ACCOUNTING (009)

415 Governmental and Nonprofit Accounting (3) Introduction to governmental and nonprofit accounting; emphasis on governmental accounting principles; fund accounting; accounting for governmental non-profit entities. Prereq: 414 or consent of instructor.

414 Financial Reporting by Business and Nonprofit Organizations (3) Continuation of 311 and 312. Application to error corrections, aggregation issues, international accounting, and governmental statements. Prereq: 311 with C or better or consent of instructor.


310 Cost and Managerial Accounting (3) Analysis of costing for products, projects, and management control. Topics include cost behavior; cost prediction; budgeting; and responsibility accounting. Prereq: 102 or Coreq: Management 203.

341 Accounting Information Systems (3) Development and use of accounting information systems for collection, organization, and dissemination of economic information and organizations for internal control and decision making. Prereq: 203, Management 203. Junior standing. May exam may be given during the last class meeting. F, Sp.

411 Financial, Compliance, and Operational Auditing (3) Role of auditing in society from an internal and external perspective. The auditing process, internal and external controls, and statistical sampling in auditing, fraud auditing. Operational auditing, compliance auditing, and applications of auditing procedures to specific transaction cycles. Prereq: 203.

410 Financial Reporting By Business and Nonprofit Organizations (3) Continuation of 311 with emphasis on liabilities, stockholders' equity, earnings, accounting ethical and error correction, regulatory issues, the international accounting, and governmental statements. Prereq: 311 and consent of instructor.

415 Governmental and Nonprofit Accounting (3) Contemporary issues in theory and practice of governmental accounting principles; environment of public sector; and governmental non-profit entities. Prereq: 414 or consent of instructor.

431 Federal Income Taxation (3) Federal income taxation of individuals, partnerships, corporations, and estates and trusts. Prereq: 311 with C or better, or consent of instructor. F, Sp.

462 Advertising Practicum (1) Experience in a functional area of advertising. Ten hours laboratory each week. May be repeated once. Prereq: Progression as a major in the Department of Advertising. Satisfactory/No credit.

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

492 Advertising Practicum (1) Experience in a functional area of advertising. Ten hours laboratory each week. May be repeated twice. Prereq: Progression as a major in the Department of Advertising. Satisfactory/No credit.

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

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 emphasizes such issues as traditional African societies, the institution of slavery, the development of African-American political and economic systems, the African-American protest tradition, and the Civil War and Reconstruction.

202 Introduction to African-American Studies (3) Multidisciplinary approach to the African-American experience through the Civil War period which emphasizes such issues as traditional African societies, the institution of slavery, the development of African-American political and economic systems, the African-American protest tradition, and the Civil War and Reconstruction.

211 Introduction to African Studies (3) Multidisciplinary approach to the study of African traditions, cultures, religions, political economics, social organizations, and systems from the earliest to the twentieth century. Includes the role of nationalism, post-colonial dependency, contemporary problems, and current liberation struggles in various areas of the continent.

212 Introduction to African Studies (3) The Multidisciplinary study of Africa and its incorporation into the world economy. The outcomes and the twentieth century. Includes the role of nationalism, post-colonial dependency, contemporary problems, and current liberation struggles in various areas of the continent.

213 Introduction to African Studies (3) Multidisciplinary approach to the study of African traditions, cultures, religions, political economics, social organizations, and systems from the earliest to the twentieth century. Includes the role of nationalism, post-colonial dependency, contemporary problems, and current liberation struggles in various areas of the continent.

214 Introduction to African Studies (3) Multidisciplinary approach to the study of African traditions, cultures, religions, political economics, social organizations, and systems from the earliest to the twentieth century. Includes the role of nationalism, post-colonial dependency, contemporary problems, and current liberation struggles in various areas of the continent.

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

216 African-American Art (3) Same as Art History 316.

217 African-American History (3) Same as History 317.

218 African-American Studies (3) Same as Anthropology 318.

219 African-American Studies (3) Same as Anthropology 319.

220 African-American Studies (3) Same as Anthropology 320.

221 African-American History (3) Same as History 321.

222 African-American Literature (3) Same as English 322.

223 African-American Literature (3) Same as English 323.

224 African-American Literature (3) Same as English 324.

225 African-American History (3) Same as History 325.

226 African-American History (3) Same as History 326.
421 Comparative Studies in African and African-American Studies (3) Comparative studies of African and African-American history, culture, religion, and social stratification. Involves the respective views of African-Americans and African-Americans who seek an education on the primary, secondary, college, or graduate level. Writing emphasis course. (Same as History 431.)

439 History and Philosophy of African-American Education (3) Focuses on attempts by African-American educators to secure an education for their people and fight for equality since the beginning of the 19th century. Involves the work of African-American educators who seek an education on the primary, secondary, college, or graduate level. Writing emphasis course. (Same as History 431.)

431 Research Seminar in African-American Studies (2) Teaches the specific approach to the research process and development of research skills. Students design and implement a research project of their choice in the field of African-American Studies. Prereq: 201-202 and 211-212. Writing emphasis course.

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

483 African-American Women in American Society (3) Focuses on the historical and contemporary social, economic, and political issues faced by African-American men and women. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours.

492 Independent Study (1-3) Individualized study of a topic of interest to the student. May be repeated for credit. Maximum 6 hours.

493 African-American and African Politics (3) (Same as Political Science 493.)

473 Black Male in American Society (3) Focuses on the historical and contemporary social, economic, and political issues faced by African-American men and women. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours.

452 African-American and African Politics (3) (Same as Political Science 452.)

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


212 Agricultural Finance (3) Macro-finance, financial objectives, opportunities, and placement processes. Assignments for written and oral presentations. F

317 Agricultural and Natural Resources Honor Seminar (1) Discussed selected topics, issues, and potential future directions for the field. Prereq: Consent of instructor. May be repeated for credit. Maximum of 2 hours. S

318 Independent Study (1-3) Self-directed study of an agricultural economics topic. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours.


322 Agricultural Finance (3) Macro-finance, financial objectives, opportunities, and placement processes. Assignments for written and oral presentations. F

330 The Agricultural Marketing System (3) Survey of the system of marketing agricultural commodities and non-agricultural commodities. Prereq: Consent of instructor. May be repeated for credit. Maximum of 3 hours.

331 Agricultural Marketing (3) The decision process of marketing organizations and individuals. Prereq: Consent of instructor. May be repeated for credit. Maximum of 3 hours.

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367 Agricultural Marketing (3) The decision process of marketing organizations and individuals. Prereq: Consent of instructor. May be repeated for credit. Maximum of 3 hours.

368 Agricultural Marketing (3) The decision process of marketing organizations and individuals. Prereq: Consent of instructor. May be repeated for credit. Maximum of 3 hours.
written presentation on special topics and current research. Prereq: Completion of Animal Science sophomore and junior core courses and consent of instructor. 2 hours and 1 lab. SP

461 Dairy Cattle Production and Management (3) Integration of principles of nutrition, breeding, physiology, and management into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and enterprise management. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. SP

462 Pig Production and Management (3) Integration of principles of nutrition, breeding, physiology, and management into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and enterprise management. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. SP

463 Poultry Production and Management (3) Integration of principles of nutrition, breeding, physiology, and management into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and enterprise management. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. SP

482 Animal Production (3) Principles of nutrition, breeding, physiology, and management into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and enterprise management. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. SP

483 Companion, Zoo and Lab Animal Management (3) Principles of nutrition, breeding, physiology, and management into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and enterprise management. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab. SP

484 Animal Science Field Study (4) Off-campus work experience designed to develop student's ability to apply classroom concepts and critical thinking. Permission of instructor. Prereq: 130 or consent of instructor. 6-48 hours. 

485 Independent Study in Animal Science (1-3) Directed study of specific content permitted by the instructor. Open to senior standing. Permission of instructor. 1-3 hours.

486 Animal Science Teaching Assistant (1) Assist the primary instructor in laboratory instruction and demonstrate laboratory procedures. 1 hour. CIRC

492 Service (1) Review of literature and oral/written presentation on special topics and current research in Animal Science field. Prearr. Senior standing. C, F, S

495 Veterinary Medical Technology (1) For Animal Science and Animal Science Pre-Veterinary Medicine Majors only. Consent of the instructor. Must be enrolled as a full-time student. May be repeated for a maximum of five credits. Prereq: Consent of instructor. 1 hour. SP

496 Veterinary Medical Technology (1) For Animal Science and Animal Science Pre-Veterinary Medicine Majors only. Consent of the instructor. Must be enrolled as a full-time student. May be repeated for a maximum of five credits. Prereq: Consent of instructor. 1 hour. SP

497 Independent Study in Veterinary Medical Technology (1-3) For Animal Science and Animal Science Pre-Veterinary Medicine Majors only. Consent of the instructor. 1-3 hours.

498 Independent Study in Animal Science (1-3) Directed study of specific content permitted by the instructor. Open to senior standing. Permission of instructor. 1-3 hours.

499 Independent Study in Animal Science (1-3) Directed study of specific content permitted by the instructor. Open to senior standing. Permission of instructor. 1-3 hours.

500 Animal Science Senior Seminar (1-3) May be repeated for a maximum of six credits. Prereq: Senior standing and consent of instructor.


502 Anthropology of Religion (3) As Religious Studies 302.

503 Genetics and Society (3) (Same as Sociology 306.)

504 North American Indians (3) Comparative overview of woodland cultures of North America. Topical coverage ranges from prehistoric and aboriginal lifeways to problems resulting from contact and acculturation. Writing-emphasis course.

505 Southeastern Indians (3) Survey of Southeastern American Indian cultures at the time of European contact. Focus on Cherokee culture and its relation to the regional and economic, and religious organization of neighboring groups. Prereq: 130 or consent of instructor.

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

507 Peoples and Cultures of Mesoamerica (3) Prearr. 

508 African-Related Artworks (3) Maco, Guatemalan, Benin, E. African, and Handicrafts. Patterns of cultural conformity and cultural change throughout Mesoamerican History. Prearr. 130 or consent of instructor. Writing-emphasis course.

509 African Religions (3) (Same as Religious Studies 315.)

510 American Religions (3) (Same as Religious Studies 311.)

511 African-American Anthropology (3) (Same as Anthropology 310.)

512 Cultural Ecology (3) Prereq: 130 or consent of instructor. Writing-emphasis course.

513 Cultural Evolution and Diffusion (3) Topical study of major problems in cultural evolution and diffusion. Prereq: 130 or consent of instructor. Writing-emphasis course.

514 Economic Anthropology (3) Economic change and diffusion, and the economic, social, and cultural organization of communities. Writing-emphasis course.

515 Historical Anthropology (3) Topical study of cultural history from earliest dated human culture to rise of complex societies. Prereq: 130. Writing emphasis course.

516 Introduction to Anthropology (3) Topical study of cultural history from earliest dated human culture to rise of complex societies. Prereq: 130. Writing emphasis course.

517 History of Anthropology (3) Topical study of cultural history from earliest dated human culture to rise of complex societies. Prereq: 130. Writing emphasis course.

518 History of Anthropology (3) Topical study of cultural history from earliest dated human culture to rise of complex societies. Prereq: 130. Writing emphasis course.

519 History of Anthropology (3) Topical study of cultural history from earliest dated human culture to rise of complex societies. Prereq: 130. Writing emphasis course.

520 History of Anthropology (3) Topical study of cultural history from earliest dated human culture to rise of complex societies. Prereq: 130. Writing emphasis course.
ARCHITECTURE (133)
111 Introduction to the Built Environment (9) Scope and definition of the built environment in relation to natural and social systems. Discussion of courses, courses and programs of the School. Coreq: 171 F
112 Visual Design Theory (3) Principles of visual design, addressing form and space. Exploration of visual design in the production of modern architecture, and visual communication. Coreq: 172 Sp
113 Architecture and the Built Environment (3) An introduction to the built environment, its components and non-architecture majors. Signification of our built environments, forces behind them. Creative aspects of design.
Survey of workshops from local to global. Strategies for individual and collective investigation seminar and 6 credit hour studio.
113 Drawing and Perception (3) Exploration of drawing as a means of recording and communicating design ideas. Addressing perceptual phenomena. Examination of both plan and elevation with the use of perspective and spatial relationships. Includes live-drawing time. Shading, shadow depth. Compositional principles will be introduced. Drawings based on observation, including figure drawing and landscape views. Coreq: 171 F.
119 Introduction to Architecture (3) Introduction to the fundamentals of construction, materials and technologies in a historical context.
121 Introduction to Graphics Skills (4) Introduction to finishing drawing and information techniques emphasizing visualization and simulation. The work will be explored and developed in the studio (4 credit hour studio).
122 Introduction to Basic Design (6) Introduction to basic design principles in both two and three dimensions. The work will be explored in a seminar format and the studio in the studio (6 credit hour studio).
127 Architectural History/Theory I (3) Architectural thought and ideas of building and community form. History of architecture in the ancient, medieval, and modern periods. Coreq: 172 F.
128 History and Theory of Architecture II (3) Architectural thought and ideas of building and community form. History of architecture in the ancient, medieval, and modern periods. Coreq: 172 F.
161 History and Theory of Architecture I (3) Architectural thought and ideas of building and community form. History of architecture in the ancient, medieval, and modern periods. Coreq: 172 F.
162 History and Theory of Architecture II (3) Architectural thought and ideas of building and community form. History of architecture in the ancient, medieval, and modern periods. Coreq: 172 F.
163 History and Theory of Architecture III (3) Architectural thought and ideas of building and community form. History of architecture in the ancient, medieval, and modern periods. Coreq: 172 F.
164 History and Theory of Architecture IV (3) Architectural thought and ideas of building and community form. History of architecture in the ancient, medieval, and modern periods. Coreq: 172 F.
171 and 172 SP
172 Architectural Design I (3) Introduction to architectural form, ideas and techniques in a lecture format. The work will be explored and developed in the studio (3 credit hour studio).
172 SP
172 Architectural Fundamentals (3) Introduction to the fundamentals of construction, materials and technologies in a historical context.
172 Architectural Design III (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design IV (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design V (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design VI (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design VII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design VIII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design IX (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design X (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XI (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XIII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XIV (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XV (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XVI (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XVII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XVIII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XIX (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XX (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXI (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXIII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXIV (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXV (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXVI (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXVII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
172 Architectural Design XXVIII (6) Design synthesis. Integration of design determinants, structural, theoretical, and contextual elements. Coreqs: 171 and 172 SP.
410 History and Theory of Urban Forms (3) Patterns of community development. Selected historic and contemporary examples. Basic urban design issues and assembly design approaches examined through lectures, readings, and studio studies including historical change in urban form and design.

412 Non-Western and Indigenous Architecture (3) Building principles and practices of non-Western peoples and their economic, social, and political environment. Selected examples examined through readings, lectures, discussions, and tours. The world as viewed by primitive peoples.

413 Twentieth-Century Architectural Technology (3) Building materials and construction techniques from primitive to the present. 

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


422 Modern East European Architecture (3) Twentieth-century architecture in Russia, Czechoslovakia, Poland, and Hungary. Methods, materials, and values. Stalinist and post-Stalinist architecture.

425 Special Topics in Architecture (1-6) Faculty-initiated special topics. Topic varies. May be repeated. Maximum 12 hours. 

426 Architectural Design (3) Material and technical analysis and design techniques used in the planning, designing, constructing, and analyzing of buildings. Introduces and examines the conceptual design of buildings.

429 Computer Aided Design I (3) Advanced computer-aided design using a commercial computer-aided design program. Emphasis is on application to threedimensional design.

431 Structural and Mechanical Applications (3) Case studies in the design process and analyses of building systems. Investigates the integration of structural and mechanical systems. Focuses on the economic and physical aspects of design.

432 Computer Applications in Design II (3) Advanced computer-aided design using three-dimensional modeling and analysis utilities. Design analysis using computer animation, rendering techniques, visualization, and video.

433 Computer Applications in Design III (3) Advanced computer-aided design using advanced computer animation, rendering techniques, visualization, and video.

434 Architectural Design (3) Architectural design process and design tools. Emphasis is on design thinking and design theory.

435 Building Energy Analysis (3) Balancing heat flow through external walls and roofs and analysis of building energy consumption. Emphasizes energy conservation techniques. Focuses on computer analysis techniques.

436 Development and Design (3) Design process and design tools. Emphasis is on design thinking and design theory.

437 Architectural Design Theory (3) Principles and practice of the design process. Impact of economics, finance and other public policies on the design and development of real estate. Open to all students.


450 Comprehensive Design Project I (3) Project selection and preparation for Architectural 462. Preparation and documentation of hypothesizes. Preparation of background and progress information. GS and completion of design project.

451 Architecture and Planning (3) Study and planning for architectural, social, and environmental issues. Prerequisite: 472. Syllabus.


482 Architectural Design VI (6) Order and form in complex buildings developed to address programmatic, ecological, and environmental issues. Prerequisite: 472. Credit.

483 Architectural Design VII (6) Order and form in complex buildings developed to address programmatic, ecological, and environmental issues. Prerequisite: 472. Credit.

484 Architectural Design VIII (6) Order and form in complex buildings developed to address programmatic, ecological, and environmental issues. Prerequisite: 472. Credit.

485 Development and Design (6) Exploration of image making, consumption, and the allocation of scarce resources. Issues of finance, economics, urban economies, and marketing are analyzed in relation to urban and architectural design. Analysis of financial feasibility of projects. Prerequisite: 472. Credit.

486 Design of Sustainable Architecture (6) Architectural design and the environment. Emphasis on the design of buildings that are sustainable. Prerequisite: 472. Credit.

487 Architectural Design IX (6) Order and form in complex buildings developed to address programmatic, ecological, and environmental issues. Prerequisite: 472. Credit.

488 Architectural Design X (6) Order and form in complex buildings developed to address programmatic, ecological, and environmental issues. Prerequisite: 472. Credit.

489 Structural Innovations (6) Building design with emphasis on structural configuration and technology. Emphasis is on design of new materials, detailing, and methods in building construction. Prerequisite: 472. Credit.

490 Foreign Study (1-18) Research and design projects conducted in various locations deemed fit. Syllabus.

491 Off-Campus Study (1-18) Students must contact director of program director or an affiliated professor in advance to participate. In-service to public school systems is included. Faculty-student team seminars and projects are selected and conducted at the discretion of the professor and the community. 

492 Independent Study in Architecture (1-6) Individual study and project under faculty direction. Credit awarded when satisfactory work is submitted. May be repeated. Permission of instructor required.

493 Independent Study in Architectural History (1-6) Individual study and project under faculty direction. Credit awarded when satisfactory work is submitted. May be repeated. Permission of instructor required.

494 Foreign Studies Sketchbook (1-3) Investigations of historic urban architecture and various locations studied. Analysis and sketching in sketchbook format required. Prerequisite: 472. Credit.

495 Design Studies in Krakow (6) Studio meets in Krakow, Poland. Design studies responding to specific architectural conditions in an Eastern European city.

496 Sketchbook Study in Krakow (6) Studio meets in Krakow, Poland. Fine arts investigations related to architectural design. 

ART (140)

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

103 Studio Fundamentals: Three Dimensional Design (3) Projects dealing with the manipulation of space and three-dimensional objects in relation to the environment, materials, and design. Emphasis on the environment, materials, and design.


107 Studio Fundamentals: Architecture and the City (5) An introduction to the design of buildings and environments in relation to the city. Emphasis on the design of buildings and environments in relation to the city.

ART CERAMICS (135)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. May not be repeated. Maximum 12 hours.


222 Ceramics: Throwing (3) Introduction to throwing, drawing and pre-firing glaze. Prereq: 101 and 103.

250 Portfolio Practicum - Handbuilding I: Intensive post-introductory study designed to develop work for exhibition in Ceramics Portfolio Review (255). Art majors only. Not repeatable for credit. Prereq: 221, 222, and consent of Department.

255 Portfolio Practicum - Throwing I: Intensive post-introductory study designed to develop work for application in Ceramics Portfolio Review (255). Art majors only. Not repeatable for credit. Prereq: 221, 222, and consent of Department. Students may be made to repeat the course.

295 Ceramic Special Topics (3) Student or instructor-initiated courses to be offered at convenience of Department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

320 Ceramic Portfolio Review (2) Review of prior work in ceramics. Successful completion required prior to registration for 321. Prereq: 201, 202, and 255 (or 221 and 222), and consent of Department. Students may be made to repeat the course.

321 Ceramics: Handbuilding II (3) Continued investigation of handbuilding with emphasis on the development of individual direction. Prereq: 250.

322 Ceramics: Throwing II (3) Continued investigation of throwing with emphasis on the development of individual ideas and expression. Prereq: 250.

421 Ceramics: Advanced Handbuilding (4) Continued investigation of ceramics form with an emphasis on the development of individual direction. Prereq: 221 and 321 or 322. May be repeated. Maximum 12 hours.

422 Ceramics: Advanced Throwing (4) Continued investigation of throwing with emphasis on the development of individual direction. Prereq: 250 and 321 or 322. May be repeated. Maximum 12 hours.


435 Ceramics: History Seminar (3) Survey of the history of ceramics through the study of major historical periods and cultures. (Does not apply toward an art history requirement.) Prereq: 250.

436 Ceramics: Kiln Design (3) Designing kilns, traditional and modern methods, construction methods, and kiln operation. Prereq: 321.

438 Ceramics: Studio Seminar (3) Student initiative led courses to be offered at convenience of Department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

441 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

493 Special Topics in Drawing and Painting (3) Student-initiated course offered at convenience of Department. Prereq: Determined by department for individual topic. May be repeated. Maximum 8 hours.

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

495 Visiting Artist Seminar (2) Study and discussion of art projects conducted by different visiting artists. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

ART DRAWING (137)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. May not be repeated. Maximum 12 hours.

211 Drawing I: Survey of Drawing (3) Development of figure in environment. Prereq: 211. May be repeated. Maximum 12 hours.

212 Drawing II: Life Drawing (3) Development of personal drawing techniques and concepts through class problems. Prereq: 211 and 212 or consent of instructor. May be repeated. Maximum 12 hours.

215 Drawing III (3) Development of personal drawing techniques and concepts through class problems. Prereq: 211 and 212 or consent of instructor. May be repeated. Maximum 12 hours.

312 Drawing Portfolio Review (0) Review of prior work in drawing, including all aspects of drawing with emphasis on successful completion of any portfolio review. Prereq: 212 and 312 or consent of instructor. May be repeated. Maximum 6 hours.

314 Advanced Graphic Design (3) Theory and techniques of graphic design. Prereq: 352.

320 Introduction to Graphic Design (3) Introduction to graphic design. Prereq: 254 and successful completion of any portfolio review.

350 Graphic Design Portfolio Review (0) Review of graphic design work. Successful completion required prior to registration for 350. Prereq: 254 or consent of instructor. Students may be made to repeat the course.

350 Field Experience (1) Tasks related to teaching and professional practice. Prereq: 350 and consent of instructor. May be repeated. Maximum 2 hours.

354 Editorial Illustration (3) Media and techniques as applied to editorial illustration. Prereq: 354 and successful completion of any portfolio review.

395 Graphic Design Seminar (3) Discussion of design and professional aspects of graphic design. Prereq: 350.

396 Special Topics in Graphic Design (1) Intensive and productive experiences involving multicultural graphic design issues and topics. May be repeated. Maximum 15 hours.

426 Special Topics in Drawing and Painting (3) Intensive and productive experiences involving multicultural graphic design issues and topics. May be repeated. Maximum 12 hours.

450 Graphic Design Seminar (3) Discussion of design and professional aspects of graphic design. Prereq: 350.

452 Graphic Design Center Practicum (3) Practical experience in a student-managed, on-site studio. Prereq: 254 and consent of instructor. May be repeated. Maximum 6 hours.

454 Editorial Illustration (3) Media and techniques as applied to editorial illustration for books, magazines, and newspapers. Prereq: 354 and successful completion of any portfolio review.

455 Graphic Design Professional Seminar (3) Professional practices including client relationships, design management and teamwork practices. Preparation and writing of a portfolio for product and Prereq: 354.

494 Graphic Design Professional Seminar (3) Professional practices including client relationships, design management and teamwork practices. Preparation and writing of a portfolio for product and Prereq: 354. (Does not apply toward an art history requirement.) May be repeated. Maximum 8 hours.

ART EDUCATION (141)

301 Foundational Art Education (3) Basic philosophy and structure underlying teaching activities in art education courses. Prereq: Admission to Teacher Education Program. (F, Sp, Su)

302 Multiculturalism in Visual Art (3) Selective cogni- tive and productive experiences involving multicultural visual art. (F, Sp, Su)

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

304 Concepts of Printmaking, Graphic Design and Letterpress (3) Processes involved in making print and graphic design and letterpress including pertinent literature and research. Prereq: 303 and admission to Teacher Education Program. F

305 Field Experience (1) Field experience teaching and teaching methods. Prereq: Minimum 2 hours. F, Sp, Su

401 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. May not be repeated. Maximum 12 hours.

404 Special Topics in Drawing and Painting (3) Intensive and productive experiences involving multicultural graphic design issues and topics. May be repeated. Maximum 8 hours.
Courses of Instruction

400. Curriculum Planning and Teaching Strategies (3) Program development, instruction methods, professional literature, contemporary issues, evaluation and teaching strategies. Prerequisites: Psych 470 and admission to Teacher Education Program. Sp.

490. Special Topics (0-3) By permission. Maximum hours.

493. Independent Study (0-5) By permission. Maximum 9 hours.

ART HISTORY (139)

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

173 Western Art (3) Major monuments in the history of European Art extending from the prehistoric to the present. Two-hour lecture and one-hour discussion each week. Writing-emphasis course.

177 Honors: Western Art (3) Consent of Department Required. Major monuments in Western Art with emphasis on European prehistory through the Middle Ages. Two-hour lecture, writing, and discussion. Writing-emphasis course.

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

181 Asian Art (3) Art of Central and Southeast Asia, India, China, Korea, and Japan from prehistory through current times and into modern media. Two-hour lecture, one-hour discussion, each week.

275 Special Topics in Art History (1-5) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

317 Early Christian and Byzantine Art, 1 (3) Art of the Eastern Empire from the beginning of the Christian era to the early sixth century. Required for Art History majors. Prereq: Consent of instructor. Writing-emphasis. (Same as Medieval Studies 317.)

373 Northern European Painting, 1530-1600 (3) From Courbet and Rembrandt to Northern Renaissance. Van Eyck, Roger van der Weyden, and Durer. Study of Northern European painting from the sixteenth to the eighteenth centuries. Prereq: Consent of instructor. Writing-emphasis course. (Same as Medieval Studies 370.)

474 History of 20th Century Painting and Sculpture (3) Emphasis on the development of modern art and contemporary movements in China, Taiwan, and Hong Kong. Prereq: 172 and 173 or for honors equivalents, or consent of instructor. Writing-emphasis course.


276 Special Topics in Art History (1-5) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

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


604 Art of Indian Asia (3) History of art with consideration of the art of Central Asia and Southeast Asia. Writing-emphasis course.

497 Independent Study (1-5) By permission. May be repeated. Maximum 12 hours.

499 Individual Problems (0-5) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

ART MEDIA/PHOTOGRAPHY (134)

130 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For art history majors, credit may not be repeated. Maximum 12 hours.

231 Photography (3) A first course in darkroom photography. Film and darkroom techniques, history of photography, and critical viewing.

232 Introduction to Cinematography as Art (3) Development of basic concepts and techniques for the creation of film as an art form. Prereq: 231 or consent of instructor. (Same as Cinema Studies 230.)

233 Introduction to Video Art (3) Development of basic concepts and techniques for the creation of video works as an art form. Prereq: 231 or consent of instructor. (Same as Cinema Studies 231.)

235 Special Topics in Photography/Media Arts (1-5) By permission of the instructor. Consent of department. Prereq: Determined by department. May be repeated. Maximum 12 hours.

236 Photographic Media Arts Portfolio Review (1) Review of prior work in photography/media arts. Submission of completed projects required for evaluation for junior and senior courses. Prereq: Consent of department. Satisfaction with Credit only.

241 Photography (4) Individual expression in photographic media. Prereq: 231. May be repeated. Must be completed within 7 years. Maximum 9 hours.

341 Digital Photography (4) Studio course introducing theory and technical concepts of use of computer in photography. Prereq: 241 or 330 or permission of instructor. Maximum 9 hours.

350 Large Format Photography (4) Studio course. Study and discussion of large format photography in relation to contemporary art and society. Prereq: 341 and permission of instructor. Maximum 6 hours. (Same as Cinema Studies 456.)

365 Video Art (3) Continued development of concepts and techniques for the creation of video works as an art form. Emphasis on individual projects. Prereq: 341 and 350 or permission of instructor. May be repeated. Maximum 9 hours. (Same as Cinema Studies 456.)

399 Visiting Artist Seminar (3) Study and discussion of individual projects, and consideration of the art issues confronted by visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

ART PAINTING (139)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For art history majors, credit may not be repeated. Maximum 12 hours.

213 Painting I: Introduction (3) Basic concepts of oil and acrylic painting on canvas. Prereq: 101, 103 for art majors.

214 Painting II (3) Techniques of expression in oil and acrylic on canvas. Prereq: 101, 103 for art majors.


216 Watercolor I (3) Basic concepts of transparent watercolor, with attention to individual exploration of artists' colorways. Prereq: 101-103. May be repeated. Maximum 6 hours.

217 Watercolor II (3) Basic concepts of transparent watercolor, with attention to individual exploration of artists' colorways. Prereq: 101-103. May be repeated. Maximum 6 hours.

293 Special Topics in Drawing/Painting (1-5) By permission of the instructor. Consent of department. May be repeated. Maximum 12 hours.

299 Visiting Artist Seminar (3) Study and discussion of individual projects, and consideration of the art issues confronted by visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.
and photo-plates. Prerequisite: 264 and 360, or consent of instructor. Prerequisite: 363 Lithography I (4) Exploration of concepts and techniques in intaglio printing including work from zinc, Consen...d or instructor. Prerequisite: 363, or consent of Instructor. Prerequisite: 364, or consent of Instructor. Major 10 hours.

264 Screen Printing I (3) Individual development of screen printing problems and techniques. Emphasis upon greater development of image and personal concept. Prerequisite: 364, or consent of Instructor. Major 12 hours.

435 Intaglio II (4) Exploration of individual projects through advanced color printing methods and combinations with other techniques. Prerequisite: 362, or consent of Instructor. Major 12 hours.

436 Lithography III (3-6) Exploration of individual projects through advanced lithographic methods in combination with other techniques. Prerequisite: 363, or consent of Instructor. Prerequisite: 364, or consent of Instructor. May be repeated. Maximum 12 hours.

443 Screen Printing II (3-6) Individual development of screen printing problems and techniques. Emphasis upon greater development of image and personal concept. Prerequisite: 364, or consent of Instructor. May be repeated. Maximum 12 hours.

50 Los Angeles (1) (9) Prerequisite: Permission of department. May be repeated. Maximum 12 hours.

500 Special Topics in Painting (3) Prerequisite: Instructor-initiated course offered at convenience of department. Prerequisite: 101, 103, or consent of instructor. May be repeated. Maximum 12 hours.

101, 103, or consent of instructor. May be repeated. Maximum 12 hours.

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

460 Fibers I (2-4) Beginning to intermediate. May be repeated.

460 Fibers II (2-4) Beginning to intermediate. May be repeated.

263 Lithography II (4) Exploration of concepts and techniques in lithography from stone, aluminum plates and zinc plates. Prerequisite: 362 and 360, or consent of Instructor. Prerequisite: 364, or consent of Instructor. Major 8 hours.

360 Printmaking Portfolio Review (0) Review of prior work in printmaking to determine eligibility to register for junior and senior courses. Prerequisite: Consent of department. Satisfactory/Nocredit only. prior to registration for junior and senior courses. Prerequisite: Consent of department. Satisfactory/Nocredit only.

361 Watercolor Portfolio Review (0) Review of prior work in watercolor to determine eligibility to register for junior and senior courses. Prerequisite: Consent of department. Satisfactory/Nocredit only.

362 Intaglio I (3) Explorations of traditional and contemporary techniques of etching, drypoint, aquatint, and color methods. Prerequisite: 264, or consent of Instructor. Prerequisite: 363, or consent of Instructor. May be repeated. Maximum 12 hours.

363 Lithography I (4) Exploration of concepts and techniques in intaglio printing including work from zinc, plate etching, stone and other materials. Prerequisite: Determined by department for individual topics. May be repeated. Maximum 12 hours.

364 Screen Printing I (3-6) Individual development of screen printing problems and techniques. Emphasis upon greater development of image and personal concept. Prerequisite: 364, or consent of Instructor. May be repeated. Maximum 12 hours.

431 Sculpture II (3) Further exploration and development of sculptural concepts and materials. Prerequisite: 241 and 346 or consent of instructor. Prerequisite: 240 and 340 or consent of Instructor. Major 8 hours.

436 Lithography III (3-6) Exploration of individual projects through advanced lithographic methods in combination with other techniques. Prerequisite: 363, or consent of Instructor. Prerequisite: 364, or consent of Instructor. May be repeated. Maximum 12 hours.

445 Individual Problems (3) Prerequisite: Consent of instructor. Major 12 hours.

459 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. Does not apply toward auxiliary requirement. May be repeated. Maximum 12 hours.

466 Fibers II (2-4) Intermediates to advanced. May be repeated.

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

494 Individual Problems (3) Prerequisite: Consent of instructor. Major 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. Does not apply toward auxiliary requirement. May be repeated. Maximum 12 hours.

ART SCULPTURE (143)

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

263 Lithography I (3) Exploration of concepts and techniques in lithography from stone, aluminum plates and zinc plates. Prerequisite: Determined by department for individual topics. May be repeated. Maximum 12 hours.

264 Screen Printing I (3) Screen printing as a free art medium including development and applications of various printing techniques. Prerequisite: 101, 103, or consent of instructor. May be repeated. Maximum 12 hours.

365 Special Topics in Studio Art (3) Prerequisite: Instructor-initiated course offered at convenience of department. Prerequisite: 101, 103, or consent of instructor. May be repeated. Maximum 12 hours.

800 Special Topics in Drawing and Painting (3) Prerequisite: Instructor-initiated course offered at convenience of department. Prerequisite: 101, 103, or consent of instructor. May be repeated. Maximum 12 hours.

242 Life Sculpture I (3) Modeling techniques in clay and plaster. Emphasis upon human figure as subject. Modeling process as both representation of the human body and as an expressive art form. Prerequisite: Consent of department. Satisfactory/Nocredit only. prior to registration for junior and senior courses. Prerequisite: Consent of department. Satisfactory/Nocredit only.

390 Fabric (2-4) Intermediates to advanced. May be repeated.

395 Photography I (4) Stone and alumium plate lithography, workshop in traditional and contemporary techniques of printing. Prerequisite: 101, 103, or consent of instructor. Major 12 hours.

396 Mixed Media Sculpture I (3) Use of two or more mediums, and a variety of sculptural techniques, joined to create dimensional form. May include carving, metal working, welding, blacksmithing, and other related techniques. Emphasis on development on a personal form. Prerequisite: 241 and 346 or consent of instructor. Prerequisite: 240 and 340 or consent of Instructor. Major 12 hours.

420 Ceramic I (3) Individual development of problem solving techniques for ceramic production. Emphasis on building, construction, mold making, limited work in plastics, wood, or metal.
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

ASTRONOMY (150)
151-152 Introductory Astronomy (4,4) Survey of the compilation, structure, and dynamics of the universe which introduces the vocabulary of astronomy and scientific method. Components of the solar system including results from planetary exploration, hypervelocity and the ages of the Earth and evolution of the solar system in light of current knowledge and scientific reasoning. Stellar birth, evolution, and death as a chain of events; characteristics of galaxies and the origin of the universe at the beginning of the universe in light of modern science and related physics. Principles for understanding the structure of the universe. Credit will not be taken in sequence. 3 hours lecture, 2 hours lab. May be taken for credit with consent of the instructor. 3 hours lecture, 2 hours lab. May be taken for credit with consent of the instructor.

499 Senior Seminar in Communication Sciences and Disorders (3) Capstone Experience: A writing-intensive seminar that introduces students to the profession of communication disorders in the past, present and future. Prereq: Consent of mentor and instructor.

BIOCHEMISTRY AND CELLULAR AND MOLECULAR BIOLOGY (188)
230 Human Physiology (5) Fundamentals of human physiology, primarily from the perspective of cellular and molecular biology. Credit may not be applied toward BCMB major. Prereq: One year of college chemistry and two years of college biology. 4 hours and one lab.

240 Human Anatomy (5) Same as EEB 240

255 Introductory Microbiology (4) Fundamentals of molecular genetics. Credit may not be applied toward BCMB major. Prereq: One year of college chemistry and two years of college biology. 4 hours and one lab.

260 Human Anatomy (5) Same as EEB 240

261 Microbiology and Viruses (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

262 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

263 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

264 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

265 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

266 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

267 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

268 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

269 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

270 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

271 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

272 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

273 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

274 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

275 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

276 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

277 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

278 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

279 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

280 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

281 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

282 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

283 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

284 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

285 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

286 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

287 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

288 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

289 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

290 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

291 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

292 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

293 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

294 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

295 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

296 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

297 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

298 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

299 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

300 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

301 Cell Biology (4) Basic concepts of cell structure, growth, development, and function. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

302 Molecular Biology (4) Basic concepts of molecular biology. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.

303 Virology (4) Basic concepts of virus morphology, structure, classification, genetics, and replication. Prereq: One year of college chemistry and one year of college biology. 4 hours and one lab.
330 Physiology of Reproduction and Lastation (3) (Same as Animal Science 3306)

342 Advanced General Physiology Laboratory (2) Congenital heart defects. Prerequisite: Principles of Physiology 1, 2 or concurrent enrollment; biochemistry 130-131.

344 General Physiology Laboratory (2) Preparing or preparing.

420 Independent Research in Biochemistry (1-6) Special experimental problems under direction of staff members. May be repeated for credit. Prerequisites: Undergraduate level and consent of the instructor. Maximum 4 hrs may be counted toward BCMB major. May be repeated. Prerequisite: 410.

421 Junior/Senior Seminar (1) Lecture/discussion on the application of biochemistry to enzyme systems in the research, clinical, diagnostic or therapeutic environment. May not be used toward requirements for major. May be repeated. Prerequisite: 410.

426 Seminar in Neurobiology (3) Great and molecular principles and problems of human inheritance. Prerequisite: Biology 210.

471-481 Biological Chemistry (3, 4, 5, 6) Physiologic principles of molecules with applications to biochemistry, pharmacology, and medicine. Corequisites: Biology 211-212, 213-214, 315-316. Emphasis on current developments for applications, including modern research implications. Writing emphasis course. Oral presentation and a referenced/literature review essay are required. A capstone course.

420 Advanced Topics in Biochemistry (3) Selection of topics in recent developments in biochemistry, emphasizing recent chemical, physical, and energetic aspects of metabolism, nucleic acid and chromosome structure, genome organization and dynamics, DNA and chromosomal replication, transcription and translation, cell structure and function, metabolism, and the diversity of life, attended for diversity and multidisciplinary aspects of modern biochemistry. May not be used toward requirements for major. May be repeated. Prerequisites: 410 and consent of the instructor.

424 Foundations in Neurobiology (3) Basic neural pathways and behavior in vertebrates, the behavior of specific nervous systems, neural tissues and cell structure, genome organization and function, nervous system function, development, and behavior. Emphasis on basic principles of brain function. Prerequisite: Biology 212, 220. Chemistry 103, 120, 121 and 130.

426 Seminar in Neurobiology (3) Great and molecular principles and problems of human inheritance. Prerequisite: Biology 210.

422 Advanced General Physiology Laboratory (2) Advanced Organismal and Environmental Physiology. Prerequisite: Physiology 210. Laboratory/practicum/No Credit only. May be repeated. Maximum 12 hours. Prerequisites: 410 and consent of the instructor.

420 Independent Research in Biochemistry (1-6) Special experimental problems under direction of staff members. May be repeated for credit. Prerequisites: Undergraduate level and consent of the instructor. Maximum 4 hrs may be counted toward BCMB major. May be repeated. Prerequisite: 410.

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426 Seminar in Neurobiology (3) Great and molecular principles and problems of human inheritance. Prerequisite: Biology 210.

471-481 Biological Chemistry (3, 4, 5, 6) Physiologic principles of molecules with applications to biochemistry, pharmacology, and medicine. Corequisites: Biology 211-212, 213-214, 315-316. Emphasis on current developments for applications, including modern research implications. Writing emphasis course. Oral presentation and a referenced/literature review essay are required. A capstone course.

420 Advanced Topics in Biochemistry (3) Selection of topics in recent developments in biochemistry, emphasizing recent chemical, physical, and energetic aspects of metabolism, nucleic acid and chromosome structure, genome organization and dynamics, DNA and chromosomal replication, transcription and translation, cell structure and function, metabolism, and the diversity of life, attended for diversity and multidisciplinary aspects of modern biochemistry. May not be used toward requirements for major. May be repeated. Prerequisites: 410 and consent of the instructor.

424 Foundations in Neurobiology (3) Basic neural pathways and behavior in vertebrates, the behavior of specific nervous systems, neural tissues and cell structure, genome organization and function, nervous system function, development, and behavior. Emphasis on basic principles of brain function. Prerequisite: Biology 212, 220. Chemistry 103, 120, 121 and 123.

426 Seminar in Neurobiology (3) Great and molecular principles and problems of human inheritance. Prerequisite: Biology 210.

422 Advanced General Physiology Laboratory (2) Advanced Organismal and Environmental Physiology. Prerequisite: Physiology 210. Laboratory/practicum/No Credit only. May be repeated. Maximum 12 hours. Prerequisites: 410 and consent of the instructor.

420 Independent Research in Biochemistry (1-6) Special experimental problems under direction of staff members. May be repeated for credit. Prerequisites: Undergraduate level and consent of the instructor. Maximum 4 hrs may be counted toward BCMB major. May be repeated. Prerequisite: 410.

421 Junior/Senior Seminar (1) Lecture/discussion on the application of biochemistry to enzyme systems in the research, clinical, diagnostic or therapeutic environment. May not be used toward requirements for major. May be repeated. Prerequisite: 410.

426 Seminar in Neurobiology (3) Great and molecular principles and problems of human inheritance. Prerequisite: Biology 210.

471-481 Biological Chemistry (3, 4, 5, 6) Physiologic principles of molecules with applications to biochemistry, pharmacology, and medicine. Corequisites: Biology 211-212, 213-214, 315-316. Emphasis on current developments for applications, including modern research implications. Writing emphasis course. Oral presentation and a referenced/literature review essay are required. A capstone course.

420 Advanced Topics in Biochemistry (3) Selection of topics in recent developments in biochemistry, emphasizing recent chemical, physical, and energetic aspects of metabolism, nucleic acid and chromosome structure, genome organization and dynamics, DNA and chromosomal replication, transcription and translation, cell structure and function, metabolism, and the diversity of life, attended for diversity and multidisciplinary aspects of modern biochemistry. May not be used toward requirements for major. May be repeated. Prerequisites: 410 and consent of the instructor.

424 Foundations in Neurobiology (3) Basic neural pathways and behavior in vertebrates, the behavior of specific nervous systems, neural tissues and cell structure, genome organization and function, nervous system function, development, and behavior. Emphasis on basic principles of brain function. Prerequisite: Biology 212, 220. Chemistry 103, 120, 121 and 123.

426 Seminar in Neurobiology (3) Great and molecular principles and problems of human inheritance. Prerequisite: Biology 210.

422 Advanced General Physiology Laboratory (2) Advanced Organismal and Environmental Physiology. Prerequisite: Physiology 210. Laboratory/practicum/No Credit only. May be repeated. Maximum 12 hours. Prerequisites: 410 and consent of the instructor.

420 Independent Research in Biochemistry (1-6) Special experimental problems under direction of staff members. May be repeated for credit. Prerequisites: Undergraduate level and consent of the instructor. Maximum 4 hrs may be counted toward BCMB major. May be repeated. Prerequisite: 410.
403 Engineering Design Fundamentals (3) Nature of design. Traditional approaches, creativity, aesthetic, and symbolic properties. Emphasis on methods and practice of design. Prereq: Math 125. 3 hours and 1 lab.

410 Introduction to Agricultural and Food Engineering (3) Principles of approach and practice; historical development; trends; current issues. Prereq: Physics 121 or consent of instructor. 3 hours. F

416 Environmental Assessment (3) Fundamentals of environmental assessment, including land, water, and air. Prereq: Math 125 or consent of instructor. 3 hours. F

420 Radio-TV Sales (3) Problems and practices of radio, television, and cable sales. Case studies in sales and sales management; use of computerized sales presentations. Lab. Exp. 275-280. 3 hours. F

421 Radio-TV Advertising and Promotion (3) An in-depth study of radio-television advertising and promotion. Writing persuasive copy—commercial, promotional, and public service. Analysis of broadcast markets and media. Interpreting and using audience research data. Prereq: Communications 200. 3 hours. F

422 Radio-TV Performance (3) Development of vocal, visual, and performance skills for announcers, interviewers, and disc jockeys. Emphasis on the concepts of sound, music, voice, and public address techniques as well as video and audio production techniques. Prereq: Communications 200. 3 hours. F

423 Corporate Video (3) Examination of special relationships, public relations, organizational behavior, and the management of communication, particularly as they relate to the function of the corporate video program. Emphasis on the concepts of sound, music, voice, and public address techniques as well as video and audio production techniques. Prereq: Communications 200. 3 hours. F

424 Electronics in Professional Applications (3) Equipment for application of solid-state and/or vacuum tube electronics in professional applications. Prereq: Math 121 or consent of instructor. 3 hours. F

425 Agricultural Waste Management and Pollution Control (3) Waste minimization, fundamentals, characteristics of animal manures, trace metals for composting, material balance and energy, cost accounting and economic analysis, animal excretions, and animal waste. Prereq: Math 125. 3 hours and 1 lab. F

426 Internal Combustion Engine (3) Theory, concepts and mechanics of small internal combustion engines. Theoretical efficiency, selection, operation, adjustment, troubleshooting and ordering of single-cylinder air polluting engines. Prereq: Math 121 or consent of instructor. 2 hours and 1 lab. F

427 Biological and Physiological Application Technology (3) Equipment for application of solid-state and/or vacuum tube electronics in professional applications. Prereq: Math 121 or consent of instructor. 3 hours. F

430 Mobile Hydraulic Power System Design (3) Functional and operational characteristics of mobile hydraulic systems; components and auxiliary equipment, maintenance and troubleshooting. Prereq: Math 121 or consent of instructor. 3 hours. F

431 Mobile Hydraulic Power System Design (3) Functional and operational characteristics of mobile hydraulic systems; components and auxiliary equipment, maintenance and troubleshooting. Prereq: Math 121 or consent of instructor. 3 hours. F

432 Irrigation and Waste Management System Design (3) Design of irrigation and agricultural waste management systems with consideration given to economic, environmental, and regulatory factors; problems related to irrigation and water quality. Design content. Shulls, Spr. 390: 1 hour and 1 lab. Sp

433 Industrial prototypes and design (3) Behavioral and response characteristics of industrial prototypes and design; evaluation of design performance. Prereq: Math 121. 3 hours. F


435 Mobile Electric Systems (3) Basic electronics with biological applications. Analog and digital electronics sensing and controlling physical and environmental parameters; sensor selection and interfacing; signal conditioning; process control. Includes laboratory exposure to equipment and practical applications. Prereq: Electrical and Computer Engineering 301. 3 hours and 1 lab. Sp.

436 Special Problems in Biosystems Engineering (3-6) Selection, analysis and solution of problems. May be repeated. E

441-442 Undergraduate Research Participation (1-6) Independent research in the field. Involves the student in research under supervision of staff members. Prereq: Junior or senior standing; minimum grade average 3.0, consent of instructor. May be repeated. Maximum 8 hours. E

443-444 Undergraduate Research Participation (1-6) Independent research in the field. Involves the student in research under supervision of staff members. Prereq: Junior or senior standing; minimum grade average 3.0, consent of instructor. May be repeated. Maximum 8 hours. E

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

449 Plant Physiology I: Introductory Principles (3) Principles of plant physiology as they relate to the molecular and cellular organization of the plant cell and its adaptation to the environment. Prereq: 110-120 or Biology 140-140 equivalent and consent of instructor. Prereq: Math 125. 3 hours. F

450 Plant Physiology II: Applications (3) Selected physiological processes of plants. Prereq: 110-120 or Biology 140-140 equivalent and consent of instructor. Prereq: Math 125. 3 hours. F

451 Plant Tissue Culture (3) Methods for the culture of cells, tissues, and organs including media preparation and techniques for propagation. Prereq: Math 125. 3 hours. F

452 Microbiology of Animal Tissues (3) Principles of animal tissue culture with emphasis on biological applications. Laboratories. Prereq: Math 125. 3 hours. F

459-460 Biotechnology and Bioprocessing (3) Biotechnical engineering: the fundamental topics in biotechnology, with emphasis on the practical applications to agricultural, environmental, and medical problems. Prereq: Math 125. 3 hours. F

461-462 Field Studies in Botany (3-6) Individual, independent study under guidance of selected staff. May be repeated. Maximum 6 hours. E

463 Introductory Botany (3) Cells, tissues and organs; their development in vegetative and reproductive structures of vascular plants. Prereq: Math 125. F

464 Introduction to Agricultural and Food Engineering (3-6) Fundamentals of the principles of approach and practice; historical development; trends; current issues. Prereq: Physics 121 or consent of instructor. 3 hours. F

465 Plant and Animal Pathology (3) Principles of disease in plants and animals. Laboratory work includes preparation of slides, growth of cultures, and identification of diseases. Prereq: Math 125. 3 hours. F

466 Field Botany (3) Prerequisites: basic biology of plants and animals, and environmental sciences. Selection of plant and animal species for study in the field. Includes concept development, script writing, mapping, sound design, and post-production. Prereq: Math 125. 3 hours. F

467 Undergraduate Research Seminar (1) One hour per week on research in Botany. Prereq: Math 125. F

468 Biotechnology and Bioprocessing (3) Principles of plant and animal tissue culture, with emphasis on biological applications. Laboratories. Prereq: Math 125. 3 hours. F

470 Special Problems in Biosystems Engineering (3) Methods for the culture of cells, tissues, and organs including media preparation and techniques for propagation. Prereq: Math 125. 3 hours. F

471 Organic Chemistry I (3) Structure and properties of organic compounds; reactions of hydrocarbons, alcohols, aldehydes, ketones, and organic acids. Prereq: Math 125. 3 hours. F

472 Organic Chemistry II (3) Structure and properties of organic compounds; reactions of hydrocarbons, alcohols, aldehydes, ketones, and organic acids. Prereq: Math 125. 3 hours. F

481 Evolutionary Genetics (3) Principles of population genetics and evolution. Application of genetics to agriculture and medicine. Prereq: Math 125. 3 hours. F

482 Plant Tissue Culture (3) Methods for the culture of cells, tissues, and organs including media preparation and techniques for propagation. Prereq: Math 125. 3 hours. F

483 Animal Tissue Culture (3) Methods for the culture of cells, tissues, and organs including media preparation and techniques for propagation. Prereq: Math 125. 3 hours. F

484 Biotechnology and Bioprocessing (3) Principles of plant and animal tissue culture, with emphasis on biological applications. Laboratories. Prereq: Math 125. 3 hours. F

485 Plant Physiology I: Introductory Principles (3) Principles of plant physiology as they relate to the molecular and cellular organization of the plant cell and its adaptation to the environment. Prereq: 110-120 or Biology 140-140 equivalent. 3 hours. F

486 Plant Physiology II: Applications (3) Selected physiological processes of plants. Prereq: 110-120 or Biology 140-140 equivalent and consent of instructor. Prereq: Math 125. 3 hours. F

489-490 Biotechnology and Bioprocessing (3) Principles of plant and animal tissue culture, with emphasis on biological applications. Laboratories. Prereq: Math 125. 3 hours. F

491-492 Undergraduate Research Participation (1-6) Independent research in the field. Involves the student in research under supervision of staff members. Prereq: Junior or senior standing; minimum grade average 3.0, consent of instructor. May be repeated. Maximum 8 hours. E

493-494 Undergraduate Research Participation (1-6) Independent research in the field. Involves the student in research under supervision of staff members. Prereq: Junior or senior standing; minimum grade average 3.0, consent of instructor. May be repeated. Maximum 8 hours. E

495 Plant Physiology I: Introductory Principles (3) Principles of plant physiology as they relate to the molecular and cellular organization of the plant cell and its adaptation to the environment. Prereq: 110-120 or Biology 140-140 equivalent. 3 hours. F

496 Plant Physiology II: Applications (3) Selected physiological processes of plants. Prereq: 110-120 or Biology 140-140 equivalent and consent of instructor. Prereq: Math 125. 3 hours. F
480 Assessment in Early Childhood Programs (3) Assessment processes and principles of assessment in early childhood through 8 years of age. Includes participation. Prerequisite: AL 350 and admission to the ECE licensure program. Prerequisite: Coreq: 351.

451 Early Childhood Education III: Maintaining Exceptional Children (3) Individualized curriculum planning based on knowledge of normative, nonnormative development, assessment, effective teaching strategies, classroom management, and intervention techniques and learning environments. Prerequisite: Prerequisite: 350 and admission to the Early Childhood Education licensure program.

458 Children and Stress (2) Theory and methods for understanding young children, their stressors, mechanisms for stress reduction, and management in classroom. Prerequisite: Prerequisite: admission to the Child Development major or admission to the Early Childhood Education licensure program.

294 Diversity in Practice I: Community-Relational (3) Techniques for developing community relationships, analysis of goals, resource use, information systems, competencies within families. Observation and analysis of diverse family practice. Prerequisite: Core or consent of instructor.

260 Family Education I: Environments for Children (3) Classroom management, behavior goal setting, organization of day care environments, communication, interpersonal skills, interaction with children, child stress reduction and management in classroom. Laboratory participation included. Prerequisite: Prerequisite: 110 and 231. M320, admission to the major or consent of instructor.

261 Early Childhood Education II: Curriculum and Program Development for Young Children (4) Plan development of curriculum and instruction, teaching methodology, and critical reflection in the conceptualization of learning activities and the role of the teacher in the process. Prerequisite: Prerequisite: 360 and admission to the Child Development major or admission to the Early Childhood Education licensure program.

343 Day Care Administration (3) Theories, methods, and procedures for administration of day care programs. Prerequisite: Prerequisite: admission to the major or consent of instructor. Coreq: 341.

345 Family Resource Management (3) Theory and application of managerial function within families, societies of goals, resource use, information systems, competencies within families. Observation and analysis of diverse family practice. Prerequisite: Core or consent of instructor.

479 Preparation Seminar (1) Orientation to practicum and placement, experiences and requirements. Must be approved by the course instructor and the student’s supervisor. May be repeated. Maximum 6 hours. Prerequisite: Prerequisite: 9 hours in Child and Family Studies and consent of instructor. May be repeated with consent of instructor. Maximum 6 hours.

480 Practicum in Child Development Specialization (3) Specialization practicum for students in specified specialization, children and families in community settings related to each child's life goals. Prerequisite: Prerequisite: admission to the major, core courses in specified specialization, early childhood education, early childhood administration, or an advanced special education, school-aged child care, and research. Prerequisite: Admission to the Child Development major or the Early Childhood Education licensure program and consent of the instructor. May be repeated. Maximum 6 hours. May be repeated with consent of instructor.

481 Research in Child and Family Studies (3-6) Preparation for and conduct of research in child and family studies. Satisfactory/No Credit only. Prerequisite: Prerequisite: Must meet progression requirements. Satisfactory/No Credit only. Prerequisite: Completion of Family Studies core, completion of required courses in major, consent of instructors. May be repeated. Maximum 12 hours.

475 Child-Parent Relationship (3-6) An examination of the dynamics that affect the parent-child relationship. Prerequisite: Prerequisite: 350 and admission to the major or core courses in Family Studies. May be repeated with consent of instructor. Maximum 6 hours.

450 Assessment in Early Childhood Programs (3) Assessment processes and principles of assessment in early childhood through 8 years of age. Includes participation. Prerequisite: 350 and admission to the major or ECE licensure program. Prerequisite: Coreq: 351.

455 Children and Stress (3) Theory and methods for understanding young children, their stressors, mechanisms for stress reduction, and management in classroom. Prerequisite: Admission to the major or Coreq: 350 and admission to the major or consent of instructor. Coreq: 351.

450 Assessment in Early Childhood Programs (3) Assessment processes and principles of assessment in early childhood through 8 years of age. Includes participation. Prerequisite: 350 and admission to the major or ECE licensure program. Prerequisite: Coreq: 351.

451 Early Childhood Education III: Maintaining Exceptional Children (3) Individualized curriculum planning based on knowledge of normative, nonnormative development, assessment, effective teaching strategies, classroom management, and intervention techniques and learning environments. Prerequisite: 350 and admission to the Early Childhood Education licensure program.

461 Directed Study in Child and Family Studies (1-3) Directed research, independent investigations, or project under supervision of faculty. May be repeated with different topics. Maximum 4 hours. Prerequisite: Prerequisite: 2 hours in Child and Family Studies and consent of instructor.

470 Student Teaching (15) Responsibility for planning and guiding group of infants, toddlers, or preschoolers under supervision of classroom teacher and coordinator. Includes weekly seminar, Prerequisite: 350 and admission to the major or consent of instructor. Coreq: 351.

476 Field Practicum (2-5) Field practicum in the Early Childhood Education licensure program or by consent of instructor. Prerequisite: Prerequisite: 350 and admission to the major or consent of instructor.

481 Research in Child and Family Studies (3-6) Preparation for and conduct of research in child and family studies. Satisfactory/No Credit only. Prerequisite: Prerequisite: Must meet progression requirements. Satisfactory/No Credit only. Prerequisite: Completion of Family Studies core, completion of required courses in major, consent of instructors. May be repeated. Maximum 12 hours.

462 Practicum in Child Development Specialization (3) Specialization practicum for students in specified specialization, children and families in community settings related to each child's life goals. Prerequisite: Prerequisite: admission to the major, core courses in specified specialization, early childhood education, early childhood administration, or an advanced special education, school-aged child care, and research. Prerequisite: Admission to the Child Development major or the Early Childhood Education licensure program and consent of the instructor. May be repeated. Maximum 6 hours. May be repeated with consent of instructor. Maximum 6 hours.

477 Practicum in Child Development Specialization (3) Specialization practicum for students in specified specialization, children and families in community settings related to each child's life goals. Prerequisite: Prerequisite: admission to the major, core courses in specified specialization, early childhood education, early childhood administration, or an advanced special education, school-aged child care, and research. Prerequisite: Admission to the Child Development major or the Early Childhood Education licensure program and consent of the instructor. May be repeated. Maximum 6 hours. May be repeated with consent of instructor. Maximum 6 hours.

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COMUNICATIONS (259)

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

209 Writing for Mass Communications (3) Information gathering and writing under deadline for broadcast, video, and other media. Emphasis on research, writing and presentation.

206 Mass Communications Research Methods (3) Social science research methods, especially sample surveys. Exams by computer applications. Emphasis on statistical decision-making and information retrieval in mass media. Prereq: 205 or consent of instructor. F, Sp

400 Mass Communications Law and Ethics (3) Emphasis on legal issues directly affecting the mass media: business and legal structures and applications, I/O techniques, lists, queues, priority queues. Also includes ethical standards and principles of analysis and design of information systems. Prereq: 302. 3 hour lab required.

410 Special Topics in Communication (1-15) Topics such as archiving, parallel processors, software engineering, design of operating systems, analysis and modeling of communication networks, pattern recognition and natural language understanding. Emphasis on faculty research. May be repeated. Maximum 9 hours.

411 Senior Thesis I (3) Independent study leading to a thesis. For College Scholars students. Only one of 411, 412 may be taken for credit. Prereq: consent of instructor.

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

COGNITIVE SCIENCE (260)

100 Introduction to Computers and Computing (3) Basic concepts of computer hardware and software. Unix computer systems and workstations. Programming and computer culture. Emphasis on faculty research. May be repeated. Maximum 9 hours.

102 Computer Science I (4) Problem solving and algorithm development. Organization and characteristics of modern digital computers with emphasis on developing good programming habits. Building and debugging a program that manipulates a computer's memory in a modern computer language. Students who have received credit for 111 or 112 may not receive credit for 102 except by consent of the instructor.

111 Computer Organization (3) Number systems, internal representation of numbers in computers, hardware and software design of computer systems, computer instruction set and assembly language, microprogram control units. Computing with regular machines. Introduction to digital circuits. Prereq: 102, 3 hour lab required.

213 Numerical Analysis (3) Emphasis on numerical methods, supercomputers and parallel processors. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

230 Systems Programming (3) Introduction to user-level systems programming. File control, process control, memory management, system utilities, network programming. Prereq: 230. 3 hour lab required.

301 Algorithms (3) Graphs and trees, data structures and algorithms, search strategies, programs, performance of algorithms. Prereq: 301, 302 or permission of instructor. F

420 Advanced Topics in Machine Intelligence (3) Topics such as artificial intelligence, parallel processors, natural language processing, Expert systems. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

421 Advanced Topics in Software Systems (3) Topics such as operating systems, compilers, parallel processors, software engineering, software testing, software architecture. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq completion of core curriculum or consent of instructor.

430 Advanced Topics in Scientific Computation (3) Topics such as numerical methods, supercomputers and parallel processors. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

440 Advanced Topics in Computer Networks (3) Topics such as network architecture, protocols, computer networks, computer networks, network protocols, network technology, network applications, network programming languages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq completion of core curriculum or consent of instructor.

450 Advanced Topics in Computer Systems (3) Topics such as assembly languages, computer architecture, computer organization, computer programming languages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq completion of core curriculum or consent of instructor.

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

452 Numerical Algebra (3) Same as Mathematics 472.

430 Advanced Topics in Theoretical Computer Science (3) Topics such as Church's thesis, Turing machines, Goedel's Incompleteness Theorem, computability theory, formal languages and graph theory and their applications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

420 Independent Study (1-15) Special project in area of student's interest. May be repeated. Maximum 6 hours. See advisor for credit grading only.

College Honors: Foreign Study (1-15) May be repeated for a maximum of 6 hours. See advisor for credit grading only.

College Honors: Off-Campus Study (1-15) May be repeated for a maximum of 6 hours. See advisor for credit grading only.

College Honors: Independent Study (1-15) May be repeated for a maximum of 6 hours. See advisor for credit grading only.

College Honors: Directed Study (1-15) May be repeated for a maximum of 6 hours. See advisor for credit grading only.

College Honors: Special Topics (1-15) May be repeated for a maximum of 6 hours. See advisor for credit grading only.
tion and process of sport. Differences between sport and institute or professional areas of Physical Education. May be repeated. Maximum 3 hours. S/NC grading.

372 Philosophy of Sport (3) Theories of reality and logical, and social-psychological factors related to and/or affecting motorskill acquisition and/or affecting motor development. Prereq: Progression to the major or consent of instructor. May be repeated. Maximum 16 hours.

415 Teaching Creative Dance for Children (2) Theory, technique, and production skill culminating in the presentation of two works. Prereq: 440 or 445 or approval of instructor. Maximum 4 hours.

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

450 Movement Education (3) Clinical studies in developing physically and artistically proficient children. Available to dance majors or minors or with consent of instructor. May be repeated. Maximum 9 hours. S/NC grading.

450 Movement Education (3) Clinical studies in developing physically and artistically proficient children. Available to dance majors or minors or with consent of instructor. May be repeated. Maximum 9 hours. S/NC grading.

466 Motor Development Laboratory (3) Application of selected perceptual-motor development, movement education, and pedagogical concepts to performance assessment and motor skills development in preschool and primary grade dance majors and minors or with consent of instructor. May be repeated. Maximum 12 hours.

531 History of Sport and Physical Activity in Westem Culture (3) Study of sport and physical activity since ancient times in modern times. Illustrating historical role in western culture. Provides background for growth of sport in education, and explores how sport was viewed in ancient Greece and Rome and in ancient China and Japan. Prereq: Consent of instructor. May be repeated. Maximum 3 hours.

533 Comparative Vertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of vertebrates. Field trip to coast required. Prereq: 240 or equivalent recommended. 2 hours and 2 labs.

534 Ecology and Evolutionary Biology Colloquium (1-1) Weekly discussions of current topics in ecology and evolutionary biology and opportunities to gain independent research experience. Prereq: Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

535 Human Anatomy (2) Gross and microscopic anatomy of the human. Credit may not be applied toward Ecology and Evolutionary Biology major. Prereq: 230 (Same as BCMB 230).

536 Human Anatomy (2) Gross and microscopic anatomy of the human. Credit may not be applied toward Ecology and Evolutionary Biology major. Prereq: 230 (Same as BCMB 230).

537 Intro to Oceanography (4) Basic oceanography, including physical, chemical, geological and biological processes and patterns. Emphasis on ecosystem description and its application to the study of coastal processes and marine ecosystems. Prereq: Consent of instructor. Maximum 4 hours.

538 Comparative Vertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of vertebrates. Laboratory discussion of skin, ears, and scales. Prereq:同意 of instructor. Maximum 4 hours.

539 Comparative Invertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of invertebrates. Laboratory discussion of skin, ears, and scales. Prereq:同意 of instructor. Maximum 4 hours.

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

541 Undergraduate Research (1) Research projects under the direction of an instructor. To be arranged by student and instructor. May be repeated for a maximum of 8 hours, but a maximum of 4 hours is to be applied toward the Biology major.
402 Pracmum in Ecology and Evolutionary Biology (3) Participation in individualized practical approach of ecology, behavior, and evolutionary biology in community, government, and industry. Prereq Biology 210, 220, and prior consent of instructor.

303 Plant Evolution (3) Same as Biology 403.

407 Senior Honors Thesis (3) With preparation and completion of thesis, students may apply for research honors program in EEB and EESS 400 or equivalent.

408 Perspectives in Ecology and Evolutionary Biology (3) Course content varies. Emphasis on current developments for applications, including social and economic concerns, and critical assessment of primary literature. Prereq consent of instructor. May be repeated for credit but a maximum of 4 hours may be applied toward the department major.

411-412 Milestone in Ecology and Evolutionary Biology (2) Selected advanced topics in ecology, behavior, and evolutionary biology, concentrated in time and credit. Prereq consent of instructor. May be repeated for credit but a maximum of 4 hours may be applied toward the major.

420 Comparative Animal Behavior (3) Principles and methods of ethology with emphasis on ecological, developmental, physiological, and evolutionary aspects. (Same as Psychology 490.)

429 Comparative Animal Behavior Laboratory (1) Introduction to observational and experimental research in ethology. Coreq 411-412. (Same as Psychology 490.)

450 Evolution: Theory of Species Formation (3) Prereq: Biology 210, 230 and prior consent of instructor. 2 hours and laboratory. 4 credit hours.

455 Evolutionary Concepts in Marine Biology (3) Evolutionary processes and their impact on the development of organic diversity. The historical development of ideas concerning biological evolution. Prereq: Biology 240 or consent of instructor.

461 Special Topics in Organismal Biology (3) Topics vary. Latin America, Asia, Soviet Union and other regions. Prereq Biology 331 or consent of instructor. 2 hours and laboratory. 4 credit hours.

511 Intermediate Microeconomics (3) Theory of consumer behavior, production and costs, price and behavior of firms in perfectly competitive, monopolistically competitive, and imperfectly competitive markets. Prereq: 313 or consent of instructor. Writing-emphasis course. May be repeated when topic varies. Maximum 9 hours. Prereq: Senior standing. Coreq: Mathematics 141-142 or 147-148.


432 Economics of Resources and Environmental Policy (3) Analysis of economic policies and allocation of resources. Benefits and costs of development of natural resources and impacts of growth on environment. Prereq: 201. Writing-emphasis course.

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

472 Public Finance: Taxation and Intergovernmental Relations (3) Individual taxes and tax systems, intergovernmental fiscal relations. Prereq: 201. Writing-emphasis course.

480 Introduction to Mathematical Economics (3) Application of mathematical topics (3) to economic theory and problems. Prereq: Mathematics 211. Coreq: Economics 511 with a grade of B or better. Mathematics 141-142 or 147-148.

491 Honors Seminar (3) Topics vary, senior paper required. Prereq: Senior standing. 3.0 GPA or higher in economics and consent of instructor.

493 Independent Study (1-3) Opportunity for qualified students to pursue topics of special interest. Prereq Senior standing. 3.0 GPA or higher in economics and consent of instructor.

494 Independent Study in Economics (1-3) Opportunity for qualified students to pursue topics of special interest. Prereq Senior standing. 3.0 GPA or higher in economics and consent of instructor.

EDUCATION (289)

100 Special Topics (1-3) Introduction to selected discipline or professional area represented in the College of Education. Prereq: Senior standing. 3.0 GPA or higher in education and consent of instructor.

201 Field Study in Education (1-3) Problems of professional concerns of the student and current trends. Prereq: 50 or as resources are available to support the student. May be repeated.

202 Undergraduate Seminar (1) Organizational patterns of current and planned developments in education. Prereq: Educational and Counseling Psychology 210; Prereq: Education 400; Prereq: Admission to Teacher Education Program.


304 Microcomputers and Instructional Design (3) Introduction to teaching with microcomputer as related to curriculum development and instruction. Prereq: Admission to the Teacher Education Program.

EDUCATION IN THE SCIENCES, MATHEMATICS, RESEARCH, AND TECHNOLOGY (290)

194 Mathematics and Natural Science Laboratory (3) Laboratory experiences designed for introducing students to techniques of scientific inquiry, laboratory, study of natural science and other disciplines where appropriate, and work as learners to prepare economic analyses of selected economic problems facing modern society. Prereq: Senior standing and completion of Economics 311, 313 and another of upper division economics courses. Writing-emphasis course.

EDUCATION IN THE SCIENCES, MATHEMATICS, RESEARCH, AND TECHNOLOGY (290)

194 Mathematics and Natural Science Laboratory (3) Laboratory experiences designed for introducing students to techniques of scientific inquiry, laboratory, study of natural science and other disciplines where appropriate, and work as learners to prepare economic analyses of selected economic problems facing modern society. Prereq: Senior standing and completion of Economics 311, 313 and another of upper division economics courses. Writing-emphasis course.
324 Applications of Instructional Technology in Bio- 

dematics and Middle School Teaching (3) Applica-

tions of instructional technology in the elementary 

and middle schools with an emphasis on computers. Expe-

riences in the contemporary classroom. Pre-re: Prereq: 

Admission to Teacher Education Program.

332 Field Experience in Teaching: Secondary II (I) 

Field experiences related to teaching and to teacher 

roles. EDP 395 and 396 to admission to Teacher 

Education Program. Satisfactory/No Credit only. S.

335 Field Experience in Teaching: Secondary I (I) 

Field experiences in classes related to teaching and to 

teacher roles. Pre-re: Prereq: Admission to Teacher 

Education Program. Satisfactory/No Credit only. S.

350 Problems in Improvement of Instruction (1-3) 

Special conferences, workshops, or seminar assignments. 

May be repeated. Maximum 3 credit hours. Satisfactory/ 

No Credit grading only. E.

355 Utilization of Instructional Media (3) Basic com-

munication and teaching process, need for instructional 

media; development, selection and utilization of 

media, basic video and other production techniques. 

(Same as Library 

and Information Science 475.) E.

358 Instructional Media in Elementary Education (1) 

Basic operation of back-of-the-class, selection and 

utilization of materials, pre-service teacher education 

needed for effective communication in the elementary 

classroom. Media Lab experience in production of 

AV software.

408 Teaching of Mathematics, Grades 7-12 (3) Prepa-

ration of teaching plans, evaluation, readings for teach-

ing mathematics, teaching seminar and evaluation 

during student teaching. Pre-re: Prereq: Admis-

sion to Elementary Education Program. Satisfactory/ 

No Credit grading only. E.

409 Introduction to Instructional Computing (3) Class-

room use of computers, applications for teachers, over-

view of computing and computing as it relates to education. 

Pre-re: Prereq: Admission to Elementary Education 

Program. Satisfactory/No Credit grading only. E.

485 Selected Topics in Aerospace Science (1-4) 

Current problems and topics in aerospace science, 
topics in science and engineering for the various areas 
of aerospace science. Pre-re: Consent of instructor. 50 

F or H/S, F.

ENGINEERING AEROSPACE (018)

340 Aerospace Engineering Introduction and 

Measurement (1) Fundamentals of measurement sys-

tems involving sensors-temperature, pressure, 

strain, flow, turbomachinery, vibration, acoustic, 

aircraft, simulation, fluid flow, heat transfer.

Pre-re: Math 241.

351 Compressible Flow (3) One-dimensional internal 

flow computational and non-adiabatic conditions.

Pre-re: Math 241, Chem 130.

370 Aircraft Performance (3) Characteristics of pro-

pellants, performance of aircraft propulsion systems, 

performance and dynamic stability and control of aircraft. 

Pre-re: Math 241.

401 Thesis (3) Problem investigation and report. Pre-

re: Senior standing. F, S.
251 Transportation Engineering (3) Transportation problems and perspectives, rural and urban; use of a systematic planning process; analysis of existing and potential transportation networks and the evaluation of civil engineering projects. Civil engineering decision-making and applications of economic analyses. Prereq: sophomore standing.

261 Structural Analysis (1) (Reactions; shear and moment diagrams; force in trusses, universal shear and moment diagrams; Castigliano's theorems; and solving of beam and truss problems.) Prereq: 345. Coreq: 350.


422 Construction Methods and Equipment (3) Fundamental concepts in construction and equipment selection and productivity; concrete and steel construction; and construction controls and economics. Prereq: 241.

423 Highway Engineering (3) Design, construction, operation, and maintenance of highway facilities; includes study of various engineering principles and theories to probability of planning, locating and design of highway facilities; covers both geometric and pavement design. Prereq: 210, 212, 213.

424 Traffic Engineering (3) Characteristics of traveler behavior and the interaction with traffic involvement; traffic studies; basic principles of traffic collection, control, and traffic safety analysis; and design. Prereq: 210, 212, 215.

430 Analysis of Framed Structures (3) Maximum stresses due to moving loads; stress of influence lines (linear forms) due to substructures and overall analysis of critical load and resistance factors. Prereq: 465, 471. Coreq: 469.

431 Geological Engineering (3) Influence of geologic and hydrologic environments on engineering; site investigation, design and construction of geotechnical structures; water control structures; and dam safety analyses. Prereq: 341, 350.

435 Foundation Engineering (3) Fundamentals of geotechnical engineering applied to design and construction of various foundations, bearing capacity, settlement and deep foundations. Prereq: 345. Coreq: 350 or consent of instructor.


331 Electronic Devices (3) Fundamentals of energy bands, theory of p-n junctions, diodes, field effect transistor, bipolar junction transistor, and JFET. Analysis of electrical circuits, small signal equivalent circuits, simple power supplies, and amplifiers. Include laboratory experiments and projects. Design content: 1 hour. Prereq: 201, 205, Coreq: 202.


452 Organization and Design of Digital Systems and Software (4) Organization and design of computer systems for interactive organization and computer architecture for digital and computer systems. Design content: 1 hour. Prereq: Senior standing.

453 Microprocessors and Microcontrollers in Electro- nical Engineering (3) Project oriented course using high-level computer languages and hardware. Design content: 2 hours. Prereq: 310, 311, 316, 329, 341.

465 Principles of Industrial Plasma Engineering (3) Plasma physics and technology relevant to industrial applications of plasma. Reactor design, plasma chemistry, and plasma applications. Design content: 1 hour. Prereq: Senior standing.


Theory and application of forecasting systems including regression and time series models. Independent demand manufacturing systems, and manufacturing information/control systems. Prereq: 400.

CNC machinetools, robotics and related material handling systems, hard automation, alternative integrated manufacturing systems and databases. Prereq: 303. Senior standing.

Human capabilities and limitations affecting work, work place, and work environment design. Effects of stress on performance, environmental factors affecting worker well-being, and methods to design for worker effectiveness. Emphasis on human factors methodology, human input requirements, and sensitivity of decision to changes in factor tolerances.


Quantitative Methods in Project Management (2) Project planning, scheduling, and control based on networking and precedence diagramming techniques. Activities network and time-cost trade-offs of activities, multi-project control, computer applications, and pert methods of handling uncertainty in activity time estimation. Prereq: 304 and senior standing.

Systems engineering principles and new methodologies. May be repeated once.

Practical polymer systems (3) Synthesis and characterization of polymers, polymerization kinetics, molecular and structural evaluation of polymers and polymer blends. Prereq: senior standing. Non-majors require consent of the instructor.

Mechanical behavior of materials (3) Descriptions of deformation and fracture of metals; ferrous and non-ferrous alloys; alloy selection. Emphasis on crystal structure, crystallographic defects, and mechanical properties. Prereq: 303. Senior standing.


Principles of ceramic materials (3) Characterization of ceramic materials as to their crystal structure, their microstructure, and mechanical properties. Prereq: senior standing. Non-majors require consent of the instructor.

Introduction to Materials Science and Engineering (3) Correlation of atomic structure, crystal structure and microstructure of solids with mechanical, physical, and chemical properties of engineering significance. Prereq: 301.

Materials Science Seminar (1) Professional and ethical considerations, safety, products, product liability, field trips. Satisfactory/unsatisfactory grading system.

Chemical Behavior of Materials I (3) Transformation of phase, crystallographic defects, dislocations, slip systems, and mechanical properties. Prereq: 310.

Materials Laboratory Procedures (1) Thermometry, sample manipulation, materials test methods, working with graphics and image data, data analysis, reporting results. Prereq: 301.

Mechanical Behavior of Materials II (3) Torsion of round bars, bending and deflection of beams, strength of materials, fatigue, stress concentration, failure, fatigue, creep, fatigue, and stress analysis.

Principles of composite materials (3) Characterization of ceramic materials as to their crystal structure, their microstructure, and mechanical properties. Prereq: senior standing. Non-majors require consent of the instructor.
495 Introduction to Rhetoric and Composition (3) for a total of 6 hours credit. Modes of inquiry in rhetoric and composition and their adequacy are covered in regular courses. May be repeated upon consent of instructor.

493 Independent Study (1-6) Tutorial in subjects not adequately covered in regular courses during the summer.

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

490 Language and Law (3) Language in the Anglo-American legal tradition. Maximum 6 hours. (Same as Cinema Studies 489.)

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

484 Special Topics in Writing (3) Original writing and research on such issues as differences between learning to write second languages and research on such issues as differences between learning to write second languages and research on such issues as differences between learning to write second languages. Prerequisite: 398.

499 Senior Seminar (3) Intensive study in an author, genre, period, or of problems in language, literary history, or theory. Consent of the student and the instructor is required. Prerequisite: 391.

498 Senior Honors Paper (3) Second semester of study in selected disciplinary or professional areas of Physical Education. May be repeated. Maximum of 6 hours. Prerequisite: Progression to the major.

411 Adapted Physical Activity (3) Working with individuals with developmental and disabilities, with emphasis on nature of disability and implications for programming. May be repeated with different topics. Consent of the instructor is required. Satisfactory/No Credit grading only.

412 Practicum in Adapted Physical Activity (1) Working with individuals in education or clinical settings, where an emphasis is placed on teaching skills and professional roles. Consent of the instructor is required. Satisfactory/No Credit grading only.

421 Biomimetics of Human Movement (3) Study of biomimetics and its approach to the analysis of human movement. Emphasis on qualitative and quantitative analysis of human movement. Prerequisite: 125. Satisfactory/No Credit grading only.

425 Exercise Psychophysiology/Fitness Internship (3) Supervised experiences in exercise/fitness areas. May be repeated for a maximum of 10 hours. Satisfactory/No Credit grading only.

426 Exercise Psychophysiology (3) Supervised experiences in exercise/fitness areas. May be repeated for a maximum of 10 hours. Satisfactory/No Credit grading only.

420 Physical Education (3) Lectures and directed study with the goals of students as the major. Topics include physical education in groups, the keys to learning, the development and evaluation of fitness in normal populations. Prerequisite: 230. Exercise Science majors must have a cumulative GPA of 3.5 to register for this course.

422 Practicum in Exercise/fitness (3) Study of biomimetics and its approach to the analysis of human movement. Emphasis on qualitative and quantitative analysis of human movement. Prerequisite: 125. Satisfactory/No Credit grading only.

425 Exercise Psychophysiology/Fitness Internship (3) Supervised experiences in exercise/fitness areas. May be repeated for a maximum of 10 hours. Satisfactory/No Credit grading only.

280 Introduction to Real Estate (3) This course is designed to provide a detailed survey of the real estate industry. Prerequisite: 101. Satisfactory/No Credit grading only.

276 Fitness for Life (2) Evaluation and discussion of factors related to optimal health: cardiorespiratory fitness, strength and power, and nutrition. Satisfactory/No Credit grading only.

201 Personal Finance (3) Financial planning, investing and managing one's personal finances. Consent of the instructor is required. Satisfactory/No Credit grading only.

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Courses of Instruction

420 Financial Markets (3) Role of short and long term financial markets in the process of economic information and allocation. Theories and mathematics of interest rates and capital markets. Prereq: 301. 
421 Financial Institutions (3) Management policies of financial institutions in the current capital market system. Legal, market, and regulatory environment and their implications for the management of financial institutions. Scope, structure, and goals of the financial system. Prereq: 301.

426 Field Observations in Food Processing (2) Observation of food processing operations. Laboratory class with emphasis on food processing machinery, equipment, and techniques. Prereq: 140 or consent of instructor. 1 hour and 2 lab.

427 Forest Protection (3) Prereq: FWF 311, or consent of instructor. 2 hours and 1 lab.


430 Forest Resource Resources (3) Study and evaluation of the variety of factors that influence forest structure and composition; forest inventory and management; forest economics. Prereq: FWF 312. Coreq. 305, 306, 322, 323, 324, 323, 320.


434 Wood Processing and Machining (2) Processing and forming of wood products. Fundamentals of machining.

410 Wildlife Habitat Evaluation and Management (3) Integration of field and remote sensing methods, including sampling and estimating population abundance, methods of analysis and management. Prereq: 412 or consent of instructor. F, Sp.

402 Practicum In Forestry (1-4) Supervised experience in departmental and field projects related to forestry. Prereq: Junior standing. Selectivity. No credit only. E.

401 Independent Study in Forestry (1-10) Special research or independent project in timber, forest management or related field. Letter grade of Satisfactory/No Credit. F.

330 Wildlife and Fishery Science Examination (1) Highly structured field experience guided by specific learning objectives prepared for the instructor and the lab supervisor. The student is responsible for field placement. One per quarter with six weeks of field experience. Prereq: Junior standing. Consent of instructor. F, Sp.

FORESTRY, WILDLIFE AND FISHERIES (396)

100 Current Issues in Renewable Natural Resources (1) Current resource issues presented by graduate students on weekly basis. Student discussion and presentation with faculty and the outside speaker. Some written work required. Topics and speakers change each offering. Attendance required at all class meetings. May be repeated. Maximum 9 hours. Satisfactory/No Credit only. F, Sp.


209 Introduction to Wildlife Management (3) Field trips required. Prereq: Senior status in Wildlife Utilization Conservation or consent of instructor. F.

206 Practicum In Forestry (1-8) Highly structured field experience guided by specific learning objectives prepared for the instructor and the lab supervisor. The student is responsible for field placement. One per quarter with six weeks of field experience. Prereq: Junior standing. Consent of instructor. F, Sp.

250 Conservation (3) Use and abuse of wildland resources. Historical perspectives and current management of forests, wildlife and fish of North America. Prereq: Chemistry 100. Core. PSS 210, 311, and (for Forestry majors) 313. 2 hours and 1 lab. F.


313 Measurements and Sampling (2) Measurement techniques and sampling methods for vegetation; estimation of animal populations; map and aerial photography use. Prereq: Stat. 201, Ag. 290, Math. 125. Core. FWF 312. 1 hour and 1 lab. F.

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

311 Dendrology and Silvics of North American Trees (3) Identification, classification and nomenclature of important North American trees and woody landscape associates. Historical perspectives and field trips attend the basis for the practice of silviculture. Prereq: 1 year of Botany or Biology. S, Sp.

301-302 Elementsof (French for Upper Division and Graduate Students) (3,3) Elementsof language, elementary and advanced. (Same as French 201 and 202.) French 150, 303, Core. F, Sp.

301-302 Honors: Intermediate French (3,3) For students of superior ability in French. Prereq: 1 year of high school French. Students follow an accelerated program with emphasis in all aspects of French language study (including literary translations). Students with a grade of A in 211 may enter 218 with permission of instructor. Prereq: French Credit for 300 given to students receiving a grade of A or B in the course. F, Sp.

300-301 Advanced Grammar and Reading (3,3) For students who have completed the intermediate level sequence and who need additional preparation in reading, vocabulary, written and oral expression. Prereq: French 212 or equivalent or advanced placement credit. Prereq: Need to enroll toward the major or minor. F, Sp.

310-322 Elementsof French for Upper Division and Graduate Students (5, 5) Principles of language, elementary and advanced. (Same as French 201 and 202.) French 301, 302, Core. F, Sp.

406 Methods of Historical Linguistics (1) Introduction to the use of Classical Latin through Vulgar Latin into major Romance languages. (Same as Spanish 429 and Linguistics 429.)
101 The Dynamic Earth (4) Physical processes within and upon the Earth's surface, including the formation of

GEOLOGY (424)

Courses of Instruction 179

motions. Prereq: 300-level literature course. May apply toward major.

401 Highlights of French Civilization (3) Survey of French civilization from the Stone to World War II. Historical events, daily life, all forms of art. Prereq: A 300-level French course. Writing emphasis course.

432 Contemporary French Culture (3) French con-
temporary civilization and culture since World War II. Prereq: A, 300 level course in French society today. Prereq: A 300 level literature course. Writing emphasis course.

433 Literary Paradoxes of French Women (3) This course is designed to acquaint students with a variety of French literary movements, dealing with women's different social backgrounds and of complete personality, for her mayor or minor writer in French. (Same as Women's Studies 433.)

434 Literature of Quebec (3) Introduction to History of Quebec as well as French literature connected with North America. Reading Indian reserve and minor works, such as the Voyages of Champlain and the Journals of the Jesuits, as well as the Literature of Contemporary Quebec. Prereq: A 300 level literature course.

435 Capstone Experience in French (3) Synthesizing senior capstone and in which students reflect on the reason chosen of the discipline from a multi-dimensional point of view. Writing emphasis course. Prereq: A 450 level literature course.

445 Advanced French for Business (3) Study of advanced contemporary French language and culture as they relate to business transactions. A comprehensive approach is used to explore differences and similarities between French-speaking business cultures and those of North America and Japan. Students build upon their knowledge of business terminology while being aware of cross-cultural references and the desire in empathic strengthening. Prereq: 440 or the consent of instructor.

490 Internship 1-15 Career-related experiences in the United States or abroad with permission of the Career office. May apply toward major.

492 Off-Campus Study (1-15) Prereq: Written consent of the director. May be repeated. Maximum 6 hours. Satisfies any general education requirement. Prereq: 490 or the consent of instructor.

499 Proseminar in Geography (3) Majorthemes in geography. May apply toward major. Prereq: 497 with grade of "A" and permission of advisor. Prereq: Open to second semester juniors and seniors. Satisfies any general education requirement. Prereq: 490 or the consent of instructor. Writing emphasis course.

499 Geographical and Cartographic Methods (3) Generalcirculationsystem leading to an understanding of climate and weather events. Nature of individual weather elements, their measurement and analysis over time and space.

401 Economic Geography: Core Concepts (3) Con-cepts, theories, and practices in economic geograph-

402 Physical and Cultural Geography of North America (3) Geographical differences between the geographies of North America and Japan. Students build upon their knowledge of business terminology while being aware of cross-cultural references and the desire in empathic strengthening. Prereq: 440 or the consent of instructor.

490 Internship 1-15 Career-related experiences in the United States or abroad with permission of the Career office. May apply toward major.

492 Off-Campus Study (1-15) Prereq: Written consent of the director. May be repeated. Maximum 6 hours. Satisfies any general education requirement. Prereq: 490 or the consent of instructor.

499 Proseminar in Geography (3) Majorthemes in geography. May apply toward major. Prereq: 497 with grade of "A" and permission of advisor. Prereq: Open to second semester juniors and seniors. Satisfies any general education requirement. Prereq: 490 or the consent of instructor. Writing emphasis course.

499 Geographical and Cartographic Methods (3) Generalcirculationsystem leading to an understanding of climate and weather events. Nature of individual weather elements, their measurement and analysis over time and space.

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499 Proseminar in Geography (3) Majorthemes in geography. May apply toward major. Prereq: 497 with grade of "A" and permission of advisor. Prereq: Open to second semester juniors and seniors. Satisfies any general education requirement. Prereq: 490 or the consent of instructor. Writing emphasis course.
321-402 History of Eastern Asia (3,3) 320-East Asia: history and culture to 1600. China, Korea, and Japan, and their relations with Islam and China. Understanding political, social, and economic changes in East Asia through the East-West contacts, battles, and trade. (Same as Asian Studies 321.)

353 The Civil War and Reconstruction Eras, 1860-1877: a time of formative years; 350-to 1776; 351-1776 to 1815. Writing-emphasis course.

352 The United States during the Jacksonian Era, 1829-1850: a time of thematic approach to early American history in the 19th century. (Same as American Studies 352.)

350-351 Early Modern America, 1607-1815 (3,3) America in historical perspective. Lecture-discussion. Especially designed for transfer students. English or American literature.

363 The History of France (3) French incipient development of the nation, from colonial era to diplomatic relations with the world. Writing-emphasis course.

369-370 History of the Middle East (3,3) Rise and development of the nation-state. The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as Ancient Mediterranean Civilizations 366.)

371-372 African History (3,3) A group of the southern and western regions of sub-Saharan Africa and the conflict and change occurring there from 1600 A.D. through the World War II era. 370-The Middle East from the ancient city to the present. Impact of the West and background of current problems in the area. Writing-emphasis course.

403 Comparing Cultures in African and American Societies (3) (Same as African-American Studies 403.)

429 Medieval Intellectual History (3) The evolution of thought in Europe from late antiquity to the 15th century; especially connections between major themes and the social, intellectual, and technological developments of the later medieval period. Major writing requirement. Prerequisite: 201 or equivalent assignment of instruction. Not available for graduate credit in History. (Same as Economics 413.)

431 Comparative Studies in African and American Societies (3) (Same as African-American Studies 431.)

432-433 European Intellectual and Cultural History (3,3) Historical Issues (3) Broad, thematic issues in historical perspectives. Lecture-discussion. Especially designed for transfer students. English or American literature.

430-431 European Intellectual and Cultural History (3,3) The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as Ancient Mediterranean Civilizations 366.)

440 America: The Society and its Social Record (3) The American Frontier and Westward Movement. From the Atlantic to the Trans-Mississippi West (Settlement and development of the "West" through American history. Writing-emphasis course.

441 Indian-White Relations in United States History (3) In the late 19th century, the United States had more people living on the continent than at any time in its history. (Same as American Studies 441.)

443-444 History of the South (3,3) The South as a region. 443-Old South from Revolution to Civil War. 444-New South from Reconstruction through the Civil War. (Same as African-American Studies 443.)

447 The History of Tennessee (3) Tennessee's history from its colonial beginnings as a 13th-century British colony to the present. Writing-emphasis course.

454 Cities and Urbanization in American History (3) The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as African-American Studies 454.)

457-458 Caribbean History (3,3) Caribbean history from c. 1492 to the present. The impact of the war on American society. (Team-taught course.)

466 Ancient Near Eastern Civilization (3) The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as Ancient Mediterranean Civilizations 366.)

469-470 The Crusades and Medieval Christian-Muslim Relations (3) The major Crusades in the Middle East and the impact of Islamic civilization on the West. From the early Crusades to the fall of the second Crusades. Writing-emphasis course.

480 Honors: Senior Paper (3) (B) A senior paper of 40-50 pages in length; research and conceptualization is the primary emphasis. Required of all students working for honors in history. Writing-emphasis course.

481 Women in American Economic History (3) The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as Women's Studies 481.)

483-484 Indian Wars and the American Revolution (3,3) The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as American Studies 483.)

486-487 History of East Asia (3,3) East Asia: history and culture to 1600. China, Korea, and Japan, and their relations with Islam and China. Understanding political, social, and economic changes in East Asia through the East-West contacts, battles, and trade. (Same as Asian Studies 486.)

488-490 American Intellectual History (3,3) The nation's broad strategic aims and means of attaining them, shifting strategy, tactics and weapons. (Same as American Studies 488.)

490 Historical Issues (3) Broad, thematic issues in historical perspectives. Lecture-discussion. Especially designed for transfer students. English or American literature.

499 Honors: Senior Paper (3) (B) A senior paper of 40-50 pages in length; research and conceptualization is the primary emphasis. Required of all students working for honors in history. Writing-emphasis course.

501 The American Frontier and Westward Movement. From the Atlantic to the Trans-Mississippi West (Settlement and development of the "West" through American history. Writing-emphasis course.

502 Indian-White Relations in United States History (3) In the late 19th century, the United States had more people living on the continent than at any time in its history. (Same as American Studies 502.)

507 Honors: Senior Paper (3) (B) A senior paper of 40-50 pages in length; research and conceptualization is the primary emphasis. Required of all students working for honors in history. Writing-emphasis course.
545 History of Sports in the United States (3) Developments in sports and sport culture from pre-colonial times to the present, with emphasis on the role of sport in American society.

550 History of Brazil (3) History of Latin America's largest nation. History of boom and bust economic cycles, slavery and the abolition of slavery, populism, economic and political development. (Same as Latin American Studies 450.)

551 Cuban Revolution in Historical Perspective (3) Emphasis on Cuba as a window on social, economic, and political developments in Latin America, with an eye to the evolution of the Cuban Revolution and its impact on other Latin American countries.

553 Modern Latin American History in Film (2) Major events and trends in Latin America since 1945, as portrayed in selected films made by Latin American directors. Topics include economic development, the Cuban Revolution, and Antifascism. (Same as Latin American Studies 453.)

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

561 Studies in Western European History (3) Variable content. Selected topics in Western European history such as warfare, revolutions, or nationalismo. May be repeated. Maximum 9 hours.

562 Studies in Central European History (3) Variable content. Selected aspects of Central European history. May be repeated. Maximum 9 hours.


564 Studies in Latin American History (3) Variable content. Different regions of Latin America from pre-Columbian to present. May be repeated. Maximum 9 hours. (Same as Latin American Studies 467.)

565 Studies in Asian History (3) Variable content. Particular aspects of Asian history. May be repeated. Maximum 9 hours.

566 Studies in African History (3) Variable content. Different regions of Africa from pre-colonial to present. May be repeated. Maximum 9 hours.

568 Studies in Comparative History (3) Variable content. Comparative examination of the historical experience of different regions and civilizations. May be repeated. Maximum 9 hours.

570 Studies in International Relations (3) Variable content. Ecological relationships and individual entities of the two fields. Not open to students with recent course or background in The Teaching of Elementary School Science or Social Studies. Prereq: Admission to Teacher Education Program.

423 Elementary and Middle School Teaching Methods (0) Methods and materials (knowledge tool) for teaching science and social studies, including content and curricular overview. Emphasis will be given to unit planning, daily planning, evaluation, etc., so as to develop an integrated, meaningful course of study. Prereq: Admission to Teacher Education Program.

424 Studies in Elementary Education (1-0) Variable topics in teaching in Early Childhood (0-4), Primary (4-8), Intermediate (8-12), and Special Education (12-18). Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only.

571 Directed Independent Study (1-3) Tutorial and research. May be repeated. Maximum 9 hours. E

400 Language Arts/Reading Instruction in Elementary and Middle Schools (2) Language and language development as they are taught in grades K-8, emphasizing the development of basic reading and vocabulary skills, the selection and evaluation of reading materials, and the planning, implementation, and evaluation of reading instruction. Prereq: Admission to Teacher Education Program.

401 Field Experience in Early Childhood Education (2) Observation and participation in early childhood education settings. Application for internship should be made upon admission to Teacher Education Program. Coreq: E 402.

402 Language Arts/Reading Instruction in Elementary and Middle Schools (2) Methods and materials for teaching science and social studies in elementary and middle schools. Emphasis on the student as a learner, different areas of the continent and diverse aspects of the African experience such as African resistance movements, colonial and post-colonial experiences, and political and economic development under colonialism to social and economic development in modern African nations, and apartheid and recombination in South Africa. May be repeated. Maximum 9 hours.

404 Studies in Classroom Practice (3) Variable content. Subject matter taught in other courses. May be repeated. Maximum 9 hours. E


406 Studies in Cross Cultural History (3) Variable content. Comparative analysis of political systems, stages of development, and social relations and social interaction of two or more cultures. May be repeated. Maximum 9 hours.

409 Foreign Study (1-15) May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

410 Directed Independent Study (1-3) Tutorial and research. May be repeated. Maximum 9 hours. E

412 Elementary and Middle School Science and Social Studies Instruction (3) Methods and materials for teaching science and social studies. May be repeated. Maximum 9 hours. E

572 Independent Study (1-15) Topics to be assigned. May be repeated. Maximum 15 hours. E
HOTEL AND RESTAURANT ADMINISTRATION (512)

101 Food Principles (3) Food selection, safety, preparation, evaluation, meal planning, service. 3 hours. Sp.

120 Introduction to Hotel and Restaurant Administration (3) History and place of retail in national economy; basic operating systems, organization structure problems in the hospitality industry. 3 hours. Tf.

126 Front Office Management (3) Front office procedures with topics and examples of the hotel/motel industry; reservation systems, check-in, check-out, payment methods. 3 hours. C.

200 Foodservice Systems Administration (3) Management concepts, processes, resources in foodservice systems; distribution, marketing and purchasing; foodservice operations. 3 hours. Tf.

206 Planning and Organizing Interiors (1) Planning and organizing interior spaces for restaurants and lodging facilities; relation of furnishings to architectural spaces. Open only to Hotel and Restaurant Administration majors.

301 Quantity Food Procurement, Production and Service (3) Principles for determining needs, procuring, producing, and serving foods in volume as they apply in the hotel/motel industry. Prereq.: 320, 220, 351; 1 credit hour in HRA program or consent of the instructor. Coreq. 321 or 322.

321 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, producing, and serving foods in volume. Prereq.: 120, 220, 351 or 352; 1 credit hour in HRA program or consent of the instructor. Coreq. 320.

302 Quantity Food Procurement, Production and Service Observation (1) Application of principles in determining needs, procuring, producing, and serving foods in volume as they apply in the hotel/motel industry. Prereq.: 320, 220, 351 or 352; 1 credit hour in HRA program or consent of the instructor. Coreq.: 321.

324 Tourist and Travel Administration (3) Economic, organizational, and service aspects of travel; its relationship to tourism; specifics of hotel, wholesale travel agency, and airline operation. Prereq.: 321, 323, or 325; 3 credit hours. Tf.

420 Field Experience in Hotel and Restaurant Administration (3) Internship in hotel or restaurant. Prereq.: 320, 321, 322 or 323; CFS 205 or consent of instructor. Coreq.: 321.

445 Field Experience in Community-Based Programs (1-3) Community-based programs. Prereq.: 325. May be repeated with different topic. Maximum 3 hours.

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

510 Human Ecological Systems (3) Theory and practice of human ecology; forces impacting the quality of life. Prereq.: Micro 210 or PH 310; 3 credit hours. Tf.


601 Field Experience in Family Life (3) Internship in Human Resource Development programs. Prereq.: 321 or 320; Senior standing; consent of instructor. Coreq.: 320.

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

607 Special Topics in Human Ecology (1-3) May be repeated. Maximum of 6 credit hours.

618 Honors: Human Ecology (3-6) Issues or topics of special interest. Prereq.: Freshman standing and consent of instructor. Coreq.: 320.

620 Student Teaching in Vocational Home Economics (6-18) Student teaching in vocational home economics. Includes 3 credit hours supervised classroom experience. Prereq.: 325. May be repeated with different topic. Maximum 6 credit hours.

621 Student Teaching in Family and Consumer Sciences (6-18) Student teaching in family and consumer sciences. Prereq.: 325. May be repeated with different topic. Maximum 6 credit hours.

622 Honors: Family and Consumer Sciences (3-18) Issues or topics of special interest. Prereq.: Freshman standing and consent of instructor. Coreq.: 320.

624 Convention Management (3) Scope and spe- cifics of convention management, including require- ments involving individual needs; methods and tech- niques for routinizing services. Prereq.: 320, 321, 322 or consent of instructor.

440 Special Topics: Hotel and Restaurant Adminis- tration (1-3) Developments, issues and problems in Hotel and Restaurant Administration; topics variable. Prereq.: Junior or Senior Standing in Hotel and Restau- rant Administration Program or consent of the instructor. May be repeated. Maximum 3 credit hours.

470 Directed Study: Hotel and Restaurant Adminis- tration (1-3) Internship; student experience. Prereq.: Junior and Senior Standing, consent of the instructor. Coreq.: 320.

HUMAN ECOLOGY (520)

101 Special Topics in Human Ecology (1-3) Topics in the College of Human Ecology and consent of instructor. No credit only. May be repeated. Maximum 3 credit hours.

201 Field Experience in Farm Life (3) School-based programs. Prereq.: May be repeated. Maximum 3 credit hours. Tf.

396 Field Experience in Social Work (3) Social work experience. Prereq.: CFS 205. May be repeated. Maximum 3 credit hours.

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

510 Human Ecological Systems (3) Theory and practice of human ecology; forces impacting the quality of life. Prereq.: Micro 210 or PH 310; 3 credit hours. Tf.


601 Field Experience in Family Life (3) Internship in Human Resource Development programs. Prereq.: 321 or 320; Senior standing; consent of instructor. Coreq.: 320.

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

607 Special Topics in Human Ecology (3-6) Issues or topics of special interest. Prereq.: Freshman standing and consent of instructor. Coreq.: 320.

620 Student Teaching in Vocational Home Economics (6-18) Student teaching in vocational home economics. Includes 3 credit hours supervised classroom experience. Prereq.: 325. May be repeated with different topic. Maximum 6 credit hours.

621 Student Teaching in Family and Consumer Sciences (6-18) Student teaching in family and consumer sciences. Prereq.: 325. May be repeated with different topic. Maximum 6 credit hours.

622 Honors: Family and Consumer Sciences (3-18) Issues or topics of special interest. Prereq.: Freshman standing and consent of instructor. Coreq.: 320.
366 Manufacturing Technology (3) Manufacturing systems, including machine tools, producing and developing products, processing, producing, manufacturing, and services.

369 Plastic Technology (3) Characteristics and applications of thermoplastics and thermosetting materials. Plastics production equipment related to design and processing of plastics. Pre Req: 165 and admission to Teacher Education Program.

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

373 Instructional Techniques in Industrial Education (3) Techniques and methods of teaching industrial education, and instructional techniques in technical and vocational education.


431 Utilization of Community Resources (3) Strategies of developing linkages between vocational education and the private sector through advisory committees, boards and working partnerships. Development and management of discipline-related programs. Pre Req: 372.

435 Special Topics in Human Resource Development (3) Topics to be assigned. May be repeated. Maximum 6 hours.

439 Individual Study in Human Resource Development (3) Prior consent of supervising instructor with approval form filed in the office of the department head. May be repeated. Maximum 6 hours.

439 Coordination Techniques (3) Necessary procedures, duties and responsibilities to implement, measure, and evaluate a successful cooperative education program.

440 Introduction to Adult Education (3) Basic concepts of adult education and the diversity of adult learners, including opportunities for practitioners practice from recent instructional settings.

440ahu 3/24/97, 5:24 AM

462 Adult Development and Training (3) Application of the concepts, methodology, and management of training programs for adults.

462 Principles and Organization of Business Marketing Education (3) Historical background and current status of business education and marketing. Current instructional techniques, student needs, and program evaluation.

434 Methods and Materials in Business (3) Prerequisites: Admission to Teacher Education Program. PrepReq 420. Instructional techniques and methods of teaching business education and marketing. Emphasis on the various professions, roles and responsibilities as they affect the delivery of human services and social problems.

490 Human Services Methodologies I (3) Includes theories, methods, and practices in the field of human services. Emphasis on understanding the nature of disabling conditions and on the different methods of providing services in those situations. Forming professional identity, assisting clients, and developing communication skills.

491 Human Services Methodologies II (3) Emphasis on the different methods of providing services in those situations. Includes practice with individuals, small groups, and families. Classic and contemporary theories and methods are emphasized.

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 Supervised Readings (1-15)

495 Special Topics (1-15) Topics to be assigned. May be repeated. Maximum 12 hours.

496 Research Seminars (1-15) Prerequisites: Admission to Teacher Education Program. May be repeated up to 15 hours.

497 Supervised Internship (1-15)

498 Off-Campus Study (1-15)

499 Independent Study (1-15)

410 Early Childhood Special Education (3) Introduction to the field of early childhood special education including the nature of disabling conditions, historical perspectives in the field, legislation, legal, professional, and ethical issues. May be repeated. Maximum 9 hours.

411 Early Childhood Special Education Field Work (1) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

412 Early Childhood Special Education Field Work (2) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

413 Early Childhood Special Education Field Work (3) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

414 Early Childhood Special Education Field Work (4) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

415 Early Childhood Special Education Field Work (5) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

416 Early Childhood Special Education Field Work (6) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

417 Early Childhood Special Education Field Work (7) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

418 Early Childhood Special Education Field Work (8) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

419 Early Childhood Special Education Field Work (9) Practical field experience in appropriate organized and directed early childhood special education programs. May be repeated. Maximum 9 hours.

420 Human Services Field Work (1) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

421 Human Services Field Work (2) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

422 Human Services Field Work (3) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

423 Human Services Field Work (4) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

424 Human Services Field Work (5) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

425 Human Services Field Work (6) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

426 Human Services Field Work (7) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

427 Human Services Field Work (8) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

428 Human Services Field Work (9) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

429 Human Services Field Work (10) Practical field experience in appropriate organized and directed human service agencies. May be repeated. Maximum 9 hours.

430 Principles and Organization of Business Marketing Education (3) Principles and organization of business education and marketing. Student needs, and program evaluation.

431 Early Childhood Education: Program Development and Teaching in Kindergarten (3) Curriculum planning, classroom organization, management, and evaluation for teaching young children. Relationship of kindergarten to total elementary school. PreReq Admission to Teacher Education Program.

432 Early Childhood Education: Program Development and Teaching in Kindergarten I (3) Curriculum planning, classroom organization, management, and evaluation for teaching young children. Relationship of kindergarten to total elementary school. PreReq Admission to Teacher Education Program.

433 Early Childhood Education: Program Development and Teaching in Kindergarten II (3) Curriculum planning, classroom organization, management, and evaluation for teaching young children. Relationship of kindergarten to total elementary school. PreReq Admission to Teacher Education Program.
271 Fundamentals of Interior Design I (5) Prerequisites: None. Problem solving, spatial experience, design and construction processes, increasing larger scale, communication of design material. May be repeated for credit. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

272 Fundamentals of Interior Design II (5) Problem solving, spatial experience, design and construction processes. May be repeated for credit. Preparation to courses 141, 171, 172, Math 115 or equivalent.

273 History of Interior Architecture I (4) Interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

274 History of Interior Architecture II (4) Interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

275 History of the Contemporary Interior Architecture (4) History of contemporary architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

276 Business Principles and Practices (3) Principles of business and budgeting practices, relationship of business practices to profession, and relationship of business practices to profession. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

277 Business Practices and Administration (3) Business practices and administration of business practices, interrelationships of business practices to profession, and relationship of business practices to profession. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

278 Principles of Interior Architecture (3) Principles of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

279 Techniques for Advanced Design (3) Techniques for advanced design, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

280 Business Principles and Practices (3) Business principles and practices, relationship of business practices to profession, and relationship of business practices to profession. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

281 History of Interior Architecture I (4) History of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

282 History of Interior Architecture II (4) History of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

283 History of the Contemporary Interior Architecture (4) History of the contemporary interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

284 Business Practices and Administration (3) Business practices and administration of business practices, interrelationships of business practices to profession, and relationship of business practices to profession. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

285 Principles of Interior Architecture (3) Principles of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

286 Techniques for Advanced Design (3) Techniques for advanced design, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

287 Business Principles and Practices (3) Business principles and practices, relationship of business practices to profession, and relationship of business practices to profession. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

288 History of Interior Architecture I (4) History of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

289 History of Interior Architecture II (4) History of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

290 Principles of Interior Architecture (3) Principles of interior architecture, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

291 Techniques for Advanced Design (3) Techniques for advanced design, furniture, design philosophy, history, and design requirements. Preparatory to courses 141, 171, 172, Math 115 or equivalent.

292 Business Principles and Practices (3) Business principles and practices, relationship of business practices to profession, and relationship of business practices to profession. Preparatory to courses 141, 171, 172, Math 115 or equivalent.
455 Issues in Science Communications (3) Topics vary may be majors; consent of instructor for non-majors.

451 Environmental Reporting (3) Writing for newspapers and periodicals. Attention to problems in areas such as strip-mining, media on such environmental issues as strip-mining, agriculture, the humanities, the environment, technical meetings and interviews. Prereq: consent of instructor.

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


420 Print Media Management (3) Current business, management and legal aspects of the print media. Emphasis on circulation distribution, advertising, and senior standing. Prereq: 360.

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

386 Communications Graphics (3) Development and operation of world communication channels and agencies. Comprehensive overview of the major forms of writing for the content areas of the school program. Extensive assessment of test-taker skills. Teaching reading and study skills in content areas of the school program. Extensive assessment of test-taker skills.

461 Developing Reading Skills in Content Fields (3) Instructional methods, lesson planning, peer-teaching; emphasis upon study and use of devices and techniques. Prereq: consent of instructor.

402 Latin American Studies Seminar (3) Same as Spanish 401, Geography 373.

399 Special Topics (1-15) Topics to be assigned. May be repeated. Maximum 12 hours.

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

384 Science Writing as Literature (2) Survey of important science writing for the general public across the spectrum of sciences, engineering, and medicine. Works written by scientists, novelists, journalists, and novelists. Richard Susan will be an editor for the writing. Prereq: Consent of instructor.

383 Mass Communications History (3) Development of the press and the role of mass communications in American history. Newspapers, radio, television and magazines. F.

382 Advanced Photographic Journalism (3) Advanced principles and methods of black-and-white photographic introduction to color photography. News and feature photography, photo essays. Prereq: 250, or consent of instructor.

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

375 Independent Study (3) May be repeated for a maximum of 4 credit hours. Prereq: Consent of instructor.

371 Effcient Reading and Study Skills (2) Improvement of reading and study skills for advanced students. Prereq: 102. F, Sp.

360 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and appreciation of literature for general public. Emphasis on teaching students to read. Prereq: consent of instructor. Satisfactory/No Credit grading only.

351 Cicero and Sallust (3) Prereq: 252 or equivalent.

251 Intermediate Latin: Grammar Review and Readings (2) Prereq: 112 or 120 or placement through the Latin placement examination.

252 Intermediate Latin: Vergil's Aeneid (3) Prereq: 251 or equivalent.

243 Colloquial and Formal Latin (2) Prereq: 252 or equivalent.


224 Close Reading and Technical Translations (3) For advanced students in Latin. In practice, Close reading, translating the text of the model.

413-422 Selected Readings from Latin Literature (3)B For advanced students in Latin. Historical, rhetorical, and literary analysis of selected literary works in the original Latin. May be repeated for credit. Maximum 6 hours. Prereq: 360 or consent of instructor.

410 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Latin. Prereq: Consent of instructor.
371 Foundations of the English Language (3) Same and use of language by individuals and groups. Prerequisite: English 200. Language, Linguistics and Society (3) Introduction to generative theory. Prerequisite: Six hours of courses required for English 371. MARIAN paradigm from 19th century intellectual trends. Science (3) Development of the scientific understanding of language and culture. Prerequisite: English 371.

LINGUISTICS (623)
485 Special Topics in Language (3) Same as English 485. 474 Teaching English as a Second or Foreign Language (3) Same as English 474 and German 435. 471 Sociolinguistics (3) Same as English 471 and German 435. 435 Structure of the German Language (3) Same as German 435. 426 Methods of Historical Linguistics (3) Same as French 426 and Spanish 426. 425 Introduction to Descriptive Linguistics (3) Same as French 425 and German 425. 429 Romance Linguistics (3) Same as French 429 and Spanish 429. 421 Business Strategy Formulation and Implementation (3) Same as English 421 and French 421. 420 Sales Force Management (3) Personaleselling as a functional area in an organization. Prerequisite: English 301, senior standing.

TRANSPORTATION (624)
310 Introduction to Logistics (3) Business logistics as a strategic area within the firm. Role of materials management and physical distribution, such as forecasting, planning, scheduling, warehousing, purchasing, inventory systems, design and organization. Overview of supply chain operation.

311 Organizational Structure and Behavior (3) Behavior processes in organizations; motivation, leadership, decision making, communication; behavioral interviewing; group behavior, organizational structures, conflict, politics, change and development. Prerequisite: English 343.

331 Organizational Behavior (3) Human processes in organizations; motivation, leadership, decision making, communication; behavioral interviewing; group behavior, organizational structures, conflict, politics, change and development. Prerequisite: English 343.

420 Sales Force Management (3) Personaleselling as a functional area in an organization. Prerequisite: English 301, senior standing.

420 Sales Force Management (3) Personaleselling as a functional area in an organization. Prerequisite: English 301, senior standing.

431 Personnel Management (3) Theory, methods and issues associated with effective personnel management. Prerequisite: English 301, senior standing.

432 Implementation and Evaluation of Personnel Programs (3) Methods of identifying, developing, implementing, evaluating and controlling personnel programs. Prerequisite: English 301, senior standing.

440 International Marketing (3) Planning and control of international sales. Planning, organizing, staffing and managing international operations. Prerequisite: English 301, senior standing.

441 Operations Management (8) (3) Planning and control of inventory systems. Aggregating planning, scheduling, systems planning, materials management. Prerequisite: English 341.

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492 Logistics and Transportation Off-Campus Study (1-6) Satisfactory, No Credit grading only. Prerequisite: Consent of instructor. May be repeated once for credit.

492 Management Off-Campus Study (1-6) Satisfactory, No Credit grading only. Prerequisite: Consent of instructor. May be repeated once for credit.

471 International Management (3) Factorssignificant in the international business environment; strategies for international business operations. Prerequisite: English 301, senior standing.

471 International Management (3) Factorssignificant in the international business environment; strategies for international business operations. Prerequisite: English 301, senior standing.

470 Honors: Executive-in-Residence in Transportation and Logistics (3) Student interaction with top level logistics executives from the logistics and transportation industries. Prerequisite: Consent of instructor.

493 Logistics and Transportation Off-Campus Study (3-6) Satisfactory, No Credit grading only. Prerequisite: Consent of instructor. May be repeated once for credit.

310 Introduction to Logistics (3) Business logistics as a strategic area within the firm. Role of materials management and physical distribution, such as forecasting, planning, scheduling, warehousing, purchasing, inventory systems, design and organization. Overview of supply chain operation.

311 Organizational Structure and Behavior (3) Behavior processes in organizations; motivation, leadership, decision making, communication; behavioral interviewing; group behavior, organizational structures, conflict, politics, change and development. Prerequisite: English 343.

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492 Logistics and Transportation Off-Campus Study (1-6) Satisfactory, No Credit grading only. Prerequisite: Consent of instructor. May be repeated once for credit.

492 Management Off-Campus Study (1-6) Satisfactory, No Credit grading only. Prerequisite: Consent of instructor. May be repeated once for credit.

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471 International Management (3) Factorssignificant in the international business environment; strategies for international business operations. Prerequisite: English 301, senior standing.

470 Honors: Executive-in-Residence in Transportation and Logistics (3) Student interaction with top level logistics executives from the logistics and transportation industries. Prerequisite: Consent of instructor.

493 Logistics and Transportation Off-Campus Study (3-6) Satisfactory, No Credit grading only. Prerequisite: Consent of instructor. May be repeated once for credit.
Prerequisites:

- Two years of algebra and one year of geometry in high school and satisfactory placement test scores or Math 100.
- Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores or Math 100.
- Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores or Math 100.
- Prerequisite: 147-148 or invitation by the department.

Courses of Instruction

189
443 Complex Variables (3) Introduction to the theory of functions of a complex variable, including residue theory and contour integrals. Prerequisite: 241 or 247.

443 Complex Variables II (3) Applications of complex variable theory to potential theory, electrostatics, and fluid flow. Prerequisite: 443.

445-446 Advanced Calculus I, II (3) Introduction to the theory of sequences, series, differentiation, and Riemann integration of functions of one or more variables. Prerequisite: 241 or 247 and 250, or consent of instructor.

447-448 Honors: Advanced Calculus I, II (3) Honors version of 445-446. Prerequisite: 241 or 247 and 300, or consent of instructor.

453 Matrix Algebra II (3) Advanced topic in matrix theory, including the Jordan canonical form. Prerequisite: 251 or 257.

454-455 Abstract Algebra I, II (3) Introduction to algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prerequisite: 251 or 257.

455-456 Abstract Algebra II, I (3) Introduction to advanced topics in algebra including the treatment of selected topics such as Galois theory, commutative ring theory, and the Jordan canonical form. Prerequisite: 451.

460 Geometry (3) Axiomatic and historical development of plane and solid geometry. Prerequisite: 300, or consent of instructor.

461 Topology I (3) Introduction to topology. Prerequisite: 300 or consent of instructor.

462 Numerical Analysis I (3) Introduction to computational methods for solving mathematical problems. Prerequisite: 271 or 275 and 300, or consent of instructor.

463-464 Mathematical Statistics I, II (3) Probability theory. Prerequisite: 259 (or 257) and 300, or consent of instructor.

470 Geometry and Topology II (3) Advanced topic in geometry and topology. Prerequisite: 271 or 275 and 300, or consent of instructor.

471 Numerical Analysis (3) Direct and iterative methods for solving algebraic and transcendental equations. Prerequisite: 271 and 300, or consent of instructor.

473-474 Advanced Mathematical Methods I, II (3) Introduction to advanced topics in mathematical methods, including the development of solution methods and the use of technology. Prerequisite: 271 and 300, or consent of instructor.

MEDICAL BIOLOGY (661)

411 Undergraduate Research Participation (1-3) Experience in ongoing biomedical research projects under the supervision of faculty. Students in pre-medical and health-related programs may be enrolled. May be repeated. Maximum 9 hours. Satisfactory/No Credit only.

420 Seminar in Microbiology (3-6) Topics will vary. Will require in-depth class presentations and seminar presentations by students. Prerequisite: 241 and 300, or consent of instructor. May be repeated. Maximum 9 hours. Satisfactory/No Credit only.

MEDICAL TECHNOLOGY (669)

411 Laboratory Practicum in Biochemistry (1-6) Laboratory experiences in biochemistry. Prerequisite: 241. May be repeated. Maximum 9 hours. Satisfactory/No Credit only.

460 Immunology (3) Principles of inflammation and immunology. Prerequisite: 310. May be repeated. Maximum 6 hours. Satisfactory/No Credit only.
320 Advance Military Studies II (4) Preparation of the future officer leadership of Army to excel at MS 400 years of JROTC (or) 110, 120, 210, 220 completion (or) basic training completion. Letter grade only. 3 hours and 1 hour lab. F

330 Basic Military Science II (3) Introduction of basic leadership theory, principles and skills, with emphasis on affective and/or instrumental. Students present a military drill in subject matter of the JROTC. Skills include drill movements, small unit communications, and land navigation. Physical and mental exercises for prolonged standing. Students with higher physical requirements are excused from lab. Letter grade only. 2 hours class and 1 hour lab. Sp

121 Basic Officer Skills I (3) The study of American military skills subject briefing. Skill taught in rifle marksmanship, small unit communications, first aid, leadership and history of the military team, land navigation, small unit patrolling, and physical fitness. Tactical and administrative roles in the military. Letter grade only. F

490 Special Topics in Music Education (1) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E
309-309 Marching Band (1) May be repeated.
370-370 Symphony Orchestra (1) May be repeated.
380-380 Concert Choir (1) May be repeated.
382-382 University Chorus (1) May be repeated.
393-393 Men's Chorale (1) May be repeated.
399-399 Women's Chorus (1) May be repeated.
399-399 Accompanying (1) May be repeated.

MUSIC GENERAL (598)
100 Fundamentals of Music (3) Theory and practice of basic elements of music. Writing-emphasis course. F, S.
105 Music Appreciation (2) Developing talents in understanding and understanding of Western music from the ancient world through the 20th century. For non-music majors. Writing-emphasis course. E.

301-389). May be repeated once for credit. Requires study combining participation in a University musical emphasis course. E.

120 History of Opera (3) Dramatic, vocal and orchestral elements in operas of Italian, French, and German composers. 1600-1750 emphasis.

340 Symphonic Literature (3) Survey of literature written before 1900. Study of music history and historical eras through selected writings. Writing-emphasis course.

400 Music of North America (3) Folk and art music of the United States and Canada from colonial times to the present. Writing-emphasis course.

400 History of Opera (3) Dramatic, vocal and orchestral elements in operas of Italian, French, and German composers. 1600-1750 emphasis.

401 Music in Christian Worship (3) Harmony, counterpoint, and modal and historical eras.

402 Church Music Methods and Administration (3) Study and appreciation of music from Baroque to Modern style, with emphasis on the evolution of the symphony.

410 Analysis of Jazz Styles (2) Individual improvisation.

420 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz, improvisation and ear training jazz programs, and arranging/chord techniques for jazz ensembles.

510-512 Jazz History (3) Development of key instruments in modern jazz, techniques, harmonization, and transcription. Must be taken in sequence.

510 JAZZ HISTORY (711)
110 Advanced Improvisation (2) Development of individual skills and solving individual problems in jazz improvisation. Prereq: 110, 120.

110-120 History of Jazz Drumming (2) Examination of major component and performers who have contributed significantly to creation of modern style of jazz drumming.

120-220 Jazz Improvisation (I, II) Study and application of improvisation techniques, including monochord, chord progression, chord scales, patterns, melodic development, and turn styles. Prereq: 110.

120 Jazz Composition and Arranging (2) Prereq: Consent of instructor.

220-230 Jazz Band Arranging (3) Arranging and scoring for the Big Jazz Band. Prereq: Consent of instructor.


359-399 Marching Band (1,1) May be repeated. Prereq: Consent of instructor.

210-220 History of Music, I, II (3,3) 210-1750. Prereq: Music Education 320, or equivalent.

210 History of Music, II (3) Survey of Western music from the Middle Ages to the present as composers, performers, and interpreters. Prereq: 210.

210, 220 History of Music (3,3) 210-1750. Prereq: Music Education 320, or equivalent.

210-220 History of Music, I, II (3,3) 210-1750. Prereq: Music Education 320, or equivalent.

210 History of Music, I (3) Survey of Western music from the Middle Ages to the present; problem of style and interpretation. May be taken as a review course for graduate students. Prereq: Consent of instructor.

330 Percussion Literature and Pedagogy (3) Survey of historical, analytical, and historical eras through written literature. Writing-emphasis course.

320 Studio Guitar (3) Group classes. Prereq: Consent of instructor.

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

340 Piano Literature and Pedagogy (3) Study of musical style and instrument literature and individual principles of learning; specific programs based on pupil aptitude and background; collateral teaching experiences included. Prereq: Music Education 320, or equivalent.

340 Pediatric Literature and Pedagogy (3) Study of musical style and instrument literature and individual principles of learning; specific programs based on pupil aptitude and background; collateral teaching experiences included. Prereq: Music Education 320, or equivalent.

430-450 Piano Pedagogy I, II (2,3) Pedagogical methods and materials related to the development of musical learning; problem of style and interpretation. Must be taken in sequence. Prereq: Consent of instructor.

430-450 Piano Pedagogy I, II (2,3) Pedagogical methods and materials related to the development of musical learning; problem of style and interpretation. Must be taken in sequence. Prereq: Consent of instructor.

460-470 Organ and its Literature, I, II (3,3) Development of the organ and its literature from the Middle Ages to the present; problems of style and interpretation. Prereq: Consent of instructor.

502 Studio Music and Jazz major or consent of instructor.

503-504 Studio Music and Jazz major or consent of instructor.

505-506 Studio Music and Jazz major or consent of instructor.

507 Studio Music and Jazz major or consent of instructor.

508 Studio Music and Jazz major or consent of instructor.

509-510 Studio Music and Jazz major or consent of instructor.

510-512 Jazz History (3) Fundamentals of the jazz language, including terminology, chord symbols, chord structure, and chord progression, plus ear-training lab. Prereq: Music Theory 110.

501 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult piano classes, with collateral teaching experiences. Prereq: Consent of instructor.

510-512 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult piano classes, with collateral teaching experiences. Prereq: Consent of instructor.

510-512 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult piano classes, with collateral teaching experiences. Prereq: Consent of instructor.

510-512 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult piano classes, with collateral teaching experiences. Prereq: Consent of instructor.
NURSING (720)

All upper division nursing courses, except 301 and 314, are restricted to students who have progressed into the major (see ENROLLMENT PROGRESSION POLICIES AND PROCEDURES in the chapter Prelude).

203 Health and Culture (3) An exploration of the biosocial and behavioral factors influencing health and illness in various cultural groups. Emphasis on the role of culture in health maintenance and promotion, and the provision of health care for diverse populations. Prereq: 310, 312 or consent of instructor. 3 lectures.

Clinical Nursing (4) Developmental, physical, psychological, sociocultural, and environmental factors related to the provision of nursing care. Emphasis on the application of theoretical concepts to the care of specific patient populations. Prereq: 310, 312 or consent of instructor. 4 laboratory experiences.

720 Special Topics (1-3) In-depth study of selected topics. Prereq: 310, 312 or consent of instructor. 1-3 credits.

322 Community Health Nursing: Care of Individuals (3) Introduction to community health nursing. Identifying aggregates at risk for selected community health problems; relating aggregates to environmental, demographic, socioeconomic and political factors; use of data to identify community health problems; planning, organizing and implementing community health nursing actions; assessing community health problems; identifying community resources; chronic illness; mental illness; children and family; elder care; and community health nursing. Prereq: consent of instructor. 3 lectures.

401 Family Health Nursing (3) Nursing needs of families in health and illness. Prevention of selected family health problems; selected family health problems; family development; family interaction patterns; family responses to health care; health promotion and prevention; family intervention strategies. Prereq: 301, 304, 306 or consent of instructor. 3 lectures.

405 Professional Nursing Seminar (2) Critical examination of legislative, legal, ethical, social, and political factors that influence nursing practice. Emphasis on the role of the nurse in the delivery of health care services. Prereq: 301, 303 or consent of instructor. 2 lectures.

411 Family/Military Nursing (3) Application of the nursing process to patients who have experienced military service. Emphasis on the development of the nurse-patient relationship; communication; critical thinking; time management; leadership and management skills. Prereq: 301, 303 or consent of instructor. 3 lectures.

420 Food and Nutritional Analysis (4) Principles, methods, and techniques of food analysis. Sensory evaluation concepts and techniques. Prereq: 312, PSSc 471. 4 lectures.

440 Leadership and Management in Nursing (3) Introduction to selected concepts related to leadership and management of health care organizations. Emphasis on decision-making and problem solving. Prereq: 301, 304, 306 or consent of instructor. 3 lectures.

450 Physiological Principles (3) Concepts and principles of normal human performance. Emphasis on physiology as a basis for integration of systems physiology and for understanding pathophysiological mechanisms. Prereq: 301 or consent of instructor. No credit for students who have received credit for 300-312. 3 lectures.

453 Oncology Nursing (3) In-depth exploration of selected oncology nursing issues. Focus on selected concepts related to pathophysiology and nursing interventions employed in all phases of the disease. Preceptors: 401, 411 or consent of instructor. 3 lectures.

470 Special Topics (1-3) In-depth study of selected topics in nursing, seminars, or issues not covered in other courses. Topics determined by faculty and student interest. Prereq: Consent of instructor. 1-3 credits.

493 Independent Study (1-3) Nursing or health-related topics not covered in other nursing courses. Prereq: Senior standing or consent of instructor. 1-3 credits.
309 Field Experience: Nutrition 1 (3) Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit only.

310 Directed Study: Nutrition 1 (3) Individual student faculty experience. Prereq: Junior or Senior standing and consent of instructor. Letter grade only.

ORNAMENTAL HORTICULTURE AND LANDSCAPE DESIGN (740)

110 Introduction to Ornamental Horticulture (3) Survey of the history, science, crafts, professions, and business aspects of ornamental horticulture and landscape design. Prereq: 110 or consent of instructor. F, Sp.

200 Basic Landscape Plants (3) Identification, classification, adaptation, culture and landscape design uses of basic ornamental foliage, shrubs, and vines. Prereq: 110 or consent of instructor. 2 hrs. L.

210 Interior Planting (3) History and introduction of the interior plant industry, identification, culture, propagation, and use of plants for the commercial interior plant business. Prereq: 200. 3 hrs. L.

260 Fundamentals of Landscape Design (3) History of landscape design as it relates to contemporary specialization. Awareness and accessibility to the landscape basic graphic skills and design theory with an emphasis on ornamental landscape planning. Introduction to landscape design as it relates to professional practice. Prereq: 110 or consent of instructor. 1 hr. L.

300 Fall Herbaceous Ornamental Plants including annuals, perennials and bulbs. Prereq: 280. 1 hour and 2 labs. F.

320 Practical Landscape Design (3) Practical experiences in landscape design. Open only to students registered in the College of Architecture. Consent of instructor required. 2 hrs. L.

325 Landscape Construction (3) Basic principles of construction and machinery. Identification and use of construction equipment. Prereq: 260 or consent of instructor. F.

350 Basic Landscape Construction (3) Basic materials, tools, and techniques for basic landscape construction and planting design. Prereq: 280, 320, and 350. 1 hr. and 3 three-hour labs. Sp.

360 Principles in Landscape Design (3) Theory and application of landscape design. Introduction to the computer-aided design software: LANDCADD. Prereq: 350. 2 hrs. L.

370 Grounds Maintenance (3) Identification and understanding of the history and function of grounds maintenance and crew management. Prereq: 280. 1 hr. and 2 labs. F.

401 Advanced Turfgrass Management (3) Principles and scientific basis of turfgrass culture, identification, physiology, and fertilization, and pest control. Analysis of soil, water and nutrition effects on turfgrass performance. Prereq: 260 or consent of instructor. 2 hrs. L.

404 Computer Aided Landscape Design (3) Overview of computer-aided design principles and applications related to landscape design and construction. Emphasis on development of the computer-aided design drawing through utilization of LANDCADD software. Prereq: 280. 3 hrs. F.

409 Seminar (3) Current problems in ornamental horticulture and landscape design. Prereq: Senior standing. Letter grade only.

432 Off-Campus Internship (1-3) Work experience in approved ornamentals, turf or landscaping industry. Prereq: Completion of 2 years of credit at the University. Prereq: 110 or consent of instructor. 2 hrs. L.

449 Advanced Landscape Design (4) Comprehensive design experience in landscape design using appropriate design guidelines. Computer-aided design software utilized. Prereq: 350 or consent of instructor. 2 hrs.

460 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposal writing, contract management in landscape service industry. Computer-aided design applications to a variety of construction projects. Prereq: 350 or consent of instructor. 2 hrs.

480 Advanced Landscape Design (4) Comprehensive design experience in landscape design using appropriate design guidelines. Computer-aided design software utilized. Prereq: 350 or consent of instructor. 2 hrs.

485 Computer Aided Landscape Design (3) Overview of computer-aided design principles and applications related to landscape design and construction. Emphasis on development of the computer-aided design drawing through utilization of LANDCADD software. Prereq: 280. 3 hrs. F.

492 Field Experience: Nutrition 1 (1-3) Prereq: Junior or Senior standing, consent of instructor. Letter grade only. Maximum 6 hours.

492 Off-Campus Internship (1-3) Work experience in approved ornamentals, turf or landscaping industry. Prereq: Completion of 2 years of credit at the University. Prereq: 110 or consent of instructor. 2 hrs. L.

101 The Human Condition: Value and Reality (3) The meaning of human existence, the possibility of man, freedom, morality, human nature, and human values. Writing emphasis course.

111 The Human Condition: Knowledge and Reality (3) The structure of thought, the objectivity of knowledge, the standards and limits of human knowledge. Writing emphasis course.

112 Foundations of Western Thought: Antiquity from Plato to Simone de Beauvoir (Same as Women's Studies 393.)

115 The Human Condition: Value and Reality (3) The meaning of human existence, the possibility of man, freedom, morality, human nature, and human values. Writing emphasis course.

116 Foundations of Western Thought: Antiquity from Plato to Simone de Beauvoir (Same as Women's Studies 393.)

117 Principles of Selection and Breeding (3) Principles of genetic variability and selection for crop improvement. Prereq: 116. 2 hrs. L.

119 The Human Condition: Knowledge and Reality (3) The structure of thought, the objectivity of knowledge, the standards and limits of human knowledge. Writing emphasis course.

123 Critical Thinking (3) An introduction to practical and theoretical aspects of critical thinking, the art of recognizing, analyzing, evaluating and constructing arguments. Writing emphasis course.

130 Ancient Western Philosophy (3) Writing emphasis course.

131 Medical Philosophy (3) Development of medical thought from the ancient to modern times. Writing emphasis course.

132 Medieval Philosophy (3) The place of mind in a material universe and the nature and possibilities of human knowledge. Writing emphasis course.

134 Environmental Ethics (3) Issues concerning environmental protection and the role of human beings. Writing emphasis course.

135 Formal Logic (3) Introduction to formal deductive logic. Writing emphasis course.

136 Ethics (3) Theories of ethical values. Writing emphasis course.

137 Environmental Ethics (3) Issues concerning environmental protection and the role of human beings. Writing emphasis course.

138 Environmental Ethics (3) Issues concerning environmental protection and the role of human beings. Writing emphasis course.

139 Ethics (3) Theories of ethical values. Writing emphasis course.

140 Analytical Logic (3) Introduction to formal deductive logic. Writing emphasis course.

141 Environmental Ethics (3) Issues concerning environmental protection and the role of human beings. Writing emphasis course.

142 Business Ethics (3) Ethical problems as they confront both business as a social institution and individuals in business.

143 Professional Responsibility (3) Critical analysis of selected ethical dilemmas from philosophy, religious ethics, and social ethics, and social ethics dealing with responsibility and the nature of human responsibility. Prereq: (130 or 131) and consent of instructor. Letter grade only.

144 Professional Ethics (3) Principles and techniques involved in ethical decision making in the landscape industry. Prereq: 350 or consent of instructor. Letter grade only.

145 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposal writing, contract management in landscape service industry. Computer-aided design applications to a variety of construction projects. Prereq: 350 or consent of instructor. 2 hrs.

146 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposal writing, contract management in landscape service industry. Computer-aided design applications to a variety of construction projects. Prereq: 350 or consent of instructor. 2 hrs.

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159 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposal writing, contract management in landscape service industry. Computer-aided design applications to a variety of construction projects. Prereq: 350 or consent of instructor. 2 hrs.
PLANT AND SOIL SCIENCE

306 Current Topics in Environmental Science (1) Lectures and invited presentations on current environmental issues and careers in Environmental Science. Sp.

220 Introduction to Soil Science (3) Differentials in soils, soil formation, physical, chemical, and biological properties of soils. Differentiation between living and dead microbial and plant materials. Prerequisites: chemistry and biology. 3 hours lecture and 1 laboratory. F.

221 Introduction to Soil Science Laboratory (1) Experiments on topics covered in 220. Sp., F.

230 Introduction to Crop Science (3) Fundamentals of agriculture, genetic potential, cultivation, growth, reproduction and uses of crops and plants used in plant science. Prerequisites: biological sciences. 3 hours lecture and 1 laboratory. F.

232 Soil Morphology (1) Intensive course involving soil profile mapping and fieldwork, soil profile structure, pedology, structure, classification, growth and reproduction of higher plants, soil and water conservation. Maximum 4 hours. 1 hour and 1 laboratory. Sp.

331 Soil Fertility (3) Function of soil properties on nutrient availability to plants. Management of nitrogen, phosphorus, potash, sulfur and other elements that affect crop yields. Prerequisites: 210 and consent of instructor. 2 hours and 1 laboratory. F.

332 Fruit Crops (3) Fundamentals of soil science, plant nutrition. Introduction to fertilizers. Principles of crop production and management factors for deciduous fruit crops will be emphasized. Prerequisites: 230. 3 hours lecture and 1 laboratory. F.

333 Vegetable Crops (3) Characteristics, economic importance, production techniques, and production problems. Emphasis on fresh and processing markets with emphasis on both. Prerequisites: 230 and consent of instructor. 3 hours lecture and 1 laboratory. F.

334 Soil Chemistry (3) Structure and chemical properties of soil material with emphasis on the colloidal fraction as it relates to exchange, chemical-physical-soil acidity, oxidation-reduction, weathering, nutrient availability and soil drainage. Prerequisites: 230 or consent of instructor. F.

335 Soil Biology and Hydrology (3) Principles of soil biology and soil hydrology as they apply to crop production. Effects of environmental factors on soils. Prerequisites: 230 or consent of instructor. F.

342 Bioclimatology (3) Solarenergy budget, interactions between climate, regional and local climates and growth of vegetation. Effects of climate and climatic change and the biota. Prerequisites: 230 or consent of instructor. 3 hours lecture and 1 laboratory. F.

343 Agricultural Pedogenetics (3) Principles of soil improvement. Soil survey and sampling. Soil fertility, soil acidity, structure, soil texture, soil water relationships. Prerequisites: 230. Prerequisites: 210. 3 hours lecture and 1 laboratory. F.

345 Postharvest Biology and Technology (3) Principles of plant physiology and biochemistry related to storage and transport of products. Prerequisites: 230. 3 hours lecture and 1 laboratory. F.

348 Environmenal Chemistry (3) Principles of soil chemistry and its relation to the environment. Prerequisites: 230. 3 hours lecture and 1 laboratory. F.

351 Field and Forage Crops (3) Agronomic principles of crop production. Crop improvement, growing, pest management, and harvested forage crops. Prerequisites: 230 or consent of instructor. 3 hours lecture and 1 laboratory. F.

353 Vegetable Crops (3) Characteristics, economic importance, adaptability and production of vegetables for fresh market and processing uses. Prerequisites: 230 or consent of instructor. 3 hours lecture and 1 laboratory. F.

362 Weed Management (3) Principles of weed interference with crop production. Control of weeds. Chemical and physical controls. Prerequisites: 230. 3 hours lecture and 1 laboratory. F.

370 Soil and Water Conservation (3) Hydrologic, agricultural, and engineering principles applied to water management problems including flood and drought control management, and water quality. Prerequisites: 230. 3 hours lecture and 1 laboratory. F.

375 Soil and Water Conservation Laboratory (1) Remediation of agricultural problems due to water and soil. Fieldwork, laboratory problems related to water and soil. Prerequisites: 230. 1 hour laboratory. Sp.

395 Soil Microbiology (3) Soilmicrobial population and the soil ecosystem; microbial transformations of organic and inorganic compounds. Prerequisites: 230 and 350 or consent of instructor. 2 hours lecture and 1 laboratory. F.

396 Soil Genesis and Classification (3) Soil genesis and classification. Selection of soils for optimal growth of specific crops based on soil properties. Prerequisites: 230 or consent of instructor. 2 hours lecture and 1 laboratory. F.

411 Introduction to Soil Science (3) Differences in soils, soil formation, physical, chemical, and biological properties of soils. Differentiation between living and dead microbial and plant materials. Prerequisites: chemistry and biology. 3 hours lecture and 1 laboratory. F.

412 Soil Genesis and Classification (3) Soil genesis and classification. Selection of soils for optimal growth of specific crops based on soil properties. Prerequisites: 230 or consent of instructor. 2 hours lecture and 1 laboratory. F.

413 Soil Chemistry (3) Structure and chemical properties of soil material with emphasis on the colloidal fraction as it relates to exchange, chemical-physical-soil acidity, oxidation-reduction, weathering, nutrient availability and soil drainage. Prerequisites: 230 or consent of instructor. F.

414 Soil, Land Use and the Environment (3) Environmental components and soil properties affecting human health and the environment. Soil as a renewable natural resource, including nutrient cycling and soil and water quality. Prerequisites: 230 or consent of instructor. F.

415 Land Use and the Environment (3) Environmental components and soil properties affecting human health and the environment. Soil as a renewable natural resource, including nutrient cycling and soil and water quality. Prerequisites: 230 or consent of instructor. F.

416 Field and Water Conservation (1) Hydrologic, agricultural, and engineering principles applied to water management problems including flood and drought control management, and water quality. Prerequisites: 230. 1 hour laboratory. Sp.

417 Field and Water Conservation Laboratory (1) Remediation of agricultural problems due to water and soil. Fieldwork, laboratory problems related to water and soil. Prerequisites: 230. 1 hour laboratory. Sp.

421 Urban Politics and Process (3) Development of political processes and policy-making in the modern American city. (Same as Social Studies 201.)

422 Minority Group Politics in the United States (3) Content varies. May be repeated with the consent of the department. Maximum 4 hours. 1 hour and 1 laboratory. F, Sp.

423 Law in American Society (3) Law as a process through which social problems are addressed in the United States. Emphasis on how law, legislation, and administrative regulations influence evolutionary trends. Sp.

424 Introduction to Public Administration and Public Policy (3) Public agencies, their organization, personnel, and financial management and administrative responsibility, the policy-making process, political environment. F, Sp.

425 Political Change in Developing Areas (3) Colonialism and politics of political changes with primary attention to Asia and Latin America. Prerequisites: 130 or consent of instructor. F.

426 Latin American Politics and Politics (3) Introduction to Latin American political conditions and political parties. Prerequisites: 130 or consent of instructor. F.

427 Politics in Western Democracies (3) Political culture patterns, and institutions of Western democratic governments. F.

428 Introduction to International Relations (3) Foreign policy, international economic, international security, and peace. Prerequisites: 130 or consent of instructor. F.

429 Problems in Plant and Soil Science (3) Special research or laboratory problems in plant and soil science. May be repeated. Maximum 4 hours. E.

POLITICAL SCIENCE

101 United States Government and Politics (3) Introduction to fundamental institutions and processes of American Political System. Credit given for the Carnegie, the Congress and the Constitution. Prerequisites: 101 or consent of instructor. F.

201 United States Government and Politics (3) Analysis and exploration of the American Political System for students with superior ability. Admission by permission of department for students at all levels. A good average in American Government is a prerequisite for any course in Plant and Soil Science.

210 United States Government and Politics (3) Analysis and exploration of the American Political System for students with superior ability. Admission by permission of department for students at all levels. A good average in American Government is a prerequisite for any course in Plant and Soil Science.

311 Contemporary Issues in American Public Policy (3) Focus on policy making, public opinion and public policy, including the background, nature, and effects of present policies, and involves the future. Writing-emphasis course. F.

312 Popular Culture and American Politics (3) Popular culture related to American politics and government focusing on the role of film, television, folklore, music, drama, art, and literature. Writing-emphasis course. (Same as American Studies 210 and Cinema Studies 211.)


331 Judicial Process (3) Cases as components of political systems, and public policy formulation through judicial decision making.

340 Introduction to Public Administration and Public Policy (3) Public agencies, their organization, personnel, and financial management and administrative responsibility, the policy-making process, political environment. F, Sp.

341 Political Change in Developing Areas (3) Colonialism and politics of political changes with primary attention to Asia and Latin America. Prerequisites: 130 or consent of instructor. F.

342 Latin American Politics and Politics (3) Introduction to Latin American political conditions and political parties. Prerequisites: 130 or consent of instructor. F.

343 Politics in Western Democracies (3) Political culture patterns, and institutions of Western democratic governments. F.

344 Introduction to International Relations (3) Foreign policy, international economic, international security, and peace. Prerequisites: 130 or consent of instructor. F.

345 Problems in Plant and Soil Science (3) Special research or laboratory problems in plant and soil science. May be repeated. Maximum 4 hours. E.

POLITICAL SCIENCE

101 United States Government and Politics (3) Introduction to fundamental institutions and processes of American Political System. Credit given for the Carnegie, the Congress and the Constitution. Prerequisites: 101 or consent of instructor. F.

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Courses of Instruction
SOCIAL WORK (905)

200 Introduction to Social Work (3) Emergence of the social work profession; professional mission; knowledge, skills, and values; professional ethics; assisting service-disabled; helping veterans; career patterns; practice settings.

230 Social Welfare Policy (3) Structure and function of the social welfare system; analysis of social welfare programs; introduction to the methodology of social policy research.

240 Social Work Research (3) Scientific method and research strategies to evaluate one's practice and/or social service delivery. Knowledge of statistical techniques required. Prereq: Math 115 or Psych 385.

241 Social Policy (3) Knowledge, values, and skills for entry level practice in a variety of settings. This social work preceptor serving process, oriented toward client systems, ethical, and social work roles, and the worker's role for socio-environmental issues. Content includes: welfare, poverty, and social policies. Prereq: Consent of instructor.

312 Work and Social Change (3) In-depth study of generalist practice with individuals and families, practice theory, and thinking about people with diverse backgrounds. Course content is subject to change. Prereq: Consent of instructor.

313 Social Work Practice II (3) In-depth study of generalist practice with individuals and families. Practice theory and thinking about people with diverse backgrounds. Course content is subject to change. Prereq: Consent of instructor.

314 Human Behavior and the Social Environment (3) Individuals and groups, personality and culture, environments, and social contexts. Emphasis on understanding and responding to personal, environmental, and social issues. Prereq: Consent of instructor.

315 Sociological Research (3) Selected issues in sociological research and methodology. Emphasis on applying empirical research methods to the analysis of issues in sociology. Prereq: Consent of instructor.

330 Computers and Society (3) History of computing and computer system applications. Social, cultural, and economic impacts. Prereq: Consent of instructor.

331 Sociological Theory (3) Survey of contemporary issues and problems in sociological theory with an emphasis on the functional change and their implications for the future. Prereq: Consent of instructor.

335 Sociology of Religion (3) Interrelationship of society, culture, and religion. (Same as Religious Studies 335.)

336 Rural Sociology (3) (Same as Rural Sociology 336.)

338 Human Behavior in the Social Environment (3) Introduction to the field of human services, social, environmental, and psychological factors in human behavior. (Same as Social Work 338.)

340 Class Structure (3) Social strata and social class. Emphasis on American society. (Same as Political Science 340.)

341 Criminology (3) (Same as Political Science 341.)

343 Race and Ethnicity (3) Social sources of racial and ethnic cleavages and social, economic, and political consequences. Emphasis on race and ethnicity in the United States. Writing-emphasis course.

344 NU 110 Social Problems and Social Change (3) Increasingly acute and intense problems such as violence, crime, inequality, lifestyle preferences, and environmental issues within the context of social change. (Same as Political Science 344.)

345 Society and Law (3) How laws and legal processes are affected by social change, the social impact of legal sanctions, relations between law and social justice. Writing-emphasis course.

346 Gender in Society (3) Exploration of gender in society utilizing various sociological perspectives with special focus on the relationships between social structures and gender identities. (Same as Women's Studies 346.)

347 Social Policy (3) Social policy analysis of social welfare and social change. Interest groups and policy-making. (Same as Political Science 347.)

348 Sociology of Sport (3) Social meaning, organization, and process of sport. Prereq: Consent of instructor. (Same as Cultural Studies in Education 348.)
freshmen are admitted on the basis of a diagnostic test, periods. Required of all majors. Prereq: 325 or equivalent.

111-112 Elementary Spanish (3, 3) Language laboratory required. Must be taken in sequence. Available form major credit. 1 hour lecture, 2 hours screen- and 1 hour discussion. Writing emphasis class.

335 Aspects of Spanish Literature (3) Introduction to Spanish literature. May be repeated with consent of instructor. 3 semester hours (3 credit hours).

323 Intermediate Composition and Grammar (3) Focus on some aspect of grammar, phonetics, nonverbal behavior, research strategies, and theoretical and practical writing skills. Available form major credit. 1 hour lecture, 2 hours screen- and 1 hour discussion. Writing emphasis class.

306 Aspects of Spanish American Literature (3) Carlos de la Americas Studies) (3 credit hours). Prerequisites: 325 or equivalent.

340-40 Conversation and Composition in Business Spanish (3, 3) Commercial vocabulary, business letter writing, and role play. Required of all majors. Prerequisites: 325 or equivalent. Required of all majors with a concentration in Language and World Business. Prereq: 312 and 318 or permission of instructor.

11 Cultural Priority and Institutional Changes in Latin America (3) Value systems, behavioral patterns, political climate, role of the military, the church, educational institutions, and nationalism. Prerequisites: 4 hours at 300 level. Latin American Studies coursework must be taken from faculty. Writing emphasis course. (Same as Latin American Studies 452.)

217 Spanish Literature in English Translation (3) From the Golden Age, Don Quijote, the plays and poetry of Lope de Vega, and Cervantes to the works of Lorca, Ortega, and Cola. No foreign language or major requirement. Prerequisites: 3 hours of Latin American Studies courses or consent of the instructor.

230 Transnational Grammer Review and Reading (3) A review of grammar rules, vocabulary selection, and comprehension and sentence construction. Available form major credit. 1 hour lecture, 2 hours screen- and 1 hour discussion. Writing emphasis class.

210 Public Speaking (3) Preparation and delivery of arguments, projects, and speeches. Prereq: Spanish 325 or equivalent or written consent of the instructor.

240 Business and Professional Communication (3) Basic principles of communication within organizations and to external clients. Includes a variety of topics from communication breakdowns and mental models, to organizational and cultural dimensions. Prerequisite: 3 hours of Spanish or Latin American Studies courses or consent of the instructor.

270 Argumentation and Debate (3) Reasoned decision making in the public sphere. Focuses on critical thinking, reasoning, and evaluating the discourse of others. Prerequisite: 3 hours of Spanish or Latin American Studies courses or consent of the instructor.

301 Spanish for Students of Other Romance Language (3) Elementary course in the Spanish language with a strong background in another Romance language. Designed for students majoring or minoring in Spanish and American students. Prereq: 3 hours at 300 level in another Romance language or equivalent.

321 Intermediate Composition and Grammar (3) Develops writing and grammar skills. Prerequisite: 320 or 345-346 or equivalent. Prerequisite: 3 hours of Latin American Studies courses or consent of the instructor.

325 Intermediate Spanish Transition (3) Provides instruction in Spanish grammar, vocabulary, and listening comprehension. Focuses on theoretical and practical listening skills. Available from major credit. 1 hour lecture, 2 hours screen- and 1 hour discussion. Writing emphasis class.

359 Capstone Colloquium in Spanish (3) An integrative experience focusing on a broad range of issues and topics that are relevant to the Spanish-speaking world and also involves those who specialize in Hispanic Studies. Prerequisite: 335 and 336 or equivalent.

360 Latin American Film and Culture (3) Explores the ways in which Latin American films and videos from Latin America have been used to make European and US audiences aware of the complexity of Latin America. Prerequisites: 335 and 336 or equivalent.

320 Communication and Society (3) Study of communication as a social process, message construction, receiver variables.

330 Numerical Communication (3) Exploration of non- verbal communication from human communication perspective: signs and symbols, and contexts of communication. Diagnoses, research strategies, and theoretical approaches.

335 Aspects of Spanish Literature (3) Introduction to Latin American literature. May be repeated with consent of instructor. 3 semester hours (3 credit hours).
492 Off-Campus Study ('1-15) See description of major concentration. Selected reading and discussion in the area of speech communication to be determined by the student in consultation with supervising faculty member and Department Chair, and prior to registration (see Department for proposal deadlines). May be repeated to a maximum of 15 hours.

491 Foreign Study ('1-15) See description of major concentration. May be repeated to a maximum of 15 hours. Department prior to registration (see Department for proposal deadlines).

497-498 Senior Honors Thesis ('3, '3) Required of students enrolled in the honors program. Admission with the consent of the Department.

493 Independent Study ('1-15) See description of major concentration. Selected readings/research in an area of speech communication to be determined by the student in consultation with supervising faculty member and Department Chair, and prior to registration (see Department for proposal deadlines). May be repeated to a maximum of 15 hours.

SPORT AND PHYSICAL ACTIVITY (954)

311 Coaching Football ('1) Theoretical and practical application of various coaching techniques in the preparation of the team for competition. Personal development, team concepts and techniques, and individual and team motivation. Prerequisite: Consent of instructor.

390 Evidence and Argumentation (3) Concepts of evidence in public controversies, sources and types of evidence, and evidence presentation in legal, judicial, and public debate contexts. Prerequisites: Consent of instructor.

413 Coaching of Track and Field (1) Coaching methods and training techniques for various track and field events, including conditioning, techniques, and training strategies. Prerequisite: Consent of instructor.

412 Coaching of Basketball (1) Individual and team fundamentals for the high school coach; conditioning, schedule making, and other business arrangements. Prerequisite: Consent of instructor.

410 Coaching of Baseball/Softball (1) Theoretical and practical application of various coaching techniques in the preparation of the team for competition. Personal development, team concepts and techniques, and individual and team motivation. Prerequisite: Consent of instructor.

380 Practicum I ('3) Supervised part-time experience at an approved site for purposes of supporting and clarifying career goals. Each hour of credit requires 40 clock hours of supervised work. Prerequisites: Approval of supervising faculty member and Department Chair. May be repeated to a maximum of 30 hours. Department prior to registration (see Department for proposal deadlines).
415 Introduction to Statistical Computing (3) Use of computer operating system commands and packages programs for statistical analysis and the management of data. Prerequisite: Credit for statistics major. Prereq: 201 or 251.

416 Regression Analysis (3) Linear regression and correlation, multiple regression, polynomial regression, selection of variables, use of dummy variables, analysis of residuals. Logistic regression and logit applications. Prerequisite: 201 or 251. E


418 Special Topics in Statistics (1-2) Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

419 History of Statistical Process Management (3) Control charts and other statistical techniques applied to manufacturing and other processes. Emphasis on understanding causes of variation. Use of statistical process control charts. Prereq: Consent of department head. E


420 Independent Study (1-6) Faculty directed study of a particular area of study. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

421 Introduction to Practical Information on Electricity, Physics, Psychology, and Instrument Engineering (3) Survey of practical information on electricity, physics, psychology, and instrument engineering as it is applied to management of business processes. Prereq: 340. E

422 Design and Analysis of Single Factor and Many-Factor Designs (3) Design and analysis of experiments. Emphasis on understanding the causes of variation. Prereq: 201 or 251. E

424 Advanced Industrial Engineering and Production (3) Techniques in design and production. Emphasis on understanding the causes of variation. Prereq: 201 or 251. E

425 Fractional Factorial and Incomplete Block Designs (2) Use of fractional factorial designs and incomplete block designs. Use of computer packages. Major writing requirement. Prereq: 330.


430-431 Principles of Play Directing (3, 3) Problems in directing. Emphasis on understanding the causes of variation. Prereq: 331 or consent of instructor. E

430-431 Principles of Practical Theatrical Design (3, 3) Fundamentals of theatrical design. Emphasis on understanding the causes of variation. Prereq: 331 or consent of instructor. E

432 Advanced Vocal and Speech (3) Breathing-centered acting techniques. Prereq: 224 or consent of instructor.


435 Structural Cabinets and Furnishings for Interior Design (3) Study and application with emphasis on character and function. Prereq: 250. Graduate credit to theatre M.F.A. students only.

436 Advanced Lighting Design (3) Advanced problems in lighting design and theory. Emphasis on practical techniques of lighting musical theatre, opera, and dance. Prereq: 260 or consent of instructor.

437 Computer Assisted Design for Stage Lighting (3) Advanced course in computer assisted design for stage lighting. Use of CAD and other design software for preparation of lighting plots and associated paperwork. Prereq: Theatre 362 or consent of instructor.

438-441 Playwriting (3-6) Advanced introduction in the writing of plays. Prereq: Consent of instructor.

439-441 Applied Designs (1-6) Faculty directed study of a particular area of design, e.g. lighting, props, costumes, scenic design, and scenery design. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

440 Textile Science (970) 220 Soft Goods Manufacturing (3) Study of textile products for apparel and interior furnishings; emphasis on the selection of fibers, yarns, fabrics, textiles and consumer habits to guide the development of products needed for particular end uses.

THEATRE (976)


219 Voice and Diction (2) Voice production for individual students. Prereq: 210. Open to all students.

221-222 Acting (1) Development of character and scene. Emphasis on improvisation and independent work. Prereq: 100-110. Open to non-majors.


429 Design and Analysis of Single Factor and Many-Factor Designs (3) Design and analysis of experiments. Emphasis on understanding the causes of variation. Prereq: 201 or 251. E

430 Advanced Scenery Technology (3) Study and practice of theatrical scenic production. Prereq: 342. Graduate credit available to Theatre M.F.A. students only.

431 Advanced Scenery Technology II (3) Study and practice of theatrical scenic production. Prereq: 342. Graduate credit available to Theatre M.F.A. students only.

432 Advanced Scenery Technology III (3) Study and practice of stage lighting for theatrical production. Prereq: 342. Graduate credit available to Theatre M.F.A. students only.


434 Advanced Scenery Technology (3) Study and practice of theatrical scenery construction. Prereq: 342. Graduate credit available to Theatre M.F.A. students only.

435 Historical Scenery Technology (3) Study and practice of theatrical scenery construction. Prereq: 342. Graduate credit available to Theatre M.F.A. students only.

407 Honors: Concentration in the Social Sciences (3) Small group studies of selected topics, issues or problems with a concentration in the social sciences. Open to all students with a GPA of 3.0 or greater. Topics vary. May be repeated.

408 Honors: Concentration in the Natural and Applied Sciences (3) Small group studies of selected topics, issues or problems with a concentration in the natural and applied sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

409 Senior Honors Seminar (1) Development and presentation of senior honors project. Prerequisite: 3.0 GPA and approval of Honors Director. May be repeated and required of all graduating students in the University Honors Program. Should be taken semester prior to the semester of graduation. Satisfactory/No Credit grading only.

410 Independent Study (1-15) Open to any undergraduate student. Proposals must be approved in advance. See the Director of University Honors for further information. Letter grade only.

UNIVERSITY STUDIES (984)

411 Art and Organism (3) Interdisciplinary investigations of the relationship between art and biology. Readings and classroom discussion. May be repeated. Maximum: 9 hours.

422 Women's Health (3) (Same as Health 422.) Writing-emphasis course.

425 Women's Health (3) (Same as Health 425.) Writing-emphasis course.

432 Women in the Greek and Roman World (3) (Same as Classics 322.) Writing-emphasis course.

433 Behavioral Geography (3) (Same as Geography 433.)

333 Behavioral Geography (3) (Same as Geography 433.)

530 Practicum In Urban Studies (3-6) Practicum experience, in conjunction with the Urban Studies Program, for students pursuing senior honors projects. Proposals must be approved in advance. See the Director of University Honors for further information. Letter grade only.

541 & 542 Special Topics in Urban Studies (1) Interdisciplinary approach to issues facing the city. Topics may be repeated. Maximum: 9 hours.

543 Sociology and Society (3) Sociology and social problems with a concern for the social sciences and social issues. Sociology 341 may be repeated. May be taken by graduate students with consent of instructor. May be repeated and required of all graduating students in the University Honors Program. Satisfactory/No Credit grading only.

544 Women and Social Problems (3) Interdisciplinary study of the role of women in society. Major topics include women's legal and political status, the emergence and development of women's roles in the arts and sciences, and women's role in industrial and post-industrial American society. Writing-emphasis course.

549 Marriage and Family, Roles and Relationships (3) (Same as Family Studies 205.)

550 Emergence of the Modern American Woman (3) Role of women in the development of American civilization and culture. Major topics include women's legal and political status, the emergence and development of women's roles in the arts and sciences, and women's role in industrial and post-industrial American society. Writing-emphasis course.

559 Women and Religion (3) (Same as Religious Studies 459.)

560 Women in Music (3) (Same as Music History 360.)

563 Women in American Literature (3) (Same as English 363.)

565 Women in the Classics (3) (Same as Classics 365.)

567 Women and Public Health (3) An examination of recent changes in the laws affecting women and a study of the role of women in contemporary American politics.

568 Women and Popular Culture (3) An examination of the changing role of women in popular-culture contexts: popular music, popular magazines, commercial culture, commercial culture. A team-taught course with guest lecturers and student project work.

576 Gender in Society (3) (Same as Sociology 376.)

577 The Concept of Women (3) (Same as Philosophy 377.)

578 Philosophy of Feminism (3) (Same as Philosophy 378.)

580 Women in the Greek and Roman World (3) (Same as Classics 380.) Writing-emphasis course.

580 Topics in Women's Studies (3) Content varies. May be repeated.

581 Bio-Risk Disclosure: Implications for Education and Counseling (3) (Same as Educational and Counseling Psychology 410.)

583 Men Writing in English (9) (Same as English 423.)

585 Women's Health (3) (Same as Health 425.)

587 Women in European History (6) (Same as History 435.) Writing-emphasis course.

588 Portrayal of French Women (6) (Same as French 436.)
434 Psychology of Gender (3) (Same as Psychology 434.) Writing-emphasis course.

453 Women in American History (3) (Same as History 453.) Writing-emphasis course.

466 Rhetoric of the Woman's Rights Movement to 1930 (3) Historical and critical study of public addresses in the campaign for women's rights in the United States from the 1930s through the 1950s. (Same as Speech Communication 466) Writing-emphasis course.

469 Sexuality and Cinema (3) Explores issues surrounding sexuality, gender and cinema from a feminist perspective. (Same as Cinema Studies 469.)

476 Rhetoric of the Contemporary Feminist Movement (3) Historical and critical study of rhetoric in the campaign for women's rights in the United States from the 1940s to the present. (Same as Speech Communication 476) Writing-emphasis course.

483 African-American Women in American Society (3) (Same as African and African-American Studies 483.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15) Registration by consent of chair of Women's Studies.