ACCOUNTING (009)

201 Principles of Financial Accounting (3) Introduction to financial accounting theory and practice with emphases on preparation and reporting of financial information. Prerequisite to all other courses in accounting. Prereq: Mathematics 110 or 112.

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

311-312 Intermediate Financial Accounting (3) Theories, principles, and procedures related to estimation of liabilities, fixed assets and equities; measurement of periodic income; and preparation of financial statements. Prereq: 202 for 311; and 311 with a grade of C or better and Management 320 for 312. E

312 Cost and Managerial Accounting (3) Analysis of costing methods, fixed and variable costs, cost-volume-profit relationships. Topics include cost behavior, cost prediction, budgeting, and responsibility accounting. Prereq: 302. Prereq: Coreq. Management 230. 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 users. Prereq: 311 with a grade of C or better and consent of instructor. May be taken by audit only. Presentation of written work. Consent of instructor. F, Sp

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

411 Auditing (3) Role of auditing in society, operational auditing: professional auditing standards, auditor’s legal responsibilities, audit evidence and reporting; role of internal control and statutory sampling in auditing, application to special transaction cycles. Prereq: 312 with a grade of C or better. F, Sp

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

417 Federal Income Taxation (3) Fundamentals of income taxation including personal income, corporation income, estate, and gift taxation. Prereq: Progression as a major in the Department of Accounting. Consent of instructor. F, Sp

480 Advertising Issues (3) Examination of the role of advertising in society and controversies surrounding advertising, competition, plus ethical aspects of advertising. Emphasis on written and oral presentation of arguments. Prereq: 350 and 351 with grades of C or better. Open to marketing seniors in the College of Business Administration with consent of instructor. Ten hours laboratory each week. May be repeated once. Prereq: Progression as a major in the Department of Advertising.

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

ADVERTISING (012)

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

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

350 Advertising Creative Strategy (3) Basic concepts of creative strategy with intense practice in developing creative ideas and organizing advertising campaigns and judging creative work. Prereq: 250 with a grade of C or better.

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

370 Professional Seminar (3) Exploration of career choices in mass communications. Resumes and letter writing, interviewing, and portfolio preparation. Prereq: Progression as a major in the Department of Advertising.

415 Advertising Management (3) Case study approach to advertising decisions. Data analysis and interpretation, generating alternative strategies, and written presentation of recommendations. Prereq: 350 and 351 with grades of C or better. Open to marketing seniors in the College of Business Administration with consent of instructor. Ten hours laboratory each week. May be repeated once. Prereq: Progression as a major in the Department of Advertising.

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

470 Advertising Principles (3) Examination of the role of advertising in society and controversies surrounding advertising, competition, plus ethical aspects of advertising. Emphasis on written and oral presentation of arguments. Prereq: 350 and 351 with grades of C or better. Open to marketing seniors in the College of Business Administration with consent of instructor. Ten hours laboratory each week. May be repeated once. Prereq: Progression as a major in the Department of Advertising.

492 Advertising Practicum (1) Experience in an advanced area under the supervision of a faculty member. Prereq: Progression as a major in the Department of Advertising. Consent of instructor. F, Sp

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

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 Civil War, Reconstruction, race issues in the 20th century, the Civil Rights era, black leadership, and current social problems. Prereq: Consent of instructor. F, Sp

202 Introduction to African-American Studies (3) Multidisciplinary approach to the African-American experience from the Civil War through the Civil Rights era and contemporary issues. Emphasis on race and class issues, and urban sociologies, the African-American church and education and African-American intellectual and project movements.

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

314 Peoples and Cultures of Africa (3) (Same as Anthropology 114.)

315 African-American Anthropology (3) (Same as Anthropology 115.)

318 African-American History (3) (Same as History 318.)

322 Minority Group Politics in the United States (6) (Same as Political Science 322.)

340 Race and Ethnicity (3) (Same as Sociology 340.)

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

373 African-American Religions (3) (Same as Religious Studies 353.)

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

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

392 African-American Religions in United States (3) (Same as Religious Studies 392.)

400 Special Topics in African-American Religion (3) (Same as Religious Studies 353.)

492 African-American Literature (3) (Same as Literary Studies 392.)

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

420 Families, Race, Class and Culture (3) (Same as Child and Family Studies 420.)

430 Family and Child Studies (3) (Same as Child and Family Studies 430.)
421 Comparative Studies in African and African-American Societies (3) Comparative studies of African and African-American societies in such areas as education, religion, and social stratification. Includes the re- 
 viewed African American and Africa have of each other and the context of African. Writing emphasis (course. See History 421.)

422 History and Philosophy of African-American Education (3) Focuses on attempts by African-Ameri- 
can educators to ensure education for themselves and their children from the wise of slavery to the Supreme Court decision in 1546. Examines black perceptions of the im- 
portance of education and specialized approaches toward black children who seek education on the primary, second- 
dary, college, or industrial level. Writing emphasis course.

423 Research Seminar in African-American Studies (3) Teaches basic approaches to the research process and de- 
vancement of research. Students design and implement a research project of their choice in the field of African-American Studies. Prereq: 320-322 and senior standing. Writing emphasis course.

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

425 The African-American Experience From the Co- 
nial Period to the Present (3) Same as History 430.

436 Issues and Topics in African-American Studies (3) Topics vary. May include scholarly articles, issues, and 
individuals from the field of African-American Studi- 
es. May be repeated. Maximum 6 hours.

422 African Political Studies (3) Same as Political Sci- 
ence 432.

424 African Prehistory (3) Same as Anthropology 434.

425 Black Male in American Society (3) Examines internal images, myths and stereotypes which have developed concerning black males in American culture. Includes 
the impact of such critical factors as Black WOMEN, violence, concepts of masculinity, the white, white males, white females, homosexuality, national- 
ity, and victimization on black males in America.

430 Black Communities in Urban America (3) Examines 
the structure and development of black communities in major U.S. cities. Includes political, economic, and social factors used by blacks in the development of their neighborhoods and neighbor- 
hoods of its own.

430 African-American Women in American Society (3) Focuses on historical and contemporary topics, 
figures, and factors. May include scholarly articles, issues, and individuals from the field of African-American Studies. Prereq: 320-322 and senior standing. Writing emphasis course.

423 African-American Issues in American Society (3) Examines the benevolent and historical influence of three 
white males, white females, homosexuality, national-
ism (1-3) Primarily for Agricultural and Business 
Students. May be repeated. Maximum 6 hours.

420 Seminar in Agricultural Economics and Busi- 
ess (1) Primarily for Agricultural Economics and Busi- 
ess majors in their senior year. Introduction to current 
issues, subject matter, special emphasis, and opportuni- 
tes in the field. Discussion of career objec-
tives, opportunities, and placement process. Assign-
ments for written and oral presentation.

421 Agricultural and Extension Education (3) Overview of agricultural education and careers in the agri- 
cultural industry. Focus on agricultural education, teacher, and management activities. Prereq: 320-322 and senior standing. Writing emphasis course.

422 Ambassadors in Agricultural Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

423 Agricultural Leadership (3) Focuses on the role of the agricultural leader in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

424 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

425 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

426 Student Teaching in Agricultural Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

427 Agricultural Economics (3) Focuses on the role of the agricultural economics teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

428 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

429 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

430 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

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432 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

433 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

434 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

435 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.

436 Agricultural and Extension Education (3) Focuses on the role of the agricultural education teacher in the classroom, providing information to students, and modeling the culture of agriculture. Prereq: 320-322 and senior standing. Writing emphasis course.
413 Component Design and Machine Synthesis (3) Design, functional analysis, creativity, analysis and synthesis, professional development and continuing education. 1 hour. F

420 Political Attitudes and Opinions (3) (Same as Sociology 345.) Political ideology, political behavior, group behavior, the function of political voice in a democratic society; the political process; the role of government; the function of professional officer in a democratic society; behaviors associated with professional military service; preparation for field training. 3 hours. Coreq: 401-402. Satisfactory/No Credit only.

425 Small Internal Combustion Engines (3) Theory, concepts and mechanisms of small internal combustion engines, propulsion, operation, adjustment, troubleshooting and repair of single-cylinder engines. Prerequisite: Physics 121 or consent of instructor. 2 hours and 1 lab. F

426 Agricultural Chemical Application Technology (3) Equipment and applications for agricultural and natural resource sources (1) Microcomputers as related to agriculture and natural resources systems. Primarily for College of Agriculture and Natural Resources Honors students. May be repeated. E

430 Mobile Hydraulic Power System Design (2) Function and operational characteristics of mobile hydraulic systems, including pumps, valves and actuators; analysis and synthesis of power transmission and control systems. Prerequisite: Mechanical Engineering Systems 341. 1 hour and 2 labs. Sp

431 Component Design and Machine Synthesis (3) Synthesis of design: structural, kinematic, power, control system development; preparation of design drawings, specifications, model of device; written and oral report on project. Design content: 3 hours. Prerequisite: 403. 1 hour and 2 labs. Sp

432 Irrigation and Waste Management System Design (3) Design of irrigation and agricultural waste management systems with consideration given to livestock waste characteristics, and impact on crop yield and water quality. Design content: 3 hours. Prerequisite: 340, 341. 1 hour and 2 labs. Sp

433 Food and Bioprocessing System Design (3) Actuators; analysis and synthesis of power transmission and power system components including pumps, valves and actuators; analysis and synthesis of power transmission and control systems. Prerequisite: 341. 1 hour and 2 labs. Sp

434 Agronomic Engineering System Design (3) System design for processing, handling, and storage of agricultural products. Topics may include: product characteristics, equipment specifications, design considerations. Design content: 3 hours. Prerequisite: 402, 403. 1 hour and 2 labs. Sp

435 Electronic Systems (3) Basic electronics with biomedical instrumentation and systems, safety and controlling physical and environmental parameters. Basic electronics and troubleshooting, signal conditioning, process control. Includes laboratory experiments. Design content: 1 hour. Prerequisite: Electrical and Computer Engineering 301. 3 hours and 1 lab. F

436 Special Problems in Agricultural Engineering (1-3) Current trends and problems in agricultural engineering. May be repeated. E

AGRICULTURAL ENGINEERING TECHNOLOGY (067)

201-202 Air Force Aerospace Studies (1,1) Introductions to the Air Force and basic military power, organization of America's defense structure, and mission, various component forces of U.S. Armed Forces and the Air Force. Prerequisite: Air Force ROTC application and completion of either 205 or 101-104, 201-202. Satisfactory/No Credit only.

205 Field Training (Academic Program) (1-4) Role of United States military forces in contemporary world, with particular attention to United States Air Force. Organization and mission; various component forces of U.S. military power, organization of America's defense structure, posture of major powers, and elements and principles of essential defense policy. Concluded at field training. Prerequisite: 201-204. Coreq: 3-0-12. Only to be taken two years after program begins.

201-302 Air Force Aerospace Studies (5,9) Air Force leadership at prior officer level, including theoretical, professional, and legal aspects, with attention to communication skills, military management, leadership, personal and professional development, at Air Force ROTC approval and completion of either 205 or 101-104, 201-202. Satisfactory/No Credit only.

456 History of Sports in the United States (3) (Same as History 380.) Historical development, current national and international issues, and trends for the future. 3 hours.

American Issues/Agricultural Engineering Technology (070)

220 Anatomy and Physiology of Farm Animals (3) Morphology, function of professional officer in a democratic society; behaviors associated with professional military service; preparation for field training. Coreq: 401-402. Satisfactory/No Credit only.

260 The Animal Industry and Market Evaluation (3) Properties of materials including wood, metal, concrete, plastics and labor-saving, draftless and plan reading; fabrication techniques and processes involving hand labor, power equipment, and air and pneumatic tools. 2 hours and 1 lab. F

262 Food and Process Technology (3) Analysis of raw materials and their transformation to finished products; processing; heating, drying, mixing, separation, cooling; fermentation, and waste handling. Prerequisite: Physics 121. 3 hours and 1 lab. F

302 Special Topics in Computer Applications for Agriculture and Natural Resources (1) Content varies according to availability and departmental needs. Permission required for variable title on transcript.

317 Agriculture and Natural Resources Honors Seminar (1) Discussion of selected topics, issues and problems in agriculture and natural resource systems. Prerequisite: 340 and Soiland Water Conservation Laboratory (1) Coreq: 340. Same as Plant and Soil Science 210.

318 Agriculture and Natural Resources (2) Advanced topics in microcomputer applications for agriculture including system organization and selection, specifications, communication, data base management, electronic spreadsheets, project management, and other application software. Prerequisites: Agriculture 301. 1 hour and 1 lab. F

319 Agricultural and Natural Resources Honors Seminar (1) Advanced topics in microcomputer applications for agriculture including system organization and selection, specifications, communication, data base management, electronic spreadsheets, project management, and other application software. Prerequisites: Agriculture 301. 1 hour and 1 lab. F

Agriculture 401-402, Philosophy and the Peaceful Ideal (3) (Same as History 380.)

320 Popular Culture and American Politics (2) (Same as Political Science 312.)

321 Agriculture and Natural Resources Honors Seminar (1) Discussion of selected topics, issues and problems facing national and international food, agricultural, and natural resource systems. Prerequisite: 340. 1 hour and 1 lab. S

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

326 Microcomputer Applications in Agriculture and Natural Resources (2) Advanced topics in microcomputer applications for agriculture including system organization and selection, specifications, communication, data base management, electronic spreadsheets, project management, and other application software. Machine systems and an overview of application software. 3 hours.

331 Microcomputer Applications in Agriculture and Natural Resources (2) Advanced topics in microcomputer applications for agriculture including system organization and selection, specifications, communication, data base management, electronic spreadsheets, project management, and other application software. Machine systems and an overview of application software. 3 hours.

340 Soil and Water Conservation (3) Hydrologic, management; safety considerations; material handling and disposal methods. Prerequisites: Physics 121 or consent of instructor. 2 hours and 1 lab. Sp


344 Agricultural Waste Management and Pollution Control (3) Characterization of animal manures, techniques for collection, composting, storing, and utilizing hatchery waste. Prerequisite: Mathematics 121, 2 hours and 1 lab. F

American Issues/Agricultural Engineering Technology (070)

345 Historical Development of the Military Power of the United States (3) History of farming; the role of the farmer in the economy; the farmer as a producer; the farmer of the future. Prerequisites: Air Force ROTC application and completion of either 205 or 101-104, 201-202. Satisfactory/No Credit only.

355 Religion and Culture in the United States (3) (Same as Sociology 350.)

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

361 Introduction to Folklore (3) (Same as English 419.)

370 Historical Development of the Military Power of the United States (3) History of farming; the role of the farmer in the economy; the farmer as a producer; the farmer of the future. Prerequisites: Air Force ROTC application and completion of either 205 or 101-104, 201-202. Satisfactory/No Credit only.

380 American Issues/Agricultural Engineering Technology (070)

381 Introduction to Folklore (3) (Same as English 419.)

382 The Animal Industry and Market Evaluation (3) Properties of materials including wood, metal, concrete, plastics and labor-saving, draftless and plan reading; fabrication techniques and processes involving hand labor, power equipment, and air and pneumatic tools. 2 hours and 1 lab. F

383 Field Training (Academic Program) (1-4) Role of United States military forces in contemporary world, with particular attention to United States Air Force. Organization and mission; various component forces of U.S. military power, organization of America's defense structure, posture of major powers, and elements and principles of essential defense policy. Concluded at field training. Prerequisite: 201-204. Coreq: 3-0-12. Only to be taken two years after program begins.

385 Religion and Culture in the United States (3) (Same as Sociology 350.)

386 Freedom of Speech (3) (Same as Speech Communication 469.)

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

388 The Animal Industry and Market Evaluation (3) Properties of materials including wood, metal, concrete, plastics and labor-saving, draftless and plan reading; fabrication techniques and processes involving hand labor, power equipment, and air and pneumatic tools. 2 hours and 1 lab. F

389 American Issues/Agricultural Engineering Technology (070)
411 Linguistic Anthropology (3) Basic linguistic concepts and principles. Prerequisites: Consent of instructor. May be repeated. Maximum 6 hours.

420 Fieldwork in Archaeology (3-9) Practicum work in archaeology. Prerequisites: Consent of instructor. May be repeated. Maximum 6 hours. Prerequisites: Either 110, 120, 130 or consent of instructor. Corequisites: 171. F, S

423 Advanced Computer Applications (3) Survey of the role of the computer in architecture, its potentials and limitations. Recent developments in computer applications with specific applications and demonstrations. F, S

491 Independent Study (1-15) Selected readings in history, theory, and design methodology with emphasis on analysis of architectural exemplars. Prerequisites: Consent of instructor. May be repeated. 1 credit hour seminar and 5 credit hours studio. Corequisites: 171. F, S

492 Introduction to Architectural Technology (2) Basic concepts and methods in architectural design. Introduction to the computer in architectural design. Prerequisites: Consent of instructor. May be repeated. 1 credit hour seminar and 5 credit hours studio. Corequisites: 171. F, S

493 Independent Study (1-15) Selected readings in history, theory, and design methodology with emphasis on analysis of architectural exemplars. Prerequisites: Consent of instructor. May be repeated. 1 credit hour seminar and 5 credit hours studio. Corequisites: 171. F, S

494 Primeval Behavior (3) Social organization and ceremonial behavior of early hunter-gatherer and forager societies. Prerequisites: 120 or consent of instructor. Corequisites: 171. F, S

495 Human Paleontology (4) Introduction to human paleontology. Prerequisites: 120 or consent of instructor. Corequisites: 171. F, S

496 Biology of Human Variability (3) Introduction to human paleontology. Prerequisites: 120 or consent of instructor. Corequisites: 171. F, S

497 Human Paleoanthropology (3) Introduction to human paleontology. Prerequisites: 120 or consent of instructor. Corequisites: 171. F, S

498 Fieldwork in Archaeology (3-9) Practicum work in archaeology. Prerequisites: Consent of instructor. May be repeated. Maximum 6 hours. Prerequisites: Either 110, 120, 130 or consent of instructor. Corequisites: 171. F, S

412 Materials and Methods of Construction (3) Principles of construction of simple buildings which explore formal possibilities of form, function, and design. Emphasis on development of basic design-study and analysis techniques. Prerequisites: Consent of instructor. May be repeated. Maximum 6 hours. Prerequisites: Either 110, 120, 130 or consent of instructor.
243 MetalCastSculptureI(3)Metalcastingmethods
241 SculptureI(3)Problemswhichexplorebasic
229SpecialTopicsinCeramics(3)Studentorinstruc-
213 PaintingI:Introduction(3)Capacitiesofoiland
214 PaintingII(3)Techniquesofexpressioninoiland/
212 Drawing II: LifeDrawing (3)Developmentof
drawingskilledanddynamicofthehuman
211 Drawing I: Survey of Drawing (3)Fundamental aspectsof
220 Ceramics I: The Potter's Wheel (3)Concepts,techniques,
209 SpecialTopicsinFiberand Fabric(3)Studentor
208 Fabric:SoftSculpture(3)Fabricasamedium.Development ofrelief
203 Fabric:SoftSculpture(3)Fabricasamedium.Development ofrelief
218 IntermediateIllustrationPractical(3)Developmentof
216 IllustrationPractical(3)Introductiontoillustration.
215 WatercolorII(3)Individualexpressionwithwater-base
207 SpecialTopicsinDrawing(3)Conceptsandtechniquesof
206 SpecialTopicsinDrawing(3)Conceptsandtechniquesof
205 Drawing I (3)Conceptsandtechniquesof
204 Ceramics III (3)Conceptsandtechniquesof
203 Two-DimensionalFiber(3)Mixedmediaapproach
202 Two-DimensionalFiber(3)Mixedmediaapproach
201 BeginningGraphicDesign I (3)Introductionto
250 SpecialTopicsinPhotography(3)Studentorinstructor-
251 BeginningGraphicDesign I (3)Introductionto
253 SpecialTopicsinPhotography(3)Studentorinstructor-
252 IntermediateGraphicDesign I (3)Conceptsof
254 SpecialTopicsinGraphicDesign (3)Advancedmodeling
techniques.Reinforcementoffoundobjectmaterial.Prereq:211.
256 IndividualProjectsinGraphicDesign/Illustra-
tion.Prereq:350. Successfulcompletionrequiredpriorto
registrationforjuniorand
seniorcourses.Prereq:211,252, and 312 or consentofinstructor. May be repeated. Maximum 12 hours.
255 GraphicDesign/IllustrationPortfolioReview(0)
Satisfactory/Nocreditonly.
254 MixedMediaSculpture(3)Studentorinstructor-

253 Blackand WhiteIllustration(3)Blackandwhite
mediaandtechniquesasadaptofproductandeditorial
illustration.Prereq:350. Successfulcompletionrequiredpriorto
registrationforjuniorandseniorcourses.Prereq:211,252, and 312 or consentofinstructor. May be repeated. Maximum 12 hours.
252 IntermediateGraphicDesign I (3)Conceptsandtechniquesof
251 BeginningGraphicDesign I (3)Introductionto
250 SpecialTopicsinPhotography(3)Studentorinstructor-
249 SpecialTopicsinFiberand Fabric(3)Studentorinstructor-
248 SpecialTopicsinFiberand Fabric(3)Studentorinstructor-
246 Mixed Media sculpture(1)Use of two or more
techniques, and a variety of sculptural techniques,lied to
create dimensional form. May include carving, modeling,
molding, casting, and other processes.
245 Steel Sculpture(3)Practices to introduce steel as
almaterialforthecreationofsculpture.developmentof
weldingtechniques.
244 Mixed Media sculpture(1)Use of two or more
techniques, and a variety of sculptural techniques,lied to
create dimensional form. May include carving, modeling,
molding, casting, and other processes.
243 MetalCastSculptureI(3)Metalcastingmethods

354 Color Illustration II (3) and print and color media and techniques as applied to production and editorial illustration. Prereq: 353.


360 Printmaking Portfolio Review (2) Review of prior work in printmaking with emphasis on individual prior registration for senior and junior printmakers. Prereq: consent of department. Prereq: 356. May be repeated. Maximum 2 hours.

363 Lithography I (4) Color lithography from stone and point source illumination. Techniques involving stone preparation and acid etching. Prereq: 353. Prereq: consent of instructor. May be repeated. Maximum 4 hours.

363 Screen Printing II (4) Advanced work with basic screen printing techniques including photo screening. Emphasis on identification and development of personal concept. Prereq: 353 and 356. May be repeated. Maximum 8 hours.

371 Early Christian and Byzantine Art to 1250 (3) Art in Italy and the Eastern Empire from the beginning of Christianity to c. 1050. Mosaic and painting, sculpture and architecture. (Same as Medieval Studies 371.)

372 Northern European Painting, 1350-1600 (3) From Gothic to Baroque aesthetic. Emphasis on the use of perspective as applied to architecture. Prereq: 353. May be repeated. Maximum 4 hours.

373 Mediterranean Art, the West, 800-1500 (3) Western European art of the "Dark Ages." Romanesque and Gothic art to c. 1500. Prereq: 353. May be repeated. Maximum 8 hours.

377 The Art of Italy: 1250-1450 (3) Development of naturalism. Development and expansion of theories of perspective in the Early Renais- sance, including Duccio, Giotto, Masaccio, Ghirlandaio. (Same as Medieval Studies 372.)


391 Medieval Art of the West, 800-1200 (3) Western European art of the "Dark Ages." Romanesque and Gothic art to c. 1500. Prereq: 353. May be repeated. Maximum 8 hours.

397 Art of Southern Europe, 1750-1870 (3-6) Concentrated study of Caravaggio, Rembrandt, and Italian Baroque decorative arts in the visual arts, music, drama, literature and painting abroad. Prereq: 353. May be repeated. Maximum 12 hours.

398 Japanese Art II (3-6) Survey from ancient Japan in clip to the Meiji period style of today. Variety of screen painting techniques, including photo screening. Emphasis will be placed on the aesthetics and the use of photography as a medium for artistic expression. Prereq: 398.

399 History of Photography (3-6) Survey of the history of photography from its invention to the present with an emphasis on aesthetic and idiosyncratic to more recent trends. Emphasis will be placed on understanding the use of photography as a medium for artistic expression.

400 Survey of Glass Projects in Fibers (2-4) Prereq: 201. Consent of instructor. May be repeated. Maximum 6 hours.


404 Advanced Industrial Design 2 (3) Exploration of surface aesthetics, architecture and technology. Prereq: 396 or consent of instructor. May be repeated. Maximum 6 hours.

408 Advanced Computer Enhanced Design 2 (Pre- requisites: 408 or consent of instructor. May be repeated. Maximum 6 hours.

409 Special Topics in Fiber/Fabric I (3) Student or instructor-initiated course offered as a continuation of previous independent study. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

411 Drawing IV (3) Individualized pursuit of pictorial expression through advanced concepts and techniques. May be repeated. Maximum 12 hours.

413 Painting IV (3) Advanced painting through individual project exploration of various media and techniques. Prereq: 313. May be repeated. Maximum 12 hours.

416 Watercolor III (3) Advanced painting with water- colored medium in paper providing individual concepts and personal approaches. Prereq: 316. May be repeated. Maximum 12 hours.

417 Ceramics Advanced Projects I (3) Each student will develop an independent study in specific concept using appropriate media, materials, and techniques. Prereq: 417. May be repeated. Maximum 12 hours.

419 Ceramic Surface Design (3) High and low fire technical techniques, clay, slips, glazes, underglazes, and glaze making. Prereq: 417. May be repeated. Maximum 12 hours.

420 History of Ceramics Seminar I (3) Survey of the history of ceramics from ancient through contemporary periods. Emphasis on the aesthetic and technical side of ceramics and individual presentations. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

421 Ceramics: Individual Projects (3-6) Student or instructor-initiated course offered as a continuation of previous independent study. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

422 Ceramics: Advanced Projects I (3) Each student will develop an independent study in specific concept using appropriate media, materials, and techniques. Prereq: 422. May be repeated. Maximum 12 hours.

423 Ceramics: Surface Design I (3) High and low fire technical techniques, clay, slips, glazes, underglazes, and glaze making. Prereq: 423. May be repeated. Maximum 12 hours.

425 History of Ceramics Seminar II (3) Survey of the history of ceramics from ancient through contemporary periods. Emphasis on the aesthetic and technical side of ceramics and individual presentations. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

426 Kilns: Design, Construction and Operation (3) Designing kilns, traditional and modern refractories, and other related research or off-campus. Prereq: 425.


429 Special Topics in Ceramics I (3) Student or instructor initiated course offered as a continuation of previous independent study. Prereq: consent of department. May be repeated. Maximum 12 hours.

430 Special Topics in Ceramics II (3-6) Independent development of problem and concept in individual projects. Prereq: 430. May be repeated. Maximum 12 hours.

431 Special Topics in Ceramics III (3-6) Student or instructor initiated course offered as a continuation of previous independent study. Prereq: consent of department. May be repeated. Maximum 12 hours.

432 Special Topics in Ceramics IV (3-6) Independent development of problem and concept in individual projects. Prereq: 432. May be repeated. Maximum 12 hours.

433 Ceramic Production I (3-6) Emphasis on the aesthetic and technical side of ceramics and individual presentations. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

434 Ceramic Production II (3-6) Emphasis on the aesthetic and technical side of ceramics and individual presentations. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

435 Ceramics: Advanced Projects II (3-6) Each student will develop an independent study in specific concept using appropriate media, materials, and techniques. Prereq: 435. May be repeated. Maximum 12 hours.


438 Graphic Design/illustration Practicum (1-12) Student or instructor-initiated course offered as a continuation of department study. Prereq: determined by department for individual topic. May be repeated. Maximum 12 hours.

439 Special Topics in Printmaking I (3) Student or instructor-initiated course offered as a continuation of department study. Prereq: determined by department for individual topic. May be repeated. Maximum 12 hours.

441 Advanced Sculpture I (3-6) Individualized pursuit for personal development of individual topic. Prereq: consent of department. May be repeated. Maximum 12 hours.

442 Ceramics: Advanced Projects II (3-6) Each student will develop an independent study in specific concept using appropriate media, materials, and techniques. Prereq: 442. May be repeated. Maximum 12 hours.

443 Advanced Sculpture II (3-6) Individualized pursuit for personal development of individual topic. Prereq: consent of department. May be repeated. Maximum 12 hours.

449 Special Topics in Sculpture I (3-6) Each student will develop an independent study in specific concept using appropriate media, materials, and techniques. Prereq: consent of department. May be repeated. Maximum 12 hours.

450 Advanced Graphic Design I (3) Advanced exploration into art systems and their impact on visual design. Prereq: 450.


456 Graphic Design/illustration Practicum (1-12) Student or instructor-initiated course offered as a continuation of department study. Prereq: determined by department for individual topic. May be repeated. Maximum 12 hours.

462 Intaglio III (3) Special project in traditional intaglio techniques, including intaglio press, mezzotint, and drypoint. Prereq: 462. May be repeated. Maximum 12 hours.

463 Lithography II (3) Special project in traditional lithography techniques. Prereq: 463. May be repeated. Maximum 12 hours.

464 Screen Printing III (3) Special project in traditional screen printing techniques and techniques. Prereq: 464. May be repeated. Maximum 12 hours.

481 Museology 1: Museums, Purpose and Function (3) Purposes, functions and development of museums and other related research or off-campus. Prereq: 481. May be repeated. Maximum 12 hours.

484 Museology III: Field Projects (1-12) Special project in field projects involving restoration, preservation, registration, and other related research or off-campus. Prereq: 481 or consent of instructor. May be repeated. Maximum 12 hours. (Same as Anthropology 484.)

485 History of Prattanining (2) Survey of prints from 1470 to 1500. Prereq: 485. May be repeated. Maximum 12 hours. (Same as Anthropology 485.)


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. Maximum 12 hours.

210 Drawing (3-4) Beginning to intermediate. May be repeated.

211 Ceramics (3-4) 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.

300 Special Topics (2-4) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

301 Foundation of Art Education (3) Basic philosophy and structure of art education. May be repeated. Maximum 6 hours.


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

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

305 Fine Elementary Education (3) Techniques related to teaching and to teacher roles. May be repeated. Maximum 8 hours. Prerequisite: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp.

310 Curriculum Planning and Teaching Strategies (3) Program development, instructional methods, program evaluation, contemporary issues, simulation and films related to teaching. 301 and admission to Teacher Education Program. F, Sp.

311 Pre-Internship Seminar (1) Orientation begins with intellectual preparation for internship. Must be completed the term immediately preceding the internship. Prerequisite: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp.

400 Internship I: Grades K-12 (3-4) Test of materials and theories of learning. Internship is completed in most public schools. Application for internship should be made upon admission to Teacher Education Program. Prerequisite: 301 and admission to Teacher Education Program. Satisfactory/No Credit only. F, Sp.

401 Internship II: Grades K-12 (3-4) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in most public schools. Prerequisite: 400 and admission to Teacher Education Program. Satisfactory/No Credit only. F, Sp.

402 Special Topics (1-4) May be repeated. Maximum 24 hours.

403 Special Topics (2-4) May be repeated. Maximum 24 hours.

404 Special Topics (3-4) May be repeated. Maximum 24 hours.

405 Special Topics (4-4) May be repeated. Maximum 24 hours.

406 Special Topics (5-5) May be repeated. Maximum 24 hours.

407 Special Topics (6-6) May be repeated. Maximum 24 hours.

408 Special Topics (7-7) May be repeated. Maximum 24 hours.

409 Special Topics (8-8) May be repeated. Maximum 24 hours.

410 Internship III: Grades K-12 (3-4) Maximum of 9 hours. Prerequisite: 401 and admission to Teacher Education Program. Satisfactory/No Credit only. F, Sp.

411 Internship IV: Grades K-12 (3-4) Maximum of 9 hours. Prerequisite: 402 and admission to Teacher Education Program. Satisfactory/No Credit only. F, Sp.

412 Individual Problems (1-4) Prerequisite: Consent of instructor. May be repeated. Maximum 32 hours.

413 Independent Study (1-4) Prerequisite: Consent of instructor. May be repeated. Maximum 32 hours.

414 Special Topics (1-4) May be repeated. Maximum 12 hours.

415 Special Topics (2-4) May be repeated. Maximum 12 hours.

416 Special Topics (3-4) May be repeated. Maximum 12 hours.

417 Special Topics (4-4) May be repeated. Maximum 12 hours.

418 Special Topics (5-5) May be repeated. Maximum 12 hours.

419 Special Topics (6-6) May be repeated. Maximum 12 hours.

420 Special Topics (7-7) May be repeated. Maximum 12 hours.

421 Special Topics (8-8) May be repeated. Maximum 12 hours.

422 Special Topics (9-9) May be repeated. Maximum 12 hours.

423 Special Topics (10-10) May be repeated. Maximum 12 hours.

424 Special Topics (11-11) May be repeated. Maximum 12 hours.

425 Special Topics (12-12) May be repeated. Maximum 12 hours.

426 Special Topics (13-13) May be repeated. Maximum 12 hours.

427 Special Topics (14-14) May be repeated. Maximum 12 hours.

428 Special Topics (15-15) May be repeated. Maximum 12 hours.

429 Special Topics (16-16) May be repeated. Maximum 12 hours.

430 Special Topics (17-17) May be repeated. Maximum 12 hours.

431 Special Topics (18-18) May be repeated. Maximum 12 hours.

432 Special Topics (19-19) May be repeated. Maximum 12 hours.

433 Special Topics (20-20) May be repeated. Maximum 12 hours.

434 Special Topics (21-21) May be repeated. Maximum 12 hours.

435 Special Topics (22-22) May be repeated. Maximum 12 hours.

436 Special Topics (23-23) May be repeated. Maximum 12 hours.

437 Special Topics (24-24) May be repeated. Maximum 12 hours.

438 Special Topics (25-25) May be repeated. Maximum 12 hours.

439 Special Topics (26-26) May be repeated. Maximum 12 hours.

440 Painting (2-4) Intermediatetoadvanced. May be repeated.

441 Photography (2-4) Intermediatetoadvanced. May be repeated.

442 Ceramics (2-4) Intermediatetoadvanced. May be repeated.

443 Fibers (2-4) Intermediatetoadvanced. May be repeated.

444 Fabric (2-4) Intermediatetoadvanced. May be repeated.

445 Metal Design (2-4) Intermediatetoadvanced. May be repeated.

446 Wood (2-4) Intermediatetoadvanced. May be repeated.

410 Plant Anatomy (3) Cells, tissues, organs and plant development in vegetative and reproductive structures of angiosperms. A laboratory examination of seed plants. Prereq: 110-120 or Biology 110-120.

418 Paleobotany and Palynology (3) (Same as Geol- n-429) 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, programming, regulations, and effects of radio and television on society. Students gain practical experience in radio and television. Credit given for a weekly 1-hr lab. Prereq: Communication 100.

310 Radio News (Writing, reporting, and performing) News for radio. Lecture and lab course with experience in writing and producing radio spots, news stories, feature segments, and television commercials. Prereq: 110-120 or Biology 110-120 or equivalent. Prereq: Communication 235.

330 Producing for Radio (3) Functions, theories, topics, skills, and techniques of writing, performing, and producing a television news program. Includes an overview of news writing, scripting, and techniques as well as video editing. Prereq: 310.


128-T, 138-T Introduction to Organic Chemistry (4) Organic chemistry. Alkanes, unsaturated and aromatic hydrocarbons, stereochemistry and reactions of organic functional groups. Prerequisites: Chemistry 121 and 122 or 131 and 132 or equivalent. Prereq: 100 or 101 or 113 or 118 or 131 or 138.

130-131 General Chemistry (4,4) A general course in inorganic and organic chemistry. 130: Atomic theory, chemical bonding, covalency, quantitative analysis, stoichiometry, quantitative thermodynamics. 131: Thermodynamics, kinetics, equilibria, descriptive chemistry of non-metallic and metallic elements, electrochemistry, radioactive processes, introduction to organic chemistry. Prereq: for 130: 100 or 131 or 101 and 1 lab. E

121-121 General Chemistry (4,4) For chemistry majors. Subject matter similar to Chemistry 120-121. Prereq: for 121: 100 or 121 and 1 lab. 121-131 General Chemistry (4,4) A general course in inorganic and organic chemistry. Prerequisites: and limited to chemistry majors. Prereq: for 130: 100 or 131 or 101 or 1 lab and 1 lab. S

210 Introduction to Chemical Research (1) Participation in an active research program in an area of inorganic, organic, physical, or polymer chemistry. Students work with a faculty advisor on a research project, interpreting results, and formulating hypotheses. Credit may be applied toward a major or minor in chemistry. Not a substitute for or prerequisite for 400. Prereq: Chemistry 200 or higher level course in chemistry and consent of instructor. May be repeated. Maximum 4 hours.

230 Organic Chemistry (3) Periodicity, valence, bonding, and the description chemistry at the element level. Covalent compounds: nuclear chemistry: transition elements; organometallics. Prereq: Chemistry 200 or 130 or 131 or 138. F

391 Analytical Chemistry (3) Principles and practices of quantitative measurements in chemical systems. Analysis, characterization, and methods. Applications of instrumental analysis to inorganic, organic, food, and environmental analysis. Prereq: 121.

392 Analytical Chemistry Laboratory (1) Experiments on topics covered in 391. Coreq: 391.


431 Radioactivity and Its Application (2) Radioactive decay, detection apparatus and techniques, tracer applications. Prereq: 230 or 481 or 483. Sp
The high school and college levels. May be repeated.

Examination of cases from the writing of the Roman jurists.

461 Studies in Classical Archaeology (3) Variable consent of department.

Sculpture, architecture, and Rome. May be repeated up to three times with consent of instructor.

Classical studies and the academic profession on both the politics of the "golden age" of Pericles and Augustus; of Linear B; new understandings of the culture and studies today: recent achievements in the areas of both the Greek mainland, Crete, and Cyprus ca. 3000-700 B.C. Rise and fall of the Minoan and Mycenaean civilizations. 

331 Archaeology of the Aegean Bronze Age and Early Greeks (3) Includes Troy, the Cycladic Islands, the Greek mainland, Crete, and Cyprus ca. 3000-1400 B.C. Extensive practice in analysis of terms. Practice in use of Latin nomenclature. 

320 Programming Languages (3) Structure and syntax of modern programming languages.

291 Lower-Division Special Topics (1-3) Topics vary. 9 credit hours possible. Departmental permission required. May be repeated. Maximum 9 hours.

281 Seminar in Classical Archaeology (1-3) Seminar topics vary. Maximum 9 credit hours possible. Departmental permission required. May be repeated. Maximum 9 hours.

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

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

260 Introduction to Comparative Literature (3) Overview of systems of mass communications, with emphasis on American media, their owners, legal and institutional control, role and effects. Advertising, broadcasting, journalism and publishing, and public relations are examined in the context of theories of mass communications.

259 Communications (259) Introduction to Multicultural Communications (3) Overview of systems of mass communications, with emphasis on American media, their owners, legal and institutional control, role and effects. Advertising, broadcasting, journalism and publishing, and public relations are examined in the context of theories of mass communications.

258 Writing for Mass Communications (3) Information-gathering and writing under deadline for print and broadcast media, including news and promotional copy. Preparation of news, advertising and persuasive text. Grammar, usage, and style examinations. Prerequisite: 160, English 162, and typographical skill.

257 Mass Communications Research Methods (3) Social science research methods; especially survey, used by communications media. Applications to both internal decision making and external communication in media. Prerequisite: 201 or consent of instructor.

256 Mass Communications Law and Ethics (3) Emphasis on the relationship between the mass media and society, the rights and responsibilities of the mass media, and the impact of technology on both internal decision-making and external communication in media. Prerequisite: 201 or consent of instructor.


241 Computer Science Research (3) Supervised research in computer science. 

240 Special Topics in Computer Science (3) Supervised research in computer science. 

235-256 Greek and Roman Literature in English Translation (255) Greek and Roman literature. 

234 Greek and Roman Literature in English Translation (254) Greek and Roman literature. The world's first legal prose writers. Emphasis on understanding legal institutions in relationship to human society. Classical aspects of Roman poetry and context.

233 Archaeology and Art of Greece and Rome (3) Survey of the art and architecture of the Greek and Roman civilizations with an emphasis on major sites, building types, and art forms. 


220 Computer Organization (3) Number systems, digital logic, and computer design. 

219 Electronic Printing and Graphics (1) Currrent hardware and software used in the electronic production of documents containing multiple fonts, mathematical equations, and graphics. 

216 Fundamentals of Programming (3) Structure and syntax of modern programming languages. 

215 Study of Classical Archology (3) Variable consent of department. May be repeated.

412 Senior Thesis II (3) Continuation of 411. Writing emphasis course.

371) 

370 Computer Techniques for Literary Study (3) Computer research in literary study including writing programs in BASIC which have literary research applications. 

369 Mass Communications Research Methods (3) Social science research methods; especially survey, used by communications media. Applications to both internal decision making and external communication in media. Prerequisite: 201 or consent of instructor.

368 Honors: College Scholars Studies (3-6) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated. Maximum 16 hours.

367 Senior-Thesis (3-6) May be repeated. Maximum 16 hours.

366 Advanced Topics in Theoretical Computer Science (3) Topics such as numerical methods, supercomputers, mathematical foundations of computing, computer science and programming language. Emphasis on research methodology. Preparation of core curriculum or consent of instructor.

365 Advanced Topics in Theoretical Computer Science (3) Topics such as numerical methods, supercomputers, mathematical foundations of computing, computer science and programming language. Emphasis on research methodology. Preparation of core curriculum or consent of instructor.

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

358 Theory of Computation (3) Recursive functions, Church-Turing thesis, Rice's theorem, and formal models of computing.

356 Honors: College Scholars Studies (3-6) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated. Maximum 16 hours.

355 Programming Languages (3) Structure and syntax of modern programming languages.

354 Computer Organization (3) Number systems, digital logic, and computer design.


352 Computer Organization (3) Number systems, digital logic, and computer design.

351 Computer Organization (3) Number systems, digital logic, and computer design.
193 Practicum: Dance Production (1) Laboratory and professional production techniques 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. Available to dance majors and minors or with consent of instructor. May be repeated. Maximum 16 hours.

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

240 Tap: Level II (2) Instruction and practice in intermediate tap dance techniques. Prereq: Consent of instructor. May be repeated. Maximum 16 hours.

250 Economic History of the North Atlantic Community (3) The REVOLUTION, development of the factory system, rise of an urban and industrial society in the region of the North Atlantic (c. 1600-1800). Emphasis on processes under alternative strategies and allocations used to promote economic improvement in less developed economies. May be repeated. Maximum 16 hours.

255 Economic Development (Third World) (3) Analysis of major economic strategies, policies, and problems in less-economized countries. Limited to students in the College of Integrated Studies.

271 Organizational Behavior (3) A study of the behavior of individuals and groups in organizations with an emphasis on human resource management and human relations. May be repeated. Maximum 16 hours.

275 International Business (3) Overview of major foreign trade and investment issues. May be repeated. Maximum 16 hours.

280 Survey of Economic Ideas (3) An introduction to demand and supply theory and its implications for government policies. May be repeated. Maximum 16 hours.

301 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, interest rates, money and fiscal policy, debt, and international economics.

302 Macroeconomic Fluctuations (3) Analysis of historical data; methods of analyzing macroeconomic fluctuations; the business cycle; the cause and pattern of business cycles; structural changes in the economy.

310 Money and Financial Markets (3) Theory of money and financial markets; the role of money in the economy; monetary theory and policy; debt, and international economics.

311 International Macroeconomics (3) Measurement of money and prices, aggregate demand, output, employment, price determinants, international capital flows, fiscal and monetary policies and growth. Prerequisite: 201.

313 Intermediate Microeconomics (3) Theories of consumer behavior, production and cost, price and output determination in perfectly competitive, monopolistic and imperfectly competitive markets, input prices, consumer income, welfare, and government policies. Prerequisite: 201.

315 International Economics (3) Analysis of economic relations in the world economy, including trade, investment, multinational corporations, debt, and debtors. Prerequisite: 201.

321 International Economics (3) International payments, exchange rate determination, monetary and fiscal policy, commodity agreements, comparative advantage, the role of non-market decisions, economic sanctions, regional integration, international migration. Prerequisite: 201.

325 Economic Development (Third World) (3) Policies of economic development, role of poverty and underdevelopment and independent nations. Prerequisite: 201. Writing emphasis course.

326 Comparative Economic Systems (3) Economic systems: socialist, capitalist, and mixed economies, and the techniques and policies of socialism and capitalism. Prerequisite: 201. Writing emphasis course.

327 The Political Economy of Natural Resources and Natural Resource Conservation (3) Origins of capitalism, mercantilism, Revolution, development of factory system, role of government, business and labor, integration of the Atlantic economy. Prerequisite: 201. Writing emphasis course.

328 Labor Economics (3) Exchange of labor services for leisure time and compensation; labor market behavior, labor market efficiency, labor market institutions, discrimination, unions and collective bargaining, labor market institutions. Prerequisite: 201. Writing emphasis course.

329 Taxation and Intergovernmental Relations (3) Federalism, regionalism, and politics in the development of the Constitution and the distribution of economic powers, national fiscal policy, and national economic policies. Prerequisite: 201. Writing emphasis course.
EDUCATION (289)

105 Special Topics (1-4) Study in selected disciplinary or professional areas. Prerequisite: permission of instructor.

106 Independent Study (1-6) Opportunity for qualified students to pursue topics of special interest. Prerequisite: student of standing, 3.0 GPA in academic courses, and consent of instructor. Maximum 6 total credits.

EDUCATIONAL AND COUNSELING PSYCHOLOGY (311)

210 Personality and Mental Health (3) Theories and research regarding personality and mental health with an emphasis on how to enhance academic performance through study skills, techniques, and resources. Prerequisite: Educational and Counseling Psychology 210 and Educational and Counseling Psychology 410; Preparatory to Teaching Education Program.

212 Career and Personal Development (3) Systematic approaches to facilitation of career development and life planning. Corequisites: interpersonal relations, career decision-making, and/or Social Studies. Prerequisite: Admission to Teacher Education Program.

215 Learning Skills and Study Systems (3) Approaches to the development of study skills, techniques, and resources. Prerequisite: learning skills and study systems; corequisites: Educational and Counseling Psychology 210 and Educational and Counseling Psychology 410; Preparatory to Teaching Education Program.

210 Special Topics (1-4) Study in selected disciplinary or professional areas. Prerequisite: permission of instructor.

212 Learning Study and Curriculum (3) Organization of curricula and classrooms, analysis of the nature and regularity of human development to teaching/learning processes and organizational patterns of curricula and classrooms. Prerequisites or Corequisites: Educational and Counseling Psychology 210 and Educational and Counseling Psychology 410; Preparatory to Teaching Education Program.

215 Learning Skills and Study Systems (3) Approaches to the development of study skills, techniques, and resources. Prerequisite: learning skills and study systems; corequisites: Educational and Counseling Psychology 210 and Educational and Counseling Psychology 410; Preparatory to Teaching Education Program.

EDUCATIONAL AND CURRICULUM INSTRUCTION (301)

101 Efficient Reading and Writing (3) Improvement of reading comprehension and oral, written, and visual communication skills. Prerequisite: acceptable reading achievement level and instructor's approval. Corequisites: Research Methods in Education and Teaching Methods in Education.

103 Field Study in Education (1-6) The selection of topics and the methodology for field study. Preparatory to Teaching Education Program.

105 Special Topics (1-4) Study in selected disciplinary or professional areas. Prerequisite: permission of instructor.

106 Independent Study (1-6) Opportunity for qualified students to pursue topics of special interest. Prerequisite: student of standing, 3.0 GPA in academic courses, and consent of instructor. Maximum 6 total credits.

EDUCATIONAL AND CURRICULUM INSTRUCTION (301)

101 Efficient Reading and Writing (3) Improvement of reading comprehension and oral, written, and visual communication skills. Prerequisite: acceptable reading achievement level and instructor's approval. Corequisites: Research Methods in Education and Teaching Methods in Education.

103 Field Study in Education (1-6) The selection of topics and the methodology for field study. Preparatory to Teaching Education Program.

105 Special Topics (1-4) Study in selected disciplinary or professional areas. Prerequisite: permission of instructor.

106 Independent Study (1-6) Opportunity for qualified students to pursue topics of special interest. Prerequisite: student of standing, 3.0 GPA in academic courses, and consent of instructor. Maximum 6 total credits.
456 Teaching Speech and Drama Grades 7-12 (3) Principles and techniques of teaching speech and drama in secondary schools. Prereq: Admission to Teacher Education Program. F

457 Teaching Science in the Secondary School (3) Techniques of teaching science. Prereq: Admission to Teacher Education Program. F, Sp

458 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading and literature. Sp, Su

459 Developing Reading Skills in Content Fields (3) Teaching reading and study skills in a content area of the high school program. Emphasis on middle school and high school. F, Sp

471 Internship I: Elementary (3) Methods and the review of teaching. Internship in is completed in both public and private schools. Application for internship must be made upon admission to the Teacher Education Program. Prereq: 410 and admission to the Teacher Education Program. Satisfactory/No Credit only.

472 Internship II: Elementary (4) Supervised readings in specified topic area. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only.

473 Student Teaching in the Elementary School (3-12) Seminar approach to classroom problems. Field experience (460 or 462). Internship for students in the first year program in education. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only.

474 Student Teaching, Grades 7-12 (12) Seminar approach to classroom problems. Prereq: Admission to Teacher Education Program. Internship 460 or 462. Internship for students in the first year program in education. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only.

475 Utilization of Instructional Media (3) Basic communication processes, analysis of various media for instructional development, development of instructional objectives, and evaluation of instructional media. Prereq: Lib Inf 475 or 475E. F, Sp

476 Utilization of Instructional Media in Elementary Education (1) Basic operation of audiovisual equipment, selection and use of appropriate media in instruction, and methods of evaluation and presentation. Prereq: Lib Inf 475 or 475E. S, Su

485 Teaching of Mathematics, Grades 7-12 (3) Preparation of teaching plans, evaluation, materials for teaching mathematics; teaching simulation and directed observation in schools. Prereq: Admission to Teacher Education Program, permission of Teacher Education Program, and 205 (1). Satisfactory/No Credit only.

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

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

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

496 Technologies'-'s in Education (3) Methods, materials, recent trends in science and environmental education. Prereq: Admission to Teacher Education Program. F, Sp

ENGINEERING AEROSPACE (016)

403 Space Environment Instrumentation and Measurement (3) Fundamentals of instrumentation apparatus and measurement techniques. Studied topics include instrumentation, telemetry data treatment, transducer, signal conditioning, system inputs, temperature and pressure measurement. Prereq: 362, NE 414, ECE 301. F, Sp


341 Thesis (2) Problem investigation and report. Prereq: Senior standing. F, Sp

342 Aerodynamics (3) Theory and design of aerodynamic bodies for flight. Potential flow theories, inviscid effects, compressibility effects. Subsonic, supersonic, and transonic bodies. Prereq: 370. F

355 Advanced Fluid Flow (3) Boundary layer theory, laminar and turbulent flow. Compressibility effects. Numerical solution methods. Prereq: 420 or ME 344 or consent of instructor. F


ENGINEERING CHEMICAL (226)

430 Chemical Engineering Thermodynamics (3) Basic concepts and one dimensional applications of thermodynamics. emphasis on flow processes, reactor gas, reactor heat transfer, reactor mass transfer, and chemical equilibrium. Coreq: Mathematics 231. F


418 Computers in Chemical Engineering (3) Operation of digital computers, mainframes and minicomputers. Application of digital computers to chemical engineering. Prereq: Mathematics 110. F

301 Seminar I (3) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No Credit only.

403 Introduction to Optimization (3) Principles and application of optimization techniques to chemical engineering problems. Prereq: Mathematics 231. F

330 Chemical Engineering Thermodynamics (3) Basic concepts and one dimensional applications of thermodynamics. emphasis on flow processes, reactor gas, reactor heat transfer, reactor mass transfer, and chemical equilibrium. Coreq: Mathematics 231. F

415 Computer Applications in Chemical Engineering (3) Introduction to computer applications in chemical engineering. Prereq: Mathematics 231. F

430 Chemical Engineering Thermodynamics (3) Basic concepts and one dimensional applications of thermodynamics. emphasis on flow processes, reactor gas, reactor heat transfer, reactor mass transfer, and chemical equilibrium. Coreq: Mathematics 231. F

301 Seminar I (3) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No Credit only.

403 Introduction to Optimization (3) Principles and application of optimization techniques to chemical engineering problems. Prereq: Mathematics 231. F

415 Computer Applications in Chemical Engineering (3) Introduction to computer applications in chemical engineering. Prereq: Mathematics 231. F

430 Chemical Engineering Thermodynamics (3) Basic concepts and one dimensional applications of thermodynamics. emphasis on flow processes, reactor gas, reactor heat transfer, reactor mass transfer, and chemical equilibrium. Coreq: Mathematics 231. F

301 Seminar I (3) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No Credit only.
201 Electrical and Computer Engineering Computations (3) Computer analysis and plotter calculus; linear algebra; algorithms for roots of equations; numerical integration; simulation of ordinary differential equations; Programming languages: Fortran, COBOL, C, or C++. Design content: 3 hours. Prereq: 205.

231 Small Computer Systems (5) Structured assembly language programming; data collection under the control of the personal computer using A/D converters; output of data to art displays, on-line, real-time analysis using an X-Y plotter, real-time control of computers, spacecraft computer applications; wordprocessing applications using a terminal, wordprocessors, and a computer-aided terminal to control applications and projects. Design content: 2 hours. Prereq: 201, 205, 352. Coreq: 301.

301 Circuits and Electronic Measurement Devices (3) DC and AC Circuits, Transistors, Transformers, Mosfets, Generators. For in-hom projects only. Prereq: Mathemat- matics 221. Physics 251.


313 Linear System Analysis (3) Stability and tran- sient analysis of continuous and discontinuous time systems, stability, block diagrams and signal flow graphs. Introduction to feedback theory. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 311.


331 Electronic Devices (3) Fundamentals of energy bands, theory of field effect devices, surface and bulk, characteristics, device applications, diode and transistor circuits, performance- oriented laboratory experiments and projects. Design content: 1 hour. Prereq: 311.

332 Electronic Circuits (3) Multistage transistor ampli- fier testing, gain stages, output buffer stage, amplifier stability analysis, circuits, and applications, wave-shaping circuits, frequency compensation methods. Laboratory experiments for applications in basic feedback configurations, biasing circuits, and screening circuits. Includes laboratory experi- ments and design projects. Design content: 3 hours. Prereq: 301.


342 Communication Systems I (3) Principles of modern data communication techniques, including linear, angle, and pulse modulation with applications. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 341.

343 and Analog Integrated Electronics (4) Principles and characteristics of power semiconductor devices, single thyratrons and thyristors and thyristor and similar devices. Includes laboratory experi- ments and research projects. Design content: 1 hour. Prereq: 341.

345 Digital and Analog Signal Processing Electronics (4) Trans- formers, amplifiers, filters, frequency analysis of trans- formers and circuits, analysis of transistors and integrated circuits, wave-shaping circuits, operational amplifiers. Laboratory experiments and projects. Design content: 2 hours. Prereq: 342.

346 Analog Signal Processing Electronics (4) Trans- formers, amplifiers, filters, frequency analysis of trans- formers and circuits, analysis of transistors and integrated circuits, wave-shaping circuits, operational amplifiers. Laboratory experiments and projects. Design content: 2 hours. Prereq: 342.

431 Digital and Analog Integrated Electronics (4) Principles and characteristics of power semiconductor devices, single thyratrons and thyristors and thyristor and similar devices. Includes laboratory experiments and projects. Design content: 2 hours. Prereq: 345.

440 Digital Signal Processing (3) Principles and charac- teristics of integrated circuits, emphasis on microprocessor design. Includes laboratory work and projects. Design content: 2 hours. Prereq: 342.

441 Introduction to Plasma Engineering (3) Particle and ray descriptions of plasma, radiation from pions, implosion of fusion devices, and the I/Ochannels. Microprogramming the control unit and different interrupt structures. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 341.

442 Antennas and Propagation (3) Linear antennas, arrays, other simple antennas, Antenna gain, impedance, communication link parameters. Use propagation in earth bound free space, earth to space link and space to space link. Includes laboratory work and projects. Design content: 1 hour. Prereq: 341.


451 Microprocessors in Computer Engineering (4) Project oriented using a microcomputer kit having a monitor program and development system with extra- terminal and interfacing input. Includes laboratory experi- ments and interface with other microcomputer kit. Included is dependent upon number of projects completed, notebook solutions, and engineer- ing notebook. Includes laboratory experiments and de- sign projects. Design content: 3 hours. Prereq: 351.

461 Organization and Design of Digital Systems and Computers (4) Considerations for hardware organization and digital circuits. Includes full-logic and CPU structures, control and organization, storage sys- tems, and the I/O channels. Microprogramming the control unit and different interrupt structures. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 351.

432 An analog Signal Processing Electronics (4) Trans- formers, amplifiers, filters, frequency analysis of trans- formers and circuits, analysis of transistors and integrated circuits, wave-shaping circuits, operational amplifiers. Laboratory experiments and projects. Design content: 3 hours. Prereq: 341.

452 Organization and Design of Digital Systems and Computers (4) Considerations for hardware organization and digital circuits. Includes full-logic and CPU structures, control and organization, storage sys- tems, and the I/O channels. Microprogramming the control unit and different interrupt structures. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 351.

455 Data Acquisition Systems (4) Digital analog conversion techniques, parallel and serial data transfer; project-oriented introduction to VLSI circuits, analog-digital conversion techniques, open source circuits, and numerical methods. Includes labora- tory experiments and design projects. Design content: 3 hours. Prereq: 355.

460 Data Acquisition Systems (4) Digital analog conversion techniques, parallel and serial data transfer; project-oriented introduction to VLSI circuits, analog-digital conversion techniques, open source circuits, and numerical methods. Includes labora- tory experiments and design projects. Design content: 3 hours. Prereq: 355.

462 Plasmas Magnetohydrodynamic Engineering (3) The flow of fluids, collision of charged particles, plasma and the ionosphere, plasmas and the atmosphere, MHD generators and turbines, electromagnetic force on moving wires, interac- tions. Includes laboratory experiments and projects. Prereq: 322 for ECE majors, or Physics 322 or 324 for all others.
304 Introduction to Human Factors Engineering (3) Includes principles and methodologies of human-machine interaction, effects of environmental conditions, design of work systems, and human-computer interaction. Focuses on developing effective methods to fit the person to the task. Prerequisite: Junior standing.

305 Motion and Time Study (3) Design of work methods, including analysis, improvement, and time study techniques. Focuses on developing effective methods to fit the person to the task. Prerequisite: Junior standing.

400 Manufacturing Material Processes (3) Characterizes of manufacturing processes used in modern manufacturing. Prerequisite: CHEM 130, E&ME 321.

201 Integrated Manufacturing Systems (3) Design of manufacturing systems, including analysis, design, and control of manufacturing processes. Prerequisite: CHEM 130 and Computer Science 101.

302 Production System Planning and Control (3) Application of queuing analysis and simulation techniques to production and operations management. Prerequisite: E&ME 305.

301 Operations Research (3) Introduction to mathematical programming includes classical optimization theory, linear programming (simplex method, transportation and assignment problems) and dynamic programming. Prerequisite: Mathematics 201.


201 Sophomore Seminar (1) Introduction to industry, design, and human outputs, the design of human-machine interfaces, the analysis of stress on performance, environmental factors such as noise, light, and atmospheric conditions. Focus on developing effective methods to fit the person to the task. Prerequisite: Junior standing.

304 Introduction to Human Factors Engineering (3) Includes principles and methodologies of human-machine interaction, effects of environmental conditions, design of work systems, and human-computer interaction. Focuses on developing effective methods to fit the person to the task. Prerequisite: Junior standing.

305 Motion and Time Study (3) Design of work methods, including analysis, improvement, and time study techniques. Focuses on developing effective methods to fit the person to the task. Prerequisite: Junior standing.

400 Manufacturing Material Processes (3) Characterizes of manufacturing processes used in modern manufacturing. Prerequisite: CHEM 130, E&ME 321.

201 Integrated Manufacturing Systems (3) Design of manufacturing systems, including analysis, design, and control of manufacturing processes. Prerequisite: CHEM 130 and Computer Science 101.

302 Production System Planning and Control (3) Application of queuing analysis and simulation techniques to production and operations management. Prerequisite: E&ME 305.

301 Operations Research (3) Introduction to mathematical programming includes classical optimization theory, linear programming (simplex method, transportation and assignment problems) and dynamic programming. Prerequisite: Mathematics 201.

342 Thermology (3) Fluid statics: conservation equations of mass, momentum, and energy application. 2 hours and laboratory. Prereq: 231, Mathematics 241.


323 Mechanical Behavior of Materials (3) Stress-strain relations, failure and creep, and fracture mechanics. 3 hours and laboratory. Prereq: 321, 231.

322 Mechanics of Materials I (3) Stress-strain relations, failure and creep, and fracture mechanics. 3 hours and laboratory. Prereq: 321, 231.

321 Thermology (3) Fluid statics: conservation equations of mass, momentum, and energy application. 2 hours and laboratory. Prereq: 231, Mathematics 241.
work in English structures, reading, or writing. Admission to the course is by the English Placement Exam only. Meets Your in a week. A, B, C, F grading.


201 British Literature I: Beowulf through Johnson (3) Major literary works from three periods: Romantic, Victorian, and the Twentieth Century. Writing-emphasis course.

202 British Literature II: Wordsworth to the Present (3) Major literary works from three periods: Middle Ages, Renaissance, and Restoration and Eighteenth Century. Writing-emphasis course.

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

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

221 Literature of the Western World I: Colonial Era to the Civil War (3) Introduction to the development of literature in America from its beginnings to the Civil War. Writing-emphasis course.

222 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) Enriched section of 221 designed for students with a 3.25 or higher GPA.

232 American Literature II: Civil War to the Present (3) Enriched section of 221 designed for students with a 3.25 or higher GPA.

251 Introduction to Poetry (3) Poetry as a distinct art form in the context of general development in art, architecture, music, and society. Individual conferences with instructor. Writing-emphasis course.

301 British Culture to 1660 (3) English literature in the context of parallel developments in art, architecture, music, and society. Individual conferences with instructor. Writing-emphasis course.

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

306 Introduction to Shakespeare (3) May not be used by English majors to fulfill the pre-1900 literature course requirement. A, B, C, NC grading.

332 Women in American Literature (3) Women as artists and as subjects in American literature from its beginnings to the present. Same as Women's Studies 232. Writing-emphasis course.

333 Black American Literature and Aesthetics (3) Black American literature and aesthetics since 1899, with emphasis on cultural upheavals and the principles of "Amerikan." Writing-emphasis course.

345 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 1940s and 1950s. Same as Cinema Studies 345. Writing-emphasis course.

351 The Short Story (3) Emphasis on Twentieth-century American and International.

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

363 Writing Poetry (3) Introduction to writing poetry. Writing assignments.

365 Writing Drama and the Screenplay (3) Introduction to writing for pre-set, full-length stories. As well as screenplay.


372 The Structure of Modern English (3) Survey of phonology, morphology, and syntax of modern English. Same as Linguistics 372.

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

381 Introduction to Folklore (3) Essential terms and concepts in modern folklore studies. Emphasis on the oral tradition, legend, prose, folklore, popular and folk stories, dances, games, and architecture. Same as American Studies 381.

398 Junior-Senior Honors Seminar (3) Designed for students with a 3.25 or higher GPA.

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

405 Shakespeare II: Later Plays (3) Shakespeare's collected plays from the mid-sixteenths to late seventeenth century, including the mature tragedies (e.g., Hamlet), the romantic comedies (e.g., Twelfth Night), the history plays (e.g., Henry IV and Henry V), and the tragicomedies (e.g., Measure for Measure). Writing-emphasis course.

406 Renaissance Drama (3) Plays in English translation. Same as American Studies 406.

416 Victorian Poetry and Prose 1 (3) Emphasis on the spiritual consciousness and works of women writers. Same as Women's Studies 416.


422 Women Writers in Britain (3) Emphasis on the can literature from Columbusto Washington Irving. Same as Women's Studies 422.

510 American Realism and Naturalism (3) 511 Modern American Literature (3) World War I and the twenties. Same as American Studies 511.

515 American Novel Before 1900 (3) From earliest American novel through Cooper, and Cooper to the turn of the twentieth century. Written in prose and verse. Same as American Studies 515.

531 Modern American Novel (3) Authors such as Faulkner, Steinbeck, etc. Same as American Studies 531.

532 Modern American Novel II (3) Southern literature from colonial to the twentieth century, including the rise of the Southern Renaissance. Same as American Studies 532.

533 Critical Theory (3) Historical survey of major works of literary criticism.

542 The Nineteenth-Century British Novel (3) Major literary works from Defoe and Austen, including two-thirds of the eighteenth century (such as the picaresque and the sentimental novel). Written in prose and verse. Same as American Studies 542.

543 Twentieth-Century International Novel (3) Same as American Studies 543.

544 American Realism and Naturalism (3) Same as American Studies 544.

545 Modern American Literature (3) World War I and the twenties. Same as American Studies 545.

546 Modern British and American Drama (3) O'Neill's works as precursors to modern dramatics, including the can theatre, theater, and the use of masks in English translation by major European authors from the sixteenth century. Written in prose and verse. Same as American Studies 546.

547 Twentieth-Century Modern and American Drama (3) O'Neill's works as precursors to modern dramatics, including the can theatre, theater, and the use of masks in English translation by major European authors from the sixteenth century. Written in prose and verse. Same as American Studies 547.

551 Modern and American Poetry (3) From Tennyson, the Pre-Raphaelites, and Whittier to Langston Hughes and Langston Hughes. Same as American Studies 551.

552 Modern and American Drama (3) O'Neill's works as precursors to modern dramatics, including the can theatre, theater, and the use of masks in English translation by major European authors from the sixteenth century. Written in prose and verse. Same as American Studies 552.
Introduction to Economic Geography (3) Concepts and spatial organization of the world's major types of economies: agriculture, energy, and mineral production, manufacturing, transportation, trade, and services.

310 Introduction to Maps, Aerial Photography, and Cartography (3) Principles, techniques, design, and other forms of spatial images as tools for geographic analysis and decision making.

320 Cultural Geography: Core Concepts (3) Background and method of cultural geography: basic concepts and theories focusing on cultural landscapes, cultural boundary formation, diffusion and diffusion, cultural integration, and world patterns of cultural place. This course is designed to acquaint students with variety of phenomena such as culture, economy, and politics. Prerequisite: Seminar 200.

330 Menenogeography (3) Dynamics of weather and its relation to environmental variables. Prerequisite: Seminar 200.


491 Foreign Study (1-15) United States or abroad with permission of the instructor. For Language & World Business majors only. Satisfactory/No Credit only.

492 Off-Campus Study (1-15) United States or abroad with permission of the instructor. For Language & World Business majors only. Satisfactory/No Credit only.

410-411 Consecutive and Simultaneous French-English and English-French Translation (3,3) 410-Consecutive Translation to and from English. Introduction to simultaneous translation of French into English. Prerequisite: 212, 218 or equivalent. Can be applied toward major but not toward minor. Prerequisite: 341 or consent of instructor.

411 French Literature of the 16th Century (3) Highlights of 16th century French literature. From the works of the humanists (Rabelais and Montaigne; reading of poems from the writers of Lyonnaise) and members of the Pleyade. Prerequisite: 212, 218 or equivalent.

412 French Literature of the 17th Century (3) Major works of the Enlightenment. French literature. Prerequisite: 212, 218 or equivalent.

414 French Literature of the 19th Century (3) French Realism. Prerequisite: 212, 218 or equivalent.

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

416 Methods of Descriptive Linguistics (3) Phonetics and phonology, morphology and syntax. Types of languages, language groups, dialects, and language change. Application of descriptive linguistics—field work in the laboratory, fieldwork, study of language samples, and areal linguistic mappings. Introduction to descriptive linguistics and to phonetics, dialect, and aural language. Prerequisite: Seminar 200.

419 Practicum in Cartography/Remote Sensing (2-6) Introduction to digital cartography and remote sensing techniques. Prerequisite: Seminar 200.

431 Introduction to Economic Geography (3) Location and spatial organization of the world's major types of economies: agriculture, energy, and mineral production, manufacturing, transportation, trade, and services.

433 Literary Portraits of French Women (3) Course is designed to acquaint students with variety of phenomena such as culture, economy, and politics. Prerequisite: Seminar 200.

434 Literature of Quebec (3) French literature of the 19th century. The Quebecois. Prerequisite: 212, 218 or equivalent.
421 Geography of Folk Societies (3) Geographical orientation, classification, and identification of folk societies and their cultural landscapes. Prerequisites: 101–102 or consent of instructor.
491 Foreign Study (1-15)

490 Internship (1-15) Career-related experiences in the business, government, administration and economics fields. See the Language & World Business Director for further information.


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

470 Physical and Chemical Systems of the Earth (2) Development of the physical earth from the solid core and the hydrosphere, crust, mantle, and core. Interrelationship of physical systems; volcanoes, plate tectonics, geomagnetism, chemical and isotopic processes of the core, and the earth's temperature and history. Critical problem-solving on major controversies of the past, and problems unresolved today. Writing emphasis course. Prereq: 16 hours geology courses numbered 300 and above. 2 lecture and 1 discussion periods.

468 Principles of Economic Geology (3) History of mineral deposits, process of mineralization, theories of ore formation, mineralogical and chemical processes of theoreminerals, and the earth's temperature. Historical problem-solving on major controversies of the past, and problems unresolved today. Writing emphasis course. Prereq: 16 hours geology courses numbered 300 and above. 2 lecture and 1 discussion periods.

466 Directed Problems in Geology (4-9) Directed study or special topics. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

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

464 Selected Topics in German Literature from 1750 to the Present (3) Prereq: 301 or 302 or consent of department. 331 or 332 and courses in English translation, or equivalent.

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

462 German Grammar (3) Prereq: 5 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

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

460 History of the German Language (3) Development of the German language from Indo-European through the early Middle Low German. Prereq: 261.

459 Structure of the German Language (3) Contrastive analysis of German and English sentence structure, and the historical development of the German language. Prereq: 301 or 302.

458 Methods of Historical Linguistics (3) Provenzal, district historic literature, sound change, origins of language. Prereq: 301 or 302.

457 Historical Linguistics (3) Origins of sound change, principles of reconstruction and fundamental concepts of modern linguistics. Prereq: 301 or 302.

456 Phonology of German (3) Sound structures of the German language. Prereq: 261.

455 Morphology of German (3) Derivational and inflectional morphology of the German language. Prereq: 261.

454 History of the German Language (3) Development of the German language from Indo-European through the early Middle Low German. Prereq: 261.

453 Methods of Historical Linguistics (3) Provenzal, district historic literature, sound change, origins of language. Prereq: 301 or 302.

452 Historical Linguistics (3) Origins of sound change, principles of reconstruction and fundamental concepts of modern linguistics. Prereq: 301 or 302.

451 Phonology of German (3) Sound structures of the German language. Prereq: 261.

450 Morphology of German (3) Derivational and inflectional morphology of the German language. Prereq: 261.

449 Internship in Language & World Business (3-9) Career-related experiences in the business, government, administration and economics fields. See the Language & World Business Director for further information. May be repeated two times with approval of department. Prereq: 202 or equivalent.

448 Off-Campus Study (1-15)

447 Independent Study (1-15)

446 Principles of Economic Geology (3) History of mineral deposits, process of mineralization, theories of ore formation, mineralogical and chemical processes of theoreminerals, and the earth's temperature. Critical problem-solving on major controversies of the past, and problems unresolved today. Writing emphasis course. Prereq: 16 hours geology courses numbered 300 and above. 2 lecture and 1 discussion periods.

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

444 Selected Topics in German Literature from 1750 to the Present (3) Prereq: 301 or 302 or consent of department. 331 or 332 and courses in English translation, or equivalent.

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

442 German Grammar (3) Prereq: 5 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

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

440 History of the German Language (3) Development of the German language from Indo-European through the early Middle Low German. Prereq: 261.

439 Structure of the German Language (3) Contrastive analysis of German and English sentence structure, and the historical development of the German language. Prereq: 301 or 302.

438 Methods of Historical Linguistics (3) Provenzal, district historic literature, sound change, origins of language. Prereq: 301 or 302.

437 Historical Linguistics (3) Origins of sound change, principles of reconstruction and fundamental concepts of modern linguistics. Prereq: 301 or 302.

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432 Historical Linguistics (3) Origins of sound change, principles of reconstruction and fundamental concepts of modern linguistics. Prereq: 301 or 302.

431 Phonology of German (3) Sound structures of the German language. Prereq: 261.

430 Morphology of German (3) Derivational and inflectional morphology of the German language. Prereq: 261.

429 Internship in Language & World Business (3-9) Career-related experiences in the business, government, administration and economics fields. See the Language & World Business Director for further information. May be repeated two times with approval of department. Prereq: 202 or equivalent.

428 Off-Campus Study (1-15)

427 Independent Study (1-15)

426 Principles of Economic Geology (3) History of mineral deposits, process of mineralization, theories of ore formation, mineralogical and chemical processes of theoreminerals, and the earth's temperature. Critical problem-solving on major controversies of the past, and problems unresolved today. Writing emphasis course. Prereq: 16 hours geology courses numbered 300 and above. 2 lecture and 1 discussion periods.

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

424 German Literary Movements (3) Major periods in the development of German literature since 1750, with an emphasis on the problems of print and periodicals. Prereq: 6 hours of 300 courses excluding 331-332.

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

422 German Grammar (3) Prereq: 5 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

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

420 History of the German Language (3) Development of the German language from Indo-European through the early Middle Low German. Prereq: 261.

419 Structure of the German Language (3) Contrastive analysis of German and English sentence structure, and the historical development of the German language. Prereq: 301 or 302.

418 Methods of Historical Linguistics (3) Provenzal, district historic literature, sound change, origins of language. Prereq: 301 or 302.

417 Historical Linguistics (3) Origins of sound change, principles of reconstruction and fundamental concepts of modern linguistics. Prereq: 301 or 302.

416 Phonology of German (3) Sound structures of the German language. Prereq: 261.

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408 Methods of Historical Linguistics (3) Provenzal, district historic literature, sound change, origins of language. Prereq: 301 or 302.

407 Historical Linguistics (3) Origins of sound change, principles of reconstruction and fundamental concepts of modern linguistics. Prereq: 301 or 302.

406 Phonology of German (3) Sound structures of the German language. Prereq: 261.

405 Morphology of German (3) Derivational and inflectional morphology of the German language. Prereq: 261.
**HUMAN PERFORMANCE AND SPORT STUDIES (526)**

100 Orientation to Physical Education (2) Overview of the physiological and psychological aspects of physical education with special emphasis on introductory field experiences. Prereq: Taken the first semester in the major's major.

102 PE Major: Basketball (1-3) Fundamentals of basketball, including individual and team skills with completion of techniques for effective teaching of these fundamental skills. 

103 PE Major: Tennis (1-3) Development of skills, rules and guidelines for effective strategies and techniques in tennis. 

104 PE Education Major: Gymnastics I (1) Beginning skills in tumbling and selected men's and women's routines. 

105 PE Major: Golf (1) Fundamentals skills, general rules, and strategies related to the game of golf with emphasis on skill development. Prereq: Progression to the major.

201 PE Major: Social Skills (1) Fundamental and advanced skills in social etiquette and techniques for communication. 

202 PE Major: Varsity (1) Development of skills, rules, and strategies related to the game of varsity baseball with emphasis on skill development. 

203 PE Major: Basketball I (1) Development of skills, rules, and strategies related to the game of basketball with emphasis on skill development. 

204 PE Major: Varsity (1) Development of skills, rules, and strategies related to the game of varsity baseball with emphasis on skill development. 

205 PE Major: Track and Field (1) Basic skills of track and field with completion of techniques for effective teaching of these fundamental skills. 

300 Special Topics in Human Ecology (1-3) Study in selected disciplinary or professional areas of physical education. 

301 Psychology of Coaching (2) Coaching the effective use of psychological factors in coaching. 

**HUMAN ECOLOGY (520)**

100 Special Topics in Human Ecology (1-3) Topics treat the specific discipline of the instructor. Satisfactory/No Credit only. 

200 Microcomputer Applications (3) Introduction to microcomputer use and use of software programs in operations research, computer database systems, spreadsheet programs and graphics programs. Prereq: Progression into HRA program or consent of the instructor. 

300 Practicum in Preschool Aquatics (2) Individualized planning and teaching of aquatic experiences to 3 to 5 year-old children within the context of a broad-based motor development program. Prereq: Consent of instructor. 

302 Field Studies (1-3) Peer teaching, using selected style, and systematic observation of motor behaviors of physical education students in pre-service, in-service, and high school settings. Prereq: 100.

311 Coaching Football (1) Theoretical and practical application of various coaching techniques in football with specific emphasis on effective teaching of the fundamental skills and techniques. 

312 Coaching of Basketball (1) Individual and team fundamental skills for the high school coach: conditioning, making and setting offensive and defensive strategies. 

313 Coaching of Track and Field (1) Coaching methods and training techniques for various track and field events, including experience observing and working at meets and practices. Prereq: Consent of instructor. 

314 Coaching of Gymnastics (1) Fundamentals used in the coaching of women's and men's gymnastics. Emphasis on the psychological and motivational aspects of gymnastics skills, 

315 Coaching of Baseball/Softball (1) Theoretical and practical application of various coaching techniques in baseball and softball with specific emphasis on effective teaching of the fundamental skills and techniques. 

**SPORT STUDIES (526)**

103 PE Major: Varsity (1) Development of skills, rules and strategies related to the game of varsity baseball with emphasis on skill development. 

104 PE Education Major: Gymnastics I (1) Beginning skills in tumbling and selected men's and women's routines. 

202 PE Major: Varsity (1) Development of skills, rules, and strategies related to the game of varsity baseball with emphasis on skill development. 

203 PE Major: Basketball I (1) Development of skills, rules, and strategies related to the game of basketball with emphasis on skill development. 

204 PE Major: Varsity (1) Development of skills, rules, and strategies related to the game of varsity baseball with emphasis on skill development. 

205 PE Major: Track and Field (1) Basic skills of track and field with completion of techniques for effective teaching of these fundamental skills. 

300 Special Topics in Human Ecology (1-3) Study in selected disciplinary or professional areas of physical education. 

301 Psychology of Coaching (2) Coaching the effective use of psychological factors in coaching.
for a maximum of 10 hours. Satisfactory/No Credit


427 Movement Education (3) Educational personal sports, dance, gymnastics for children (365). Prereq: 426, and permission to enter Teacher Education Program.

466 Motor Development Laboratory (3) Application of selected perceptual-motor development, movement education, and pedagogy concepts to performance analysis and presentation of skills. Prereq: 425. Satisfactory/No Credit only. Sp.

477 Measurement Education (5) Satisfactory/No Credit only. Sp.

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

494 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

495 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

496 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

496 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

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501 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

502 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

503 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

504 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

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506 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

507 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

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509 Directed Internship (1-12) Independent study in a specialized area with permission of instructor. May be repeated. Maximum 12 hours. Prereq: Approval of instructor.

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251 orequivalent.

252-253 Introduction to Latin American Studies (3,3) Introduction to linguistics with focus on language development and use of language by individuals and groups. Prereq: Completion of Frenchmen in English, or equivalent.

312 Aspects of Spanish American Literature (3) (Same as Spanish 312)

320 Caribbean Cultures and Societies (3) (Same as Anthropology 320)

355 Latin American Government and Politics I (3) (Same as Political Science 355)

360 History of Latin America (3) (Same as History 360)

361 History of Latin America (3) (Same as History 361)

372 Geography of Middle America (3) (Same as Geography 372)

373 Geography of South America (3) (Same as Geography 373)

401 Cultural Plurality and Institutional Changes in Latin America (3) Value systems, behavioral patterns, political parties, role of the military, church, educational institutions, and nationalism. Writing-emphasis course. Prereq: 4 hours of Latin American Studies courses or consent of instructor.

402 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 402)

403 Directed Readings in Spanish and Portuguese Literature (3) (Same as Portuguese 403)

429 History of the Book (3) History of writing and printing, with special emphasis on the role of the book in medieval and Renaissance Europe. Prereq: Consent of instructor.
301 Management Science and Managerial Decision Support Systems (3) Introduction to quantitative decision analysis models and their integration into microcomputer-based decision support systems. Topics include linear, dynamic and network programming, as well as decision evaluation and selection. Prereq: Mathematics 121, 122 and Statistics 201.

310 Marketing Management (3) Institutions comprising the marketing system; principal environmental opportunities and constraints facing the marketing manager. Prereq: Accounting 201-202, Economics 201, and Statistics 201.

313 Microcomputer Laboratory (1) Optionalsupplementary laboratory for students enrolled in Computer Science courses.

315 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 and either satisfactory placement test scores or Math 100. This course should not be taken to remove an entrance requirement.

317 Business Structure Formulation and Implementation (3) General business simulation used by teams which formulate and implement business strategy. Application of strategic planning and group management skills. Prereq: 311, 312, 314.

320 Business Structure Formulation and Implementation (3) General business simulation used by teams which formulate and implement business strategy. Application of strategic planning and group management skills. Prereq: 311, 312, 314.


341 Organizational Psychology (3) Theories, methods and experimental research in personnel management and applications development (Computer Science, Sociology).

342 Independent Study (1-6) Directed research on subjects of mutual interest to student and staff member. May be repeated. Maximum 6 credit hours. Prereq: Consent of instructor.

350 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.

351 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.

362 Seminar in Transportation Strategy (3) Senior seminar in development of analysis in transportation management. Major writing requirement. Prereq: 311, 312 and senior standing.

363 Transportation in Strategic Planning (3) Senior seminar in development of analysis in transportation management. Major writing requirement. Prereq: 311, 312 and senior standing.

363 Transportation in Strategic Planning (3) Senior seminar in development of analysis in transportation management. Major writing requirement. Prereq: 311, 312 and senior standing.

363 Transportation in Strategic Planning (3) Senior seminar in development of analysis in transportation management. Major writing requirement. Prereq: 311, 312 and senior standing.

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363 Transportation in Strategic Planning (3) Senior seminar in development of analysis in transportation management. Major writing requirement. Prereq: 311, 312 and senior standing.
Gauss and Stokes. Prerequisite: 241 or 247.

404 Applied Vector Calculus (3) Topics from multivariable calculus to study concepts and problems in mathematics. Does not satisfy the secondary level. The use of microcomputers is equivalent. Writing emphasis course: at least one assignment per term.

399 Studies in Mathematics (3) May be repeated. Consent of instructor required.

372 Northern European Painting, 1350-1600 (3) (Same as Art 372.)

322 Teacher Education. Preparation for teaching of teacher education. Hazards of methodologies, corrosive chemicals, isolation, pathogens, poisons, and equipment will be discussed. Techniques of safe operation will be presented and practiced. 180 hours minimum. Consent of instructor required. 453 Matrix Algebra I 1 (3) Advanced topics in matrix algebra such as groups, rings, fields, vector spaces, and linear transformations. Prerequisite: 312 or consent of instructor.

444 Complex Variables I (3) Introduction to the theory of functions of a complex variable, including residue theory and contour integrals. Prerequisite: 311 or 247.

445-446 Advanced Calculus I, I (3,3) Introduction to topics in analysis, sequences, series, and Riemann integrals. Prerequisite: 311 or consent of instructor.

447-448 Honors: Advanced Calculus I, I (3,3) Honors version of 445-446. Prerequisite: 311 or consent of instructor.

450 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometries, and experimentaldesigns. Prerequisite: 323 or consent of instructor.

453 Matrix Algebra I 1 (3) Advanced topics in matrix algebra such as groups, rings, fields, vector spaces, and linear transformations. Prerequisite: 312 or consent of instructor.

455-456 Abstract Algebra I, II (3,3) Introduction to algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prerequisite: 311 or consent of instructor.

457-480 Principles of Supervision and Education in Medicine (3) Orientation to the handling of specimens, principles of operation of many standard to efficient blood bank. Safety control methods and associated library software for problems selected in independent work.

460 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometries, and experimentaldesigns. Prerequisite: 323 or consent of instructor.

461 Topology (3) Includes topology of line and plane, separation properties, connectedness, compactness, continuity, open and closed sets, connectedness, and topology of R^n. Prerequisite: 311 or consent of instructor.

462 Algebraic Topology I (3) Includes fundamental group, covering spaces, homotopy, and homology theory. Prerequisite: 312 or consent of instructor.

463 Algebraic Topology II (3) Topics from homology theory and the theory of polynomial equations, such as the classification of real root separation. Prerequisite: 351 or consent of instructor.

464-465 Advanced Calculus I, II (3,3) Introduction to algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prerequisite: 311 or consent of instructor.

466-467 Honors: Abstract Algebra I, II (3,3) Honors version of 455-456. Prerequisite: 311 or consent of instructor.

468-469 Geometry I, II (3,3) Includes geometry of line and plane, separation properties, connectedness, compactness, continuity, open and closed sets, connectedness, and topology of R^n. Prerequisite: 311 or consent of instructor.

490 Readings in Mathematics (1-3) Open to superior students. May be repeated with consent of instructor and handling will be presented.

MEDIEVAL STUDIES (674)

321 Medieval Historiography (3) Topics from the medieval experience, approached from the perspectives of political science, history, art history, and modern criticism. 425 Statistics (3) Derivation of standard statistical inference and handling will be presented.

251 Medieval Culture: Readings from the Early Middle Ages, 500-1000 (3) Introduction to the history of medicine and surgery, and their roles in medieval culture.

322 Medieval Philosophy (3) (Same as Philosophy 422.)

323 Medieval Latin (3) (Same as Philosophy 423.)

324 Medieval Manuscripts (3) (Same as Philosophy 424.)

325 Medieval History (3) (Same as History 325-327.)

331 Medieval European Painting, 1200-1500 (3) (Same as Art 330.)

341 Medieval Art of the West, 800-1200 (3) (Same as Art 341.)

342 Medieval Architecture (3) (Same as Art 342.)

420-421 Clinical Chemistry (5,5) Clinical aspects of biochemistry, including reviews of proteases and metabolism, as well as the development and analysis of analytical procedures. Writing emphasis course. Orientation to the handling of specimens, principles of operation of many standard to efficient blood bank. Safety control methods and associated library software for problems selected in independent work.

321 Medieval Historiography (3) Topics from the medieval experience, approached from the perspectives of political science, history, art history, and modern criticism. 425 Statistics (3) Derivation of standard statistical inference and handling will be presented.
isolation, handling, and culturing of animal viruses.

449 Virology Laboratory (1) Laboratory procedures for 440 Virology (3) Pathogenesis and molecular biology of viruses. Prereq: 310. Sp

439 Immunology Laboratory (2) Laboratory exercises 430 Immunology (3) Principles of inflammation and mechanisms in immune systems. Emphasis on the functional role of immunoglobulins in normal and simulated ecosystems. Prereq: 110 or consent of the Professor of Medical Science. Letter grade only. F

170 Leadership Development Techniques (2) Introduc- tion to leadership principles and skills, with emphasis on group coaching and recognition of the military team, land navigation, small unit patrolling, patrol, and map reading, small unit leadership. Prereq: 110 or consent of the Professor of Military Science. Letter grade only. F

160 Command and Staff Functions (4) Command and 150 Advanced Camp Practices (1) Instructor builds on background of leadership and introduction to small group leadership skills, map reading, techniques, and small communi- cations skills, and physical conditioning and group exercises and a leadership laboratory. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Su

459 Microbial Ecology (3) Physiological diversity and 450 Assessment of Microinvertebrates in Natural Environments. Emphasis on the functional role of microorganisms in normal and simulated ecosystems. Prereq. 310, F

441 Foreign Study (1-15) 437 Field Laboratory (1-15) Command and 436 Independent Study (1-15) Laboratory projects designed to accompany 440. Prereq: 319. Letter grade only. 3 hours and 1 hour lab. Sp

436 Medical Microbiology Laboratory (2) Laboratory exercises designed to accompany 435. Prereq: 319. Letter grade only. 3 hours and 1 hour lab. Sp

435 Immunology (3) Principles of inflammation and mechanisms in immune systems. Emphasis on the functional role of immunoglobulins in normal and simulated ecosystems. Prereq. 110 or consent of the Professor of Medical Science. Letter grade only. F

434 Advanced Microbiology Laboratory (2) Laboratory exercises designed to accompany 433. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. F

433 Microbiology Laboratory (2) Laboratory exercises designed to accompany 432. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Sp

432 Advanced Microbiology (3) Cell and molecular biology of microorganisms, principles and applications in modern technological society. Emphasis on microorganism major. 310, Sp

399 Advanced Microbiology Laboratory (2) Laboratory exercises designed to accompany 398. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Sp

398 Laboratory Problems in Microbiology (4) Bio- logical projects undertaken in the laboratory. May be repeated. Minimum 9 hours. Block grading. Letter grade only. F

401 Undergraduate Research in Microbiology (3) Research experience in laboratory of faculty mentor with faculty committee supervision. Prereq. Junior or se- nior standing. 310-319-320-321, 2 minimum grade point average in all coursework, consent of department head. F

420 Medical Microbiology (3) Disease producing micro- organisms including bacteria, rickettsia, chlamydia and virus. Emphasis on the functional role of bacteria. Prereq: 310. Sp

319 Introductory Microbiology Laboratory (1) Basic techniques for the examination, cultivation, and identifi- cation of microorganisms. Prereq: 310, F

318 Virology Laboratory (1) Laboratory projects designed to accompany 308. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Sp

317 Animal Pathobiology Laboratory (1) Laboratory projects designed to accompany 316. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Sp

316 Biochemistry Laboratory (1) Laboratory projects designed to accompany 315. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Sp

315 Microbiology (4) General properties of bacteria and viruses including physiology, metabolism, genetics, applied bacteriology and parasitology, and vi- ral pathogenesis. Prereq. Consent of instructor. E

310 Advanced Microbiology (3) Cell and molecular biology of microorganisms, principles and applications in modern technological society. Emphasis on microorganism major. Prereq. 310, Sp

309 Medical Microbiology Laboratory (2) Laboratory exercises designed to accompany 308. Prereq. 310. Letter grade only. 3 hours and 1 hour lab. Sp

308 Medical Microbiology (3) Disease producing micro- organisms including bacteria, rickettsia, chlamydia and virus. Emphasis on the functional role of bacteria. Prereq: 310. 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, S

240 Class String Methods (2) Structure, use, tech- niques of playing, care and repairof principal instru- ments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Prerequisite one of current instrumental materials. Letter grade only. Sp

230 Class Percussion Methods (2) Structure, use, tech- niques of playing, care and repairof principal instru- ments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and grade points 4 that show leadership. Prerequisite one of current instrumental materials. Letter grade only. F

221 Advanced Field Study (1) Advanced field study in 211 Basic Officer Skills (2) Leadership in small units. Emphasis 200 Basic Military Studies-Practicum (4) 240 contact hours of instruction and evaluation at Fort Knox, Kentucky. Letter grade only. F

200 Basic Military Studies (4) Advanced Leadership techni- ques of playing, care and repairof principal instru- ments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and grade points 4 that show leadership. Prerequisite one of current instrumental materials. Letter grade only. F

200 Basic Officer Skills (2) Leadership in small units. Emphasis on techniques necessary for basic understanding and grade points 4 that show leadership. Prerequisite one of current instrumental materials. Letter grade only. F

110 Basic Military Science (3) Formation and function- ing of the American defense establishment and ... g with current world af- fairs; challenges facing the military in the future. Adven- turing technological advancements, life in industrial society, and ethical beliefs. Written reports required. AAdditional course. Letter grade only. Su

100 Advanced Officer Skills (2) Leadership in small units. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Prerequisite one of current instrumental materials. Letter grade only. 4 hours and 1 hour lab. F

100 Advanced Officer Skills (2) Leadership in small units. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Prerequisite one of current instrumental materials. Letter grade only. 4 hours and 1 hour lab. F

999 Senior Seminar (3) In-depth consideration of mi- crobiological problems of current interest requiring an inte- gration of two or more disciplines. Emphasis on modern biological and experimental basis of current discussion. Historical background. Emphasis on safety and health issues. Letter grade only. F, Sp

995 Field Laboratory (1-15) Field Laboratory projects designed to accompany 404. Prereq: 319. Letter grade only. F, Su

994 Special Problems (1-15) Special problems in microbiology. Prereq: 310. Consent of instructor. Letter grade only. F, S

993 Independent Study (1-15) Independent Study projects designed to accompany 404. Prereq: 319. Letter grade only. F, Sp

992 Off-Campus Study (1-15) Off-Campus study, either abroad or in the United States. Letter grade only. F, Sp

991 Foreign Study (1-15) Off-Campus study, either abroad or in the United States. Letter grade only. F, Sp

988 Music Education/Courses of Instruction 177 Music Education/Courses of Instruction 177
330-540 Opera Theatre (1,1) May be repeated.
334-534 Saxophone Choir (1,1) May be repeated.
330-530 Chamber Singers (1,1) May be repeated.
316-516 Steel Band (1,1) May be repeated.
315-515 Chamber Music Ensemble (1,1) May be repeated. Maximum 12 hours.
314-514 Brass Choir (1,1) May be repeated.
312-512 Baroque Ensemble (1,1) May be repeated.
311-511 Marimba Choir (1,1) May be repeated.
310-510 Trombone Choir (1,1) May be repeated.
309-509 Tuba Ensemble (1,1) May be repeated.
306-506 Trombone Choir (1,1) May be repeated.
303-503 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
301-501 Woodwind Choir (1,1) May be repeated.
MUSIC ENSEMBLE (708) 301-601 Woodwind Choir (1,1) May be repeated.
300-500 Small Jazz Ensemble (1,1) May be repeated.
300-500 Saxophone Choir (1,1) May be repeated.
300-500 Marimba Choir (1,1) May be repeated.
300-500 Trombone Choir (1,1) May be repeated.
300-500 Percussion 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 Trombone Choir (1,1) May be repeated.
310-510 Percussion 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.
310-510 Percussion Ensemble (1,1) May be repeated.
315-515 Chamber Music Ensemble (1,1) May be repeated. Maximum 12 hours.
318-518 Brass Choir (1,1) May be repeated.
320-520 UT Singers (1,1) May be repeated.
330-530 Chamber Singers (1,1) May be repeated.
332-532 Collegium (1,1) May be repeated.
334-534 Saxophone Choir (1,1) May be repeated.
330-530 Concert Band (1,1) May be repeated.
332-532 Campus Band (1,1) May be repeated.
334-534 Varsity Band (1,1) May be repeated.
356-556 Laboratory Band (1,1) May be repeated.
359-559 Marching Band (1,1) May be repeated.
270-570 Symphony Orchestra (1,1) May be repeated.
356-556 Concert Band (1,1) May be repeated.
352-562 University Choir (1,1) May be repeated.
353-563 Men's Choir (1,1) May be repeated.
358-568 Women's Choir (1,1) May be repeated.
359-599 Accompanists (1,1) May be repeated.
MUSIC GENERAL (698) 100 Fundamentals of Music (3) Theory and practice of basic elements of music. Writing-ensemble course.
110 Music Appreciation (3) Developing listening skills and understanding of Western music from the ancient world through the 20th century. For non-music majors. Writing-ensemble course.
120 History of Rock (3) Study and appreciation of rock music, its origins and influence and role in the development and cultural dimensions to the present. Writing-ensemble course.
120 Music Performance (3) Individual course of study focusing on performance as a University music ensemble with concordance study of an instrument cohort. One hour of applied study (Music Performance and ensemble rehearse scheduled Music 510-599). May be repeated once for credit. Requires payment of Applied Music fee. F, S.
200 Solo Class (3) 101 Junior Recital (3) 411 Lecture Recital (3) 412 Special Topics in Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum 4 hours.
412 Special Topics in Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum 4 hours.
MUSIC HISTORY (709) 210 Introduction to Music Literature (3) Basic forms of music and accepted repertoire through chronological approach. For music majors and history only. 210 History of Music Literature (3,3) 210 to 1750. Prereq: 200. Must be taken in sequence.
310 Introduction to African-American Music (3) History of African music: blues, gospel music, and jazz with emphasis on Black American contributions. (Same as African-American Studies 310.)
310 Women in Music (3) History of women in music from the Middle Ages to the present as composers, performers, and patrons. (Same as Women's Studies 330.)
310 History of Jazz (3) Origin, development, and style of jazz music and its evolution. Emphasis on style and integration of various musical elements and performance techniques. (Same as African-American Studies 310.)
310 Introduction to Folk and Popular Music (3) Study of music of other than Western Christian origin. Selection of styles and composers. Emphasis on musical structure. Examples will be drawn from folk, rock, pop, jazz, and non-Western literatures. Prereq: 210-220.
310 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.
310 Music History Survey (3) History of music with emphasis on genres, style changes, and cultural contexts. Written European traditions to 1900. Recommended as a course review for graduate students. Prereq: Consent of instructor.
310 Music History Genre (3) Topics vary. May be repeated. Prereq: Consent of instructor.
320 History of Opera (3) Dramatic, vocal, and orchestral elements in opera of either, French, and Germanic periods. May be repeated with emphasis on the evolution of the symphony.
320 History of Country Music (3) Survey of literature for beginning music students from Baroque to the present, with emphasis on the evolution of the symphony.
330 Music Methods for the Elementary 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. If.
430 Percussion Literature and Pedagogy (1) Survey of literature for percussion and related areas. May be repeated. Letter grade only. S, U.
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130-140 Jazz Piano I, II (3, 4) Harmonic language of jazz, improvisation of chord symbols, formatting for voice-
  
  160 Introduction to Styles in Jazz Drumming (2) Examination of major compositors and performers who have contributed significantly to creation of principal styles of jazz drumming.
  
  210-220 Jazz Improvisation I, II (2, 2) Study and applica-
  
  490-491 Internship (2, 2) Opportunity for pedagogical and research procedures, and literature of the Suzuki pianomethod. Must be taken in sequence. Prereq: Consent of instructor.

MUSIC KEYBOARD (712)

110-120 Class Piano I, II (1, 1) Development of key-
  
  240 Church Service Playing I (1) Practical skills appli-
  
  210-220 Theory III, IV (3, 3) Materialsofmusic with empha-
  
  130-140 Jazz Piano I, II (3, 4) Harmonic language of jazz, improvisation of chord symbols, formatting for voice-
  
  103-203 360-460-560 Flute (1-4) May be repeated. Prereq: Consent of instructor. Cannot be used to satisfy applied music requirement.

MUSIC PERFORMANCE (713)

Admission by audition only. Prereq: Mus Gen 140 or equivalent.

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

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

116-216 316-416-516 Clarinet (1-4) May be repeated.

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 Organ (1-4) May be repeated.

260-360 460-560 Piano (1-4) May be repeated.

180-280 380-480-580 Violin (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: Consent of instructor. May be repeated for credit. Maximum 4 hours.

490-499 Independent Study in Music Theory (1-15) Prereq: Consent of instructor. May be taken as a review course for graduate students. Prereq: Consent of instructor.

MUSIC PERFORMANCE (713)

Admission by audition only. Prereq: Mus Gen 140 or equivalent.

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

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

116-216 316-416-516 Clarinet (1-4) May be repeated.

220-320 420-520 Saxophone (1-4) May be repeated.

125-225 325-425-525 Horn (1-4) May be repeated.

210-220 Internship I, II (2, 2) Opportunity for pedagogical and research procedures, and literature of the Suzuki pianomethod. Must be taken in sequence. Prereq: Consent of instructor.

MUSIC PERFORMANCE (713)

Admission by audition only. Prereq: Mus Gen 140 or equivalent.

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

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

116-216 316-416-516 Clarinet (1-4) May be repeated.

220-320 420-520 Saxophone (1-4) May be repeated.
214 Integrated Biochemical and Health Sciences (3-6) A study of the biological and biochemical basis of human disease. Prerequisites: Chemistry 100-10 and 6 semester hours of anatomy and physiology. F.

241 Community Health Nursing (3) Application of the nursing process to individuals, families, groups, and communities with health problems. Prerequisite: Junior or Senior standing. F, Sp.

244 Community Health Nursing Theory (3) Theoretical component of 243. For RN's only. F, Sp.


290 Directed Study: Nutrition (1-3) Individual student: design of project which may be related to the student's major field of study. Satisfactory/No Credit only. Prerequisites: Junior or Senior standing. Consent of instructor. E.

291 Field Experience: Nutrition (1-3) Field experience in the field of nutrition. Prerequisites: Junior or Senior standing. Consent of instructor. Satisfactory/No Credit only. E.

401 Family Community Mental Health Nursing (3) Application of the nursing process to individuals, families, and communities with mental health problems in community and institutional settings. Prerequisites: RN's only. F, Sp.

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

403 Community Health Nursing (3) Application of the nursing process to individuals, families, groups, and communities with health problems. Prerequisites: RN's only. Corequisites: 359, 372. F, Sp.

404 Community Health Nursing Theory (3) Theoretical component of 403. For RN's only. Prerequisites: 312. F, Sp.

405 Nutrition Management and Theory (3) Theoretical component of 404. For RN's only. Prerequisites: 312. F, Sp.


407 Nutrition Management Theory (3) Theoretical component of 406. For RN's only. Prerequisites: 312. F, Sp.


409 Nutrition Management and Theory (3) Theoretical component of 408. For RN's only. Prerequisites: 312. F, Sp.

ORNAMENTAL HORTICULTURE AND LANDSCAPE DESIGN (740)

110 Environmental Horticulture (3) Basic plant sciences and their relationship to ornamental horticulture. Introduction to awareness and appreciation of ornamental plants and their use in the development and management of residential and commercial landscapes.

205 Basic Landscape Design (3) Introduction to the development of effective plans for small residential sites. Focus on climate, soils, native vegetation, water, and accessibility. Preparations: 1 hour of instructor and 2 hours of lab. E

210 Basic Landscape Design (3) Preparation and testing of landscape designs. Focus on the design of ornamental plants for specific environments. Prerequisites: 2 hours of instructor and 2 hours of lab. E

220 Basic Landscape Design (3) Identification, analysis, and design of ornamental plants for residential landscaping. Focus on the selection, placement, and care of ornamental plants. Prerequisites: 2 hours of instructor and 2 hours of lab. E

230 Basic Landscape Design (3) Preparation and testing of landscape designs. Focus on the design of ornamental plants for specific environments. Prerequisites: 2 hours of instructor and 2 hours of lab. E

240 Turfgrass Management (3) Practical turfgrass management techniques. Focus on the identification and management of turfgrass diseases, disorders, and weeds. Prerequisites: 2 hours of instructor and 2 hours of lab. E

300 Turfgrass Management (3) Practical turfgrass management techniques. Focus on the identification and management of turfgrass diseases, disorders, and weeds. Prerequisites: 2 hours of instructor and 2 hours of lab. E

310 Greenhouse Production and Management (3) Management and operation of a greenhouse or a part of a greenhouse. Focus on plant production and care, economics, and marketing. Prerequisites: 2 hours of instructor and 2 hours of lab. E

320 Plant Materials (2) Identification, classification and design uses of ornamental plants including trees, shrubs, vines and herbaceous plants and generally excluding those grown in 220. Prerequisites: 220 hours of instructor. Preparations: 2 hours of instructor. 2 labs. E

330 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. Prerequisites: 2 hours of instructor and 2 hours of lab. E

340 Turfgrass Management (3) Practical turfgrass management techniques. Focus on the identification and management of turfgrass diseases, disorders, and weeds. Prerequisites: 2 hours of instructor and 2 hours of lab. E

350 Turfgrass Management (3) Practical turfgrass management techniques. Focus on the identification and management of turfgrass diseases, disorders, and weeds. Prerequisites: 2 hours of instructor and 2 hours of lab. E

360 Introduction to Philosophy of Science (3) An introduction to the study of the methods and principles of science. Prerequisites: 8 hours of physical science or Computer Science. Preparations: 2 hours of instructor and 2 hours of lab. E

370 Philosophy of Science and Religion (3) Introduction to the philosophy of science and religion. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

371 Philosophy of Science and Religion (3) Introduction to the philosophy of science and religion. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

380 The Concept of Woman (3) The nature of woman as it has been conceived by major western philosophers from Plato to Simone de Beauvoir. (Same as Women's Studies 393.) Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

390 The Human Condition: Value and Reality (3) The nature of reality and the nature of values. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

391 The Human Condition: Knowledge and Reality (3) The nature of knowledge and the nature of reality. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

392 Epistemology (3) An introduction to epistemology in ancient and modern time. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

393 Marxism (3) Basic philosophical issues in Marxist philosophy. May be taken before 111. Prerequisites: 2 hours of instructor and 2 hours of lab. E

394 Theoretical and Applied Ethics (3) An introduction to the field of philosophy of science and the social and political implications of scientific research. Prerequisites: 2 hours of instructor and 2 hours of lab. E

395 Ethics (3) Ethics of War and Peace. Prerequisites: 2 hours of instructor and 2 hours of lab. E

396 Philosophy and Religion of India (3) The place of mind in a material universe and the meaning of life, the existence of God, freedom of the will, and the nature of good and evil. Prerequisites: 2 hours of instructor and 2 hours of lab. E

397 The Concept of Freedom (3) The nature of freedom as it has been conceived by major western philosophers from Plato to Simone de Beauvoir. (Same as Women's Studies 393.) Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

398 Ethics of War and Peace. Prerequisites: 2 hours of instructor and 2 hours of lab. E

399 Environmental Ethics (3) Ethical issues concerning the environment and the future of the human species. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

400 Special Topics (3) Time content varies, may be repeated. Prerequisites: 2 hours of instructor and 2 hours of lab. E

401 Medical Ethics (3) Medical ethics and the ethical problems of medical practice. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

402 Special Topics (3) Time content varies, may be repeated. Prerequisites: 2 hours of instructor and 2 hours of lab. E

403 Environmental Ethics (3) Ethical issues concerning the environment and the future of the human species. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

404 Critical Thinking (3) An introduction to critical thinking in the field of philosophy. Prerequisites: 2 hours of instructor and 2 hours of lab. E

405 Critical Thinking (3) An introduction to critical thinking in the field of philosophy. Prerequisites: 2 hours of instructor and 2 hours of lab. E

410 Critical Thinking (3) An introduction to critical thinking in the field of philosophy. Prerequisites: 2 hours of instructor and 2 hours of lab. E

411 Introduction to Philosophy of Science (3) An introduction to philosophy of science and the social and political implications of scientific research. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

412 Ethical Theory and Its Applications (3) A study of ethical theory and its applications. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

413 Advanced Topic in Analytical Logic (3) Advanced topic in Analytical Logic. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

414 Ethics of War and Peace. Prerequisites: 2 hours of instructor and 2 hours of lab. E

415 Environmental Ethics (3) Ethical issues concerning the environment and the future of the human species. Prerequisites: 110, Plant and Soil Science 210 and 8 hours of Botany. Preparations: 2 hours of instructor and 2 hours of lab. E

416 Ethics of War and Peace. Prerequisites: 2 hours of instructor and 2 hours of lab. E

417 Critical Thinking (3) An introduction to critical thinking in the field of philosophy. Prerequisites: 2 hours of instructor and 2 hours of lab. E

418 Critical Thinking (3) An introduction to critical thinking in the field of philosophy. Prerequisites: 2 hours of instructor and 2 hours of lab. E

419 Critical Thinking (3) An introduction to critical thinking in the field of philosophy. Prerequisites: 2 hours of instructor and 2 hours of lab. E

420 Special Topics (3) Time content varies, may be repeated. Prerequisites: 2 hours of instructor and 2 hours of lab. E
PHYSICAL EDUCATION SERVICE PROGRAM (764)
The following courses may not be repeated:
200 Special Topics (1-2) When content varies, may be repeated. Number of semester hours is shown.
201-202 First Aid (1-2)
203 Badminton (1)
204 Elementary Bat (1,2)
205 Elementary Field Hockey (1)
206 Bowling (1)
209 Flag Football (1)
210 Park and Square Dance (2)
211 Golf (1)
212 Handball (1)
213 Ice Skating (1)
214 Elementary Jazz (1,2)
215 Elementary Jazz 2 (2)
216 Martial Arts: Basic Stunts (1)
218 Coed Gymnastics: Men's Apparatus (1)
219 Elementary Modern Dance I (2)
221 Elementary Modern Dance II (2)
222 Paddleski (1)
223 Personal Safety and Self-Defense (1)
230 Physical Fitness: Swimming (1)
232 Intermediate Swimming (2)
233 Racquetball I (1)
234 Soccer (1)
235 Social Dance (2)
236 Softball (1)
237 Beginning Swimming (1)
238 Intermediate Swimming (1)
241 Intermediate Water Safety (1)
242 Tap Dance I (2)
243 Tap Dance II (2)
244 Tauris (1)
245 Tennis (1,2)
246 Track and Field (1)
247 Fencing 1 (1)
248 Fencing 2 (1)
251 Volleyball (1)
252 Weight Training (1)
253 Coed Gymnastics: Women's Apparatus (1)
254 Yoga and Relaxation (1)
255 Water Safety Instructor (1)
256 Lifeguarding (1)
257 Fitness for Life (2) (Same as HSPE 276)

PHYSICS (773)
131-132 Introduction to Physics (3,3) For Students whose major is outside the physical sciences. Concepts of physics developed by observation of phenomena and logical reasoning, with a minimum of mathematical analysis. 131-132 Principles of physics: Electricity and Magnetism and Mechanics and Modern Physics. After completing one of the two, the student may take the second. Must be taken in sequence. 3 hours lecture including demonstration lab. Prerequisite: Algebra.
137 Honors: Fundamentals of Physics: Mechanics and Heat (3) For engineering majors and liberal arts majors in the physical sciences. Coreg. Mathematics 141-142, 4 lecture hours, 3 lab hours. This course will satisfy the prerequisite requirement for various upper division physics courses that require Physics 231.
141-142 Nature of the Physical World (3,3) Concepts, vocabulary, and principal of physical sciences to establish a unified picture of the physical universe. 141-142 Principles of mechanics, electricity, and wave motion in onedimensional and applied fields such as solar system, atomic and molecular behavior, radiation, dynamics, phenomena in astronomy and earth's crust. 141-142 Concepts of energy and matter, including radiation, sound, heat, and waves. 141-142 Atomic and molecular phenomena, nuclear reactions, radioactivity, nuclear energy, astronomy, earthquakes, and ocean phenomena, climate changes, and science and society. Must be taken in sequence. 3 hours lecture including demonstration lab. 3 hours lab.
151-152 Elements of Physics for Computer Science (3,3) Continuation of 131-132. Required of all engineering students. Coreg. Mathematics 241, 4 lecture hours, 3 lab hours. This course will satisfy the prerequisite requirement for various upper division physics courses that require Physics 231.
153-154 Principles of Nuclear Physics (3,3) Continuation of 131-132. Requires coregistration with Mathematics 241. 3 lecture hours, 3 lab hours. This course will satisfy the prerequisite requirement for various upper division physics courses that require Physics 231.
161-162 Fundamentals of Physics for Computer Scientists (3,3) Continuation of 131-132. Coreg. Mathematics 241. 3 lecture hours, 3 lab hours. This course will satisfy the prerequisite requirement for various upper division physics courses that require Physics 231.
165-166 Fundamentals of Modern Physics (3,3) Continuation of 131-132. Coreg. Mathematics 241. 3 lecture hours, 3 lab hours. This course will satisfy the prerequisite requirement for various upper division physics courses that require Physics 231.
343-452 Electricity and Magnetism (3) Electromagnetism, magnetic fields, electric circuits, and modern applications. 3 hours lecture and 1 hour recitation per week.

411-412 Techniques of Theoretical Physics (3) Methods and techniques in theoretical physics. Must be taken in sequence. Prerequisite: 320 or 323 and Mathematics 241. College Mathematics 251.

411-412 Modern Physics Laboratory (4) A modern introduction to fundamental and modern techniques in experimental physics, and to the theory and practice of measurement and data analysis. Selected experiments in nuclear, atomic, molecular and solid-state physics, and modern optics. Prerequisite: 311 and either 340 or 411. 4 hours lab and 1 hour tutorial per week.

312 and 312 hour and 1 lab. F, A

312 Soil and Water Conservation (3) Hydrologic, agronomic and engineering principles applied to soil and water management, soil-water systems, water quality management, and water resource development. Prerequisite: 311, 3 hour and 1 lab. F.A

313 Soil and Water Conservation Laboratory (1) Lab on topics covered in 312. Coreq: 312.

311 Forage and Fodder Crops (3) Agronomic principles of crop production and management. Crop improvement, forage production, forage utilization, and breeding management factors for deciduous forage crops will be emphasized. Prerequisite: 210 or 210 A. 2 hour lecture and 1 lab per week.

310 Agricultural Economics (3) Principles of crop production with special attention to the United States and selected case studies. Prerequisite: Consent of advisor and faculty committee. E

301 Seminar (1) Current topics in the plant and soil sciences. Techniques of effective reading and written presentation. Professional ethics, review of literature, assignments and oral presentations. Prerequisite: 210 and consent of instructor. 2 hours tutorial per week.

291S Middle Eastern Politics and Process (3) Development of international relations, controversies, and processes of government in the Middle East. Prerequisite: 210 or approval of instructor. 2 hours lab and 1 lab. F, A

282 Soil Morphology (1) Introductory course involving soil classification, physical properties, and relationship to vegetation, physical setting, animal life, and land use. Prerequisite: Chemistry 120 or equivalent. 2 hours recitation and 1 hour lab per week. F, A

281 Introduction to Soil Science (4) Differences in soils, soil genesis, physical, chemical, and biological properties, and relationships of soils to land use and environmental quality. Prerequisites: 210, 452 and 1 hour of physical science. 4 hour lecture and 1 hour lab per week.

273 Conservation Biology (3) An introduction to the study of conservation biology. The emphasis is on the role of human behavior in the conservation of plant and animal species. Prerequisite: Consent of department. May be repeated. 3 hours lecture and 1 hour lab. F, A


PLANT AND SOIL SCIENCE (792)

260 Current Topics in Environmental Science (1) Lectures and discussions about current environmental issues and concerns. Prerequisite: Consent of instructor. 1 hour per week.

210 Introduction to Soil Science (4) Differences in soils, soil genesis, physical, chemical, and biological properties, and relationships of soils to land use and environmental quality. Prerequisites: 210, 452 and 1 hour of physical science. 4 hour lecture and 1 hour lab per week.

210 Conservation Biology (3) An introduction to the study of conservation biology. The emphasis is on the role of human behavior in the conservation of plant and animal species. Prerequisite: Consent of department. May be repeated. 3 hours lecture and 1 hour lab. F, A

273 Conservation Biology (3) An introduction to the study of conservation biology. The emphasis is on the role of human behavior in the conservation of plant and animal species. Prerequisite: Consent of department. May be repeated. 3 hours lecture and 1 hour lab. F, A

310 Environmental Management and Control (3) Contemporary principles of control of disease-producing agents in environmental health. Emphasis on concepts for the control of communicable disease and non-communicable disease, including surveillance, control, and prevention of environmental and/or occupational activities. Includes: Drinking water (quality, physical and biological), waste management (solid and hazardous), vector control, food management, air pollution and radon, disease control, leishmaniasis, and vectors; control and nuisance wildlife. Prerequisite: Consent of instructor. F, Sp

101 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions from China, India, the Mediterranean world, and the Near East. Writing emphasis course.

102 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and the treatment of common problems and themes within religions traditions. Writing emphasis course.

320 Specialized Study in Leisure Education (1-2) Focusing on developing positive attitudes toward leisure. Emphasis on recreation, therapeutic recreation, and leisure services for special populations. Explanation of legislation, attitudes toward leisure activities, and leisure services. F, Sp

323 Issues in Religious Studies (3-1) Introduction to current and contemporary issues in religious studies. May be repeated. S/N Course only. Variable content. May be repeated. Maximum 6 hours. E

636 RELIGIOUS STUDIES (636) 300 Introduction to Public Health (3) Aspects of public health in the contexts of emergency and contempo- rary health issues.

303 Environmental Health: Communicable and Noncommunicable Diseases (5) Modern concepts of diseases, etiology of common communicable and noncommunicable diseases, including methods of prevention and control. F, 3rd yr of biological science or consent of instructor. F

PUBLIC HEALTH (839)

320 Introduction to Public Health (3) Aspects of public health in the contexts of emergency and contemporary health issues.

324 Foundations in Leisure Services and Studies (3) Focusing on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

330 Foundations for Leisure Studies and Services (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

340 Dimensionsof Private and Commercial Recreation (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

350 Foundations for Leisure Studies and Services (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

360 Introduction to Public Health (3) Aspects of public health in the contexts of emergency and contemporary health issues.

361 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions from China, India, the Mediterranean world, and the Near East. Writing emphasis course.

362 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and the treatment of common problems and themes within religions traditions. Writing emphasis course.

363 RELIGIOUS STUDIES (636)

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 the treatment of common problems and themes within religions traditions. Writing emphasis course.

320 Specialized Study in Leisure Education (1-2) Focusing on developing positive attitudes toward leisure. Emphasis on recreation, therapeutic recreation, and leisure services for special populations. Explanation of legislation, attitudes toward leisure activities, and leisure services.

323 Issues in Religious Studies (3-1) Introduction to current and contemporary issues in religious studies. May be repeated. S/N Course only. Variable content. May be repeated. Maximum 6 hours. E

324 Introduction to Public Health (3) Aspects of public health in the contexts of emergency and contemporary health issues.

324 Foundations in Leisure Services and Studies (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

330 Foundations for Leisure Studies and Services (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

340 Dimensionsof Private and Commercial Recreation (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

350 Foundations for Leisure Studies and Services (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service, including philosophy, history and theory, programming, economics, leadership, and a survey of leisure service organizations and occupational opportunities. F, Sp

360 Introduction to Public Health (3) Aspects of public health in the contexts of emergency and contemporary health issues.

361 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions from China, India, the Mediterranean world, and the Near East. Writing emphasis course.

362 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and the treatment of common problems and themes within religions traditions. Writing emphasis course.

363 RELIGIOUS STUDIES (636)
peoples of Africa, including how myth, rites, and symbols enhance African religious practice. (Same as Anthropology 373 and African-American Studies 351.) Writing-emphasis course.

374 Philosophy and Religion in India (3) Survey of the development of the major non-Buddhist themes of philosophy and religion taught in India. (Same as Philosophy 376.) Writing-emphasis course.

375 Buddhist Philosophy and Religion in China (3) Survey of the origins of Buddhism in China and further development of Buddhist philosophy and religion in China. Focus: Korea, Japan, the countries of Southeast Asia, and beyond. Writing-emphasis course. (Same as Philosophy 376.)

379 Religion and Philosophy in China (3) Traditional thought and religion in China are set in historical context as a basis for understanding modern China. (Same as Philosophy 375.) Writing-emphasis course.

390 Topics in Religious Studies (3) Selected figures, themes, or movements in the history of religious thought and institutions. May be repeated. Maximum 6 hours.
Introduction to Historical and Comparative Linguistics (426)

East European Studies (451-452)

Russian and East European Studies (401-402)

Advanced Russian Grammar, Conversation, and Composition (426)

Russian and East European Studies (401-402)

Advanced Grammar, Conversation, and Composition (421)

Introduction to Russian Literature (3,3) (Same as Russian 301-302)

Introduction to Russian Literature (3,3) (Same as Russian 300-301)

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Introduction to Russian Language, Literature, and Cultural Studies (425)

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Introduction to Russian Language, Literature, and Cultural Studies (425)
Sociology of Health Care (3) Organization of healthcare facilities, staff-patient relationships, demographic characteristics, and prevalence of disease.

Sociology of Aging (3) How roles and statuses change with age in relation to the major social institutions, the impact that the rapidly increasing numbers of older people have on society, the effect of society on older people.

Comparative Poverty and Development (3) A critical examination of patterns of poverty and inequality in different countries. Emphasis on comparative sociology, with a review of major social theories which attempt to explain social differences in developing countries (same as African-American Studies 442).

The Modern World System (3) Critical examination of the capitalist world system as a basic sociological system, emphasizing its role in the development of industrial societies. (Same as African-American Studies 442)

Criminal Justice (3) A critical assessment of the judicial apparatus and its components. Brief examination of the police, with most of the emphasis on the problems and issues in the justice system and crime prevention and control. Prior completion of 305 is recommended.

Sociology and Law (3) How laws and legal processes are affected by social changes. The social impact of legal sanctions, relations between law and social justice. Writing-emphasis course.

Organizational and Corporate Crime (3) Crime and deviance committed by organizations. Case studies of corporate and government crime, the organizational dynamics of crime, and theories of corporate crime and organized responses to this type of crime by governmental regulatory agencies.

Population (3) Demographic and social factors structuring human populations, population growth, migration, distribution, and composition, population policy.

Urban Ecology (3) The relation of humans to their environment. Emphasis on urban-rural interactions. Ideal for students interested in environmental protection and urban planning.

Sociology of Occupations (3) Occupations and professions, social stratification and career choice.

Sociology of Sport (3) Social meaning, organization, and practice of sport, emphasizing health-care facilities, staff-patient relationships, demographic characteristics, and prevalence of disease.

Gender in Society (3) Exploration of gender within the structure of society, utilizing various sociological perspectives with special attention to race and ethnicity.


Environment and Resources (3) Relationship between environmental factors, human lifestyles, social organization, and social control.

American Studies (3) American Studies, including the history, culture, and politics of the United States.

Overview of Social Science Research (3) Methodology of social science research, emphasizing research design, sampling, methods of data collection, and analysis.

Intermediate Spanish (3) This course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary approach to the study of the role of foreign trade in the economy. Emphasis on economic and political relationships between nations.

Intermediate Spanish (3) Prerequisite: 150 or 153 or appropriate placement exam. May be taken in any of four sequences (French 425, German 425, Russian 425, and Linguistics 425). May be repeated. Maximum 15 hours.

Spanish Civilization (3) Majorsocial,political, and cultural trends in Spanish-speaking territories. Emphasis on Spanish-American literature, Hispanic civilizations, and cultures in the Western Hemisphere. (Same as French 425, German 425, Russian 425, and Linguistics 425.)

Spanish for Students of Other Romance Languages (3) Accelerated course for students who have taken previous 4-hour courses in Spanish. Emphasis on reading and writing skills. (Same as Latin American Studies 345.)

Spanish Culture and Compositions (3) Designed to improve proficiency in oral and written communication in Spanish.

Spanish for Business (3) Contemporany Spanish in a business-oriented context, with emphasis on business correspondence, speaking, and listening.

Spanish and World Business (3) See the Director for further information.

Spanish Civilization (3) Major social, political, and cultural trends in Spanish-speaking territories. Emphasis on the history and culture of the Spanish-speaking world. See the Director for further information.

Intermediate Spanish (3) Prerequisite: 150 or 153 or appropriate placement exam. May be taken in any of four sequences (French 425, German 425, Russian 425, and Linguistics 425). May be repeated. Maximum 15 hours.

Spanish Language and World Business (1) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary approach to the study of the role of foreign trade in the economy. Emphasis on economic and political relationships between nations.

Courses of Instruction/Spanish

The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary approach to the study of the role of foreign trade in the economy. Emphasis on economic and political relationships between nations.

Courses of Instruction/Spanish

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**SPORT MANAGEMENT I**

### Foundation of Sport Management (3)
- **Introduction to the conceptual framework** including why business is involved in sport and an overview of sport management as a profession.
- **Practical, hands-on approach** to the management of sport organizations.
- **Case studies** and the application of theoretical concepts to real-world situations.

### Core Course Requirements
- **400 Topics in Speech Communication (3)**
  - Variable content focusing on the development and delivery of effective communication in various contexts.
  - Content varies based on departmental interests.
- **440 Organizational Communication (3)**
  - Focus on the communication processes within organizations.
- **450 Event Management (1-3)**
  - Study of the various principles involved in managing and planning events.
  - Content varies based on departmental interests.
- **460 Sport Management Internship (1-15)**
  - Full-time supervised off-campus experience for students.
  - Prerequisite: Progression to Sport Management Major and approval of the internship director.

### Statistics Option
- **STATISTICS (962)**
  - Course offered in conjunction with the Statistics Department.
  - **Prerequisites:**
    - 300 level Statistics courses or consent of the instructor.
  - Topics include:
    - Estimation and hypothesis testing.
    - Confidence intervals and hypothesis testing.
    - ANOVA and regression analysis.
    - Chi-square tests and contingency tables.
    - Time series analysis and forecasting.
    - Probability and stochastic processes.
    - Simulation techniques and modeling.

### Additional Requirements
- **Completion of at least 12 hours of major requirements in Sport Management.
- **Consent of department head.**
- **Prerequisite:** Completion of 492 or equivalent.

### Co-requisites
- **493 Independent Study (1-3)**
  - Faculty-directed independent study.
- **494 Proseminar in Speech Communication (3)**
  - Major writing requirement.
  - Prerequisite: Consent of instructor.

### Additional Information
- **Consent of instructor:** Required for all courses.
- **Prerequisites:**
  - Corequisites with specified courses.
  - Specific requirements for each course.

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**TECHNOLOGICAL AND ADULT EDUCATION (967)**

### Graphic Communications (3)
- Drafting as a means of expression.
- Elements of line and space.
- Use of standard computer software.

### Computer Systems (3)
- Introduction to computer systems.
- Use of standard software packages.
- Use of common computer hardware and software.

### Technical Communication (3)
- Techniques of technical writing.
- Use of standard software packages.
- Use of common computer hardware and software.

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**Industrial Graphic Design (3)**

### Principles of Design (3)
- Basic principles of design.
- Use of standard software packages.
- Use of common computer hardware and software.

### Typography (3)
- Fundamentals of typography.
- Use of standard software packages.
- Use of common computer hardware and software.

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**Industrial Electronics (3)**

### Semiconductor Devices (3)
- Basic principles of semiconductor devices.
- Use of standard software packages.
- Use of common computer hardware and software.

### Electrical Circuits (3)
- Basic principles of electrical circuits.
- Use of standard software packages.
- Use of common computer hardware and software.

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**Industrial Applications of Electronics (3)**

### Basic Electronics (3)
- Basic principles of electronics.
- Use of standard software packages.
- Use of common computer hardware and software.

### Electrical Engineering (3)
- Basic principles of electrical engineering.
- Use of standard software packages.
- Use of common computer hardware and software.
offset presswork.

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

166 Metals Technology (3) Equipment, materials, and products of metal working industries. Processing, machining, using hand tools, sheet metal and fabrication. F

209 Experience in Vocational Technical Education (1) Participation in school or industry activity, school organization, maintenance, safety, and management in Vocational Technical Education. Maximum 3 hours. Satisfactory/No Credit only. E

210 Typewriting and Shorthand Proficiency (3) Procedures and principles of typewriting, shorthand, and office procedures. Sp, Su

211 Architectural Graphics (3) Graph representation and architecture. Principles of construction, working drawings for a residential dwelling, and CAD techniques. Prereq: 161 or consent of instructor. Sp

213 Basic Electronics/Technology (3) Operation and characteristics of electrical systems and devices, including general DC/AC theory and application, use of electronic measuring instruments, circuit analysis, introduction to semiconductors and various electronic experiments that involve the function of different types of circuits. Prereq: 163 or consent of instructor. Sp

266 Construction Technology (3) Residential construction, interior decoration, and related occupations. Framing, roofing, interior and exterior finishing. Prereq: 165 or consent of instructor. Sp

268 Machine Tool Processes (3) Function, care, setup, operation, and theory of basic machine tools. Prereq: 168 or consent of instructor. Sp

269 Micro Business Applications (3) Operating and programming microcomputers. BASIC language is used and programming examples are oriented in business and industry. Implications and impact of microcomputers on occupations and everyday living. Open to non-business majors. E

356 Lab Organization, Management, Maintenance, and related responsibilities under the supervision of a master teacher in the content area. Satisfactory/No Credit only. Prereq: Admission to Teacher Education Program. F

372 Job Analysis (3) Applied techniques of job analysis to determine job descriptions, training requirements, performance standards and sequence of training techniques. Prereq: 165. Sp

373 Industrial Techniques in Instructional Education (3) Application of teaching theories, methodological and instructional materials, techniques, and related subjects. E

374 Planning Instruction for Human Resource Development (3) Selection, design, and development of performance-based training programs. Prereq: 272 or consent of instructor. F

451 Utilization of Community Resources (3) Strategies of developing linkages between educational and the private sector through educational initiatives, outreach and working partnerships. Development and management of community programs. Prereq: Three years of teaching experience. A

454 Special Topics in Technology and Adult Education (3) Emphasis will be made to be student led. May be repeated. Maximum 6 hours. F

454 Adult Education Program Design and Management (3) Principles of program development and special application to adult learners. Prereq: 201 or departmental approval. F

455 Job Analysis Techniques and Curriculum Development (3) Instructional materials development utilizing modern techniques. Prereq: 161 or consent of instructor. Su

466 Course Construction in Technology Education (3) Selection and arrangement of course content. Planning, instructional objectives, project/product selection, and evaluation. Prereq: Admission to Teacher Education Program. F

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

479 Internship in Human Resource Development (5-10) Assessment, planning, implementation, and evaluation of internship experience for students preparing for careers in human resource development. Must be completed the semester immediately following completion of student teaching. Must be taken the semester immediately preceding student teaching. Must be taken the semester immediately preceding student teaching. Maximum 10 hours. Satisfactory/No Credit only. E

481 Student Teaching: Grades 7-12 and Adults (10) Full-time experience in classroom and laboratory teaching duties with the cooperation of a cooperating Teacher. Prereq: Admission to Teacher Education Program. F

THEATRE (976)

100 Introduction to Theatre (3) students understand the history, development, and production practices of theatre. Writing emphasis course.

210-211 Survey of World Drama (3.3) 210 Includes: Jewish, Roman, Medieval, Elizabethan, and early 20th century. as well as contemporary theatre. Writing emphasis course. E

221-222 Acting (3.3) 221 Basic Acting Techniques. 222 Further exploration and development of acting techniques character and beginning scene work. Prereq: 201. Writing emphasis course. Prereq: 201.
450 Directed Field Work (3-15) Participant observation and directed field research. Project results are presented to Urban Studies students and faculty.

451 Breaking Ground (3) Covering various fields of study related to the urban environment. Topics may be selected by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often field-based). Evaluation uses of this, high field, student dialogue. May be repeated. Maximum 9 hours.


456 Rendering (3) Techniques in monotype and full color rendering show design and scenic art. A basic understanding of scenic design techniques and methods is assumed. Prereq: 355 and consent of instructor.

457 Advanced Lighting and Sound Technology (3) Projects in lighting and sound composition, including scenic design, music, sound, and theatrical design. Prereq: 355 and consent of instructor.

458 Advanced Scenery Painting (3) State-of-the-art techniques and acrylics. Prereq: 355 and consent of instructor.

459 Sound Design (3) Sound design for the performing arts. Review of equipment and acoustical factors that affect sound production. Sound designers will be judged in several categories: final project, the production of a show, and a mid-term project. Prereq: 355 and consent of instructor.

450-451 Playwriting (3,3) Advanced instruction in the writing of plays. Prereq: Consent of instructor.

452 Advanced Theatre: Costumes (3) Lab course in costume design and construction; basic theory and techniques. Prereq: 355 and consent of instructor.

453 Costume Construction (3) Study and practice of mask construction. Includes sketching, cutting, sewing, and Directed Field Work. Prereq: 355 and consent of instructor.

454 Scenery Painting (3) Introduction to materials, techniques, and processes of scenic design. Development of skills. Prereq: 355 and consent of instructor.


456 Rendering (3) Techniques in monotype and full color rendering show design and scenic art. A basic understanding of scenic design techniques and methods is assumed. Prereq: 355 and consent of instructor.

457 Advanced Lighting and Sound Technology (3) Projects in lighting and sound composition, including scenic design, music, sound, and theatrical design. Prereq: 355 and consent of instructor.

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WILDLIFE AND PROFESSIONS SCIENCE (993)

397 Law Enforcement and Public Safety (1) Fundamentals and general principles of local, state, and federal agencies that govern hospital and their management. Principles and practices of inter- acting with the public.

400 Wildlife Techniques (2) Methods in wildlife dam- age control with emphasis on the methods of control, wildlife habitat management, identification of wildlife habitat, wildlife tracking techniques as a tool, and enforcement techniques.野生动物学。野生动物伤害控制的手段。

230 Marriage and Family: Roles and Relationships (3) Social scientists' assumptions about women and men which have limited women's participation in society, various societies during different historical periods, facilita- tion of gender roles and their implications. 社会科学家关于男女角色和关系的假设。

220 Women in Society (3) Role played by women in social and cultural settings. Examples include literature (poetry, drama), art, and music. 女人在社会和文化环境中的角色。例如文学、艺术和音乐。

Genres (fiction, poetry, and drama), including works from various countries, illustrating the impact of gender roles and relationships on society. 各个不同国家的文学作品，展示了性别角色和关系对社会的影响。

400 General Physiology (3) Principles of cellular and organismic physiology. Principles and mechanisms of diverse physiological processes. 细胞和有机体生理学的原则。多样性生理过程的原理和机制。

430 Immunology (3) Principles of cellmediated immunity, humoral immunity, and transplantation immunity. 炎症的细胞介导免疫、体液免疫和移植免疫。

439 Immunology Laboratory (2) Principles of immunology and laboratory methods. 实验室免疫学原理。

215 Images of Women in Literature: Fiction, Poetry, and Drama (3) Introduction to the study of women through fiction, poetry, and drama. 通过文学，诗歌和戏剧研究女性。

215 Images of Women in Literature: Fiction, Poetry, and Drama (3) Introduction to the study of women through fiction, poetry, and drama. 通过文学，诗歌和戏剧研究女性。

490 Ethics in Wildlife and Fisheries Management (1) Ethical bases for decision-making and application of methodologies in the practice of wildlife and fisheries management. Foresters will be used to acquaint students with a diverse perspective of ethical behavior in the practices of wildlife and fisheries management. 讲座，小组讨论，视频和其他互动。介绍森林，野生动植物和渔业管理。

493 Independent Study in Wildlife and Fisheries 317 or Biology 230. 2 hours and 1 lab. 野生动物和渔业管理317或者生物学230。

440 Wildlife Techniques (2) Introduction to basic techniques of wildlife habitat management, identification of wildlife habitat, wildlife tracking techniques as a tool, and enforcement techniques. 野生动物栖息地管理的基本技术，包括识别和保护野生动物。

443 Fisheries Science (3) Quantification and management of fisheries resources. Population estimation methods; fish handling and transport; food habits analysis; markng and tagging techniques; age determination and increment growth analysis; assessment of water quality and fish populations. 鱼类资源的量化和管理。群体估计方法；鱼类处理和运输；食物习性分析；标记和标签技术；年龄决定和生长分析；水质和鱼类种群的评估。

440 Wildlife Techniques (2) Methods in wildlife dam- age control with emphasis on the methods of control, wildlife habitat management, identification of wildlife habitat, wildlife tracking techniques as a tool, and enforcement techniques. 野生动物伤害控制的手段。

440 Wildlife Techniques (2) Methods in wildlife dam- age control with emphasis on the methods of control, wildlife habitat management, identification of wildlife habitat, wildlife tracking techniques as a tool, and enforcement techniques. 野生动物学。野生动物伤害控制的手段。

434 Psychology of Gender (3) (Same as Psychology 344.) Writing emphasis course. 参与者多样性。包括社会和经济影响。写作强调课程。

432 Women in European History (3) (Same as History 432.) Women in European History (3) (Same as History 432.) Writing emphasis course. 通过文学，诗歌和戏剧研究女性。

431 Gender and Sexuality (3) (Same as Family 431.) Writing emphasis course. 性别和性身份研究。写作强调课程。

430 Immunology (3) Principles of cellmediated immunity, humoral immunity, and transplantation immunity. 炎症的细胞介导免疫、体液免疫和移植免疫。

493 Independent Study (1-15) Registration by consent of instructor. 写作强调课程。
Courses of Instruction: Zoology

470 Aquatic Ecology (3) Introduction to the physicochemical nature of inland waters with description of basic communities and their interrelationships. Prereq: Chemistry 120 and Biology 230. 2 hours and 1 lab.

472 Arachnology (3) Biology of spiders, mites, scorpions and relatives. Prereq: 360 or 380. 2 hours and 1 lab.

473 Herpetology (3) Biology of amphibians and reptiles with emphasis on ecology and adaptive radiation. Prereq: Biology 230. 2 hours and 1 lab.

474 Ichthyology (4) Evolution, classification, collection and identification, distribution, and biology of fishes with emphasis on freshwater fauna of Eastern North America. Prereq: Biology 230 or consent of instructor. 2 hours and 2 labs.

475 Ornithology (3) Behavior, ecology, populations, evolution and field identification of birds. Prereq: Biology 230. 2 hours and 1 lab.

476 Mammalogy (3) Evolution, classification, biogeography, ecology, behavior and functional anatomy of mammals. Prereq: Biology 230 or equivalent. 2 hours and 1 lab.

480 Physiology of Exercise (3) (Same as Physical Education 480.)

490 Comparative Endocrinology (3) Comparative analysis of physiology and morphology of endocrine glands in vertebrates and invertebrates, their role and interaction in maintenance of the organism and species. Prereq: 440 or equivalent.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)