours and 1 lab. A, Sp

490 Food Laws and Regulations (3) A comprehensive examination of the laws and regulations designed to preserve the safety, wholesomeness, and nutritional quality of the United States food supply with an in-depth analysis and discussion of precedent case studies and their implications for food law. Coreq: 200. The course in Food Science and Technology will serve as an essential basis for understanding of material covered in this course. Prereq: 140; non-majors must obtain consent of instructor.

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 instructor.

FIRST YEARS STUDENTS (355)

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

401 Peer Mentor Techniques (1) Training of upperclass students as mentors and advisors for freshmen. Includes cognitive and developmental theories of the college-age student, teaching and learning styles, group communication, interpersonal communication and advising skills. Prereq: Consent of instructor.

402 Peer Mentor Practicum (1) Peer mentoring of First Year Studies Students. Prereq: 401 and consent of instructor. S/N grading only. May be repeated. Maximum 3 hours.

402 Special Topics in Finance (3) Junior and senior level finance seminar. Topics to be announced prior to offering. Prereq: 301.
FORESTRY (396)

100 Forests and Forestry in American Society (3) Introductory course examining the role of forests in shaping American culture and society and exploring the evolution of the forestry profession in the North American. F


306 Forest Protection (3) Same as Entomology and Forestry Pathology 306. F

314 Economics of Forest and Wildland Resources (2) Basic principles of forest resource economics; microeconomic applications in forestry; non-market valuation and analysis; financial analyses of private and public forest resources in an integrated decision-making context. Prereq: Economics 201, or consent of instructor. F

315 Forest Ecology (3) Ecological interactions in forests among tree species, other plant and animal species, and their environment. Forest ecosystem classification; energy, nutrient, and hydrologic cycles; soil quality. Perturbations and growth, survival and forest composition; forest succession. Fire ecology. Regeneration ecology through establishment and stand dynamics. Physiological ecology, ecological strategies, and adaptations of trees. Prereq: FWF 311. 2 hours and 1 lab. Sp

321 Wildland Recreation (3) Philosophical foundation of recreation; planning, development, and management of forest recreation resources; interpretation of forest resources. Overnight weekend field trips may be required. Prereq: English 102 and Speech 210 or 240 or consent of instructor. F


323 People and Forest Practices (2) Examination of how people, institutions, and society at large affect and are affected by forest management practices. Case studies and field applications will concentrate on the wide variety of linkages that exist in society among people and forests. Application of basic skills of collaborative problem solving will be emphasized. Overnight weekend field trips required. Prereq: Coreq: 305, 306, 322, 324, 326, 329 and 330. Sp

324 Forest Resource Analysis (2) Growth and yield prediction; financial analysis of forest management alternatives; incorporating computer simulation, risk and uncertainty, investment decisions; goal setting under multiple use concepts; valuation and appraisal of forest uses. Prereq: 314, Coreq: 305, 306, 322, 323, 324, 326, 329, 330. Sp


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

332 Wood Identification (1) Cell structure and arrangement as a tool for species identification; microscopic and hand lens identification of important commercial trees. Day and evening lab; field trips may be required. Prereq: Forestry, Wildlife and Fisheries 311 or consent of instructor. Coreq: 332 for Forestry majors. Sp

415 Forest Conservation Workshop (1-3) How forest biology, ecology and management relate to conservation issues, how current conservation issues can be integrated into classroom work and student projects; environmental education strategies. Prereq: Consent of instructor. May not be taken by forestry or wildlife management majors. May be repeated. Maximum of 3 hrs. Su, F

420 Forest Resource Management (2) Introductions to forestloor-level management concepts from an economic perspective. Harvest decision; goal setting under multiple use concepts; application of linear programming model; regulation, linear programming and harvest scheduling; goal programming. Prereq: 314 and 324, or consent of instructor. F

421 Forest and Wildland Resource Economics (3) Production functions, supply-demand and market analysis; non-market programs and projects; economic analysis and decision models; investment and financial analysis; managerial economics; taxes; forest products marketing. Prereq: 324 or consent of instructor. F

422 Forest and Wildland Resource Policy (3) Policy formulation; criteria for policy determination; forest and wildland law and regulation; theory of conflict resolution; formal and informal resolution. Prereq: Senior standing, or consent of instructor. F

423 Wildland Recreation Planning and Management (3) Planning processes, master and site planning, site design projects; management strategies, methods of visitor and recreation site management; case studies. Weekend field trips may be required. Prereq: 321 and Junior standing in Wildland Recreation concentration, or consent of instructor. 2 hours and 1 lab. Sp

432 Wood Adhesives and Glued Wood Products (2) Theory and practice of adhesive bonding; study of the wood substrate-adhesive interface for bonding; principles of adhesion; wood adhesives; gluing of solid wood; wood–adhesive bonding. Laboratory practices; laboratory manufacture and/ or testing of adhesives, adhesive bond strength and glued-wood-product performance; day field trips may be required. Prereq: 331 and 332, or consent of instructor. 1 hour lecture and 2 hour lab. F

434 Wood Processing and Machining (2) Processing of wood involving primary log breakdown and secondary processing into major products. Fundamentals of machining technology for major types of cutting operations including sawing, boring, planing, veneer cutting, and laser machining. Day field trip may be required. Prereq: 331 and 332, or consent of instructor. 1 hour lecture and 2 hour lab. Sp

435 Wood Drying and Preservation (2) Discussion of wood-moisture relationships. Introduction to commercial wood-drying equipment and practices. dryer use specification, and disposal of preserved treated wood. Day field trips may be required. Prereq: 331 and 332 or consent of instructor. F

436 Wood Industry Survey (1) Industry descriptions and histories of major, regional, and local wood-using industries. Prereq: FWF 313. F

492 Practicum in Forestry (1-6) Supervised experiences in forestry, wildlife, fishery, or other natural resource field management. Prereq: Junior standing. Satisfactory/No credit only. E

493 Independent Study in Forestry (1-15) Special research or individual problem in forestry. Letter grade or Satisfactory/No Credit. E

495 Internship in Wildland Recreation (1-6) May be repeated. Maximum 6 hours. A highly structured field experience guided by specific learning objectives prepared by the instructor and the field supervisor. The student is responsible for field placement. One credit per two weeks of full-time field experience. Prereq: Junior standing, consent of instructor. E

496 Internship in Forestry (1-6) Supervised experience at departmental approved employment location arranged by the student. Internship learning objectives must be pre-approved by the advisor/instructor and the field supervisor. Prereq: Junior standing, consent of instructor. May be repeated. Maximum 6 hours.

FORESTRY, WILDLIFE AND FISHERIES (398)

100 Current Issues in Renewable Natural Resources (1) Current resource issues presented by invited guest speaker each week; student discussion and interaction with speaker; some written work required; topics and speakers change each offering; attendance required at all class meetings. Maximum 3 hours. Satisfactory/No credit only. F

211 Introduction to Forestry, Wildlife and Fisheries (3) History of natural resources policies and practices; socio-environmental objectives and alternatives concerning natural resources and their use; techniques of integrated natural resource management, ecological principles, current policies, social trends, and forest and wildland resource use. Sp

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

311 Dendrology and Silvics of North American Trees (3) Identification, classification and nomenclature of important North American trees and woody scrub; forest prescriptions; silvicultural characteristics of trees and stands as the basis for the practice of silviculture. Day- long field trips may be required. Prereq: 1 year of Botany or Biology. 2 hours and 1 lab. F

312 Principles of Silviculture (3) Principles for treating forest stands to achieve selected objectives. Prereq: Chemistry 100, Coreq: PSS 210, 311, and (for Forestry majors) 313. 2 hours and 1 lab. F

313 Measurements and Sampling (2) Measurement techniques and sampling methods for vegetation; estimating animal population parameters. Prereq: Statistics 201, Agriculture and Natural Resources 290, Mathematics 125. Coreq: FWF 312, 1 hour 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. Prereq: 211 or 250, Statistics 201, 310, 311 and (for non-forestry majors) 313. 2 hours and 1 lab. F

410 Wildlife Habitat Evaluation and Management (3) Ecological relationships between wildlife and their habitat. Evaluation, modeling, and management of wildlife habitat. Effects of land-use practices on wildlife habitat. Weekend field trips required. Prereq: 317 or consent of instructor. 2 hours and 1 lab. F

412 Managing Natural Resource Organizations (3) Human, bureaucratic and managerial factors influencing effectiveness of natural resource organizations. Alternative stakeholder and public involvement objectives, strategies and mechanisms including client-customer relationships and adversarial conflict resolution, proactive collaborative problem solving and alliance building. Prereq: 317 or consent of instructor. (Formerly: 211, 317 and Junior standing) 2 hours and 1 lab. Sp

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

Courses of Instruction
Courses of Instruction 173

400 International Natural Resource Issues (2) Identification and analyses of issues regarding forestry, wildlife, fisheries, and associated natural resources beyond U.S. borders. Applied economic, and cultural values impacting natural resources at the international level. Cases: Northern Europe, Latin America, Indonesia, and Africa. F,A

FRENCH (405)

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

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

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

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

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

300 Transitional Grammar Review and Reading (3) For students who have completed the intermediate level sequence and who require additional preparation in reading comprehension, vocabulary acquisition, and key areas of grammar. Prereq: French 212 or equivalent or appropriate score on French placement test. 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 having had 111-112 or equivalent. No auditors.

333 Intermediate Composition and Grammar (3) Emphasizes writing skills. Review of major grammatical points in French. Prereq: French 212, 218, French 300 or permission of instructor.

334 Intermediate Conversation (3) Emphasizes speaking skills. Further review of French grammar. Required of all majors. Prereq: French 212, French 218, French 300 or permission of instructor.

345 French for Business (3) Contemporary French language as it applies to business transactions. Understanding and composing business letters; oral communication. Pertinent French cultural elements of business practices. Either 334 or 345 may be applied toward the major but not both. Prereq: 333 or consent of instructor.

351-352 History of French Literature (3,3) Chronological view of French literature in relation to the specific historical developments that have influenced it. Prereq: 333 or 334 or 345 or permission of department.

400-401 Consecutive and Simultaneous French-English and French-English Translation (3,3) Consecutive Translation to and from English. Introduction to simultaneous translation to English. Simultaneous Translation to and from English, training of students with a 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: 334, 345 or equivalent. Preferably taken in sequence.

410 Medical French Literature (3) Major representative works of Medieval French literature. Texts in modern French. Prereq: a 300 level literature course. Writing emphasis. (Same as French 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 from Lyon and members of the Pleiade. Writing emphasis. Prereq: 300 or consent of instructor.


413 French Literature of the 18th Century (3) Major works of the Enlightenment. Writing emphasis course. Prereq: a 300 level literature course.


415 French Literature of the 20th Century (3) Evolution of 20th-century French literature. Writing emphasis course. Prereq: 300 or consent of instructor.

416 Survey of Francophone Literature (3) Examination of French literature outside metropolitan France, particularly Africa and the Caribbean. Writing emphasis course. Prereq: a 300-level literature course.

420 French Cinema (3) The French cinema from its foundation days through the New Wave directors. Prereq: 300 or consent of instructor. Writing emphasis course. Can be applied to major.

421 Phonetics (3) Foundation in the science of phonetics. Practical exercises and individual performance. Prereq: a 300 level literature course. Writing emphasis course. (Same as Cinema Studies 420.)

422 Advanced Grammar (3) Improving one’s written French by studying basic and more refined structures of the language. Writing creative free-style compositions. Writing emphasis course. Prereq: French 333 or 334 or 345.

423-424 Advanced Conversation (1,1) Informal conversation with native speaker on contemporary topics. Intensive in clash and conflict rather than routine conversation. Meets two hours a week for one semester credit. Prereq: French 333 or 345.

425 Introduction to Descriptive Linguistics (3) Initiation into the theory and practice of techniques of linguis- tic analysis in the subfields of phonetics, phonology, morphology, syntax, semantics, pragmatics and historical linguistics; discussion of their relevance to the learning and teaching of foreign languages and to the study of literary texts. Writing emphasis course. (Linguistics 200 strongly recommended.) (Same as German 425, Linguistics 425, Russian 425, and Spanish 425.)

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

429 Romance Linguistics (3) Development of Classical Latin through Vulgar Latin into major Romance Languages. Writing emphasis course. (Same as Span- ish 429 and Linguistics 429.)

430 Theatrical French (4) Comprehensive introduction to theatrical production and performance in French. Students collaborate in the creative staging of a French play and they actively participate in its public performance. Prereq: 300 level literature course. Writing emphasis course.

431 Highlights of French Civilization (3) Survey of French civilization from the Gauls to World War II. Historical events, daily life, all forms of arts. Prereq: a 300 level literature course. Writing emphasis course.

432 Contemporary French Culture (3) Current French cultural issues placed in historical perspective with a comparative emphasis. In English; readings in French for majors. May apply toward French major. Writing emphasis course.

433 French and Francophone Women Writers (3) Works by women writing in French considered in cultural context. In English; readings in French for majors. May apply toward French major. Writing emphasis course.

434 Literature of Quebec (3) Survey of literature of Quebec as well as French literature connected with North America. Readings include explorer and missionary works, such as the Voyages of Champlain and the Journals of the Jesuits, as well as the literature of contemporary Quebec. Writing emphasis course. Prereq: a 300-level literature class.

440 Capstone Experience in French (3) Synthesizing senior colloquium and tutorial in which students reflect on their time in the discipline from a multidimen- sional point of view. Writing emphasis course. Prereq: a 400 level literature course.

445 Advanced French for Business (3) Study of contemporary French language and culture as they relate to business transactions. A comparative approach is used to explore differences and similarities between Francophone business culture(s) and those of North America and Japan. Students build upon their knowledge of business terminology while being sensi- tized to culture differences and the dangers of simplistic stereotyping. Writing emphasis course. Prereq: 345 or consent of instructor.

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

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

GEOGRAPHY (415)

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

108 Honors: World Geography (4) For freshmen and sophomores of superior ability who are interested in the geographical approach to world problems and their solution. Open to students who have received an "A" in Geography 101. Students may not receive credit for both 102 and 108.

131-132 Geography of the Natural Environment (4,4) Characteristic features and processes of the earth’s surface and lower atmosphere; their interaction to produce a world pattern of distinctive environments significant to humanity. Must be taken in sequence. 3 hours lecture and 2 hours lab per week. Not open to students who have taken 330. Prereq: 131 is prerequisite to 132.

310 Introduction to Cartography (3) Properties, sources, uses, design and production of maps as tools for understanding and visualizing environment and to study problems and issues. Open to students who have received an "A" in Geography 101. Students may not receive credit for both 102 and 108.

320 Cultural Geography: Core Concepts (3) Background and method of cultural geography; basic con- cepts and theories, historical landscape and period art, culture regions, cultural ecology, innovation and diffu- sion, cultural integration, and world patterns of cultural phenomena.

323 Behavioral Geography (3) Types of human behav- ior, such as shopping, territoriality, commuting, residence, and mobility, and spatial consciousness as they relate to distance, natural environment, and culture. (Same as Urban Studies 323.)

334 Meteorology (3) Dynamic atmosphere and result- ing weather patterns. Nature of individual weather elements, their measurement and analysis over time and space.

340 Economic Geography: Core Concepts (3) Con- cepts, theories, and practices in economic geography. Real and theoretical patterns in agriculture, manufactur- ing, and service activities.

345 Population and Environment (3) Global and local
of folk culture, emphasizing traditional material culture and rural settlement, with examples drawn from eastern North America and selected foreign areas. Prereq: 101-102 or 320 or consent of instructor.

432 Geography of American Popular Culture (3) Geographical study of regional variation in popular cultures, especially focused on youth cultures in the United States. Prereq: Geography 320 or consent of instructor. Writing emphasis course. (Same as American Studies 423.)

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

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

435 Biogeography (3) Study of the changing distribution 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 consent of instructor.

436 Water Resources (3) Global water resources and hydrological processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. Prerequisite: 331-332 or consent of instructor.

437 Plant Geography of North America (3) Characteristics and distribution of major plant communities of Canada, the U.S., Mexico, and Central America. Relationshp to climate, soil, fire, and human disturbance. Long-term history and future prospects. Prereq: 131-132 or course work in botany or consent of instructor.

441 Urban Geography of the United States (3) Concepts and theories concerning development and significance of cities and internal morphology of cities in the United States. Prereq: 101-102 or 340 or consent of instructor. (Same as Urban Studies 441.) Writing intensive.

443 Rural Geography of the United States (3) Geographical appraisal of rural areas of the United States, including small towns and urban fringes. Problems and potentials of rural America. Prereq: 101-102 or 340 or consent of instructor. Writing intensive.

449 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade, communication, and interaction of geological, historical, and developmental aspects. Prereq: 340 or consent of instructor.

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

466 Teaching and Learning Geography (3) Preparing prospective teachers in the content, skills, strategies, and understandings needed for the effective teaching and assessment of geography in the K-12 schools. Course organization and content based largely on that of the national Geography Standards.

499 Proseminar in Geography (3) Major themes in geography, especially trends over the past 40 years. Requires senior standing. May not be applied toward the graduate studies. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course.

GEOLOGY (424)

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

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

103 The Earth’s Environments (4) Contemporary problems and solutions related to human disturbance of the environment. May not be applied toward the major. Prereq: 101. 3 lecture hours and one 2 hour lab or field period. Fulfills laboratory science sequence requirement for College of Arts and Sciences.

107 Honors: The Dynamic Earth (4) Laboratory and field emphasis to understanding physical processes, including the formation of rocks, plate tectonics, earthquakes, and landscapes. 3 lecture hours, 1 2-hour lab, and 2 field trips. Prereq: Grade of B or better in Geology 107, grade of A in Geology 101, or permission of the instructor. Students may not receive credit for both Geology 102 and 108.

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

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

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

203 Geology of National Parks (3) Geologic principles, processes, and earth materials responsible for the spectacular landscapes of national parks. Focus on interactions among internal earth processes, surficial earth processes, and human interactions. 3 lecture hours and an optional field trip. May not be applied toward the Geology major.

310 Mineralogy (4) Introduction of crystallography, crystal chemistry, x-ray diffraction, optical mineralogy, and the structures of rock-forming minerals. Laboratory includes hand-specimen identification, x-ray diffraction techniques, and microscopic identification of minerals. Prereq: 101, Chemistry 120-130 or equivalent. 3 hours lecture and 1 lab.

320 Paleobiology (3) Fossils and their uses in the study of geology, paleoecology, evolutionary biogeography, stratigraphy, and evolution. Prereq: 102 or consent of instructor. 2 lecture hours and one 2-hour lab or field period.

330 Igneous and Metamorphic Petrology (3) Classification and properties of igneous and metamorphic rocks, the processes that produce them, and the tectonic environments in which they form. Prereq: 310, 2 lecture hours and one 2-hour lab.
460 Principles of Geochemistry (3) Applications of chemical principles to geologic systems with emphasis on problem-solving techniques. Topics include phase diagrams, partition coefficients, and thermodynamic principles for evaluating stabilities of mineral assemblages, aqueous solutions, and applications of radiogenic and stable isotopes to geologic systems. Prereq.: Chemistry 120-130, Mathematics 141-142; recommended Geology 330 or consent of instructor. 3 lecture hours and one 2-hour tutorial.

470 Applied Geophysics (3) Basic principles of geophysical exploration with emphasis on applications to environmental problems. Includes seismic and electromagnetic methods. Prereq.: 6 hours of geology courses numbered above 300, Physics 221-222. 2 lecture hours.

471 Fieldwork in Geophysics (2) Summer field course for advanced undergraduates or graduate students. Taught off-campus, and requires the full time of the student for 2 or more weeks. Geophysical investigations to the student of a problem in telogenetics, hydrogeology, or the environment. Prereq.: 470 or consent of instructor.

475 Physical and Chemical Systems of the Earth (3) Development of the physical earth from the solar nebula to the present. Formation, composition and evolution of the hydrosphere, crust, mantle, and core. Interdependence of plate tectonics, volcanism, plate tectonics, geochemistry and chemical and isotopic processes of the interior of the earth. Historical perspectives on major controversies of the past, and problems unresolved today. Writing emphasis course. Prereq.: 16 hours geosciences courses numbered 300 and above. 2 lectures and 1 discussion period.

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

485 Principles of Hydrogeology (3) Physical principles of flow, flow equations, geologic controls, aquifer analysis, water quality, groundwater contamination, and transport processes. Prereq.: 101, Math 141 and 142, Physics 133 or 134 or equivalent, or consent of instructor. (Same as Civil Engineering 485.)

486 Hydrogeology Laboratory (1) Application and demonstration of hydrogeological principles in the field and laboratory, Prereq.: or Coreq: Geology 485, or Environmental Engineering 535, or consent of instructor.

490 Special Problems in Geology (1-3) Directed study or special topics. Prereq.: Consent of instructor. May be repeated. Max. credit: 6 hours. 1-3 variable.

491 Foreign Study (1-15) Study abroad in department, at home, or in foreign country. May be repeated with the approval of the department. Maximum 15 hours. (Same as Judaic Studies 350.)

492 Off-Campus Study (1-15) Study abroad in department, at home, or in foreign country. May be repeated with the approval of the department. Maximum 15 hours. (Same as Russian 426, French 426, and Spanish 426.)

493 Independent Study (1-15) Reading courses. (Same as Russian 426, French 426, and Spanish 426.)

494 Undergraduate Internship (1-15) Credit awarded through placement experience. (Same as Russian 426, French 426, and Spanish 426.)

495 Independent Study (1-15) Reading courses. (Same as Russian 426, French 426, and Spanish 426.)
435 Structure of the German Language (3) Contrastive English-German segmental and suprasegmental phonemes, contrastive English-German linguistic structures, selection topics of advanced German grammar and syntactic analysis. Prereq: 6 hours of upper-division German language courses excluding courses in translation and graduate reading courses. (Same as Linguistics 435.)

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

477-478 German Honors (1,1) Preparation of honors paper portfolio and oral presentation. Prereq: Permission of the department.

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

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

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

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

GREEK (257)

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

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

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

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

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

405-406 Selected Readings from Greek Literature (3,3) For advanced students in Greek, the study of plays, the history of languages, and 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. Students who have received credit for Health 330 may not thereafter receive credit for this course. 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.

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 education goals, roles, target populations in school, community and health care settings; health careers and opportunities; health behavior and intervention techniques; health appraisal techniques; health promotion strategies. F

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

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

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

330 Wellness For Health Professions (3) Emphasis on taking personal responsibility for one's health. Includes topics related to the healthy lifestyle, and provides specific guidelines of how to change inappropriate behaviors. Students who have received credit for 330 may not thereafter receive credit for Health 110. Sp, Su

375 Health Communications (3) Communication strategies for health educators in various settings. Emphasis on role of health-related factors that influence health care service delivery systems. Study of health problems/maintenance and/or correction. (Same as Women's Studies 425.) E

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

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

426 Health Education Program Planning (3) Principles, concerns of instructional/educational and intervention programs. F

427 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

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

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

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

506 Special Topics (1-3) For advanced students. Prerequisites determined by content. E, F, Sp

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

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

550 Influences of Alcohol and Drugs (3) For advanced students only. Topics of research emphasizing the roles of clients that are involved in the treatment of alcoholics and drug abusers. E, F, Sp

HEBREW (458)

141-142 Elementary Modern Hebrew I, II (4,4) (Same as Asian Studies 141-142.)

241-242 Intermediate Modern Hebrew I, II (4,4) (Same as Asian Studies 241-242.)

HISTORY (462)

221-222 History of the United States (3,3) 221-Settlement to 1877. 222-1877 to present. E

227-228 Honors: History of the United States (3,3) Consent of department required. Students will attend the appropriate 221-222 lectures and the designated honors discussion section.

241-242 Development of Western Civilization (3,3) Historical survey of the civilization of the western world. 241-Ancient world to 1715. 242-1715 to present. Writing-emphasis course.

247-248 Honors: Development of Western Civilization (3,3) Consent of department required. Writing-emphasis course. Students will attend the appropriate 241-242 lectures and the designated honors discussion section.

255-256 Introduction to Latin American Studies (3,3) Social, economic, political, and intellectual revolutions against traditions. Writing-emphasis course. Students who have received credit for 330, Health 375, Public Health 300, and Psychology 306, Health Instruction in Elementary Grades (3) School health program for the child in elementary grades. Teachers become familiar with organizing and presenting health content, health materials, health curricula, community resources, and communicating healthful lifestyle. Prereq: Admission to Teacher Education Program. F, Sp

312-313 Medieval History (3,3) 312-Early Middle Ages: 300-1100. Formation of medieval society and institutions. 313-Later Middle Ages 1100-1400. Height of medieval society and institutions. F, Sp

314 Renaissance Europe (3) The period traditionally seen as a transition from the Middle Ages to the modern world. Interrelationship of cultural, social, economic, political and intellectual developments, with an emphasis upon historical interpretation.

315 Reformation Europe, 1500-1650 (3) The period during which Europe witnessed religious dissunity, economic dislocation and insecurity, political centralization, intellectual skepticism, the origins of modern science, 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 impact of the scientific revolution, the intellectual flowering known as the "Enlightenment", and the English and French revolutions.

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

320 Contemporary Europe, 1900-1945 (3) The transformation from industrial to post-industrial society and the transformation of the European nation-state. Topics such as war and death, the disappearance of previous political and social instability; totalitarian control; decolonization; the impact of Freud, Einstein and existentialism; welfare states; and the problems of Euro-PEAN unification. Writing-emphasis course.
451 United States Military History, 1754 to the Present (3) The nation's broad strategic aims and means used to attain them, shifting strategy, tactics and weaponry involved in the relationship between American society and its armed forces. (Same as Military Science 430.)

452 The American Experience in World War II (3) Diplomacy and warfare in Europe and Asia and the impact of the war on American society. May be repeated. Maximum 9 hours.

453 Women in American History (3) Approaches of 432 applied to American society. Writing-emphasis course. (Same as Women's Studies 453.)

454 Cities and Urbanization in American History (3) Origins, growth, and influence of American cities in development of American society. May be repeated. Maximum 9 hours. (Same as Urban Studies 454.)

455 Environmental History of Urban America (3) Pre-industrial, industrial, and modern environmental cities, including animal pollution; epidemic disease; infrastructure construction; hinterland resource exploitation; and urban renewal and clean-up. Writing-emphasis course.

456 History of Sports in the United States (3) Development of sports and their significance in American life from colonial times to the present. Emphasis on social, cultural, economic and political impact of both spectator and participatory sports in 20th century. (Same as American Studies 456.)

459 Jefferson's America, 1789-1815 (3) Nation-building in the United States from the Constitution to the War of 1812. Economic modernization, the new national government, the first political party system, foreign relations, the role of women, the growth of cities, and changing ideas about deference, class, and community. Writing-emphasis course.

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

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

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

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

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

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

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

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

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

475 Studies in Latin American History (3) Variable content. Significant issues in Latin American history. May be repeated. Maximum 8 hours. Writing-emphasis course. (Same as Latin American Studies 475.)

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


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

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

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

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

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

489 Oral Histories of War and Peace (3) Oral history methodologies and interviews with veterans and others who have shaped modern American military history. Special issues include the Korean War. History 451, U.S. Military History, is recommended but not required.

490 Internship in the Center for the Study of War and Society (3) A structured field work experience in public history at a research center documenting modern U.S. military history, including special projects such as grant writing, interviewing, and archival processing. Prereq.: Consent of the Director of the Center for the Study of War and Society. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

HOTEL AND RESTAURANT ADMINISTRATION (512)

101 Food Quality Principles (3) Scientific principles involved in the preparation, preparation, preservation and service of food. Writing-emphasis course.

119 Introduction to the Service Industry (3) Organizational and basic operating systems for the career path available in the hospitality and retail industries. Management competencies necessary for success in these fields. (Same as RCS 119.)


211 Hotel Operations (3) Operational theory of lodging and an exploration of the lodging industry in terms of nature of work, organizational structure of lodging segments, the meaning of guest services, differentiation of brands, current industry issues and evaluation of the market place. Prereq./Coreq.: HRA 119/RCS 119.

315 Developing the Service Worker (3) Person: management policies and procedures to develop the service worker. Topics include leading organizational change, labor costs, and review of retention issues. Prereq.: HRA210/RCS 210, or RCS 211. (Same as RCS 315.)

321 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining need, planning and serving foods in volume. Prereq.: 120, 220, NTR 100 or 107, HRA 101, Micro 210 or PH 310; progression into HRA 210 or consent of the instructor. Coreq.: 320.

322 Diversity in the Service Marketplace (3) Survey of diversity in the service marketplace. Implications for the manager of a diverse workforce in the delivery of goods and services to a multiplicity of consumer groups. Prereq.: RCS/HRA 311 (Same as RCS 322).

342 Tourism and Travel Administration (3) Economic and social forces influencing domestic and international tourism; services, functions of retail, wholesale travel agencies. Prereq.: Coreq.: HRA 210 or HRA 211, or consent of instructor.

352 Food and Lodging Cost Control (3) Budget, cost analysis, computer, financial statement use in decision making in lodging and foodservice systems. Prereq.: HRP 210 and Act 202 or consent of instructor.

335 Convention and Meeting Planning Management (3) Practical insights into types of convention/meeting services, roles of the association, corporate, and government convention and meeting planners, setting of objectives and format, site selection, negotiations, program design, speaker selection, budgeting, contracting, marketing, registration, on-site logistics, and evaluation. Prereq.: HRA, RCS 210.

341 Food Safety and Sanitation for the Food Service Industry: Hazard Analysis Critical Control Point (HACCP) (1) Students will be eligible to become ServSafe certified. Prereq., or Coreq.: HRA 210.

376 Strategies for Growth (3) Issues concerning achievement of business growth with focus upon the consumer behaviors and dimensions of the service industry. Prereq.: Mix 301, HRA 326 or RCS 310, RCS 341. (Same as RCS 376.)

390 Professional Development (3) Development of skills necessary to career success: business writing, communications, time and stress management, motivational and negotiating skills. Co/Prereq.: HRA 326 or RCS 310 and progression into the program. (Same as RCS 390.)

410 Strategic Restaurant Planning (3) Restaurant Management from a strategic planning perspective; development and implementation of restaurant strategy from financial, operational, and customer orientation. Prereq.: HRA 390.

420 Professional Experience in Restaurant and Food Service Management (6) Supervised educational experiences in selected restaurant and food service operations. Prereq.: Progression into the program and HRA 326 and 390.

421 Professional Experience in Hotel/Tourism Management (3) Supervised educational experiences in selected hotel/tourism operations. Prereq.: Progression into the program and HRA 326, 390.

423 Hospitality Sales and Marketing (3) Strategic marketing and management of hospitality organizations; includes property/product, market, and competition analyses; promotion and sales planning; internal and external promotional elements. Prereq.: Marketing 301; progression into HRA program or consent of the instructor.

424 Strategic Hotel/tourism Planning (3) Hotel Management from a strategic planning perspective; development and implementation of hotel strategy from financial, operational, and customer orientation. Prereq.: HRA 390.

425 Legal Issues in Service Management (3) Legal rights and responsibilities of service industry managers, their staff and clients. Prereq.: HRA/RCS 311, progression into the program or consent of the instructor. (Same as RCS 425.)

429 Hospitality Computer Applications (3) This course is intended to provide the student with a broad exposure to software programs specifically designed for the hospitality industry. The course covers computer usage for guest room accounting, reservations, payables, receivables, management reporting, inventory control, point of sale, revenue control, labor control, and product cost control. Prereq.: HRA, RCS 326.

445 Advanced Food Production and Service Management (3) Application of management concepts in menu design, personnel, cost control and production and service of food. 2 hours and lab. Prereq.: HRA 210.
450 Advanced Lodging Management (3) This course is designed to allow students to interpret operational problems currently occurring in the hotel industry in a case study, interactive environment. The student will analyze management opportunities and threats within a hotel and determine reasonable alternatives. Prereq: HRA 211, 326, 425, Mkt. 301.

460 Professional Experience in Restaurant and Food Services Management (4) Supervised professional experience in selected restaurant and food services operations that builds upon first professional experience. Prereq: HRA 410, 420, HE 410. Coreq: HRA 485.

481 Professional Experience in Hotel/Tourism Management II (4) Supervised professional experience in selected hotel operations that builds upon first professional experience. Prereq: HRA 421, 424, HE 410. Coreq: HRA 486.


490 Management Experience in Restaurant and Food Service Management (9) Supervised managerial training with sponsoring restaurant and food service operations. Prereq: HRA 410, 420; HE 410; Coreq: HRA 485.

491 Management Experience in Hotel/Tourism Management (3) Supervised managerial training with sponsoring restaurant and food service operations. Prereq: HRA 410, 420; HE 410; Coreq: HRA 486.

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.

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

HUMAN ECOLOGY (520)

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

310 Design in Everyday Life (3) Aesthetic environment. Planning and organizing interior spaces to meet personal and family needs. Relationship of materials and furnishings to architectural space.

410 Human Ecological Systems (3) Systems theory as a component of human ecology; factors impacting on the nature of individuals, families, and environments. Prereq: HRD 210; CFS 210 or CFS 220 or RCS 341; 6 upper division hour in major.

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.

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

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.

497 Honors: Human Ecology (3-6) Issues or topics affecting areas within Human Ecology. Designed to meet particular interests of the student. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

HUMAN RESOURCE DEVELOPMENT (529)

161 Graphic Communications (3) Drafting as a means of communicating ideas. Orthographic and multiview drawing, conventional practices, pictorial techniques and applications, sheetmetal development, auxiliary projection, and applications of architectural drafting. Introduction to sketching, dimensioning and CAD.

163 Energy and Power Systems (3) Automotive technology and internal combustion engines. Includes various topics on engine design, production, and transmission of power. Engine tune up and overhaul and small engine maintenance and repair is stressed through experimental and applied laboratory experiences.

201 Field Experience in Teaching (1-3) Field experience in public school Business/Marketing, Family and Consumer Sciences, or Technology Education programs. May be repeated for a maximum of 3 hours. S/NC credit only.

210 Microcomputer Applications (3) Introduction to Microcomputer use and live software programs; operating systems, word processing systems, data base systems, spreadsheets, and graphics. Design of a management information system; spreadsheet programs; word processing, and database. Prereq: Declared major in College of Human Ecology. Satisfactory/No Credit grade only. E.

285 Introduction to Human Resource Development (3) This online course will be an overview of online instructional methodology; issues and problems associated with employee training and development; strategic training; needs assessment; learning theories and program design; transfer of training; career development; organizational development, employee empowerment and reorganization. F, Sp Prerequisites: HRD 210.

300 Individuals, Society, and Technology (3) An overview of how technology and human innovation is used to meet needs and solve problems. Hands-on opportunities to experience and solve group and individual problems in a tools and material context.

305 Construction Systems (3) Introduction to construction technology, preparing for the construction project, designing and planning the project, managing construction activities, building the structure, installing systems, finishing the project, and closing the contract.

306 Manufacturing Systems (3) Introduction to manufacturing, engineering materials, primary manufacturing processes, secondary manufacturing processes, establishing a manufacturing enterprise, designing and engineering products, the product, marketing the product, and performing financial activities.

320 Program Planning for Training, Development, and Education (3) An on-line course, the first in a four-course sequence, providing skills and knowledge in analysis, design, delivery, and evaluation of educational programs. Each student will plan an educational program. Prereq: HRD 210 or permission of the instructor. E.

325 Development of Instructional Resources (3) The second in a series of four online core courses designed to prepare instructors for the learning environment. It includes the design and development of instructional materials, the creation of instructional aids, and sequencing instruction based on the Instructional Systems Development (ISD) model. Each student will develop a training module. Prereq: HRD 320. E.

330 Instructional Strategies and Techniques (3) The third in a series of four online core courses focuses on methods and techniques of facilitating learning through application of communication theory, teaching and training concepts, and delivery methods and skills. Students will provide demonstrated competency in facilitated learning as a final course product. Prereq: HRD 320 and 325, E.

336 Teaching Technical Skills-Based Business Education (1-3) Methods and techniques for teaching Business Education and Marketing Education technology-based content that results in learner acquisition and refinement of technical skills. E.

350 Related and Applied Theory in Occupations (1-15) Applicants must show evidence of bona fide occupational experience compatible with State Plan requirements. Written theory tests and a summative comprehensive portfolio are used to award variable credit. Measures evaluated by technical specialist and departmental faculty. May be repeated. Maximum 15 hours. Satisfactory/No Credit only. Prereq: Junior standing and departmental approval. E.

351 Manipulative Skills in Occupations (1-15) Applicants must show evidence of bona fide occupational experience compatible with State Plan requirements. Written theory tests and the submission of a comprehensive portfolio are used to award variable credit. Measures evaluated by technical specialist and departmental faculty. May be repeated. Maximum 15 hours. Satisfactory/No Credit only. Prereq: Junior standing and departmental approval. E.

352 Practicum in Industrial Education (1-3) Updating and upgrading experiences in nontraditional settings for technical teachers. May be repeated. Maximum of 6 hours. Satisfactory/No Credit only. E.

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, plate-making, and offset presswork. F.


411 Managing Occupations Education Programs (3) Unique needs of instructors of occupational education: laboratory organization and safety; community resources and relations; advisory committees; operation of youth-club; and adapting instruction for special needs learners. Prereq: 320, 325.

415 Coordination Techniques (3) An online course with an overview of policy, procedures, roles, and responsibilities necessary for the analysis, design, development, implementation, and evaluation of a cooperative-educational program in vocational education. Prereq: HRD 210. Sp.

420 Introduction to Adult Education (3) Breadth of adult education activities and the diversity of adult lifestyles, including the role of adult education practice apart from traditional instructional settings. A.

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

422 Adult Development and Training (3) Application of adult development concepts to design and manage training programs for adults. Sp.

423 Methods of Teaching Basic Business and Accounting (3) Instructional methodology for teaching secondary- and post-secondary-level basic business and accounting. Integrative strategies are introduced and developed. F.

430 Principles and Best Practices of Business Education and Marketing Education (3) This course provides an overview of how Business Education and Marketing Education programs and practices operate. Special attention is given to the national standards, state-based curricular frameworks, and learner competency expectations. The course emphasizes the importance of Business Education and Marketing Education instruction. F.

434 Teaching Conceptual and Human Skills-Based Business Education and Marketing Education (3) Methods and techniques for teaching Business Education and Marketing Education conceptual skills and human skills based on subject matter content. Involves exploration of theoretical models, research and practical applications. F.

Courses of Instruction 179
441 Materials and Processes I (3) Classification sys-
tems of materials, control methods, survey of production
processes, ie. Separating, forming, conditioning, and
combining.

442 Materials and Processes II (3) Production of
industrial materials, primary process, product planning
and design, materials specification matching to product.
Includes problem solving and hands-on activities. Prereq:
371 and 441.

452 Technology in Learning Environments (3) The
fourth in a series of four online courses addresses the
use of diverse technology for creating and facilitating
instruction and learning. Involves posting and managing
an online lesson. Interactive strategies that aid in
stimulating, channeling, and sustaining learning. Prereq:
HRD 320, 325, and 330. E

455 Learner and Program Evaluation (3) This online
course teaches students to assess the effectiveness of
training or educational programs, develop performance-
based measures, evaluate job performance, and mea-
sure learner progress. Prereq: HRD 210 or equivalent
and HRD 320.

471 Principles of Supervision/Leadership (3) This
online course examines management problems such as
motivation, communication, interpersonal relationships,
and leadership. Prerequisite: HRD 210 or equivalent. Sp

473 Integrating Organizational and Career Develop-
ment (3) The course examines methods of organizational
development, issues and problems associated with
employee empowerment, involvement, and reorganization.
Effective utilization of human re-

475 Human Resources Policies, Practices, and Pro-
cedures (3) This course examines employer/organiza-
tional activities related to personnel and human re-
source programs, employee recruitment, employee as-

476 Supervised Occupational Experience (3) Prac-
tical field experience in business/industry/community-

479 Internship in Human Resource Development (3-
9) Assessing, planning, implementing, and evaluating
the effectiveness of training programs in an industrial
setting. May be repeated to a maximum of 9 semester
hours. Satisfactory/No Credit only. E

480 Directed Study in Human Resource Develop-
ment (3) Topic arranged by student in collaboration with
a supervisor. Approval form must be filed in the departmen-
tal office. May be repeated for a maximum of 6 hours. Prereq:
Junior or senior standing.

482 Directed Study in Family and Consumer Sci-
ciences Education for students preparing for teaching
secondary school programs in Family and
Consumer Sciences.

485 Special Topics in Human Resource Develop-
ment (1-3) Topics to be assigned. May be repeated.

HUMAN SERVICES (532)

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

330 Thinking About People (3) Development of thought-
ful, informed and empathic attitudes toward human
beings—those providing services as well as those re-
ceiving service. Prereq: Progression to the major, F, Sp

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

390 Information Interpretation and Assessment (3)
Information gathering and assessment for human ser-
vices are essential for human services practice.
Formulating questions, identifying rele-

350 Information Consumer (3) Information in society,
information economy, knowledge/learning society; pub-
lishing and information providers: hosts, bulletin boards,
nets; information overload, anxiety, science fraud;
gatekeeping concepts; updating systems, environmen-
tal scanning; information consumption techniques. Un-
dergraduate credit only. E

430 History of the Book (3) History of writing and
various methods of bookmaking.

450 Writing About Science, Technology and Medi-
cine (3) (Same as Journalism 450).

485 Introduction to Electronic Communications and
Information Resources on the Internet (3) Explora-
tion of worldwide information and communications re-
sources including e-mail, newsgroups, and the world-
wide web. Discussion of information issues including
copyright, censorship, privacy, and access. E

486 Advanced Electronic Communications and In-
formation Resources on the Internet (3) Exploration of
advanced information and communications issues, re-
sources and tools including forms, scripting and
search engines. Prereq: IS 485 or consent of instructor.

490 Information Environment (3) Generation, produc-
tion, management, dissemination, and use of informa-
tion and technology in society, information seeking
and user behavior, information industries, economics of
information products and services, technological and
organizational change, information professions, and
issues. E, Su-A

INSTRUCTIONAL TECHNOLOGY, CURRICULUM, AND EVALUATION (577)

203 Field Study in Education (1-3) Problems of per-
sons in active service in the field, includes methods of
teaching, curriculum materials, school-community rela-
tions, and school organizations. May be repeated.
Maximum 6 hours.

304 Microcomputers and Instructional Design (3)
Design and applications of microcomputers as related
to classroom instruction and instructional design. Prereq:
Admission to the Teacher Education Program.

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

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

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

404 Problems in Improvement of Instruction (1-3)
Special conferences, workshops, or in-service programs.
May be repeated. Maximum 6 hours. Satisfactory/No
Credit grading only. E

475 Utilization of Instructional Media (3) Basic com-
munication process, need for instructional media,
instructional development, selection and utilization of
educational and basic software techniques. (Same as Library and Information Science 475). E

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

486 Introduction to Instructional Computing (3) Class-
room uses of computers, applications for teachers,
overview of computer hardware and software for teach-
ers of all grades. Prereq: Admission to Teacher Education. E

INTERDISCIPLINARY PROGRAMS (581)

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

400 Selected Interdisciplinary Topics (1-12) Accept-
able for major or minor credit in any Interdisciplinary
Program with the consent of the Director of Interdiscipli-
ary Programs and the respective chairperson. May be
repeated for credit to a maximum of 12 hours. Letter
grade or S/NC grading.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)
Courses of Instruction

INTERIOR DESIGN (582)

141 Introduction to Interior Design (2) Orientation to the profession; relationship to allied fields; contemporary development; philosophical approaches. Open only to majors in interior design or architecture or consent of instructor. F

171 Visual Studies (3) Classification and properties of two and three-dimensional visual organization; design principles; visual and spatial elements within simple and complex visual systems; role of movement in experiencing scale and volumetric space. Three hour studio. Open only to majors in interior design and architecture. Prereq: 141 or consent of instructor. Sp

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

221 Theory of Color (2) Introduction to basic color theory and its application to interior environments. Explores aesthetics and psycho-physiological effects. Sp

231 Micro-Computers for Interior Design (3) Introduction to computer based systems: drawing, desktop publishing, and other software applications in various aspects of design project and management, including cost estimating and budget constraints, optimization of material use, and 3-d computer-aided design and information and resource management. Three hour studio. Prereq: Math 119 or consent of instructor. Coreq: 271. Interior Design majors only. F

261 Materials and Resources for Interiors (2) The development and application of materials and resources used in interior architectural space. Prereq: 171 or Arch 172 or consent of instructor. Sp


272 Fundamentals of Interior Design II (6) Problem solving, spatial organization of micro environments, increasingly larger scale; communication of total design solution graphic, audio and photographic techniques; emphasis on the use of color. Five hour studio. Prereq: 271. Sp

311 History of Interior Architecture (4) Interior architecture, decoration and decorative arts within cultural context, ancient through nineteenth centuries, emphasis on Italy, France, England, and American, Prior to Art History 172 and 173 or consent of instructor. F

312 History of the Contemporary Interior Architecture (2) Interior architecture, furniture, design philosophies, nineteenth century roots for twentieth century developments, Europe and America. Design as influenced by movements in the fine arts, technological advances, cultural context. Prereq: 311 or consent of instructor. Sp


371 Intermediate Interior Design I (6) Studio problems of intermediate complexity with emphasis on problem solving and design phases; in-depth analysis of current programming methods; integrates and extends previous knowledge of spatial organization and planning of micro and macro environments. Five hour studio. Coreq: 231, 371. Sp

400 Proxemics (2) Analysis of space and behavior within a cultural context. Application to design and the design process. Examination of theoretical foundations and concepts from environment and behavior. Simulation techniques and methods for identifying behavioral design requirements. Two hour studio. Prereq: 200, 231. Coreq: 471 or consent of instructor. F

411 History of American Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context, colonial era through nineteenth century. Prereq: 311 or consent of instructor. F

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

420 Practicum for Interior Design (3) Supervised experience in a professional design firm; business practices, project management and design philosophy. Prereq: 360, 372 and consent of instructor.

431 Computer-Aided-Design (3) Interaction between computer-aided-design process, database, spreadsheet software, cost estimating, construction drawings related to space planning. One hour lecture and two hour studio. Prereq: 231, 371. Coreq: 372 or consent of instructor. Interior Design majors only. Sp

464 Environmental Factors in Design (3) Human factors and associated research techniques and design methodologies related to the built environment.

471 Advanced Interior Design I (4) Non-residential studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Four hour studio. Prereq: 372, 420. Coreq: 400, or consent of instructor. F

472 Advanced Interior Design II (6) Comprehensive studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Six hour studio. Prereq: 471 or consent of instructor. Sp

480 Furniture Design (4) Human factors data applied to design of body support, task support, storage and systems, construction drawings and scale models; advanced millwork design; materials and manufacturing processes. Two hour lecture and four hour studio. Prereq: 471 or Arch 372 or consent of instructor Sp

484 Needs Assessment and Design Programming (3) Systematic methodology and multidisciplinary research methods as a part of design problem solving experience. Appropriate for evaluating various environments: commercial, corporate, hospitality, institutional, and retail. Seminar. May repeated for maximum six hours credit. Prereq: Fourth year standing or graduate student in interior architecture and/or planning or consent of instructor.

491 International Study (1-15) Individual or group studio and/or study abroad; academic research, field investigation, or studio experiences. Determination of credit based on particular international experience. Prereq: Consent of all interior design faculty.

493 Directed Studies in Interior Design (1-3) Independent research in environmental design analysis. Prereq: Consent of instructor.

ITALIAN (584)

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

199 Italian Language and World Business (2) This course explores the influence of foreign trade on the local, state, and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in Language and World Business. See the Director for further information.

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. F, Sp

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.

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

341-342 Intermediate Grammar, Composition and Conversation (3,3) Comprehensive 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 Literature of the Rinascimento (3) From Pucci to Tasso, the Quattrocento and the Cinquecento. Prereq: 212 or consent of instructor.

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

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

409 Directed Readings (3)

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

414 Italian Cultural Studies (3) This course will examine Italian culture as a set of practices characteristic of Italian society, from its mode of production to its eating habits, dress codes, celebrations, and rituals. The objective of the course is to achieve a greater understanding of contemporary Italian culture.

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

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

491 Foreign Study (1-15)

JAPANESE (589)

151-152 Elementary Japanese II (5,5) (Same as Asian Languages 151-152.)

251-252 Intermediate Japanese II (5,5) (Same as Asian Languages 251-252.)

313-314 Japanese Literature in English Translation (3,3) (Same as Asian Languages 313-314.)

351-352 Advanced Japanese II (4,4) (Same as Asian Languages 351-352.)

451 Readings in Japanese Literature (3) (Same as Asian Languages 451.)

JOURNALISM (594)


201 Writing for Mass Media (3) Principles and practice for writing for print and broadcast media. Comprehensive overview of the major forms of writing for the mass media, Role of media in society. Not available for majors in the College of Communications. Prereq: English 102.
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: 200.

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

290 Photожournalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, darkroom work, historical and contemporary photographic practice and laboratory.

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


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

412 Opinion Writing (3) Analysis of editorial positions, practices, and pages. Writing editorials and columns for newspapers, magazines, and company publications, with emphasis upon study and use of rhetorical devices and logic. Prereq: 203 or consent of instructor.

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

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

420 Print Media Management (3) Current business practice among print news media, especially newspapers. Problems in management and production, and the outlook for new technologies. Prereq: 6 hours math and/or accounting, and senior standing.


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

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

450 Writing about Science, Technology, and Medicine (3) Writing workshop to analyze examples of successful science writing and write series of articles for general public based on scientific journals, news conferences, technical meetings and interviews. Prereq: Consent of instructor. (Same as Information Sciences 450.)

451 Environmental Reporting (3) Writing for news media on such environmental issues as strip-mining, water pollution, air pollution, allergens, nuclear power, fossil fuel power, and solid wastes. Students hear presentations by interview experts in environmental science and reporting. Exemplary popular literature in environmental reporting is reviewed. Prereq: 203 for majors; consent of instructor for non-majors.

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

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


465 Women and Mass Media (3) Media effects on women. Media coverage and portrayal of women. Historical and current status of women in mass communication industries. (Same as Women's Studies 465.)


491 Foreign Study (1-15) Advance approval of hours and topics by advisor required for registration. May be repeated for maximum of 15 hours credit.

492 Field Experience (1-2) Approved internships and other supervised practice in journalism. May be repeated for a maximum of 4 credit hours. Prereq: 360, senior standing, and consent of instructor. Satisfactory/No Credit grading only.

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

JUDAICA STUDIES (595)

311 Ancient Hebrew Religious Traditions (3) Writing emphasis course. (Same as Religious Studies 311.)

312 Religious Aspects of Biblical and Classical Literature (3) Writing emphasis course. (Same as Religious Studies 312.)

320 Women and Religion (3) (Same as Religious Studies 320 and Women’s Studies 320.)

322 Medieval Philosophy (3) Writing emphasis course. (Same as Philosophy 322 and Medieval Studies 322.)

350 German-Jewish Topics in Literature and Culture (3) May be repeated. Maximum 6 hours. (Same as German 350.)

369 History of the Middle East (3) Writing emphasis course. (Same as History 369.)

370 History of the Middle East (3) Writing emphasis course. (Same as History 370.)

381 Introduction to Judaism (3) Writing emphasis course. (Same as Religious Studies 381.)

383 History of Jewish Civilization I (3) (Same as History 383.)

384 History of Jewish Civilization II (3) (Same as History 384.)

385 Contemporary Jewish Thinkers (3, 3) Writing emphasis. May be repeated. Maximum 6 credit hours. (Same as Religious Studies 385.)

386 Voices of the Holocaust (3) (Same as Religious Studies 386.)

395 The Crusades and the Medieval Christian-Muslim Relations (3) (Same as History 395)

405 Modern Jewish Thought (3) Writing emphasis course. (Same as Religious Studies 405.)

406 Early Christian and Byzantine Art, to 1550 (3) Writing emphasis course. (Same as Art History 425 and Medieval Studies 371.)

431 Medieval Art of the West, 800-1400 (3) Writing emphasis course. (Same as Art History 431 and Medieval Studies 381.)

LATIN (257)

111-112 Beginning Latin (3,3) Must be taken in sequence. Not available to students eligible for Latin 150.

150 Latin Transition (3) This course is designed to prepare students for enrollment in Latin 251. Prereq: Two years of high school Latin and a score on the Latin placement exam below that required for admission to Latin 251. Since 150 is a review of elementary Latin, students who receive credit in this course may not also receive credit for any other 100 level Latin course and therefore also forfeit the six hours of elementary language credit awarded through placement examination.

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

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) (For advanced students in Latin. Oratory, historical writings and poetry of ancient Rome, in the original Latin. May be repeated for credit. Maximum 9 hours. Prereq: 351-352 or consent of instructor.

435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. Prereq: Consent of instructor.

LATIN-AMERICAN STUDIES (600)

251-252 Introduction to Latin American Studies (3,3) (Same as History 255-256.)

311 Aspects of Luso Brazilian Literature (3) (Same as Portuguese 311.)

313 Peoples and Cultures of Mesoamerica (3) (Same as Anthropology 313.)

314 Peoples and Cultures of South America (3) (Same as Anthropology 316.)

315-316 Aspects of Luso-Brazilian Literature (3,3) (Same as Portuguese 315-316.)

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

331 Introduction to Hispanic Culture (3) (Same as Spanish 331.)

333 Survey of Spanish-American Literature: 1700 to Present (3) (Same as Spanish 333.)

360 History of Latin America (3) (Same as History 360.)

361 History of Latin America (3) (Same as History 361.)

372 Geography of Middle America (3) (Same as Geography 372.)

373 Geography of South America (3) (Same as Geography 373.)

401 Cultural Plurality and Institutional Changes in Latin America (3) (Same as Spanish 401.)

402 Latin American Studies Seminar (3) (Same as Spanish 402.)

431 Topics in Literature and Language of the Portuguese Speaking World (3) (Same as Portuguese 431.)

432 Topics in the Literature and Language of the Portuguese Speaking World (3) (Same as Portuguese 432.)

456 Latin American Government and Politics I (3) (Same as Political Science 456.)

460 History of Brazil (3) (Same as History 460.)

461 Cuban Revolution in Historical Perspective (3) (Same as History 461.)

462 History of Mexico (3) (Same as History 462.)

463 Modern Latin American History in Film (3) (Same as History 463.)
465 Latin American Film and Culture (3) (Same as Spanish 465 and Cinema Studies 465.)
475 Studies in Latin American History (3) (Same as History 475.)
479 Disencheded Texts in Hispanic Literature (3) (Same as Spanish 479.)
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

LEADERSHIP STUDIES ( 615)
200 Student Leadership Development (3) Designed to enhance the knowledge and skill of emerging student leaders and includes theoretical and experiential content related to leadership role, skill, and effectiveness. Satisfactory/No Credit grading only.

LEGAL STUDIES (617)
300 Mass Communication Research Methods (3) (Same as Communications 300.)
330 Law in American Society (3) (Same as Political Science 330.)
331 Sociological Research (3) (Same as Sociology 331.)
340 Women, Politics, and the Law (3) (Same as Women's Studies 340.)
344 Professional Responsibility (3) (Same as Philosophy 344 and Religious Studies 344.)
362 Roman Law (3) (Same as Classics 362.)
400 Mass Communication Law and Ethics (3) (Same as Communication 400.)
424 Psychology and Law (3) (Same as Psychology 424.)
430 United States Constitutional Law: Sources of Power and Restraint (3) (Same as Political Science 430.)
431 United States Constitutional Law: Civil Rights and Liberties (3) (Same as Political Science 431.)
442 Administrative Law (3) (Same as Political Science 442.)
451 Criminal Justice (3) (Same as Sociology 451.)
455 Society and Law (3) (Same as Sociology 455.)
469 Freedom of Speech (3) (Same as American Studies 469 and Speech Communication 469.)
470 International Law (3) (Same as Political Science 470.)
490 Language and Law (3) (Same as English 490.)
496 The Rhetoric of Legal Discourse (3) (Same as English 496.)

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: Consent 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.)
423 The Development of Diachronic and Synchronic Linguistics (3) Development of Western linguistic thought from the Hebrews and Greeks through modern times. Readings from Boas, Sapir, Bloomfield, and others. Prereq: 9 hours of courses required for the Linguistics major (300-level or above) or consent of instructor.
425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, Russian 425, and Spanish 425.)
426 Methods of Historical Linguistics (3) (Same as French 426, German 426, Russian 426, and Spanish 426.)
429 Romance Linguistics (3) (Same as French 429 and Spanish 429.)
431 Topics in Hispanic Linguistics (3) (Same as Spanish 430.)
435 Structure of the German Language (3) (Same as German 435.)
436 History of the German Language (3) (Same as German 436.)
471 Sociolinguistics (3) (Same as English 471 and Sociology 471.)
472 American English (3) (Same as English 472.)
474 Teaching English as a Second or Foreign Language I (3) (Same as English 474.)
475 Teaching English as a Second or Foreign Language II (3) (Same as English 475.)
476 Second Language Acquisition (3) (Same as English 476.)
477 Pedagogical Grammar for ESL Teachers (3) (Same as English 477.)
485 Special Topics in Language (3) (Same as English 485.)
490 Language and Law (3) (Same as English 490.)
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

LOGISTICS AND TRANSPORTATION (624)
301 Introduction to Logistics (3) Business logistics as a strategic area within the firm. Role of materials management and physical distribution, activities such as customer service, order processing and information flow, transportation, warehousing, purchasing, inventory, and system design and organization. Overview of supply chain operation.
302 Introduction to Transportation (3) Transportation and distribution as a vital 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. Prereq: Economics 201.
400 Special Topic in Logistics and Transportation (3-6) Seminar in current problem area in logistics and transportation. Topic announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prereq: Consent of instructor.
411 Logistics and Transportation Analytical Methods (3) Introduction to the principles of analytical tools and models used in logistics and transportation; applications of analytical tools to logistics and transportation problems; using analytical methods to support negotiations and decision making.
441 Global Logistics and Transportation (3) Multinational logistics strategy, import-export process, global sea, surface and air operations comparative transport systems analysis. Prereq: 301, 302.
450 Logistics Information Infrastructure Strategy and Design (3) An introduction to the use of information tools to design and create applications to support business processes in networked organizations. Students will be expected to design and use groupware, both static and dynamic web sites, relational data base applications and e-commerce applications.
460 Seminar in Logistics and Transportation Strategy (3) Senior seminar in development of strategy for logistics and transportation in a supply chain perspective. Prereq: 411, Statistics 365, Senior Standing.
461 Independent Study (1-6) Directed research on subject of mutual interest to student and staff member. May be repeated. Maximum 6 credit hours. Prereq: Consent of instructor.
479 Honors: Executive-In-Residence in Transportation and Logistics (3) Student interaction with top-level logistics and transportation executives. Focus on the strategic decision-making process. Prereq: Consent of instructor.

MANAGEMENT (625)
203 Management Information Systems (3) Management of information concepts and applications. Using the computer as a tool to source, organize, and analyze data. Designing information systems to meet business needs. Emphasis on spreadsheets, database management systems, telecommunications, and information technology. Prereq: Open to College of Business Administration students only. E
301 Principles of General and Operations Management (3) Basic functions of general management and the concepts and techniques used in operations management. Includes lectures and discussion/problem solving sessions. Prereq: Statistics 201, E
311 Labor Relations and Collective Bargaining (3) American labor history, structure, and contemporary unions, nature of collective bargaining, and dispute settlement.
321 Organizational Structure and Behavior (3) Behavioral processes in organizations; motivation, leadership, decision making, communication; behavioral consequences; group behavior, informal organizations, organizational structure, conflict, politics, change and development. Prereq: 301, F, S
341 Operations Management I (3) Design of operations systems. Process and methods analysis and measurement, location and layout, project management, operational forecasting. Prereq: 301, Statistics 201, F, S
401 Business Strategy/Policy (3) Strategy and policy which affect the character and success of the total enterprise. Capstone course which integrates all functional areas in the formulation and implementation of strategy which will enable the organization to reach objectives. Major writing requirement. Prereq: Completion of business core courses and senior standing. Must be admitted to a business major. E
421 Total Quality Management (3) TQM is characterized by three main principles: customer focus, continuous improvement, and teamwork. Course focuses on the managerial perspective that is necessary to successfully implement and sustain a TQM philosophy, while briefly introducing its underlying statistical concepts. Prereq: Statistics 201, Management 301, F, S
431 Personnel Management (3) Theory, methods and issues pertaining to successful personnel management. Prereq: 301, senior standing, F, S
432 Implementation and Evaluation of Personnel Programs (3) Methods of identifying, developing, implementing and evaluating various personnel programs. Prereq: 431, senior standing, S
440 Organizational Psychology (3) (Same as Psychology 440.)
441 Operations Management II (3) Planning and control functions of operations systems: aggregate planning, scheduling, systems management. Prereq: 341.
471 International Management (3) Factors significant to the manager in international business activities.
492 Management Off-Campus Study (1-6) Satisfactory, No Credit grading only. Prereq: Consent of Instructor.
493 Independent Study (3) Readings, research, and special projects. Prereq: Consent of instructor. May be repeated one time for credit.
MANAGEMENT SCIENCE (627)

310 Management Science and Managerial Decision Support Systems (4,4) Introduction to quantitative decision models and their integration into microcomputer-based decision support systems. Topics include linear, dynamic and non-linear programming, as well as decision analysis, Markov, inventory and queuing models. Prereq: Mathematics 123, 125 and Statistics 201.

310 Buyer Behavior—Analysis for Marketing (3) Comprehensive framework of consumer behavior concepts and processes. Emphasis on marketing information systems, design and control of marketing programs. Prereq: Marketing 301 and Statistics 201.

320 Marketing Research and Information Planning (3) Marketing Research process from its inception to implementation. Study of marketing's role in the organization. Student should be able to critically evaluate the merit of a research project as well as possess the ability to design a sound marketing project. Major writing requirement. Prereq: Marketing 301 and 302. (Same as Economics 320)

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

410 Advertising Management (3) Business side of advertising including budget, account representation, strategic planning, measuring ad effectiveness, advertising ethics. Managerial focus emphasizing types of decisions continually confronting promotion executives. Prereq: Accounting 201-202; Economics 201; Statistics 201; Marketing 301; and Marketing 310; or consent of instructor.

420 Sales Force Management (3) Personal selling function and its management in the business firm. Focuses on the activities and problems of first line sales managers. Subjects include organization, recruiting, motivating, forecasting, territory design, and evaluation. Prereq: Marketing 301 and Statistics 201.

430 Marketing Analysis and Strategy (3) Approaches for finding markets and evaluating them for opportunity. Concepts, types of information and analysis techniques combined and applied in a strategic framework. Major writing requirement. Prereq: Accounting 201, 202; Economics 201; Statistics 201; and Marketing 301, 310, 320.

440 International Marketing (3) Specific issues involved in entering overseas markets and conducting marketing operations on a global as opposed to a "domestic" scale. Topics include international operations, assessment of marketing opportunity, joint ventures, timing and sequencing of entry, global strategic planning. Prereq: Marketing 310.

450 Services Marketing (3) Specific issues involved in developing marketing strategy for service firms. Takes the perspective of both customer and the manager, understanding determination and delivery of service quality. Prereq: Marketing 310.

470 Marketing Forecasting (3) Overview of techniques, systems, and management approaches used to develop sales forecasts of markets. Performance measurement of sales forecasting and the use of forecasts in business planning are also covered. Prereq: Marketing 301, 310, and 350.

492 Marketing Off Campus Study (1-6) Satisfactory. No Credit grading only. Prereq: Consent of instructor.

493 Independent Study (1-6) Directed research on subjects of mutual interest to student and staff member. May be repeated. Maximum six hours credit. Prereq: Consent of instructor.

497 Honors I (3) Topics may include nonbusiness marketing applications, macroeconomic issues, market segmentation, international marketing, services marketing, marketing channels and related issues. Prereq: Consent of instructor.

MATHEMATICS (641)

100 Intermediate Algebra (3) First degree equations and inequalities, polynomials, rational expressions, exponents, graphing, second degree equations and inequalities, systems of equations, introduction to exponential and logarithm functions. The course is designed to prepare students for enrollment in Mathematics 110, 115, 119, 130, 201, and 202. Course does not count toward the number of hours required for graduation, does not fulfill any mathematics requirement. A, B, C, NC grading.

109 Algebra Workshop (1) Self-paced tutorial center for students taking Math 119, 130, or 141 who need additional help (as determined by placement exams, assessment exams, or classroom performance). Individual and computerized instruction on various pertinent algebraic skills. Topics covered include a student's test pass the Math 119, 130, or 141 class in which he/she is currently enrolled. May be taken for credit three times. S/N grading.

110 Algebraic Reasoning (3) A course in the applications of elementary mathematics to life in the modern world. Includes applications in financial mathematics, consumer mathematics, and other areas. Students preparing to take 123-125 should take 119 instead of 110. Prereq: Two years of algebra; or one year of algebra in high school and either satisfactory placement test scores or Math 100. This course should not be taken to remove an entrance requirement.

115 Statistical Reasoning (3) An introduction to probability and statistics without calculus. Not available for credit to students in the College of Business Administration. Prereq: Two years of algebra and one year of geometry. May be satisfactory/unsatisfactory. Prereq: Consent of instructor.

119 College Algebra (3) A review of algebraic functions, equations, and inequalities for students who satisfy the course prerequisites for 123 or 125 but whose placement test scores indicate additional preparation is necessary. Students who receive a grade of C or better in any course numbered 123 or higher (except for 200) may subsequently receive credit for 119. Prereq: Two years of algebra and one year of geometry and either satisfactory placement test scores or Math 100. This course should not be taken to remove an entrance requirement.

123 Finite Mathematics (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Exponential and logarithmic functions, interest and annuities, linear systems and matrix, probability. Prereq: Two years of algebra; or one year of geometry in high school plus satisfactory placement test score, or 119 or 130.

125 Basic Calculus (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Calculus of algebraic, exponential, and logarithmic functions, with applications. No student who has received credit for Math 141 or 152 with a grade of "C" or better may subsequently receive credit for 125. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or 119 or 130.

130 Precalculus (4) Review of algebra, logarithmic, exponential, and trigonometric functions for students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional preparation is necessary. Students who receive a grade of C or better in 141 or 151 may not subsequently receive credit for 130. Prereq: 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, emphasizing students of science, engineering, mathematics, and computer science. Differential and integral calculus with applications; Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or Math 130.

147-148 Honors: Calculus I, II, (4,4) Honors version of 141-142 for well-prepared students. Qualified students are invited to enroll. Prereq: Satisfactory scores on the AP Calculus AB or BC exams. Prereq: Consent of department.

151-152 Mathematics for the Life Sciences I, II, (3,3) For students majoring in the Life Sciences. Does not serve as a prerequisite for 231 or 241. Topics include: descriptive statistics, linear regression, discrete probability, matrix algebra, difference equations, calculus, and differential equations. Emphasis on applications in the life sciences, including on the solution of computer projects. 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. Credit will not be given for both 147 and 141 or 152.

171 Computer Literacy for Mathematics (3) Introduction to computers, the internet, mathematical packages and programming for prospective mathematics majors. Prereq: Math 141. S/N only.

200 Matrix Computations (1) An introduction to matrix computations and programming in linear algebra and matrix theory for students in the College of Engineering and College of Business Statistics majors only. Students may receive credit in both 200 and 251 but may not subsequently receive credit for 200. Prereq: 241 or 247.

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

202 Probability, Statistics, and Euclidean Geometry (3) Shorthand methods of elementary mathematics, probability, measurement of central tendency and variance. Basic plan and three-space geometry, congruence and similarity, constructions with compass and straightedge, transformations, area and volume measurement. Turtle graphs. Prereq: Two years of algebra and one year of geometry in high school and satisfactory placement test score.


241 Calculus II (4) Calculus in two or more dimensions. Includes solids, partial differentiation, multiple integration, and selections in vector calculus. Prereq: 142 or 148.

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

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

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

299 Studies in Mathematics (1-3) May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

300 Introduction to Abstract Mathematics (3) Algebra of sets, functions, relations, mathematical induction, algebraic structure of the real number system, order properties, and completeness. Prereq: Math 142.

323 Probability and Statistics (3) Discrete and continuous random variables; conditional probability, expectation, moment generating functions; law of large numbers, central limit theorem. Elements of statistical inference, estimation, and hypothesis testing. Prereq: 241 (or 247) and 300.

341 Analysis I (3) Introduction to the theory of the real number system, limits of sequences, and functions of a real variable. Prereq: 241 (or 247) and 300.

351 Algebra I (3) Introduction to abstract algebra, emphasizing integers and polynomial rings. Prereq: 251 (or 257) and 300.

371 Numerical Algorithms (3) Development and applications of fundamental algorithms for finding roots of equations, solving systems of linear equations, interpolation, fitting data using least-squares, differentiation, integration, and solving ordinary differential equations. Prereq: A high level programming language (e.g., 171 or Computer Science 102), 231, 241 or 247, and basic matrix algebra (e.g., 200 or 251 or 257).

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: 251 (or 257) and 300. 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 or 147.

404 Applied Vector Calculus (3) Topics from multivariable and vector calculus including line and surface integrals, the divergence theorem and the theorems of Gauss and Stokes. Prereq: 241 or 247.

405 Models in Biology (3) Difference and differential equation models of biological systems. Prereq: 142 or 148 or 152.

411 Mathematical Modeling (3) Construction and analysis of mathematical models used in science and industry. Projects emphasized. Prereq: 231, 241, and 251 or 257. Writing emphasis course.

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

423 Probability I (3) Axiomatic probability, multivariate distributions, conditional probability and expectations, methods of moment generating and characteristic functions. Laws of large numbers and the central limit theorem. Prereq: 300-level probability or consent of instructor.

424 Probability II (3) Elements of stochastic processes: Random walk, Markov chains and Poisson processes. Other topics as selected by the instructor. Prereq: 423.

425 Statistics (3) Derivation of standard statistical distributions including t, F and X²; independence of sample statistics; basic limit theorems; point and interval estimation, Bayesian estimates; statistical hypotheses, Neyman-Pearson theorem; likelihood ratio and other parametric and nonparametric tests; sufficient statistics. Prereq. 423 or consent of instructor.


443 Complex Variables (3) Introduction to the theory of functions of one complex variable, including residue theory and contour integrals. Prereq: 241 and 247.

445-446 Advanced Calculus I, II, (3,3) Introduction to the theory of sequences, series, differentiation, and Riemann integration of functions of one or more variables. Prereq: 241 or 247 and 300, or consent of instructor.

447-448 Honors: Advanced Calculus I, II, (3,3) Honors version of 445-446. Prereq: 241 or 247 and 300, or consent of instructor.

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

455-456 Abstract Algebra I, II, (3,3) Introduction to algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prereq: 251 (or 257) and 300, or consent of instructor.

457-458 Honors: Abstract Algebra I, II, (3,3) Honors version of 455-456. Prereq: 251 (or 257) and 300, or consent of instructor.

460 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometry. Stressing proof technique and critical reasoning. Models of Non-Euclidean geometries. Prereq: 300, or consent of instructor.

461 Topology (3) Includes topology of line and plane, separation properties, compactness, connectedness, continuous functions, homeomorphisms, continua, and topological invariants. Prereq: 241 (or 247) and 300, or consent of instructor.

471 Numerical Analysis (3) Introduction to computation, instabilities, and rounding. Interpolation and approximation by polynomials and piecewise polynomials. Quadrature and numerical integration of ordinary differential equations, including stiff systems. Prereq: 371 or consent of instructor. (Same as Computer Science 471.)

472 Numerical Algebra (3) Direct and iterative methods for systems of linear equations, Solution of a single nonlinear equation and nonlinear systems. Orthogonal decomposition, least squares and the algebraic eigenvalue problem. Prereq: 371 or consent of instructor. Recommended: 453. (Same as Computer Science 472.)

475 Industrial Mathematics (3) Modeling, analysis, and computation applied to scientific/technical/industrial problems. Prereq: 231 and familiarity with an operating system and a programming language (e.g., 171, 371, or C.S. 102).

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

495 Seminar in Actuarial Mathematics (1-3) Introduction to problems and problem solving techniques in actuarial sciences with emphasis on the mathematical topics included in the initial Actuarial Exams. Prereq: 241, 251, and 323.

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 credits for which they are prepared to work. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

MATHMATICS EDUCATION (642)

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

MEDICAL TECHNOLOGY (669)

410-411 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 of bacteria. Qualitative and quantitative 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 practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radioimmunoassay, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques, physical characteristics, detection, and use of short half-life radioactive materials for in vivo procedures such as radioimmunoassay which utilize radiotopes.

430-431 Hematology and Clinical Microscopy (4,4) Principles, theories, and instrumentation related to qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative visual analysis of blood and bone marrow smears, electron microscopy, and tissue preparation. Emphasis on microscopic identification of cells and the significance and correlation of laboratory data.

440-441 Immunohematology (3,3) Theory and practice of blood group identification, serologic and blood group compatibility. Standard technical practices used in evaluating blood typing, crossmatching, antibody detection, and preparation of blood components for transfusion. Safety control methods standard to efficient blood bank.

450 Clinical Serology and Immunology (2) Performance and interpretation of blood group serological and immunological studies 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 devices, 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 (1) Seminars in basic principles of management, ethics, and health education and teaching methods. Comprehensive examination covers entire course.

MEDIEVAL STUDIES (674)

201-202 Medieval Civilization (3,3) Introduction to basic themes in the medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, social and political history. Writing-emphasis course.

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, rational, lyric, epic, biographical. Includes Augustine’s Conferences, Bede’s Commentary on the Song of Songs, Peter Abelard’s History of My Calamities. Should be taken in sequence with 261. Writing-emphasis course.

312-313 Medieval History (3,3) (Same as History 312-313.)

322 Medieval Philosophy (3) (Same as Philosophy 322 and Judic Studies 322.)

372 Northern European Painting, 1350-1600 (3) (Same as Art History 441.)

381 Medieval Art of the West, 800-1400 (3) (Same as Art History 431.)

382 The Art of Italy, 1250-1450 (3) (Same as Art History 451.)

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.

405 Medieval Literature (3) (Same as English 401.)

406 Chaucer (3) (Same as English 402.)

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.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

MICROBIOLOGY (684)

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. E

310 Introduction to Microbiology (3) Introduction to bacteria and viruses including physiology, metabolism, and genetics of bacteria and replication and expression of viral infection. General pathogenicity, mechanisms of resistance to disease. Prereq: Biology 140. Coreq: Biology 240. F, Su

319 Introductory Microbiology Laboratory (2) Basic
leadership theory, principles and skills, with emphasis on effective oral communication. Students present a military subjects subject. Briefs taught include rifle marksmanship, small unit training, and optional field training exercises. Prereq: United States citizen; freshman or sophomore standing. Letter grade only. 3 hours and 1 hour lab. F

400 Advanced Camp-PRACTICUM (4) 249 contact hours of instruction and evaluation of leadership skills, group dynamics, communication skills, decision-making skills during the summer between the Junior and Senior year. Prereq: 310, 320. Letter grade only. Su

410 Command and Staff Functions (4) Command and staff duties and relationships including logistics, personnel systems, efficiency reports, correspondence, training management, briefings, counseling, manpower force positioning, and noncommissioned officer relationships. Prereq: 310 and 320, 400 or consent of instructor. Letter grade only. 3 hours and 1 hour lab. F

430 U.S. Military History, 1754 to the Present (3) (Same as History 451.)

493 Military Leadership Topics (1) Topics on principles and styles of military leadership. May be repeated for additional credit; provided topic is different. Maximum 4 hours. Letter grade only. Prereq: Consent of instructor. F, Sp

200 Conducting Laboratory (1) A laboratory course designed to afford conducting opportunities for student conductors and to acquaint students with a variety of music literature and techniques. May be repeated. Can be taken as elective credit by any student except those registered for MUS Ed 310 and 320. Letter grade only.

201 Field Experience in General Music (1) Observing and assisting in an approved elementary or middle school classroom. May be repeated. Maximum 3 hours. Satisfactory/No Credit only.

210 Class Woodwind Methods I (1) Structure, use, techniques of playing, care and repair of the oboe and bassoon in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

211 Class Woodwind Methods II (1) Structure, use, techniques of playing, care and repair of the flute and saxophone in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

220 Class Brass Methods I (1) Structure, use, techniques of playing, care and repair of the trumpet, french horn, and trombone in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

221 Class Brass Methods II (1) Structure, use, techniques of playing, care and repair of the lower brass instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

230 Class Percussion Methods I (1) Ethnic instruments, recording percussion trends and concepts, percussion literature and training concepts, traditional and non-traditional percussion accessories, steel drums. Letter grade only.

240 Class String Methods I (1) Structure, use, techniques of playing, care and repair of the lower string instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

241 Class String Methods II (1) Structure, use, techniques of playing, care and repair of the upper string instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

250 Functional Piano for Teachers (1) Practical piano skills for the general/vocal teacher who does not have a keyboard instrument as the applied principal. Transposes and accompaniments. May be repeated once for credit. F, Sp

260 Eurhythmics (1) Principles and practice of eurhythmics, as developed by Emile Jaques-Dalcroze. Prereq: Consent of instructor. May be repeated once for credit. Maximum 2 hours. Letter grade only. F, Sp

300 Music for Elementary Teachers (2) Singing, rhythmic activities, instrumental activities, listening, music
Courses of Instruction

reading, and creative activities appropriate for the elementary grades. For elementary education majors only. Prereq: Admission to Teacher Education Program. Letter grade only. F, S.

350 Field Experience in Music Education (1) Prereq: Consent of instructor and admission to Teacher Education Program. May be repeated. Maximum 3 hours. Satisfactory/No Credit only. E

400 Student Teaching in Music (12) Full-time teaching practice in an approved public school. Prereq: Admission to the teacher education program and completion of all Music Education courses required for the Bachelor of Music degree (four-year alternative) in Music Education. Coreq: Music Education 401.

401 Senior Seminar (0) Issues related to the music teaching profession as experienced in Student Teaching. Coreq: Music Education 400.

420 Music Methods for the Junior High School and Middle School (3) Methods and materials for teaching vocal, instrumental, and general music at the junior high school or middle school level. Prereq: Admission to Teacher Education Program and consent of instructor. Letter grade only. F

430 Music Methods for High School (3) Methods and materials for teaching vocal and instrumental music at the high school level, including charting for the marching band. Prereq: Admission to Teacher Education Program and consent of instructor. Letter grade only. F

440 Marching Band Techniques (2) Functions, organization, and direction of a school marching band. Letter grade only.

441 String Orchestra Pedagogy and Rehearsal Techniques (2) Function, organization, and direction of a school orchestra program. Letter grade only.

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

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

493 Independent Study in Music Education (1-5) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E

MUSIC ENSEMBLE (708)

301-501 Woodwind Choir (1,1) May be repeated.

302-502 Jazz-Saxophone Ensemble (1,1) May be repeated. Maximum 4 hours.

303-503 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.

304-504 Jazz Ensemble (1,1) May be repeated.

305-505 Studio Orchestra (1,1) May be repeated. Maximum 12 hours.

306-506 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.

314-514 Brass Choir (1,1) May be repeated.

315-515 Chamber Music Ensemble (1,1) May be repeated. Maximum 12 hours.

316-516 Steel Band (1,1) May be repeated.

320-520 UT Singers (1,1) May be repeated.

330-530 Chamber Singers (1,1) May be repeated.

334-534 Saxophone Choir (1,1) May be repeated.

340-540 Opera Theatre (1,1) May be repeated.

350-550 Concert Band (1,1) May be repeated.

352-552 Symphonic Band (1,1) May be repeated.

353-553 Wind Ensemble (1,1) May be repeated.

354-554 Pep Band (1,1) May be repeated.

356-556 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.

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)

140 Fundamentals of Performance (1-2) Private instrumental or vocal study, one or two half-lessons per week. (1 hour credit - elective, secondary or minor; two hours credit - major.) This course is designed to prepare students for entrance into the upper-division performance classes and general auditions. Cannot be used to satisfy applied music requirements at the principal level in the B.M. or the B.A. degree in Music. May be taken for a maximum of 4 credit hours per instrument. Admission by audition. A, B, C, NC. Requires payment of Applied Music fee, F, Sp

200 Solo Class (0)

301 Junior Recital (0)

310 Practical Experience in Arts Management (3) Arts management practicum with approved art activity. Individualized work with music instructor in conjunction with supervised experience in arts organization management. For music majors and minors only. Prereq: Consent of instructor. May be repeated for credit in another area of arts management.

401 Senior Recital (0)

411 Lecture Recital (0)

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

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

MUSIC HISTORY (709)

110 Introduction to Music in Western Culture (3) Developing listening skills and understanding of Western music from the ancient world through the 20th century. For non-music majors. Writing-emphasis course. E

115 Music in the United States (3) Explores musical traditions of the United States. For non-music majors. Writing-emphasis course.

120 History of Rock (3) Study and appreciation of rock music, its origins in blues and rock and roll, its development and cultural dimensions to the present. Writing-emphasis course. F, Sp

200 Introduction to Music Literature (3) Basic forms of music and accepted masterworks through chronological approach. For music majors and minors only. Sp


290 Introduction to World Musics (3) Survey of music of representative cultures from Africa, Asia, Oceania, and the Americas with a focus on music as sound and as part of the human condition. Also includes an emphasis on applying basic music terminology to developing listening skills.

310 Introduction to African-American Music (3) History of African music, blues, gospel music, and jazz, with emphasis on black artists and their contributions. (Same as African and African-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.)

340-341 Contemporary Trends in American Church Music I, II (2,2) Survey of sacred music in popular contemporary style, emphasizing analysis and evaluative criteria. Must be taken in sequence. 340 includes theory and keyboard harmony appropriate to the style. 341 includes composition and arranging within the style. Prereq: Music Theory 210-220.

350 History of Jazz (3) Origin, development, and styles of jazz music and its exponents. Cultivation of special listening techniques. Writing-emphasis course. (Same as African and African-American Studies 350.) F, Sp

380 Music in World Cultures (3) Examines music from an ethnomusicological perspective focusing on musical performance and the interrelationships of music, culture, and daily life. The course surveys music from a variety of cultures through a series of case studies. Prereq: 210-220, or permission of instructor.

390 World Music (3) Basic attitudes and techniques of ethnomusicology. Survey of music cultures throughout the world, with emphasis on the Pacific, Near East, Asia, and Europe.

400 Music History Survey (3) History of music with emphasis on genres, style changes, and cultural forces. Western European tradition from 400 to 1900. Recommended as a review course for graduate students. Prereq: Consent of instructor.

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

450 Composer Seminar (3) Life and works of a single composer. Subjects vary.

460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music, and role of art in society. Aesthetic viewpoints of individuals and historical eras through selected writings. Writing-emphasis course.

480 Music in Christian Worship (3) Hymnody, liturgies, and liturgical music.

493 Independent Study (1-15) Prereq: Consent of department head. May be repeated for credit.

MUSIC INSTRUMENT (710)

310 Brass Literature and Pedagogy (3) Survey of brass solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied brass faculty and class members. Prereq: Consent of instructor.

320 Woodwind Literature and Pedagogy (3) Survey of woodwind solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied woodwind faculty and class members. Prereq: Consent of instructor.

330 Percussion Literature and Pedagogy (3) Survey of percussion solo and ensemble literature, including instruc-
structural materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied woodwind faculty and class members. Prereq: Consent of instructor.

340-350 String Literature and Pedagogy I, II (3,3) 340-350 Survey of string techniques, issues, research and pedagogies; topical presentations by the applied string faculty and graduate students. Development of the violin family of instruments and bows; survey of string literature, performances, and performance styles; application of historical, analytical, and pedagogical procedures to performance. Prereq: 340 and applied enrollment in strings at 300 level or above or consent of instructor.

490 Instrumental Conducting (3) Knowledge and skills in instrumental conducting; various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Education 320 or equivalent.

**MUSIC JAZZ (711)**

110 Jazz Theory (2) Fundamentals of the jazz language, including terminology, chord symbols, chord scales, and chord progressions. Prereq: Music Theory 110.

120 Analysis of Jazz Styles (2) Individual improvisatory styles through analysis of their transcribed solos. Training and function of the ear in music. Transcription of solos from recordings and preparation of analysis. Prereq: 110.

130-140 Jazz Piano I, II (1,1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody-playing and improvisation for right hand. Must be taken in sequence.

160 Introduction to Styles in Jazz Drumming (2) Examination of major composers and performers who have contributed significantly to creation of principal jazz musical ideas. Prereq: Consent of instructor.

210-220 Jazz Improvisation I, II (2,2) Study and application of principles of improvisation, including nomenclature, chord progressions, chord-scales, patterns, melodic development, and tune styles. Prereq: 110.

310 Jazz Composition and Arranging (2) Prereq: Consent of instructor.

320 Jazz Band Arranging (2) Arranging and scoring for the Big Jazz Band. Prereq: Consent of instructor.

410 Advanced Improvisation (3) Development of individual skills and solving individual problems in jazz improvisation. Prereq: 210 and 220.

420 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz, designing and administering jazz programs, and rehearsal techniques for jazz ensembles. Prereq: Studio Music and Jazz major or consent of instructor.

**MUSIC KEYBOARD (712)**

110-120 Class Piano I, II (1,1) Development of keyboard skills in reading, technique, repertoire, harmonization, and transposition. Must be taken in sequence. Prereq: successful completion of music audition and theory placement exam. Intended for music majors and minors.

210-220 Class Piano III, IV (1,1) Continuation of 110-120; 220 completes piano competency requirement; must be taken in sequence.

230 Keyboard Harmony (1) Harmony recognition; figured bass realization, and improvisation. Prereq: Music Theory 110-120.

240 Church Service Playing I (1) Practical skills applicable to the use of the organ in church services, including improvisation, hymn playing, and accompanying. Prereq: 230 and organ proficiency at the 200 level.

260 Early Keyboard Instruments (1) An introduction to the harpsichord, clavichord, and baroque organ. Emphasis on appropriate playing techniques. Brief survey of instrument building and historical performance practice issues. Prereq: Ability to perform keyboard literature at the 180, 185, or 190 level.

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

**MUSIC PERFORMANCE (713)**

Prerequisites: by audition only. Music General 140 or equivalent.

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.

176-276-376-476-576 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.

294-394-494-594 Composition (1-3) May be repeated. Prereq: Music Theory 210 and 230, grade C or higher, or consent of instructor.

295-395-495 Composition with Electronic Media (1-3) May be repeated. Prereq: Music Theory 210 and 230, grade C or higher, or consent of instructor.

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

**MUSIC TECHNOLOGY (717)**

290 Sound Recording Techniques (3) Theory and application of tape recording and 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.

340 Introduction to Computer Music Transcription (3) Exercise in notation, playback and publishing incorporating elements of word processing, graphic design, sequencing and page layout. Study of Music Instrument Digital Interface protocol as it applies to computer music work station design. Prereq: consent of instructor.

390 Sound Synthesis Techniques (3) Studio and real-time applications of synthesizers. Historical background; theory concepts, equipment interface and usage, analysis of sounds and compositions. Prereq: 290 or consent of instructor.

**MUSIC THEORY (714)**

100 Fundamentals of Music (3) Theory and practice of basic elements of music. Writing-emphasis course. F, S

110-120 Theory I, II (3,3) Materials of music including basic chord structures through sequence and modulation. Exercises in analysis, composition, and improvisation of music with emphasis on common practice. Must be taken in sequence. Prereq: 110 - successful completion of music audition and theory placement exam; 120 - Music Theory 110, grade C or higher.

130 Ear Training I (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmic models. Includes computer lab. Should be taken concurrently with 110 A, B, C.

140 Ear Training II (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmic models. Includes computer lab. Should be taken concurrently with 120.

210-220 Theory III, IV (3,3) Materials of music including advanced chord structures and analytical methods. Emphasis on basic technique of Baroque, Classic, and Romantic periods. Exercises in analysis, composition, and improvisation of music. Must be taken in sequence. Prereq: Music Theory 120, grade C or higher, or consent of instructor; 220 - Music Theory 210, grade C or higher, or consent of instructor.


310 Form and Analysis (3) Study and practice in analysis of forms of music from smallest structural units to large compound forms. Prereq: Music Theory 210 and 240, grade C or higher.

320 Instrumentation (2) Basic techniques in scoring for voice, brass, woodwind and string choirs and percussion. To be taken by music and music education majors. Prereq: Music Theory 210 and 230, grade C or higher.

400 Survey of Music Theory (3) Emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as a review course for graduate students. Prereq: Consent of instructor.

410 Ear Training Review (1) Review and application of harmonic and melodic dictation skills for graduate and advanced undergraduate students. Prereq: 240 or the equivalent. Required of entering graduate students with a deficiency in ear-training. Satisfactory/No credit grading only.

420 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. To be taken by theory and composition majors. Prereq: Music Theory 213 and 230, grade C or higher.

430-440 Counterpoint II, III (3,3) 430—Species counterpoint in modal and tonal styles with emphasis on works of Palestrina and J.S. Bach. Prereq: 220. 440—Writing of contrapuntal forms of the 18th century and fugue. Prereq: 340-430. Study of analysis of works from the 18th through the 20th centuries. Prereq: 430-440 Music Theory 213 and 230, grade C or higher. 440: Music Theory 430, grade C or higher.
Courses of Instruction
Basic concepts of drug action and interactions. Major drug classifications. Prereq: Chem 100-110, and at least 6 semester hours of Anatomy and Physiology. Sp

361 Health Maintenance and Restoration Across the Life Span (5) Focus on health maintenance and restoration in nursing practice with children or adults experiencing common occurring acute or chronic illness. 2 lec, 3 lab. Prereq: N311, N319, N333, or N341, or RN status. Coreq: N406 and N451. F, Sp

381 Professional Leadership Issues I (2) Focus on concepts and strategies for management and leadership as a professional nurse. Emphasis on problem identification, individual responsibility, decision making, communication, confrontation, collaboration, conflict resolution, coordination, delegations, supervision, and team building to support safe client care. Prereq: N311, N331 or RN status. F, Sp

382 Health Promotion and Maintenance in Community (4) Focus on nursing care of at risk populations. Design and implement interventions to promote and maintain health. Includes assessment of socio-cultural values, environmental factors, health education, and community resources. Prereq: 311, 319, 333, 341, or RN status. Coreq or Coor: 351, 361. 2 lecture, 2 lab. F, Sp

401 Family Health Nursing (6) Nursing needs of families in health and in crisis. Provision of comprehensive care to families during pregnancy and birth, and during postpartum phases of family development. Application of theories of human growth and development, family dynamics, and crisis intervention to nurses care to families experiencing normal pregnancy and child birth and to those experiencing such health problems or complications as high risk, low birth weight infants, and developmental delays in children/parent/child relationships, or gynecologic disturbances. 3 lectures, 3 lab. Prereq: All 300 level clinical nursing courses or RN status. F, Sp

403 Health Promotion and Maintenance in Child Bearing Families (5) Focus on promotion, maintenance, and restoration of reproductive health. Emphasis on therapeutic relationships with childbearing families for long term maintenance of health care and lifestyle. 3 lec, 2 lab. Prereq: All required 300 level courses or RN status. F, Sp

405 Professional Nursing Seminar (2) Critical examination of legislative, legal, ethical, social, and educational issues. Students will have immediate or long range implications for professional nursing practice. Prereq: All 300 level clinical nursing courses or RN status. Sp

406 Pharmacology II (2) Continuation of 351 with emphasis on nursing responsibilities in the safe and effective use of therapeutic drugs, recognition and reporting of side effects, and critical aspects of patient education. Prereq: 351. F, Sp

411 Psychosocial Long-Term Nursing (6) Nursing needs of clients whose health problems are of a develop- mental, behavioral, or long-term nature. Equal emphasis on prevention, wellness promotion, and rehabilitation. Nursing laboratory/clinical experiences with a psychiatric and chronic illness emphasis in a variety of acute, extended care, and rehabilitation facilities. 3 lectures, 3 lab. Prereq: All 300 level clinical nursing courses or RN status. Sp, F

414 Community Mental Health Nursing (6) Nursing needs of clients and groups with psychosocial and/or long-term health problems. Clinical experiences provide opportunities for the application of clinical nursing care to groups with chronic illness and mental health. Prereq: All 300 level nursing courses. For non-nurse MSN students only. F, Sp

415 Family/Community Health Nursing (6) Application of the nursing process to individuals, families, and groups in the childbearing/rearing stages of development. Clinical experiences are provided in a variety of hospital and community settings. 3 lectures, 3 lab. Prereq: All 300 level nursing courses. For non-nurse MSN students only. F, Sp

421 Mental Health Maintenance and Restoration (4) Nursing to support and care for persons with mental health needs. Emphasis on use of self as therapeutic agent with individuals, groups and families and developing nursing interventions to promote mental health maintenance and restoration. Prereq: all required 300 level nursing courses or RN status. 2 lec, 2 lab. F, Sp

431 Nursing of Children (4) Theoretical component and clinical laboratory experiences related to the nursing care of infants, children, and adolescents. Emphasis on application of physiological, sociocultural, behavioral, and developmental concepts for the provision of nursing care in various settings. Prereq: All 300 level nursing courses or their equivalent or RN status. F, Sp

433 Community Health Nursing: Individuals and Families (3) Exploration of political, social, economic, envi- ronmental, ethical issues and problems in nursing. Emphasis is placed on pathophysiology, health promotion, disease prevention, and control of communicable diseases. 1 lecture, 1 sem., 1 lab. Prereq: All 300 level nursing courses or RN status. F, Sp

440 Leadership and Management in Nursing (3) Introduction to leadership concepts related to leadership and management in the delivery of nursing and health care services. Prereq: All required 300 level courses. Prereq or Coreq: 401, 411, 431, 433, or RN status. F

441 Clinical Nursing Practicum (3) Intensive experiences that emphasize integration of clinical skills, deci- sion-making, time management, leadership, and management concepts in clinical practice. Prereq: All required 300 level courses. Prereq or Coreq: 401, 411, 431, 433, 440. Satisfactory/No Credit grading only. Sp


452 Professional Leadership Issues III (2) Legal and regulatory processes affecting nursing practice and changes in the health care system. Application of the concepts of group dynamics and teamwork issues having an impact on nursing practice. Prereq: All required 300 level nursing courses and N451. Sp

453 Oncology Nursing (3) In-depth exploration of cancer and cancer care; relates cellular kinetics to theories of carcinogenesis and metastasis; treatment modalities and nursing interventions employed in all phases of the disease. Interdisciplinary approach. Prereq: N319, 351, and 361, or consent of instructor.

461 Health Restoration Across the Life Span (5) Focus on health restoration in nursing practice to support and care for children or adults and their families with acute, complex health needs. Emphasis on quality of care, continuity of care, coordination of care and end of life care. Prereq: All required 300 level nursing courses. 3 lec, 2 lab. 2 F, Sp

462 Health Maintenance and Restoration in Community (5) Analysis of the health needs of a selected commu- nity utilizing the epidemiological process. Emphasis on visiting clients and families across the life span in their own environments. Prereq: All required 300 level nursing courses for RNs, 325, 333, 351 and pre or core: 319 2 lec, 2 lab. F, Sp

490 Specialty Preceptorship (4) In-depth practicum to develop knowledge and skill in a selected specialty area under direct guidance of a clinical instructor. Knowledge development in specialty area under guidance of fac- ulty. Prereq: N406 and N451, Pre or Co req: N403, N421, N471, N461, N482 or RN Status. 1 lec, 3 lab.

493 Independent Study (1-3) Nursing of health-related topic not covered in other nursing courses. Prereq: Senior standing or consent of instructor

NUTRITION (726)

100 Introductory Nutrition (3) Nutritional concepts; current consumer issues in nutrition; nutritional needs through life cycle; international nutrition concerns and/or issues. A nutrition major who has received credit for N300 may not receive credit for this course. F, Sp

201 Careers in Nutrition (1) Overview of nutrition-related careers. Routes to meeting academic, registra- tion, and experience requirements. Letter grade only.

300 Fundamentals of Nutrition (3) Nutrition in normal and altered health states during life cycle; nutritional analysis of diets. Prereq: Chemistry 110 or equivalent. Prereq or Coreq: BCBM 230. A nutrition major who has received credit for NTR 100 may not receive credit for this course. Sp

302 Life Span Nutrition (3) Physiological development and psychosocial factors that influence nutrient needs and nutrition behaviors of individuals across the life span. Nutrition education strategies for various age groups. Prereq: 100, BCBM 230 or consent of instructor.

303 Foodservice Systems Management (3) Assessment of managerial, organizational and operational structures in foodservice systems with focus on markets related to dietetic practice; human resource policies and strategies applied to foodservice system management. Prereq: 210, 211. 3 hours and 1 lab.

313 Vitamins and Minerals (3) Functional properties and interrelationships among vitamins and minerals as they apply to human nutrition. Prereq: 100, BCBM 230, or consent of instructor.

310 Physiological Chemistry (4) (Same as Biochem- istry 310.)


314 Energy Metabolism and Metabolic Integration (3) Integration of carbohydrate, fat and protein metabo- lism as applied to nutrient utilization and requirements in humans. Prereq: 310, 313.

410 Professional Issues in Dietetics (1) Dietetic reg- istration, licensure; third party payments; dietetic prac- tice; marketing dietetics; internship application prepara- tion; dietetic practice policy in dietetic practice. Prereq: Senior standing.

412 Food and Nutrition in the Community (3) Influ- ence of health characteristics, geographic, social, eco- nomic, educational and cultural factors on food and nutrition programming; relationship of community food and nutrition problems to programs and services for families and communities with particular attention to disease prevention; public policy. Prereq: 302, 415.


420 Food and Nutritional Analysis (4) Principles, procedures, and instrumentation for analysis of food and body fluids. Interpretation of chemical, dietary, and anthropometric data analysis in nutrition research. Prereq: 100, 310.

450 Special Topics: Nutrition (1-3) Developments, issues and problems in Nutrition; topics variable. Prereq: Junior or Senior standing in NTR or consent of instruc- tor. May be repeated. Maximum 3 credits.

492 Field Experience: Nutrition (1-3) Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit only.

493 Directed Study: Nutrition (1-3) Individual student: faculty experience. Prereq: Junior or Senior standing, consent of instructor. Letter grade only.
HORTICULTURE AND LANDSCAPE DESIGN (740)
110 Introduction to Ornamental Horticulture (3) Survey of the history, science, crafts, professions, and businesses of ornamental horticulture. F
220 Basic Landscape Plants (3) Identification, classification, adaptation, culture and landscape design uses of basic ornamental trees, shrubs, and vines. Prereq: 8 hours of biological sciences or consent of instructor. F, Sp 2 hours and 1 lab
230 Interior Plantscaping (3) History and introduction of the interior plantscaping industry. Identification, culture, propagation, and use of plants for the commercial interior plantscaping industry. Prereq: 110 or consent of instructor. F
231 Interior Plantscaping II (3) Commercial application of design, sales, sales proposals, plantscape management, and basic plantscape business management for the Interior Plantscaping industry. Prereq: 230 or consent of instructor. Sp
280 Fundamentals of Landscape Design (3) History of landscape design and its relationship to current design situations. Awareness and sensitivity to the landscape; basic graphic skills and design theory with an emphasis on residential landscape planning. Introduction to landform, landscape materials, and planting design. 1 hour and 2 labs. E
330 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. Prereq: 8 hours of biological sciences or consent of instructor. 2 hours and 1 lab. F
340 Turfgrass Management (3) Practical turfgrass management; cultivar selection, identification, and establishment; basic applied fertility programs, mowing, and irrigation practices, and thatch and compaction control; pest identification and basic controls. Prereq: Plant and Soil Science 210; 8 hours biological sciences or consent of instructor. 3 hours and 1 lab. F
350 Basic Landscape Construction (3) Basic materials and detailing. Introduction to the landscape construction and contracting industry; application of landscape materials, wood, concrete and masonry construction, site drainage and landscape grading. Prereq: 280, 2 hours and 1 lab. F
360 Practicum in Landscape Construction (3) Practical experience in implementation of landscape development projects. Directed lab and field instruction in planting operations and basic landscape construction including interpreting and implementing landscape design drawings and specifications. Prereq: 350. Two three hour labs. Sp
370 Grounds Maintenance (3) Identification and understanding of maintenance tasks; transplanting, soil amendments, growth control, irrigation, climate protection and pest control. Maintenance and use of equipment; management practices. 2 hours and 1 lab. F
380 Supplemental Landscape Design Graphics (2) Refinement of graphic skills. Sketches, elevations, sections, isometric projections, and perspectives. Lettering, plan graphics, color rendering, and other visual presentation media. Prereq: 280. Two 2 hour labs. F
390 Fall Herbaceous Ornamental Plants (3) Identification, culture, and landscape use of late summer and fall herbaceous ornamental plants including annuals, perennials, herbs, and ornamental grasses. Basic gardening practices and design elements using such herbaceous ornamentals. Prereq: 110 or consent of instructor. F
391 Spring Herbaceous Ornamental Plants (3) Indentification, culture, and landscape use of Spring and early summer herbaceous ornamental plants including perennials, herbs, bulbs and wildflowers. Basic gardening practices and design elements using such herbaceous ornamentals. Prereq: 110 or consent of instructor. Sp
410 Nursery Management and Production (3) Management of plants for wholesale and retail sales and landscape contracting firms. Methods of producing liners, container and field-grown woody ornamental plants including annuals, perennials, herbs, and ornamental grasses. Basic gardening practices and design elements using such herbaceous ornamentals. Prereq: 110 or consent of instructor. Sp
420 Native Plants in the Landscape (3) Native plants and plant communities as a basis for landscaping and environmental restoration. Weekly lecture coupled with either an outing or service project of invasive exotic plant removal or native restoration. Study and work sites will primarily be demonstration projects of the UT Environmental Landscape Design Lab. They include local schoolyard habitats, greenways, wetlands, streambanks, and shorelines. Prereq: OHLD 220, Botany 330 or consent of instructor. F
426 Public Horticulture (2) Indepth study of the public horticulture industry. Attention given to the diversity of public horticulture institutions, career opportunities, and research. Discussion of current topics and issues. Senior standing or consent of instructor. Sp
429 Field Study of Public Horticulture Institutions (3) Extended 10-12 day field study of various public horticulture institutions, gardens, conservatories, and botanical gardens. Include historical grounds, zoos, conservatories, cemeteries, and nature preserves. Application and travel fee required. Prereq: OHLD 426. Sp mini-term
430 Greenhouse Floral Crop Production (3) Principles of greenhouse operation and management for commercial production of floral crops. Greenhouse construction and operation, crop scheduling and cost accounting. Environmental inputs and cultural practices as they affect plant physiological processes and influence plant growth and development. Prereq: Agriculture and Natural Resources 290 or consent of instructor. Sp
431 Greenhouse Floral Crop Production Laboratory (1) Greenhouse production of floricultural crops. To be taken concurrently with 430. Prereq: Agriculture and Natural Resources 290 or consent of instructor. Sp
440 Advanced Turfgrass Management (4) Principles and practices of turfgrass management; ecology, physiology, soil fertility, and grass nutrition; climatic influences on grass growth; physiology of clipping, water management; design, construction, and management of golf courses; physiological influences of pest infestation and control measures. Prereq: 340 or consent of instructor. 3 hours and 1 lab. F
450 Specialty Landscape Construction (3) Methods of design, materials, and installation techniques in specialized components of the landscape industry. Irrigation systems, outdoor lighting, garden ponds and water features. F
451 Plant Tissue Culture (3) (Same as Botany 451.)
460 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposal preparation, bidding, estimating, specifications, and contract management in landscape services industry. Computer technology applicable to landscape construction and contracting industry. Prereq: 350 or consent of instructor. 2 hours. Sp
480 Advanced Landscape Design (3) Comprehensive application of landscape design skills to a variety of projects focusing on an emphasis on landscape planning and analysis, planting design, and materials estimating. Prereq: 280, 380. Two 3 hour labs. F
485 Computer Aided Landscape Design (3) Overview of Computer Aided Design (CAD) as it relates to landscape design and construction. Emphasis on development of landscape design drawings through utilization of LANDCAD software. Prereq: 280, 380, and Agriculture and Natural Resources 290. F, Sp
490 Seminar (1) Current problems in ornamental horticulture and floriculture. Prereq: Senior standing. E
492 Off-Campus Internship (1-3) Work experience in approved ornamentals, turf or landscaping industry. May be repeated. Maximum of 6 credits. E
493 Individual Problem Study (1-3) May be repeated. Maximum of 6 credits. E
494 Professional Horticultural Communications (3) Communication for public horticulturists through written, oral, and visual media. Emphasis on communication skills using proper writing techniques and grammar for professional correspondence, desktop publishing, slide show development, oral presentations, and video use for educational and informational presentations in Ornamental Horticulture. Prereq: Agriculture and Natural Resources 290 and senior standing. F, A, E

PERSON (744)
161-162 Elementary Persian I,II (4,4) (Same as Asian Studies 141-142.)
261-262 Intermediate Persian I,II (4,4) (Same as Asian Studies 261-262.)

PHILOSOPHY (745)
110 The Human Condition: Values and Reality (3) The meaning of life, the existence of God, freedom of the will, human nature and values. Writing-emphasis course. E
111 The Human Condition: Knowledge and Reality (3) The place of mind in a material universe and the nature and possibilities of human knowledge. May be taken before 110. Writing-emphasis course.
120 Foundations of Western Thought: Antiquity through 1500 (3) Plato, Aristotle, Late Antiquity and the Medieval Period. Writing-emphasis course.
121 Foundations of Western Thought: 1500 through Early Twentieth Century (3) Development of Rationalist and Empiricist thought. Nineteenth Century and early Twentieth Century Philosophy. May be taken before 120. Writing-emphasis course.
130 Critical Thinking (3) An introduction to practical reasoning in natural language, designed to enhance skills in recognizing, analyzing, evaluating and constructing arguments. Satisfies Arts and Sciences Basic Skills Requirement "Mathematics, Computer Science or Logic."
135 Formal Logic (3) Introduction to formal deductive systems: propositional and predicate logic. Satisfies Arts and Sciences Basic Skills Requirement "Mathematics, Computer Science or Logic."
200 Special Topics (3) When content varies, may be repeated. Maximum 6 hours.
240 Ethics (3) Theories of ethical values. Writing-emphasis course.
242 Ethical Theory and its Applications (3) A study of moral values and principles in theoretical and practical contexts. Open only to students registered in the College of Business Administration.
290 Social and Political Philosophy (3) Basic problems and concepts of social and political philosophy. F
300 Special Topics (3) May be repeated. Maximum 6 hours.
320 Ancient Western Philosophy (3) Writing-emphasis course.
322 Medieval Philosophy (3) Development of medieval thought from St. Augustine to William of Occam. Secondary and primary sources. (Same as Medieval Studies 322 and Judaic Studies 322.) Writing-emphasis course.
324 Seventeenth- and Eighteenth-Century Philosophy (3) Writing-emphasis course.
326 Nineteenth- and Twentieth-Century Philosophy (3) Writing-emphasis course.
342 Business Ethics (3) Ethical problems as they confront both business as a social institution and individuals in business. Writing-emphasis course.
344 Professional Responsibility (3) Critical analysis of selected classic texts from philosophy, religious studies, and social sciences dealing with responsibility and the nature of professionalism. Theoretical principles and analytical skills applied to selected case studies and other detailed descriptions of professional practice from engineering/architecture; business/accounting; and at least one of law/politics; helping professions (social work, human services, ministry). teaching. (Same as Legal Studies 344 and Religious Studies 344.) Writing emphasis course.
345 Bioethics (3) Ethical issues in health care such as abortion, eugenics, genetic engineering, fair allocation in health care delivery and the doctor-patient relationship. Writing emphasis course. (Same as Religious Studies 345.)
346 Environmental Ethics (3) Issues concerning the nature of the environment and the place of humanity within it.
PHYSICAL EDUCATION ACTIVITY PROGRAM (764)

200 Special Topics (1-3) Selected topics in various activities not covered in the regular programs. When content varies, may be repeated. Maximum 6 hours.

202 Badminton (1) Fundamental badminton technique, game strategy, and rules for singles and doubles play.

206 Bowling (1) Introduction to ball selection, approach, spot bowling, rules, scoring, etiquette, and basic terminology necessary for enjoyable recreational bowling.

211 Golf (1) Introduction to chipping, putting, full swing, rules, etiquette, and scoring necessary for enjoyable recreational play.

213 Ice Skating (1) Beginning skills and etiquette in ice skating. Satisfactory/No Credit grading only.

216 Martial Arts (Special Topics) (2) Special Topics. Selected topics in various forms of martial arts, including but not limited to jujitsu, judo, karate, and taekwondo. When content varies, may be repeated. Maximum 6 hours.

222 Paddleball (1) Introduction to forehand, backhand, drop, drive and lob shots, footwork, court position.

223 Personal Safety and Self Defense (1) Develop and practice the observational and defensive skills so they may become viable considerations for personal safety. Satisfactory/No Credit grading only.

224 Physical Fitness: Conditioning (1) Program of flexibility, strength, and cardiovascular endurance through exposure to various exercise forms. Satisfactory/No Credit grading only.

225 Physical Fitness: Exercise to Music (1) Total body workout to music with lecture emphasis on basic fitness components of flexibility, strength, and cardiovascular fitness.

226 Exercise and Weight Control (1) Fitness activities and basic fundamentals of nutrition for students interested in losing weight: includes body composition assessment and instruction on achieving a goal weight.

229 Physical Fitness: Jogging (1) General factors on physical fitness with emphasis on the improve ment of cardiovascular fitness through jogging.

230 Physical Fitness: Swimming (1) Introductory course outlining basic principles of fitness, evaluation, and workout design in the aquatic environment.

231 Physical Fitness: Walking (1) Course for those wishing to begin a fitness program: includes walk and jog techniques, time spent learning and refining the postures. Satisfactory/No Credit grading only.

232 Racquetball I (1) Pass, kill, ceiling shots, and basic strokes. Singles and doubles strategy, necessity for recreational play.

233 Racquetball II (1) Stroke refinement. Forehand and backhand kill shots, advanced strategy, and introduction to competitive play.

234 Soccer (1) Introduction to individual and team fundamentals, rules, and strategy.

235 Social Dance (2) Popular ballroom dance forms and couples.

236 Softball (1) Introduction to individual and team fundamentals, rules, and strategy.

238 Swimming (1) Includes skills in the American Red Cross basic swimming course for the non-swimmer.

240 Intermediate Swimming (1) Crawl stroke, elementary back stroke, side stroke, back brush, breast stroke, entries and turns.

244 Tennis I (2) Introduction to forehand, backhand serve, volley, rules, scoring and simple strategy.

245 Tennis II (1) Development of accuracy and improved technique of ground strokes and service; introduction to smash, spin serve, and advanced strategy.

249 Tumbling I (1) Beginning tumbling skills including forward and backward rolls, twisting, balance, agility, and combinations.

250 Tumbling II (1) Front and back handsprings, front and back somersaults, and combinations.

251 Volleyball (1) Introduction to individual and team fundamentals, rules, and strategy.

252 Weight Training (1) Introduction to the principles of strength development for large muscle groups through the use of weights and machines.

254 Yoga and Relaxation (1) Introduction to yoga and various forms of relaxation, with the majority of class time spent learning and refining the postures. Satisfactory/No Credit grading only.

255 Water Safety Instructor (2) Prepares individuals to teach American Red Cross basic swimming and personal safety courses. ARC certification.

256 Lifeguarding Training (2) American Red Cross lifeguarding and aquatic management techniques. ARC certification. Prereq: Swim test second day of class.

259 Snow Skiing (1) Development of skills necessary to balance, walk and slide while on skis. Learn ski etiquette with “Skier’s Responsibility Code.” Satisfactory/No Credit grading only.

260 Western Dance (1) Popular western dance forms including line dances, western social dances, mixers and couples.

261 Scuba Diving I (1) Introduction and developmental SCUBA diving skills as well as the theory, safety skills, and practical application skills to open water SCUBA diving.

PHYSICS (773)

101-102 How Things Work (3,3) For students with majors outside science. Examines familiar objects of everyday experience and leads to an understanding of the physical principles that makes them work. No prerequisite.


137-138 Honors Fundamentals of Physics for Physics Majors (5,5) For physics and engineering physics majors and qualified students from other majors. Coreq: Mathematics 141-142.

161 Elements of Physics for Architects and Interior Design Students (3) Chosen topics in physics for architecture and interior design students. Course emphasizes material development by logic and lecture demonstrations. Prereq: Intermediate Algebra and one year of geometry.

221-222 Elements of Physics (4,4) Basic principles and applications required in premedical, pre-dental, pre-pharmacy and pre-veterinary programs. 221-222: Mechanics, heat, wave motion, and optics. 222-Electricity and magnetism, modern physics. Must be taken in sequence. 3 hours lecture, 3 hours lab. Prereq: Mathematics 130 or Calculus.

231 Fundamentals of Physics: Electricity and Magnetism (3) For engineers and Arts and Sciences majors in mathematics and the physical sciences. Required of all engineering students. Prereq: Basic Engineering 121-131 or Coreq: Mathematics 142. 2 hours lecture, 3 hours lab/recitation.


240 Fundamentals of Physics: Modern Physics (3) Special relativity, fundamental concepts of modern physics and applications to atomic, nuclear, particle and condensed matter physics. Prereq 136 or consent of instructor.

311-312 Mechanics (3,3) 311—Kinematics and dynamics of single particle systems, rotating referencing systems. 312—Many body systems, rigid bodies, Lagrangian and Hamiltonian mechanics. Strong emphasis on programming and numerical methods. Must be taken in sequence. Prereq: For 311: 136 or 138 or 231 Computer Science 102. Coreq: For 312: Math 241.
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.

412 Soil Genesis and Classification (3) Soil genesis and formation; observing and describing morphology of agricultural and forest soils; chemical and physical properties; classification. 3 weekend field trips. Prereq: 310. 2 hours and 1 lab, F

413 Environmental Soil Chemistry (3) Composition and chemical properties of soils and processes that govern fate and behavior of chemicals in the soil environment. Topics include: clay: clay chemistry and mineral weathering and stability; aqueous speciation; surface chemistry; ion exchange, adsorption, and molecular retention; oxidoreduction; soil acidity, alkalinity, and salinity. Prereq: 310 and Chemistry 110 or 350 or equivalent. F

414 Soil, Land Use and the Environment (3) Soil as an environmental component and soil properties affecting land use, as a reservoir in development planning including nonengineering aspects of site selection for land use, soil survey and resource data in land use, and soil management. Prerequisite: 310 or consent of instructor. Sp-A

415 Soil Hydrology (3) Physical relationships among solid, liquid, and gaseous phases of the soil system. The relationships of soil properties to the processes governing transport of water, and chemicals in soil. Prereq: 310, 2 hours and 1 lab, F, A

431 Physiology and Ecology in Agroecosystems (3) Plant physiology and ecology applied to crop production and management. Emphasis on plant physiology and ecology principles as they relate to production practices from seedling to harvesting and handling, interaction of crops with their environment and sustainable agroecosystems. Prereq: 330. 2 hours lecture and one 2-hour lab, F

432 Bioclimatology (3) Solar energy budget; interactions between global, regional and local climates and biological systems; qualifications of micro and micrometeorological processes; microclimates and their modification; automated weather station data collection and analyses; biological responses to climatic stresses; climate variation and change and their effects on biological systems. Prereq: 210, Agriculture and Natural Resources 290 or equivalent, and Chemistry 130 or equivalent, Junior standing. 3 hours, F-A

433 Agricultural Pesticides (3) Regulation of pesticide development, manufacture, transportation, marketing and use. Structure, mode of action, degradation and environmental impact of pesticides used in agriculture, forestry and related areas. Prereq: 1 year biology and 1 semester chemistry. 2 hours and 1 lab. Sp

434 Fruit and Vegetable Crops (3) Principles of crop production systems to counter environmental stresses and to increase productivity of warm and cool season vegetable crops, small fruit crops, and deciduous tree fruit crops. Storage of crops after harvest. Prereq: 230 or 330. 2 hours lecture and 2 hours lab. F

435 Field and Forage Crops (3) Agronomic principles of crop production and management. Crop improvement, crop systems, tillage, fertilization, pest management, harvest and utilization of major field and forage crops. Prereq: 230 or 330. 2 hours and 1 lab. Sp

453 Principles of Plant Breeding (3) Genetic principles and techniques used in crop improvement. A consideration of breeding methods for the various types of plant reproduction systems and their application. A discussion of heritability estimation, genetic advances through selection and the theory upon which breeding methods are based. Prereq: 353, 471, and Biology 240. 2 hours lecture and one 2-hour lab. F, A

471 Statistics for Biological Research (3) Notation, descriptive statistics, probability, distributions, confidence intervals, student’s t and chi-square tests, analysis of variance, mean separation procedures, linear regression and correlation. Prereq: Math 125 or equivalent, 3 hours and 1 rec. F

472 Internship in Plant and Soil Sciences (1-6) Supervised experience with an availability-approved employer. Student is responsible for making arrangements. Requirements include maintaining a daily log, supervision by the Department, and 150 hours internship. May be repeated with a maximum of 6 hours credit. Prereq: Junior standing. S/N/C. E

493 Problems in Plant and Soil Science (1-3) Special research or library problems in plant and soil science. May be repeated. Maximum 6 hours. E

494 Plant and Soil Science Seminar (1) Hot topics in plant and soil science. May be repeated. Maximum 6 hours.
POLITICAL SCIENCE (801)

101 United States Government and Politics (3) Introduction to fundamental institutions and processes of American National Politics including the Constitution, voting, the Presidency, the Congress and the courts.

102 Introduction to Political Science (3) Introduction to politics and political systems.

107 Honors: United States Government and Politics (3) Analysis and exploration of the American political system for students with superior ability. Admission by permission of department for students with at least a B average; entering freshmen accepted on basis of strong placement scores and high school record.

300 Introduction to Political Philosophy (3) An introduction to the concepts, enduring questions and significant thinkers associated with political philosophy with specific attention to the perceptions of human nature, politics, the state, civic obligation and rights, freedom, justice and democracy.

311 Contemporary Issues in American Public Policy (3) Selected public policy issues confronting the nation, including the background, nature, and effects of policies, and options for the future. Writing-emphasis course.

312 Popular Culture and American Politics (3) Popular culture related to American politics and government focusing on the roles of television, music, film, drama, art and sports. Writing-emphasis course. (Same as American Studies 312 and Cinema Studies 312.)

315 Tennessee Government and Politics (3) Major elements in Tennessee government and politics.

320 State Government and Politics (3) Setting, institutions, and processes of government in the fifty states: generalizations and comparisons, with emphasis on sources of regulatory authority, and constitutional protection of political and economic rights. (Same as Legal Studies 340.)

400 Public Management and Human Resources (3) How to mobilize and manage technical and human resources in pursuit of public sector organization goals.

411 Public Budgeting (3) The process, participants, and politics of public budgeting, with emphasis on federal, state, and local governments. Writing-emphasis course. (Same as Economics 411.)

412 Political Parties and Interest Groups (3) Analysis of political parties, interest groups, campaigns and elections.

430 United States Constitutional Law: Sources of Power and Restraint (3) Judicial review, constitutional powers of the President and Congress, federalism, sources of regulatory authority, and constitutional protection of political and economic rights. (Same as Legal Studies 430.)

431 United States Constitutional Law: Civil Rights and Liberties (3) Current issues in civil rights and liberties, including affirmative action, equal protection, privacy and the rights of the accused. (Same as Legal Studies 431.)

435 Criminal Law and Procedure (3) An overview of substantive and procedural law in the criminal justice field, with emphasis on constitutional questions and public policy issues.

441 Public Budgeting (3) The process, participants, and politics of public budgeting, with emphasis on federal, state, and local governments. Writing-emphasis course. (Same as Economics 411.)

442 Administrative Law (3) Legal dimensions of administrative power and procedures, and constitutional controls over administrators. (Same as Legal Studies 442.)

452 Black African Politics (3) Recent evolution and current political environment of sub-Saharan African nations. Writing-emphasis course. (Same as African and African-American Studies 452.)

454 Government and Politics of China and Japan (3) Political setting, structure and political processes in China and Japan. Writing-emphasis course. (Same as Political Science 454.)

456 Latin American Government and Politics (3) Introduction to the political development of Latin America with an emphasis on contemporary politics. Writing-emphasis course. (Same as Latin American Studies 456.)

459 Government and Politics of Russia and Eastern Europe (3) System transformation, political processes and governmental structure in Russia and Eastern European countries. Writing-emphasis course.

461 Policy Making in Democracies (3) Comparative approach to theory and process of making public policies.

463 Contemporary Middle East Politics (3) Governments and movements in the Middle East, their characteristics, bases, and interrelationships.

470 International Law (3) Nature and development of international law and compliance with it. Particular attention to function of international law in the context of international conflict. (Same as Legal Studies 470.)

471 International Political Economy (3) Economic relations between countries; theoretical and case studies of efforts to construct multilateral international institutions. Topics include economic growth, international trade and investment, development and global equity. Writing-emphasis course.

472 Normative Issues in International Relations (3) An examination of such normative issues among states as human rights, environmental degradation and distributive justice. Writing-emphasis course.

475 Ancient and Medieval Political Thought (3) Major western political thinkers from Socrates to Marsilio of Padua. (Same as Medieval Studies 475.)

476 Modern Political Thought (3) Major western political thinkers from Machiavelli to Marx.

487-488 Senior Honors Thesis and Seminar (3.3) Required of honors majors, admission with consent of department.

491 Foreign Study (1-15) Prerequisite: Consent of instructor. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prerequisite: Consent of Department. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Prerequisite: Consent of instructor. May be repeated. Maximum 15 hours.

494 Internship (1-6) Prerequisite: Consent of department. May be repeated. Maximum of 6 hours. May not be counted toward requirements for the Political Science major. S/NC only.

PORTUGUESE (811)

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

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

211-212 Intermediate Portuguese (3,3) 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. F, Sp

301-302 Literature, Culture and Civilization of the Portuguese-Speaking World (3,3) A course for students who have completed the intermediate sequence of Portuguese and wish to enhance their knowledge of language and culture through the medium of literature. Taught in Portuguese. Prerequisite: 212, 300 or the equivalent.

309 Intermediate Conversation and Composition (3) Designed to improve proficiency in oral and written communication in Portuguese. Prerequisite: 212, 300 or equivalent.

315-316 Aspects of Luso-Brazilian Literature (3,3) Luso-Brazilian literature through historical and cultural context of the language. Prerequisite: At least one course at the 300 level or the equivalent. (Same as Latin American Studies 315-316.)

400 Portuguese for Speakers of Another Romance Language (3) Accelerated class for beginning students of Portuguese with a strong background in another Romance language. Introduction to grammar, reading and culture of Portugal and Brazil. Prerequisite: 3 hours at 300 level in another Romance language or equivalent.

409 Advanced Conversation & Composition (3) Informal and structured conversation on contemporary topics (business, politics, economics, religion, an culture) and formal writing practice at an advanced level. Prerequisite: 309 or the equivalent.

431-432 Topics in the Literature & Language of the Portuguese-speaking World (3,3) Outstanding works of literature and culture from the countries where Portuguese is spoken. Topics may vary. May be repeated. Maximum 12 hours. Prerequisite: At least one course at the 300 level or the equivalent. (Same as Latin American Studies 431-432.)

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language and World Business Director. For Language and World Business majors only. S/NC only.

491 Foreign Study (1-15)

493 Independent Study (1-15)

PSYCHOLOGY (830)

110 General Psychology (3) Introduction to primary approaches to the study of human behavior and experience. E

117 Honors General Psychology (3) Open to University Honors Students and to students with ACT's of 29 or higher (or SAT equivalent). Prerequisite: 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. Prerequisite: 110, F, Sp

220 Behavior and Experience: Humanistic Psychology (3) Behavioral and existential analysis of individuals and their development in natural environments. Prerequisite: 110, E
300 Child Psychology (3) The normal child from conception through infancy, childhood, and adolescence. Physiological, cognitive, social, and emotional development. Prereq: 110. E

310 Learning and Thinking (3) Survey of theories and findings of research concerning both humans and nonhumans. Prereq: 110. F, Sp

320 Motivation (3) Survey of theories and related research; discussion of applications. Prereq: 110. F, Sp


347 Honors Seminar (1) Classic works in psychology; professional and ethical issues in psychology; presentations of faculty scholarship and honors students projects. Meets weekly. (May be repeated; maximum 6 hours.) Prereq: Consent of instructor.

360 Social Psychology (3) Theories, methods, and findings of research concerning individual behavior in a social context. Prereq: 110. E

367 Psychology Honors Project (3) Independent study course which leads to the Honors thesis. Students must have plans of study approved by their mentor prior to enrollment. S/NC only. May be repeated (maximum 15 hours). Prereq: Consent of instructor.

370 Ethology and Sociobiology (3) (Same as Ecology and Evolutionary Biology 370). Sp

382 Contemporary Topics in Psychology (3) Current issue or problem of contemporary psychological, impact of technology, artificial intelligence, or stereotypes. Different topic each semester. Prereq: 110 and upper division standing. 30 or more semester hours. Maximum of 6 hours may be applied toward major. May be repeated.

385 Statistics in Psychology (3) Descriptive statistics; logic of hypothesis-testing and statistical inference. Basic parametric and non-parametric tests. Not open to students with credit in Math 115 or Statistics 201. E

395 Methods of Research in Psychology (3) Fundamentals in the design, conduct, and interpretation of research, including systematic observation, experiments, quasi-experiments, and program-evaluations. Focus on both laboratory and natural settings. Prereq: 110 and 385 or Math 115 or Statistics 201; and Junior standing (60 semester hours), or consent of instructor. No more than 6 hours of Psych 382 and 482 may count towards the major. An additional 6 hours may be used as electives. May be repeated.

400 Cognitive Psychology: Language and Symbolic Processes (3) Psychology of knowing, explaining, and understanding. Directed and associated thinking, memory, and concept formation. Language, use, and development of language. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. F

409 Group Facilitation (3) Study of theory and technique through supervised experience in small groups. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. 6 hours may be used as elective. May be repeated. E

410 Sensory Processes and Perception (3) Physiological, psychological, and theoretical aspects of perception. Emphasis on audition and vision. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. Psycho 385 or Math 115 or Statistics 201 or Graduate standing. Sp

415 Psychology of Religion (3) History of the psychology of religion with an examination of various philosophical and empirical orientations. Exploration of the psychological function of religion for individuals and society. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. (Same as Religious Studies 415.)

420 History and Systems of Psychology (3) History of psychology; historical, theoretical, and methodological developments. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor or Graduate standing. F, Sp

424 Psychology and the Law (3) Psychological aspects of legal systems. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor or Graduate standing. (Same as Law Studies 445.)

430 Health Psychology (3) Psychological factors related to health and illness, including stress, personality, and environment. Applications of psychological treatments to physical illness. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor or Graduate standing. (Same as Management 440.)

434 Psychology of Gender (3) Biological, psychological, and social factors in gender. Importance of gender roles and stereotypes for behavior and experience. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor or Graduate standing. (Same as Management 440.)

445 Measurement and Testing (3) Theory of test construction and psychological measurement. Statistical methods in measurement. Survey of existing tests. Prereq: 110, Psych 385 or Math 115 or Statistics 201; and Junior standing (60 semester hours) or consent of instructor.


450 Comparative Animal Behavior (3) (Same as Ecology and Evolutionary Biology 450). F

459 Comparative Animal Behavior Laboratory (3) Coreq: 450. (Same as Ecology and Evolutionary Biology 459.) F

461 Physiological Psychology (3) Nervous system and physiological correlates of behavior. Biological basis of emotion, learning, memory and stress. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. One of the following three sequences: Biology 101 and 102, Biology 130 and 140, Anthropology 202 and 203.

467 Psychology Honors Thesis (3) Independent study for writing and oral defense of Honors thesis. S/NC only. Prereq: consent of instructor.

470 Theories of Personality (3) Major theories of human personality and their development. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. F, Sp

475 Adolescent Development (3) Theoretical perspectives and empirical research findings pertinent to adolescent development. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. Sp

480 Theories of Learning (3) Classical and current approaches to learning and cognition. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor.

482 Topics in Psychology (3) Intensive analysis of special topics, such as African-American Psychology or evaluation of programs in the community. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. No more than 6 hours of Psych 382 and Psych 482 may count towards the major. An additional 6 hours of Psych 382 and 482 may count as electives. May be repeated.

489 Supervised Research (1-9) Prereq: Junior standing (60 semester hours) and consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated. E

491 Foreign Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

492 Off-Campus Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Maximum 12 hours of 399, 489, 491, 492, or 493 may be applied toward major. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

493 Independent Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated. Sp

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: Senior standing (90 semester hours). Writing-emphasis course. F, Sp

PUBLIC HEALTH (839)

300 Introduction to Public Health (3) Aspects of public health including discussion of contemporary and controversial health issues. F, Sp

305 Disease Epidemiology, Prevention and Control (3) Foundational epidemiology applied to infectious, acute, and chronic diseases. Emphasis on the applications of public health prevention and control initiatives throughout the disease cycle. Prereq: EEB 230 and 240.

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 to the field of public health. Includes Drinking water quality (chemical, physical and biological), waste management (liquid, solid and hazardous), vector control, safe recreation, 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 Worksite Health Promotion (3) Foundational components of workplace health programs designed in the worksite that revolve around issues relative to employees and management. Emphasis on theory, program design, implementation, and evaluation from the perspective of health promotion specialist. Prereq: H300. Sp

493 Directed Independent Study (1-3) Individual study of selected issues. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. E

PUBLIC RELATIONS (841)

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

320 Public Relations Communications (3) Mechanisms of effective writing for various media to achieve organizational goals, formulate and manage public relations projects.

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

412 Opinion Writing (3) (Same as Journalism 412.)

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

470 Public Relations Campaigns (3) Research, planning, and evaluation and management of public relations campaigns. Oral and written presentation of a public relations project from inception to completion. Extensive out-of-class work. Prereq: 320 and 370 or consent of instructor.

491 Foreign Study (1-15) Advance approval of hours and topics by advisor required for registration. May be repeated for maximum of 15 hours credit.

492 Field Experience (1-2) Approved internships and other supervised practice in public relations. May be repeated for a maximum of 4 credit hours. Prereq: 320, Senior standing, and consent of instructor. Satisfactory/No Credit grading only.

493 Independent Study (3) May be repeated for maximum of 6 hours. Prereq: Consent of instructor.
READING EDUCATION (847)
329 Teaching Developmental Reading in the Elementary and Middle Schools (3) Methods and background on how to teach word recognition skills, comprehension, study skills, and how to use materials. Includes units on phonics, sight word recognition, and basal readers. For BS Education students only. Prereq: Admission to Teacher Education Program. F, Sp
340 Elementary and Middle School Developmental Reading Instruction (2-3) Word recognition (including phonics), comprehension, evaluation, and materials. Not open to students who have had recent course in reading methods. Prereq: Admission to Teacher Education Program. F, Sp
430 Principles in Reading Education (3-6) May be repeated. Maximum 6 hours. Prereq: Admission to Teacher Education Program or an course in Reading Education.

RECREATION AND TOURISM MANAGEMENT (854)
201 Recreation and Tourism Foundations and Leadership (4) Introduction to the field of leisure, recreation, and tourism focusing on understanding concepts, philosophies, and professional practices in the leisure service industry. Theories and practices of recreation leadership. F, Sp
290 Practicum in Recreation and Tourism Management (2-3) Supervised practice in approved agencies offering programs in recreation and tourism. Each hour of credit requires 40 clock hours of work. For majors only. Prereq: Permission of instructor. S/NC only. E
310 Development and Evaluation of Recreation and Tourism Programs (3) Essential elements and principles in the organization, administration, marketing, and evaluation of various types of recreation and tourism programs. Emphasis on development of program objectives. Practical and comprehensive program designs and evaluation for population and facility within student’s area of interest. Prereq: RTM 110, Junior standing, GPA required for admission to major. A-F, Sp, Su
320 Therapeutic Recreation and Special Populations (3) Principles, concepts, historical development of recreation, therapeutic recreation, and leisure services to special populations. Explanation of legislation, attitudes, barriers to participants, mainstreaming, advocacy, as related to leisure fulfillment. Prereq: Consent of instructor. F
325 Therapeutic Recreation and Lifestyle Planning (3) Emphasis on how therapeutic recreation specialists can use the application of healthy lifestyle principles as a treatment modality. Importance and role of recreation-leisure participants in group process (self-mastery, self-responsibility, fitness) in the planning and delivery of therapeutic recreation service for individuals with disabilities. Prereq: Consent of instructor. F
390 Practicum in Recreation and Tourism Management (2-3) Supervised practice in approved agencies offering career opportunities in recreation and tourism. Each hour of credit requires 40 clock hours of work. Only for majors in Recreation and Tourism Management. Prereq: RTM 290 and permission of instructor. S/NC only. E
410 Management Concepts of Recreation, Tourism and Sport Programs (3) Principles for operationalizing recreation, tourism and sport related programs. Units address utilizing research as a management tool, assessing program cost, facility utilization and evaluation and contemporary management concepts. Prereq: RTM 110, 310 or consent of instructor. A-F, F
415 Development and Maintenance of Recreation, Tourism and Athletic Facilities (3) Principles of designing, planning, equipping, operating and maintaining various facilities. Risk management, safety are incorporated into the design process. Prereq. RTM 310, or consent of instructor. A-F, F
420 Principles of Therapeutic Recreation (3) Principles and practices in therapeutic recreation, including activity program selection, individual and program assessment, treatment plans, documentation, and professional issues. Prereq: 320 or consent of instructor. F
425 Therapeutic Recreation Programming (3) Principles and practices of therapeutic recreation programming for individuals with various, and multiple disabilities. Prereq: 290, 310 and consent of instructor. F
430 Organization and Administration of Leisure and Tourism Services (3) Principles of organization and administration applied to provision of leisure services offered by public, private and/or commercial enterprises. Organizational structures, personnel management, evaluation, legal authority, introduction to budgeting and fiscal procedures. Prereq. 310 or consent of instructor. F, Su
440 Dimensions of Commercial Recreation and Tourism Enterprises (3) Organizational structures, delivery systems, marketing, and operating selected profit centers in a variety of settings. Special attention given to market performance and economic impact. Prereq: RTM 110, Junior Standing or consent of instructor. A-F, SP, Su
450 Special Topics in Leisure Education and Tourism (1-6) Development of special topics in Recreation/Therapeutic Recreation and Tourism. A-F. May be repeated.
470 Tourism and Leisure Industries (3) An examination of symbiotic relationship between tourism and various sectors of the leisure industry. Use of resources, both natural and developed, and the economic impacts of these ventures. Special attention given to how the venue impacts the local population. Sp
490 Internship in Recreation and Tourism Management (12) Full time practice in approved recreation, sport or tourism management agency. Emphasis on supervision and administrative procedures. Prereq: RTM 290, all 300 level RTM courses, Senior Standing, GPA required for major. S/NC. E
493 Directed Independent Studies in Recreation and Tourism Management (1-3) May be repeated.

REHABILITATION AND DEAFNESS (855)
223 American Sign Language I (3) Expressive and receptive skill development in sign communication. Video text and interactive teaching method used. Class conducted totally in sign. This course is a prerequisite for 226.
226 American Sign Language II (3) Expressive and receptive skill development in sign communication. Video text and interactive teaching method used. Class conducted totally in sign. Must be taken in sequence. Prereq: 223.
350 Voice to Sign Interpretation (3) Interpreting from English to sign language in a variety of physical settings (one-to-one, classroom, assemblies) for students of all ages with varying communication styles; adjusting interpretation to accommodate different student needs. Cross-cultural communication issues interpreting in a manner appropriate to the context; techniques for reducing visual fatigue and overload.
355 Sign to Voice Interpretation (3) Interpreting from sign language to English in a variety of physical settings (one-to-one, classroom, assemblies) for students of all ages with varying communication skills. Selecting appropriate to the context. Attention is also given to cross-cultural communication issues.
410 Practicum With Deaf/Hard of Hearing (3) Supervised practicum with hearing impaired students in pre-school, public school, and/or residential school setting. Sp
415 Language Development of Deaf/Hard of Hearing I (3) Language problems of hearing impaired contrasted with scope and sequence of normal language development. Formal linguistic systems used to describe language development problems. F
419 Speech Development of Deaf/Hard of Hearing (4) Theories of speech development, approaches in training perception and production of speech, and aural habilitation. Emphasis on interpreting.
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 rehabilitation professionals.
425 Introduction to the Psychology and Education of the Deaf/Hard of Hearing (3) Primarily for those planning to teach the hearing impaired. Research related to psychology, social adjustment, communication methodology, language development and education of the hearing impaired. Survey of literature. Visits to programs.
431-432 American Sign Language III and IV (3,3) Sequence stressor fluency of expressive and receptive sign communication skills. Using language in context is emphasized. Grammatical structures of ASL and cultural implications of the deaf community. Must be taken in sequence. Prereq: for 431: 426 or consent of instructor. Prereq: for 432: 431 or consent of instructor.
493 Directed Independent Study (1-3) Tutorial and specialized area. Prereq: Consent of instructor, May be repeated. Maximum 6 hours. S/NC or letter grade.

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.
102 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and assessment of comparative problems and themes within religious traditions. Writing-emphasis course.
232 Varieties of Religious Community (3) How different forms of religious communities (sects, cults, tribes, sects, monastic orders, denominations, families, etc.) have sought to reject, reinforce, transform, ignore, or dominate their culture and society. (Same as Sociology 232.)
300 Ways of Understanding Religion (3) Sources and methods used in the study of religion and religions; addressing some of the common problems and themes within religious traditions. Writing-emphasis course.
301 Religious Myth, Symbol, and Ritual (3) Distinctive modes of religious expression and analysis of theoretical approaches appropriate to their particular social and cultural functions in religions.
302 Anthropology of Religion (3) Religions of selected non-literate peoples. Role of religion in their social and cultural systems. (Same as Anthropology 302.)
305 Modern Religious Thought (3) Major themes, issues, and thinkers of nineteenth and/or twentieth century religion. Variable content. May be repeated. Maximum 6 hours.
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 Hebrew Religious Traditions (3) Development of ancient Israelite and early Jewish traditions with emphasis on those concerning the Exodus, Davidic kingship, and Zion in historical, prophetic and apocalyptic material. Writing-emphasis course. (Same as Judaic Studies 311.)
312 Religious Aspects of Biblical and Classical Literature (3) Ways in which contemporary modes of literary study enhance appreciation of biblical and classical material. Ways in which the western literary tradition has appropriated and recast the biblical and classical heritage. Writing-emphasis course. (Same as Judaic Studies 312.)
analysis of retailing in an international and global setting. Retail processes, practices and issues within international environments—cultural, economic, social, political, legal and business. Prereq: MKT 301.

422 Professional Experience in Retail and Consumer Sciences (6) Supervised educational experiences in selected retail and consumer sciences service operations. Prereq: Progression into the program and RCS 310, 390.

425 Legal Issues in Service Management (3) (Same as HRA 425.)

450 Economics of Consumer Choice (3) Micro and macro economic approaches to consumer choice across the life span; demographics; economic status of consumers; demand analysis; market structure and its impact on consumers; economics of information, implications on private and public sectors. Prereq: ECON 201.

476 Service Marketing Research (3) How to design, conduct and utilize service marketing research to improve customer service. Prereq: STAT 201, HRD 210, and RCS 376.

482 Professional Experience in Retailing II (3) Supervised professional experience in selected retail operations that build upon first professional experience. Prereq: RCS 410, 422, HE 410. Coreq: RCS 485.


493 Directed Study (1-3) Individual problems for junior and senior students with special interests in retail and consumer sciences. Prereq: Junior or Senior standing and consent of the instructor.

495 Special Topics (3) Topics in retail and consumer sciences. May be repeated. Maximum 9 hours. Prereq: Junior or Senior Standing and consent of the instructor.

497-498 Honors: Retail and Consumer Sciences (3) Individual problems for Junior and Senior students showing special ability and interest in retail and consumer sciences. Prereq: Recommendation of Department Head.

RURAL SOCIOLOGY (880)

380 Rural Sociology (3) Topics include the analysis of U.S. land tenure systems, agricultural regions, rural minorities, and consumer organizations, rural institutions, community decision making, local government, rural policy issues, rural industrialization, food policy, and cross-cultural analysis. Prereq: Sophomore standing. F (Same as Sociology 380.)

480 Technological and Community Change (3) Analysis of communication processes whereby new technology spreads within a farm population and analysis of social institutions related to change in rural communities. Prereq: 380 or consent of instructor. (Same as Sociology 480.) Sp

RUSSIAN (886)

101-102 Elementary Russian (4,4) Must be taken in sequence.

199 Russian Language and World Business (2) This course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study. Coreq: 410, 422, HE 410. Coreq: RCS 485.

222 Heaven or Hell: Utopias and Dystopias in 20th Century Russian Literature (3) Texts in English translation. No foreign language credit. Writing-emphasis course.


311-312 Russian Composition and Conversation (3,3) Practice in writing and speaking; grammar review and vocabulary building. Prereq: Completion of 202.

325 Russian Film (3) A study of Russian cinema from the earliest days to the present. Writing-emphasis course. (Same as Cinema Studies 325.)

371 Martyrs, Mobs, and Madmen in Russian Culture: 988-1861 (3) Explores various aspects of Russian music, art, and literature, emphasizing violent cultural clashes that produced extreme artistic reactions. Texts in English translation. Writing-emphasis course.

372 Eros, Death and Resurrection in Modern Russian Culture (3) Examines the obsessions which underlay the intellectual and cultural ferment of 20th Century Russian music, art, and literature. Texts in English translation. Writing-emphasis course.

401-402 Advanced Grammar, Conversation, and Composition (3,3) Prereq: 312 or equivalent.

424 Nabokov’s Novels and Stories (3) An intensive course covering several novels and stories, the memoir, and some scientific writings of the prolific Russian-American author. Prereq: Particular attention given to the author’s philosophical views and the contact between his science and his art. In English; readings in Russian for majors. Writing emphasis course.

430 Selected Topics in Russian Literature (3) When content varies, may be repeated for credit. Writing-emphasis course. Maximum 9 hours.

451-452 Senior Seminar (3,3) For majors in Russian; minors admitted at the discretion of the instructor. Intensive study of language, literary style, and literary criticism based on selected major novels.

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

491 Foreign Study (1-15)

493 Independent Study (1-15)

SAFETY (890)

400 Directed Independent Study (1-3) Individual identification and study of safety or safety education problems. Specific problems must be made known to instructor before registration. May be repeated. Maximum 12 hours. Prereq: Consent of instructor.

443 Sports and Recreational Safety (3) Accident prevention and injury control in sports activities; philosophy of sports safety; human environmental factors and interrelationship in sports injury and control; risk-taking and decision solution strategies; and contributions of sports medicine to safety. 3 hours and 2 labs. Sp


460 Fire Risk Management (3) Provides the knowledge and skills necessary to develop, implement, and manage a comprehensive fire safety program. Incorporates basic fire risk management concepts, interpretation of codes, and an exposure to basic fire analysis techniques. Prereq: Senior standing or permission of instructor.

SCIENCE EDUCATION (889)

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

SOCIAL SCIENCE EDUCATION (900)

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

SOCIAL WORK (905)

200 Introduction to Social Work (3) Emergence of the social work profession; professional mission; knowledge, skills, and values; practice settings; client groups; helping services; career patterns; practice methods. Designed to assist students to consider their ability for careers in social work.

250 Social Welfare (3) Development, structure and function of the social welfare institution. Analysis of social welfare programs and impact of the institution on society.


312 Social Work Practice I (3) Knowledge, values, and skills for entry level generalist practice in a variety of settings. The social work problem solving process, difference between client systems, ethnic-sensitive assumptions and the worker’s regard for person-environment configuration. Concurrent skills laboratory. Prereq: Initial progression. Prereq: Coreq: 314.


314 Human Behavior and the Social Environment (3) Interrelatedness of biological, social, cultural, environmental and psychological factors in human behavior. Person-in-environment over the life span with special attention to diversity, impact of racism, sexism, and other sociocultural factors. Integration of knowledge into a social work practice perspective. Prereq: Initial progression.


412 Social Work Practice III (3) Generalist practice with emphasis on groups and communities, including treatment theories, techniques, and issues. Prereq: Full progression. Coreq: 416 and 480.


460 Integrative Seminar (2) Social work content for entry-level professional practice and current issues influencing the profession. Includes development of a portfolio reflecting BSW competencies. Prereq: Full progression. Coreq: 480.

480-481 Field Practice in Social Work II, III (6,6) Six-hour per-week supervised agency field practicum for integration of theory and practice and critical examination of oneself as a professional helping person. Concurrent field seminar on integration of knowledge with practice experiences. Prereq: Full progression.

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

492 Off-Campus Study (1-15) Prereq: Consent of instructor.

493 Independent Study (1-15) Prereq: Consent of instructor.
SOCIOLOGY (915)

110 Social Problems and Social Change (3) Increasingly acute and intense problems such as alcoholism, violence, crime, inequality, lifestyle preferences, and environmental abuse within the context of social change. Assessment of control strategies.

120 General Sociology (3) Major concepts and theoretical approaches of sociology with emphasis on culture, socialization, social organization, and social stratification.

232 Varieties of Religious Community (3) (Same as Religious Studies 232.)

291 Sport in American Society (3) (Same as Cultural Studies in Education 291.)

310 American Society (3) Institutional organization of contemporary American society with particular attention to major social institutions. Writing-emphasis course.

311 Family (3) Theoretical frameworks and methodological approaches; their application in the sociological study of past and present family forms.

320 Interpersonal Communication Processes (3) (Same as Speech Communication 320.)

321 Sociological Theory (3) Survey of contemporary issues and problems in sociological theory with an emphasis on theoretical approaches and their importance for the field. Students are required to form critical appraisals of the topics addressed. Prereq: Sociology 210 or consent of instructor.

322 Sociological Research (3) Selected issues in the philosophy of social science, research design, sampling, methods of data collection, and interpretation. Requires written research report. Prereq: 110 or 120 or consent of instructor. (Same as Legal Studies 331.)


343 Race and Ethnicity (3) Social sources of racial and ethnic cleavages; social, economic, and political consequences. Emphasis on race and ethnicity in the United States. (Same as African and African-American Studies 342 and American Studies 342.) Writing-emphasis course.

344 Power and Society (3) Sociological analysis of the formation and application of nation state policies. Examination of who gets what, why, and how. Emphasis on contrasting explanations of the control of the state and the relative autonomy of the state.

345 Collective Behavior and Social Movements (3) Collective phenomena leading to social change. Response to disaster, popular crazes, and social protests and development, organization, and function of social movements. Emphasis on American cases. (Same as American Studies 345.)

350 Criminology (3) Systemic inquiry into alternative definitions of crime, statistical distribution of different types of crime causation, and responses to crime, primarily by the police.


352 Deviance and Social Control (3) Deviants, their lifestyles, social organization, and social control.

360 Environment and Resources (3) Relationship between scarcity of natural resources and changes in societal beliefs and social structure. Topics include social and physical limits to growth and collective action problems.

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. (Same as Urban Studies 363.)

370 Social Psychology (3) Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature.

375 Gender in Society (3) Exploration of gender in society utilizing various sociological perspectives with special focus on the relationships between social structures, social roles, and gender identities. (Same as Women’s Studies 375.)

380 Rural Sociology (3) (Same as Rural Sociology 380.)

400 Special Topics (3) Variable topics. Scope of subject matter determined by students and instructor with consent of department. Prereq: Determined by department. May be repeated. Maximum 6 hours.

405 Sociology of Sport (3) Social meaning, organization, and processes of sport. Prereq: 291 or consent of instructor. (Same as Cultural Studies in Education 405.)

414 Sociology of Health Care (3) 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. Writing-emphasis course. (Same as African and African-American Studies 442.)

446 The Modern World System (3) Critical examination of the capitalist world-system as a social system, its coherence, boundaries, regions, member groups, cleavages, and patterns of analysis of who gets what, why, and how in the global political economy. Writing-emphasis course.

451 Criminal Justice (3) A critical assessment of the criminal justice apparatus and its components. Brief examination of 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. (Same as Legal Studies 451.)

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. (Same as Legal Studies 455.)

459 White-Collar Crime (3) The distinctive nature and dynamics of white-collar crime, victims and costs of white-collar crime, organizations as white-collar offenders, causal theories, and the dynamics of responses to white-collar crime by private and public parties.

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, conservation and the use of appropriate technology. (Same as Urban Studies 464.)

465 Social Values and the Environment (3) Human dimensions of ecosystem management and public policy. An applied focus, describing factors and values within specific biophysical and social settings. Prereq: 110 or 120 or consent of instructor.

471 Sociolinguistics (3) (Same as English 471 and Linguistics 471.)

491 Foreign Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

SPANISH (924)

111-112 Elementary Spanish (3,3) Language labora-
tory-required. Must be concurrent enrollment. Not available to students eligible for Spanish 150. E

150 Intermediate Spanish Transition (3) This course is designed to prepare students for enrollment in Spanish 211. Prereq: Two years of high school Spanish a placement score below the level required for admittance to Spanish 211. This class will not count toward the College of Arts and Sciences intermediate-level foreign language requirement. Since 150 is a requirement for elemen-
tary Spanish, students who receive credit in this course may not also receive credit for any other 100 level Spanish course and therefore also forfeit the six hours of elementary language credit awarded through place-
ment examination. For elective credit only. F, S

199 Spanish Language and World Business (2) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the Colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restriction: Not scoring in a program in Language and World Business. See the Director for further information. F

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

217-218 Honors: Intermediate Spanish (3,3) Honors course for students of superior ability in Spanish. Incom-
ing placements on a diagnostic test, high school average and performance on the ACT. Classes normally held to a maximum of 15 students. Students receive enrichment in writing uponSpeaking and with an introduction to reading literary selections. Students who earn an A or B in 218 receive course for. Prereq: 111-112 or equiva-

talent Spanish, students who receive credit in this course in 218 receive credit for 300. Prereq: 211-218 or equiva-

300 Transition: Composition and Grammar through Reading (3) Provides preparation in writing skills and exercise in key elements of grammar through the develop-
ment of reading comprehension, vocabulary acquisition, and compositions on assigned topics. Available to non-native or non-bilingual students of Spanish only. Prereq: Spanish 212 or equivalent or appropriate score on Spanish Placement Test.

305 Conversation and Aural Comprehension (3) Develops speaking and listening comprehension skills through a variety of in-class and extra-class activities. Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines. Prereq: Spanish 212 or 218 or permission of department.

322 Upper-level Grammar and Composition (3) Study of the challenging issues in Spanish grammar and with practical application in composition assignments. Any review of basics covered in previous courses is to introduce finer points. Not available for credit for stud-
ents whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines. Prereq: Spanish 218 or 302 or permission of department. Writing-emphasis course.

330 Textual Analysis (3) Introduction to the art of reading and interpreting literary texts and the writing of critical essays, with attention to language structures, literary terminology, theory and concepts such as ro-

331 Introduction to Hispanic Culture (3) Introduction to the dynamic cultural and social developments that led to the creation, geographic distribution and distinctive character of Hispanic cultures, with attention to those elements that distinguish Hispanic culture from other cultures, as well as to ethnic and linguistic components of the Hispanic world in the present day. Prereq: Spanish 323. Writing emphasis course.

332 Survey of Spanish Literature: 1700-Present (3) Main writers, trends, stylistic periods and artistic move-
ments in Spain since 1700 set against a broad background of cultural developments. Emphasis on Neo-classicism, the Romantics, the realists of the 19th century, the Generation of ’98, the avant-garde of the 1920’s and 1930’s, social real-

dents. (Same as Latin American Studies 331.)

Courses of Instruction 199
Course Descriptions

433 Survey of Spanish-American Literature: 1700- Present (3) Main topics, trends, and influential authors in Spanish American literature from 1700 to the present. Prereq: Spanish 323 and 330. Writing emphasis course. (Same as Latin American Studies 333.)

334 Survey of Hispanic Literatures: Beginnings-1700 (3) Main topics, trends, and influential authors in Hispanic literatures from the beginning to 1700. Prereq: Spanish 323 and 330. Writing emphasis course. (Same as Latin American Studies 334.)

445 Language and Culture of the Hispanic Business World (3, 3) Commercial vocabulary, business letters, import-export, marketing. Hispanic social management culture, and the global significance of economic and political developments in Spanish-speaking countries. Required of all Spanish majors with a concentration in Language and World Business. Prereq: Spanish 323 or permission of department if a student's level of proficiency in Spanish is both superior and native as per the ACTFL Proficiency Guidelines.

401 Cultural Plurality and Institutional Changes in Latin America (3) Value systems, behavioral patterns, political parties, role of the military, the church, educational institutions and national economic systems. Prereq: 6 hours of Latin American Studies courses or consent of the instructor. Writing emphasis course. (Same as Latin American Studies 401.)

402 Latin American Studies Seminar (3) Selected topics in Latin American Studies. May be repeated. Maximum 6 hours. Prereq: 6 hours of 300 or 400 level Latin American Studies courses or consent of the instructor. Writing emphasis course. (Same as Latin American Studies 402.)

421 Phonetics (3) Prereq: 323 or permission of instructor.

422 Advanced Grammar and Translation (3) Structure of the grammatical system of Spanish. In-depth analysis of selected syntactic phenomena with practical illustration/application and exercise in Spanish-English and English-Spanish translation. Emphasis on finer points of grammatical structures. Not available to native or bilingual students of Spanish without permission of department. Prereq: 323. Writing emphasis course.

423 Advanced Composition and Conversation (3) Develops writing and speaking skills to the advanced level, covering a wide range of topics and situations and including a variety of in-class and extra-class activities. Not available to native or bilingual students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines. Prereq: 323 or permission of department. Writing emphasis course.

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

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

429 Romance Linguistics (3) (Same as French 429 and Linguistics 429.)

430 Topics in Hispanic Linguistics (3) Introduction to the study of language through different areas of linguistics such as phonology, morphology, syntax, semantics, sociolinguistics, dialectology and second language acquisition. Prereq: 323, 330, 331 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing emphasis course. (Same as Latin American Studies 430.)

431 Images of Woman in Hispanic Literature (3) Examines major Hispanic texts (and/or women authors) in the light of the relation of female individuality to a particular sense of womanhood in social, political, and economic contexts. Taught in English. Prereq: Spanish 323, 330 and completion of major or minor requirements in 332, 333, and 334. Writing emphasis course.

434 Hispanic Culture through Film (3) Analysis of selected films on subjects concerning life, culture, and artistic traditions in the Hispanic world; exploration of how film images influence perceptions of films and a comparison of them with treatments of related subjects in other types of artistic production. Prereq: Spanish 323 or permission of instructor. May be repeated. Maximum 6 hours with permission of department. Writing emphasis course. (Same as Latin American Studies 333.)

461 Special Topics (3) Focus on some aspect of Hispanic literature, culture, linguistics, or foreign language pedagogy. Topics vary. May be repeated with consent of department. Maximum 6 hours.

465 Latin American Film and Culture (3) Explores Latin American and Latin/o/a films and videos from 1900s to present as works of art and in light of political, cultural, and societal contexts. Taught in English. Not available for Spanish major or Spanish graduate credit. Graduate credit available for Latin American Studies and Cinema Studies. 1 hour lecture, 2 hours screening, and 1 hour discussion. Writing emphasis course. (Same as Latin American Studies 465 and Cinema studies 465.)

479 Disenchedt Texts in Hispanic Literature (3) Texts representing trends and periods of renewal in Spain and Latin American countries. Selected topics on transatlantic contexts and modernism. Prereq: Spanish 323, 330, 331 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing emphasis course.

482 Trends in Hispanic Thought (3) Intellectual and philosophical currents represented in literary works, selected thinkers, or movements from historical periods of Spain and Latin American countries. Prereq: Spanish 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing emphasis course.

491 Psychology and Education of Students with Special Needs (3) (Same as Special Education 491.) Individual characteristics and educational needs of exceptional children. Implications of developmental variations for functioning as adults. Enrollment limited to non-education majors.

494 Speech Communication (3) (Same as Communication 494.)

495 Foreign Study (1-15)

498 Independent Study (1-15)

499 Spanish Community Service Practicum (1) Supervised community service with local agencies that assist Hispanic community; or supervised activities with local community organizations that promote awareness of Hispanic culture among the general public. Each credit hour requires 40 semester hours of off-campus supervi- sion and evaluation. Prereq: consent of instructor and member. Prereq: completion of 18 hours of upper division Spanish and consent of instructor. Maximum of one hour credit per semester. May be repeated. Maximum 3 hours.

SPEECH COMMUNICATION (494)

100 Introduction to Speech Communication (3) Fundamental theories and practices with particular refer- ence to intercultural, interpersonal, group, organizational, and public communication.

107 Honors: Introduction to Speech Communication (3) Analysis and exploration of the fundamental theories and practices of speech communication. Ad- mission by consent of the instructor.

210 Public Speaking (3) Preparation and delivery of informative and persuasive speeches. Topics include research, organization, adapting to an audience, topic selec- tion, reasoning, and evaluating the discourse of others.

220 Interpersonal Communication (3) Process by which thoughts, feelings, and emotions are expressed and are affected by the face-to-face communication situation. (Same as Sociology 220.)

SPECIAL EDUCATION (932)

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

320 Special Education Strategies (3) Introduction to basic special education procedures, including formal and informal assessment, planning, development of individual education plans, applied behavioral analysis, appropriate medical procedures, and effective instructional strategies. Prereq: 310, admission to Teacher Education Program.

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

420 Field Experience in Modified Programs (3) Practicum for teaching in modified programs. Developing, implementing, and evaluating instruction. Prereq: 310, 320, and Admission to Teacher Education Program. Coreq: 430. Satisfactory/No Credit only. F

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

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

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

456 Speech and Language Basis of Learning Disabilities in the Classroom (3) Normal communication development; understanding of speech and language impairments in children with major or minor requirements in oral language, written communication skills into existing curriculum, especially for high incidence special education students.

470 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Implications of developmental variations for functioning as adults. Enrollment limited to non-education majors.
230 Listening (3) Study of the principles and techniques of listening. Focuses on theoretical and practical listening skills.

240 Business and Professional Communication (3) Basic principles of communication within organizations. Topics and activities may include organizational/communication theory, group problem solving, case studies, interviewing, and formal presentations.

250 Advanced Public Speaking (3) Theory and practice of informative and persuasive speaking. Prereq: 210 or 240.

260 Communication and Society (3) Study of communication strategies and public opinion, with emphasis on communication media, films, songs, demonstrations, drama, and public address.

270 Argumentation and Debate (3) Reasoned decision-making with emphasis on analysis, evidence, reasoning, constructing and refuting arguments.

280 Introduction to Oral Interpretation (3) Art of reading aloud: development of interpretive techniques and their application to selected passages of prose, poetry, and drama. Writing-emphasis course.

300 Nonverbal Communication (3) Exploration of nonverbal communication from human communication perspective: origins and research, usage and meaning of nonverbal behavior, research strategies, and theoretical approaches.

310 Persuasion (3) Methods which contribute to effective and ineffective persuasion. Topics include credibility, message content, methods of receiving messages, roles, and norms as they affect critical thinking in groups.


350 Communication Theory (3) Survey of social science approach to theorizing about communication. Prereq: 100.

390 History of Rhetorical Theory (3) Western rhetorical theory from Plato to the present. Prereq: 100.

397 Honors Seminar (1) Required of students enrolled in the honors program; admission with consent of department.

400 Topics in Speech Communication (3) Variable content course affording opportunity to offer subject matter not covered in the written course. Topics vary. Prereq: Consent of instructor.

420 Communication and Conflict (3) Communication as a significant factor in the development, management, and resolution of conflict at the interpersonal, small group, organizational, or societal levels.

425 Interpersonal Health Communication (3) An introduction to the role of interpersonal communication in health care settings. Topics include provider-client interactions, social support groups, stigma and disease, and contemporary models explaining the use of health-related information.

430 Family Communication (3) Dynamics of interactions within family systems, marriage, and parent-child relationships. Study of verbal and nonverbal communication patterns and problems. Prereq: Child and Family Studies 220 or Speech Communication 320 or consent of instructor. (Same as Child and Family Studies 430.)

440 Organizational Communication (3) Organizational setting and the 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 Communication theories and techniques in a student-selected off-campus work experience situation. Prereq: Child and Family Studies 220 or Speech Communication 320 or by special permission of Internship Director. S/NC grading only. May be repeated; maximum 6 hours.

450 Propaganda (3) Study of political, commercial, and social propaganda in United States, World War I to present. Writing-emphasis course.

466 Rhetoric of the Women’s Rights Movement to 1890 (3) Study of the history of public address in the campaign for women’s rights in the United States from the 1830s to the 1920s. (Same as Women’s Studies 468.) Writing-emphasis course.

469 Freedom of Speech (3) Historical and philosophi- cal perspectives, speech and social control, free press, free expression in free speech controversies in the U.S. Writing emphasis course. (Same as American Studies 469 and Legal Studies 469.)

470 Rhetoric of the Contemporary Feminist Movement to 1990 (3) Study of the history of public address in the campaign for women’s rights in the United States from the 1940s to the present. (Same as Women’s Studies 476.) Writing-emphasis course.

491 Foreign Study (1-15) See description of major concentration. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and Department prior to registration (see Department for proposal deadlines). May be repeated to a maximum of 15 hours.

492 Off-Campus Study (1-15) See description of major concentration. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and Department prior to registration (see Department for proposal deadlines). May be repeated to a maximum of 15 hours.

493 Independent Study (1-15) See description of major concentration. Selected readings/research in an area of speech communication to be determined by the student in consultation with supervising faculty member and, ordinarily, in an area of study not covered by departmental curriculum. Application forms available in Department office. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and Department prior to registration (see Department for proposal deadlines). May be repeated to a maximum of 15 hours.

497-498 Senior Honors Thesis (3.3) Required of students enrolled in the honors program; admission with the consent of the department.

499 Proseminar in Speech Communication (1-3) Major theoretical perspectives in speech communication, their interrelationships and applications; consideration of the significance and ethical implications of speech communication in modern society. The course will meet two or three times per week. Prereq: Senior standing and completion of 100 and at least 12 hours of major requirements in speech communication. Writing-emphasis course.

SPORT MANAGEMENT (957)

100 Orientation to Sport Management (1) Overview of the Sport Management major; taken the first semester as pre-major. F, Sp

250 Foundations of Sport Management (3) An introduction to the scope of the sport enterprise including why business is involved in sport and an overall evaluation of sport management as a profession. Prereq: Sport Management 100 or Recreation/Leisure Studies 110 F, Sp

290 Practicum 1 (3) Supervised part-time field experience at an approved site for the purpose of clarifying career goals. Requires a minimum of 120 clock hours. S/NC only. Prereq: Sport Management 100 and Sport Management major; minimum 2.5 GPA, and Sport Management 290 E. (Formerly Prereq: Sport Management majors, min. cum. 2.5 GPA and Sport Management 290, or consent of instructor)

415 Development and Maintenance of Recreation, Tourism, and Athletic Facilities (3) Same as Recreation and Tourism Management 415.

440 Sport Marketing (3) Application of fundamental marketing concepts to the sport industry. Marketing research, promotions, fund raising, advertising, and assessment of marketing programs specific to sport will be covered. The historical development of sport marketing will be included. Prereq: Progression (admission) to major, min. 2.5 GPA, Sport Management 350, or consent of instructor.

490 Sport Management Internship (6, 12) 490 Sport Management Internship (6-12) Supervised work experience at an approved site offering sport management opportunities. Emphasis on managerial tasks and administrative procedures. Requires a minimum of 120 clock hours. S/NC only. Prereq: Progression to Sport Management major, minimum 2.5 GPA, completion of all 300 level Sport Management major course requirements, and senior standing. Enrollment for two semesters (6 hours each) or one semester (12 hours). Total 12 hours required. E

493 Directed Independent Studies (1-3) Independent study in a specialized area of sport management. May be repeated. Maximum of 9 hours. Prereq: Progression to Sport Management major. E

STATISTICS (962)


320 Regression and Correlation Methods (3) Simple linear regression and correlation analysis, time series analysis, multiple regression, variable selection, regression diagnostics, partial regression, and classification data analysis techniques. Use of statistical computing software. Applied course appropriate for a general audience. Prereq: 201 or 251. E

330 Experimental Methods (3) Strategies of experimentation, factorial and fractional factorial experiments, sequential experimentation, blocking and run order restrictions, Taguchi’s strategies to reduce variation. Use of statistical computing software. Applied course for a general audience. Prereq: 201 or 251. Sp


475 Time Series Analysis (3) Model building techniques for linear models, techniques for univariate time series forecasting, Box-Jenkins forecasting methods, forecasting based on exponential smoothing, autoregression and stepwise autoregression, forecasting from regression models, Use of standard computing packages. Major writing requirement. Prereq. 320. Sp

483 Special Topics in Statistics (1-3) Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

485 Principles of Statistical Process Management (3) Control charts and other statistical techniques applied to management of business processes. Prereq: Consent of department head. E

492 Internship (1-6) Supervised off-campus experience in single-principle and/or multi-principle studies. Practical applications in business, industry, or government, culminating in a written and oral report. Prereq: Permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Satisfactory/No credit only. May be repeated. Maximum 6 hours.

493 Independent Study (2-5) Faculty directed reading and investigation of specified topic in probability or statistics culminating in a written report. Prereq: Two courses in statistics and permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Letter grade or Satisfactory/No credit. May be repeated. Maximum 6 hours.

TEXTILE SCIENCE (970)

220 Selection and Use of Soft Goods Manufacture (3) Study of textile products for apparel and interior furnishings; emphasis on the selection of fibers, yarns, fabrics, finishes and construction details to optimize properties needed for particular end uses.

THEATRE (976)

100 Introduction to Theatre (3) Understanding theatre: thought, philosophy, aesthetics, and production practices. Writing-emphasis course.

200 Basic Theatre Production (3) Introduction to techniques for the production of costumes, scenery, and lighting for the theatre. Emphasis on hands-on skills in lighting. Prereq: 220-221 Acting. 221- Further exploration and development of acting techniques through exercises and beginning scene work. Prereq: 220. Writing-emphasis courses. Prereq to 221: 220.

245 Basic Stage Costuming (3) Costume design and construction; basic theory and technique. Production participation required.

250 Introduction to Scenery Technology (3) Techniques of scenery and stage properties construction. Production participation required.

260 Fundamentals of Lighting and Sound Production (3) Survey of practical information on electricity, light, sound, physics, psychology, and instrument engineering as it relates to stage lighting and sound production. Emphasis on hands-on skills in labs. Writing-emphasis course.

300 Play Analysis (3) Study of methods and tools used in script analysis for the purpose of play production. Prereq: Theatre 100 or consent of instructor.


323 Stage Movement (3) Introduction to movement, kinesthetic awareness, and techniques of choreographic stage movement. Prereq. 220 or permission of instructor.

326 Advanced Voice and Speech (3) Breath-centered voice production; exploration and control of shaping sound; IPA; text work; Geared toward acting for the stage.

340 Introduction to Costume Design (3) Development of research and rendering skills. Prereq: 245 or consent of instructor.

345 Costume Construction (3) Techniques in the construction of costumes for the theatre. Prereq: Theatre 200 or consent of Instructor.

350 Production Planning (3) Principles and methods of planning to meet the physical needs of a production from inception to closing. Prereq: Theatre 200 or consent of Instructor.

355 Introduction to Scenic Design (3) Introduction to art and craft of scenic design.


401 Principles of Theatrical Design (3) Fundamental principles of design; visual and structural relationships. Projects will be assigned to develop understanding and perception.

409 Stage Make-Up (3) Study and problems in makeup design and application with emphasis on character analysis. Prereq: 100.

410 Special Studies in History, Literature and Criticism (3) Content varies. Concentrated study in a given period or area of Theatre History, Literature or Criticism. May be repeated.

411 Theatre History I (3) Antiquity to 1700. Major historical periods and diverse cultural traditions in world theatre history. Prereq: Theatre 300 or consent of Instructor.

412 Theatre History II (3) 1700 to contemporary theatre. Major historical periods and diverse cultural traditions in world theatre history. Prereq: Theatre 300 or consent of Instructor.

420 Special Studies in Acting (3) Content varies. Exercises in selected concentrated areas such as styles, techniques, approaches to Shakespeare, movement humor. Prereq: 320 and consent of instructor. May be repeated. Maximum 9 hours.

421 Theatre Projects in International Theatre (3-5) Study and performance of foreign works. Content varies. Language skill required. Theatre 320 and permission of instructor(s). May be repeated for a total of nine (9) hours.

425 Selected Musical Theatre Techniques (2) Study and practice of musical theatre material including both dance and vocal work. Prereq: 324 or consent of instructor. May be repeated. Maximum 4 hours.

430-3 Principles of Play Directing (3,3) Problems in composition, picturization, rhythm, movement. Prereq: 220. Must be taken in sequence.


446 Costume Patternning (3) Draping patterns for period costumes. Includes corsetry and the study of historic patterns 1500-1900.

450 Advanced Scenery Technology I (3) Study and practice of theatre woodworking; production participation will be required. Prereq: 250. 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 available 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.

454 Scenery Painting (2) Introduction to materials, techniques, principles of craft. Emphasis on gaining skill and understanding through studio experience. Prereq: Consent of instructor.

456 Rendering (3) Techniques in monochrome and full color illustration of space and form. Some acquaintance with basic concepts of perspective and freehand sketching is assumed.

462 Advanced Lighting Design (3) Advanced problems in lighting design and theory including areas such as lighting musical theatre, opera, and dance. Prereq: 362 or consent of instructor.

464 Computer Assisted Design for Theatre (3) Advanced techniques in computer assisted design for theatre. Work with CAD, Computer Drawing, Graphics, and/or 3D Modeling software for preparation of theatrical designs. Specific content varies with semester. Admission by consent of instructor only. May be repeated. Maximum 9 hours.

470 Playwriting (3) Advanced instruction in the writing of plays. Prereq: Consent of instructor.

481 Applied Theatre (1-2) Laboratory in applied theatre techniques for developmental productions. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15) Study and practice of planning to meet the physical needs of a production for a total of nine (9) hours.

492 Directed Independent Study (1-3) Consensual study and practice of a specialized area. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

493 Independent Study (1-15) Study and practice of a specialized area. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

THEORY AND PRACTICE IN TEACHER EDUCATION (978)

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

352 Field Experiences in Teaching: Secondary I (1) Field experiences in tasks related to teaching and teacher roles. Prereq: 352 and admission to Teacher Education Program. Satisfactory/No Credit only. Sp, F

353 Field Experience in Teaching: Secondary II (1) Field experiences in tasks related to teaching and teacher roles. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only.

492 Directed Independent Study (1-3) Tutorial and specialized area. Prereq: consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading or letter grade.

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

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

UNIVERSITY HONORS (983)

117-127 Honors Freshman Seminar (1,1) Sequence required of and limited to all freshman honors students. 117 concentrates on computer skills, contemporary issues, and cross-cultural perspectives on critical thinking, contemporary issues, and international study. Satisfactory/No Credit grading only.

331 Honors: Concentration in the Humanities (3) Small group study of selected topics, issues or problems with an emphasis on examination of selected topics in the humanities. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

339-348 University Scholars Seminar (1,1) Selected topics; enrollment limited to students in The University Honors Program, or with permission of the Director of University Honors. May be repeated. Maximum 6 hours. Letter grade only.

347 Honors: Concentration in the Social Sciences (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.

357 Honors: Concentration in the Natural and Applied Sciences (3) Small group study 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.

458 Senior Honors Seminar (1) Development and presentation of senior project. Preceded by and required of all graduating students in The University Honors Program. Should be taken one semester prior to the semester of graduation. Satisfactory/No Credit grading only.

491 Honors: Foreign Study (1-15) 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 (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

493 Honors: Independent Study (1-15) Open to any undergraduate honors student. Must be used by all University Honors Scholars preparing their senior projects. Proposals must be approved in advance. See the Director of University Honors for further information. Letter grade only.

UNIVERSITY STUDIES (984)

101 Lives and Times (3) Study of biography, autobiography, or any other form of writing that shapes individual lives. Writing emphasis. Intended for entering students.

210-220 Special Topics in University Studies (1-9, 1-9) Interdisciplinary approaches to selected topics for lower division students. Small group discussion of varying topics that transcend the boundaries of a single discipline. Writing intensive and team taught. May be repeated. Maximum 6 hours. Permission of instructor required. Variable credit.

227 Honors: Topics in University Studies (3) Interdisciplinary approach to a significant scholarly or social issue for lower division students. Small group discussion of varying topics that transcend the boundaries of a single discipline. Writing intensive. May be repeated. Maximum 9 hours. Permission of instructor required.

310-320 Special Topics in University Studies (3,3) Interdisciplinary approaches to issues transcending the boundaries of a single discipline. Topics may be initiated by faculty or students through arrangements with the University Studies Program. Taught by faculty from through the University (often team-taught). Discussion based and writing intensive. May be repeated. Maximum: 9 hours.

311 AIDS and Society (3) Speakers from across the state speak about scientific, social, medical, emotional and financial aspects of the AIDS epidemic. Students are required to participate in some AIDS related community activity and to describe that activity in writing.

317 Honors: Special Topics in University Studies (3) Honors course utilizing an interdisciplinary approach to a significant scholarly or social issue. Topics change every semester to reflect current offerings. Discussion based and writing intensive. May be repeated. Maximum 9 hours. Permission of instructor required.

321 Aging and Society (3) Multidisciplinary examination of process of aging and of the medical and community resources for coping with its stresses and challenges.

322 Technology, Society and the Common Good (3) Explores philosophical and religious systems with a commitment to stewardship of the planet and those with an antagonistic or neutral perception of the natural world. Systems are presented in conjunction with cultural and species distinctions caused by or related to their beliefs and values.

410-420 Advanced Topics in University Studies (3,3) Interdisciplinary research approaches to major issues transcending the boundaries of a single discipline. Topics are initiated by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Discussion based and writing intensive. May be repeated. Maximum: 9 hours.

411 Art and Organism (3) Interdisciplinary investigations of the relationship between art and biology. Readings and discussions focus on the idea that, while art is one of the most wholly human cultural endeavors, it is undeniably linked to, if not emergent from, our basic biology.

412 Normandy Scholars Seminar: War and Remembrance (9) Enrollment is limited to honors students selected for the Normandy Scholars Program. Students take course work and travel as a learning community during their time in the program. The course has three components: (a) Values and Politics, (b) 20th Century French Literature, Culture, and Language, and (c) World War II. The course is team taught by members of various departments, and prepares students for the comprehensive four weeks of study in France during the Summer Term. Coordinator’s permission required. Writing emphasis course.

417 Honors: Advanced Topics in University Studies (3) Honors course utilizing an indepth interdisciplinary approach to a significant scholarly or social issue. Topics change every semester. Consult timetable for current offering. Discussion based and writing intensive. May be repeated. Maximum 9 hours. Permission of instructor.

491 Foreign Study (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

492 Off-Campus Study (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

493 Independent Study (3-6) May be repeated. Maximum 6 hours.

WILDLIFE AND FISHERIES SCIENCE (993)

303 Communications in Wildlife and Fisheries (1) Principles, selection, and use of effective communication methods, skills, and techniques in communicating natural resources information; management, organization, and presentation of scientific information. Coreq: 305, 323, 330, 340, 350, 440, 442. Sp


323 Human Dimensions of Wildlife and Fisheries (1) Examination of the linkages between people, institutions, and society at large to natural resource management practices. Case studies and application of basic skills of group communication and collaborative problem solving and planning will be emphasized. Overnight field trips required. Coreq: 303, 305, 330, 340, 350, 440, 442. Sp


341 Law Enforcement and Public Relations (3) Fundamentals and general principles of local, state and federal laws and regulations governing natural resources and their management. Principles and practices of interacting with the public. Prereq: English 102 and Speech 210 or 240 or consent of instructor. F

350 Wildlife Damage Management (3) Principles and methods for wildlife damage management including biological, regulatory, practical, and social considerations. Weekend field trips (2) required. Prereq: FWF 317 or consent of instructor. 2 hours and 1 lab or field. Sp

440 Wildlife Techniques (3) Methods in wildlife damage control, forest, farmland, wetland habitat management, identification of wildlife field sign, wildlife capturing techniques and management plan preparation. Weekend field trips (2) required. Prereq: FWF 317 or consent of instructor. 1 hour and 1 lab or field. F
WOMEN’S STUDIES (994)

210 Images of Women in Literature: Biography and Autobiography (3) Introduction to women’s journals, diaries, biographies and autobiographies. Writing-emphasis course.

215 Images of Women in Literature: Fiction, Poetry, Drama (3) Introduction to the study of women through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry, and drama), including works from diverse historical periods and cultures. Writing-emphasis course.

220 Women in Society (3) Role played by women in various societies during different historical periods, factors which have limited women’s participation in society, social scientists’ assumptions about women.

230 Marriage and Family: Roles and Relationships (3) (Same as Child and Family Studies 220.)

310 Emergence of the Modern American Woman (3) Role of women in the development of American civilization and values. Major topics include women’s legal and political status, the emergence and development of feminism, women and the creative arts, and women’s roles in industrial and post-industrial American society. Writing-emphasis course.

320 Women and Religion (3) (Same as Religious Studies 320 and Judaic Studies 320.)

330 Women in Music (3) (Same as Music History 330.) Writing-emphasis course.

332 Women in American Literature (3) (Same as English 332.)

340 Women, Politics, and the Law (3) An examination of recent changes in the laws affecting women and a study of the role of women in contemporary American politics. (Same as Legal Studies 340.)

360 Women in Cross-Cultural Perspective (3) A study of the changing role of women in various contemporary cultures: industrial democracies, developing nations, communist countries. A team-taught course with guest lectures and slide presentations.

375 Gender in Society (3) (Same as Sociology 375.)

382 Philosophy of Feminism (3) (Same as Philosophy 382.) Writing-emphasis course.

383 Women in the Greek and Roman World (3) (Same as Classics 383.) Writing-emphasis course.

400 Topics in Women’s Studies (3) Content varies. May be repeated.