Courses of Instruction

Following certain course descriptions in this catalog are the designations: F, S, Sp, Su, A-O, A-E, E. These indicate the semesters Fall, Spring, Summer, Alternate Odd, Academic Year, Alternate Even Academic Years, or are indicated as an option in which a course is normally offered and are intended as an aide to students planning their program of study.

ACCOUNTING (009)

371 Principles of Financial Accounting (3) Introduction to financial accounting with emphasis on the role of financial statements in decision making. Prerequisite to all other courses in Accounting.


303 Cost and Management Accounting (3) Analysis of cost control, inventory valuation, cost of goods sold, absorption costing, and financial reporting. Prereq: 311.

341 Accounting Information Systems (3) Develop-ment and use of accounting information systems for collection, organization, and distribution of economic information about organizations for internal and external decision making. Prereq: 311.


ADVERTISING (012)


345 Advertising Research Methods (3) Secondary data and primary research techniques for advertising decisions. Prereq: 250 and Statistics 201.

350 Advertising Creative Strategy (3) Basic concepts of creative strategy with intensive practice in developing write-up, daily and weekly plans, and judging creative work. Prereq: 250. Communica-tion 100 or Sewich Communication 100.


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

491 Advertising Practicum (1) Experience in a func-tional area of advertising. Ten hours laboratory each week. May be repeated once. Prereq: Permission of the major in the Department of Advertising. G, S.

492 Advertising Practicum (1) 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 with an emphasis on issues as traditional African societies, the institu-tion of slavery, the development of African-American culture, the beginnings of African-American politics, and society, and the Civil War and Reconstruction.

202 Introduction to African-American Studies (3) Multidisciplinary approach to the African-American experience from the Civil War period onward which between such issues as traditional African societies, the institu-tion of slavery, the development of African-American culture, the beginnings of African-American politics, and society, and the Civil War and Reconstruction.


310 Introduction to African-American Studies (3) Multidisciplinary approach to the study of African-American experience from the Civil War period onward which between such issues as traditional African societies, the institu-tion of slavery, the development of African-American culture, the beginnings of African-American politics, and society, and the Civil War and Reconstruction.

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

316 Caribbean Cultures and Societies (3) Same as Sociology 316.

319 Caribbean Resource Management (3) Same as Environment 319.

353 Topics in African-American Music (3) Same as Music 353.

354 African Studies (3) Same as Anthropology 354.

360 Caribbean Cultures and Societies (3) Same as Sociology 360.

361 Caribbean Resource Management (3) Same as Environment 361.


363 Topics in African-American Religion (3) Same as Religious Studies 363.
techniques of animal nutrition and animal husbandry practices and applications. The course is intended for students planning to pursue careers in the animal science field.

430 Independent Study in Animal Science (1-3) Approved supervised study in areas not normally presented in the curriculum. Offered by department Head. May be repeated for a maximum of 6 credits. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits. Prerequisites: Consent of instructor.

431 Ethnographic Research (3) Conceptual and practical exploration of methods and techniques used to identify and describe anthropological cultures. Course is designed to emphasize hands-on experience with applied research. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

432 Cultural Ecology (3) Concepts and methods in cultural ecology. Emphasis on development and implementation of research project. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits.

435 Historical Archaeology Laboratory (3) Laboratory component for courses in historical archaeology. Designed to provide hands-on experience in archaeological research. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

440 Cultural Ecology (3) Concepts and methods in cultural ecology. Emphasis on development and implementation of research project. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits.

450 Anthropology of Religions (3) Same as Religious Studies 360. Survey of world religions as expressed in their different cultures. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

451 Linguistic Anthropology (3) Study of the impact of linguistic concepts on the way that humans organize and perceive the world. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

452 Fieldwork in Anthropology (3) Preparation in the design and execution of an original anthropological research project. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

453 Ethnographic Research (3) Conceptual and practical exploration of methods and techniques used to identify and describe anthropological cultures. Course is designed to emphasize hands-on experience with applied research. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

454 American Indian Studies (3-6) Same as African-American Studies 361 or Africano-American Studies 363. Survey of Native American cultures. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits.

455 Social Science Research Methods (3) Introduction to research methods and data analysis techniques used in social science research. Prerequisites: Consent of instructor. May be repeated for a maximum of 6 credits.

456 Historical Archaeology Laboratory (3) Laboratory component for courses in historical archaeology. Designed to provide hands-on experience in archaeological research. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

457 Fieldwork in Anthropology (3) Preparation in the design and execution of an original anthropological research project. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

460 Prehistory (3) Prehistoric cultures of North America from initial occupation of the continent to the contact period. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

462 Principles of Cultural Anthropology (3) Exploration and illustration of major concepts, theories, and methods in cultural anthropology, with application to a specific area. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

463 The Arctic (3) Same as Geography 363. Physical and cultural geography of the Arctic, including the history and culture of indigenous peoples. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.

464 African History (3) African history from precolonial times to the present. Prerequisites: Consent of instructor. May be repeated for a maximum of 9 hours.
101 Introduction to the Built Environment (3) Scope and definition of the built environment in relation to contemporary society, building industry, and allied design professions. Architectural design as a creative process. Orientation to courses and programs of the school. Coreq: 171. F

495 Human Paleontology (4) Intensive survey of the human fossil record from the earliest hominid remains to the earliest origins of modern human form. Prereq: 110.

493 Independent Study (1-15)

492 Off-Campus Study (1-15)

491 Foreign Study (1-15)


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

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

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

164 Courses of Instruction

231 Computer Applications in Design I (3) Introduction to computer systems—software and hardware with applications to analyzing building designs. Introduction to drafting, three-dimensional modeling, and desktop publishing.

215 Architectural History/Theory I (3) Introduction to architectural form, ideas and traditions in a lecture/discussion format. Prereq: M. Arch Admission.

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

182 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 developed in the studio (1 credit hour studio).

180 Introduction to Architecture (2) Introduction to the fundamental concepts of architecture. May be repeated. Maximum 6 hours.


122 Drawing and Abstraction (2) Exploration of drawing as a means of visual thinking and method of communication; addressing processes of abstraction and transformation of different media and techniques of representation. Drawings based on observation, abstraction, and transformation. Coreq: 172.

121 Drawing and Composition (2) Explorations of drawing as a means of visual thinking and method of communication; addressing processes of abstraction and transformation of different media and techniques of representation. Drawings based on observation, abstraction, and transformation. Coreq: 171.

111 Architecture and the City (3) Explorations of the role of architecture and urban design in shaping the built environment. Themes will include collective involvement.

10 Introduction to Architecture (3) Principles of visual design, visualization, and technical representation. Exploration of visual thinking through analysis, introduction of terminology and vocabulary. Coreq: 172. F


11 Drawing and Perception (2) Exploration of drawing as a means of visual thinking and method of communication; addressing processes of abstraction and transformation of different media and techniques of representation. Drawings based on observation, abstraction, and transformation. Coreq: 172. Sp

281 Principles of Architectural Form (3) Principles of architectural form in engineering building construction and order. Outline of design systems which includes consideration of size, shape, masses and colors, (1 credit hour seminar and 5 credit hours studio). Prereq: 182 and 3 hours studio.

282 Principles of Architectural Design (3) Principles of architectural design in engineering building construction and order. Outline of design systems which includes consideration of size, shape, masses and colors, (1 credit hour seminar and 5 credit hours studio). Prereq: 182 and 3 hours studio.

32 Material and Methods of Construction (3) Properties of materials and methods of construction and their relation to construction methods and detailing. Theory of design for materials and methods in a multidisciplinary design process. Prereq: 133. Sp

31 Architectural Structures (3) Structure properties including: materials under stress and stress conditions, properties of cross-sections of structural materials, and analysis of structurally independent, braced, framed, and simple assemblies. Pre-req: 231 and 232. F

32 Structural Analysis (3) Continuation of analysis and design of simple structures of steel, wood and concrete using advanced mathematical and statistical methods of structural analysis. Use of computer and computer-aided design tools. Pre-req: 231 and 150.

34 Advanced Architectural Structures (3) Precise and accurate design in multiple materials and forms using advanced mathematical and statistical methods of structural analysis. Use of computer and computer-aided design tools. Pre-req: 332 or equivalent.


31 Principles of Environmental Control I (3) Introduction to heating, ventilation, and air-conditioning systems, including passive and active solar energy systems, plumbing and fire protection systems. Pre-req: 231 and 232. F

31 Principles of Environmental Control II (3) Introduction to heating, ventilation, and air-conditioning systems in buildings. Pre-req: 180 and Arch. Admission.

271 Architectural Design I (6) Design synthesis. Integration of design development and development of building concepts. Pre-req: 272. F

272 Architectural Design II (6) Studies in architectural issues. The role of shapes, materials, environment, structure and scale as determinants of spatial form explored through a series of design projects covering modern techniques from thermal and visual computational design processes, documentation, and detailing. Theory of design in architectural presentation, use of computer-aided designs, and visual communication. Pre-req: Architectural Principles. Pre-req: 272. F

261 Principles of Architectural Form (3) Principles of architectural form in engineering building construction and order. Outline of design systems which includes consideration of size, shape, masses and colors, (1 credit hour seminar and 5 credit hours studio). Prereq: 182 and 3 hours studio.

262 Principles of Architectural Design (3) Principles of architectural design in engineering building construction and order. Outline of design systems which includes consideration of size, shape, masses and colors, (1 credit hour seminar and 5 credit hours studio). Prereq: 182 and 3 hours studio.
483 Architectural Development (3) Principles and practice of the architect as innovator. Impact of economics, finance, construction processes and methods on development of new projects. Open to all students.

492 Off-Campus Study (1-15) Individual problems. Prerequisite: Consent of instructor. May be repeated. Maximum 12 hours. (Same as Anthropology 482.)

493 Independent Study in Architecture (1-6) Faculty-initiated courses. Topics vary. May be repeated. Maximum 12 hours.

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

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

496 Art Courses in Krakow (6) Study meets in Krakow, Poland. Design studies responding to specific conditions in various architectural styles and methods in Krakow. Prerequisites: Consent of instructor. May be repeated. Maximum 12 hours.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>212</td>
<td>Drawing II: Life Drawing</td>
<td>Development of drawing and observation skill with special emphasis on structure and dynamic of the human figure and figure in environment. Prereq: 211. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>211</td>
<td>Drawing I: Basic Drawing</td>
<td>Development of basic drawing skills including figures and objects in perspective. Prereq: 211. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>350</td>
<td>Graphic Design Portfolio Review</td>
<td>Review of prior work in graphic design. Successful completion required prior to registration for junior and senior courses.</td>
</tr>
<tr>
<td>352</td>
<td>Intermediate Graphic Design I</td>
<td>Theory and techniques of visual problem-solving as applied to advanced applications of graphic design. Prereq: 351 with a grade of C or better. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>351</td>
<td>Intermediate Graphic Design II</td>
<td>Investigation of sign, symbols, marks and identity systems. Prereq: Art Design/Graphic 351 with a grade of C or better.</td>
</tr>
<tr>
<td>354</td>
<td>Color Illustration</td>
<td>Flat and process color media and production techniques as applied to product and editorial illustration. Prereq: 254 and successful completion of any portfolio review.</td>
</tr>
<tr>
<td>356</td>
<td>Graphic Design Production</td>
<td>Traditional and computer-generated techniques for the production of print media in graphic design. Introduction to computer systems, software and techniques.</td>
</tr>
<tr>
<td>353</td>
<td>Advanced Graphic Design</td>
<td>Theory and techniques of visual problem-solving as applied to advanced applications of graphic design. Prereq: 352 with a grade of C or better.</td>
</tr>
<tr>
<td>355</td>
<td>Graphic Design Professional Seminar</td>
<td>Professional practices including client relationships; design management and business practices. Assembly, organization and editing of the professional portfolio. Prereq: or Coreq: 452.</td>
</tr>
<tr>
<td>405</td>
<td>Computer Enhanced Graphic Design</td>
<td>Exploration of new technologies and their significance to graphic design. Prereq: 351, 356 with a grade of C or better and consent of instructor. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>404</td>
<td>Ceramic Enhanced Graphic Design</td>
<td>Exploration of new technologies and their significance to graphic design. Prereq: 352. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>403</td>
<td>Editorial Illustration</td>
<td>Media and techniques as applied to editorial illustration. Prereq: 254 and successful completion of any portfolio review.</td>
</tr>
<tr>
<td>401</td>
<td>Special Topics in Graphic Design</td>
<td>Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.</td>
</tr>
<tr>
<td>402</td>
<td>Ceramics: Special Topics</td>
<td>Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>396</td>
<td>Airbrush Painting</td>
<td>Techniques of airbrush painting; skills and creative applications emphasized. Prereq: 211.</td>
</tr>
<tr>
<td>395</td>
<td>Ceramics: History Seminar</td>
<td>Examination of the history of ceramics through lectures and student presentations. (Does not apply toward art history requirement.) Prereq: 320.</td>
</tr>
<tr>
<td>490</td>
<td>Special Topics (3)</td>
<td>May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>493</td>
<td>Independent Study (1-15)</td>
<td>Prereq: Consent of instructor. May be repeated. Maximum 12 hours.</td>
</tr>
<tr>
<td>495</td>
<td>Visiting Artist Seminar (2)</td>
<td>Study and discussion of contemporary art issues conducted by different visiting artists each semester. Prereq: 301. F, Sp, Su.</td>
</tr>
<tr>
<td>459</td>
<td>Special Topics in Graphic Design</td>
<td>Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.</td>
</tr>
<tr>
<td>456</td>
<td>Graphic Design Practicum (3-12)</td>
<td>Practical work experience in the graphic design field. Only by pre-arrangement with the department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.</td>
</tr>
<tr>
<td>455</td>
<td>Graphic Design Professional Seminar</td>
<td>Professional practices including client relationships; design management and business practices. Assembly, organization and editing of the professional portfolio. Prereq: 452.</td>
</tr>
<tr>
<td>444</td>
<td>Graphic Design Center Practicum (2-3)</td>
<td>Practical work experience in a student-managed, on-site studio. Prereq: 444. May be repeated. Maximum 6 hours.</td>
</tr>
<tr>
<td>419</td>
<td>Special Topics in Drawing and Painting (3)</td>
<td>Student or instructor-initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.</td>
</tr>
<tr>
<td>411</td>
<td>Drawn Field</td>
<td>Examination of the history of ceramics with emphasis on Europe from prehistory through the Middle Ages. Study grounded in reading, writing and discussion. Writing-emphasis course.</td>
</tr>
</tbody>
</table>
ART PRINTMAKING (132)

181 Introduction to Studio Art: Various Media (3) Individual artists create works in various artistic disciplines. For non-major only. Consent may be required. May not be repeated. Maximum 12 hours.

262 Intergalactic (1) Intergalactic printing in traditional and contemporary techniques of etching, softground, drypoint, aquatint, and related methods. Prerequisite: 101.

245 Lithography (2) Stone and aluminum plate lithography. Emphasis on technical problems, evaluation of results, and mastery of techniques. Prerequisites: crayon, tusche, transfer methods, state proofs and photolithography 131.

246 Screen Printing I (2) Screen printing as a fine art medium including development and application of various techniques to fabric. May be repeated. Maximum 12 hours.

250 Metal Design (2-4) Beginning to intermediate. May be repeated. Maximum 12 hours.

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

ARACTER SCULPTURE (143)

191 Introduction to Studio Art: Various Media (3) Individual artists create works in various artistic disciplines. For non-major only. Consent may be required. May not be repeated. Maximum 12 hours.

241 Sculpture I (3) Problems which explore basic techniques for the sculptural use of two or more distinctive materials. Prerequisites: crayon, tusche, transfer methods, state proofs and photolithography 131. May be repeated. Maximum 8 hours.

242 Life Sculpture (3) Modelling in clay and wax. Working from human models, the sculptor concentrates on the anatomical and material handling of the medium. Prerequisite: 101, or consent of instructor. Maximum 6 hours.

243 Metal Casting I (3) Use of bronze sand casting techniques. May include moulding, sand casting, and sand moulding. Prerequisite: 101, or consent of instructor. Maximum 6 hours.

244 Metal Casting II (3) Exploration and development of casting techniques inintaglioprinting including work from zinc, photo-plates. Prerequisites: 264 and 360, or consent of instructor. Maximum 8 hours.

245 Mixed Media Sculpture I (3) Use of two or more distinctive materials and a variety of sculptural techniques, geared to create dimensional forms. May include molding, carving, forging, and mixed media. Prerequisite: 241. Maximum 6 hours.

246 Mixed Media Sculpture II (3) Further exploration and development of sculptural concepts and materials. Prerequisite 245 and 340 or consent of Instructor. May be repeated. Maximum 8 hours.

247 Mixed Media Sculpture Portfolio Review (0) Review of prior work in sculpture. Successful completion required prior to registration for junior and senior courses. Prerequisite: History 172 and 173 with a grade of C or better. Satisfaction of credit only.

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

249 Individual Problems (0-6) Individual initiated course offered at convenience of department. Prerequisite: 101 and determined by department. Consent of instructor may be required. May be repeated. Maximum 9 hours.

250 Metal Design (2-4) Beginning to intermediate. May be repeated. Maximum 12 hours.

251 Life Sculpture Portfolio Review (0) Review of prior work in sculpture. Successful completion required prior to registration for junior and senior courses. Prerequisite: History 172 and 173 with a grade of C or better. Satisfaction of credit only.

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

ART SCULPTURE (143)

191 Introduction to Studio Art: Various Media (3) Individual artists create works in various artistic disciplines. For non-major only. Consent may be required. May not be repeated. Maximum 12 hours.

241 Sculpture I (3) Problems which explore basic techniques for the sculptural use of two or more distinctive materials. Prerequisites: crayon, tusche, transfer methods, state proofs and photolithography 131. May be repeated. Maximum 8 hours.

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

249 Individual Problems (0-6) Individual initiated course offered at convenience of department. Prerequisite: 101 and determined by department. Consent of instructor may be required. May be repeated. Maximum 9 hours.

ASIAN LANGUAGES (144)

131-132 Elementary Chinese I,11 (3,3) Must be taken in sequence. F, Sp

151-162 Elementary Japanese I,11 (3,3) Must be taken in sequence.

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

131-132 Elementary Chinese I,11 (3,3) Must be taken in sequence.

131-132 Elementary Chinese I,11 (3,3) Must be taken in sequence.

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

ART SCULPTURE (143)

191 Introduction to Studio Art: Various Media (3) Individual artists create works in various artistic disciplines. For non-major only. Consent may be required. May not be repeated. Maximum 12 hours.

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246 Mixed Media Sculpture II (3) Further exploration and development of sculptural concepts and materials. Prerequisite 245 and 340 or consent of Instructor. May be repeated. Maximum 8 hours.

247 Mixed Media Sculpture Portfolio Review (0) Review of prior work in sculpture. Successful completion required prior to registration for junior and senior courses. Prerequisite: History 172 and 173 with a grade of C or better. Satisfaction of credit only.

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

249 Individual Problems (0-6) Individual initiated course offered at convenience of department. Prerequisite: 101 and determined by department. Consent of instructor may be required. May be repeated. Maximum 9 hours.

490 Wood (2-4) Intermediate to advanced. May be repeated. Maximum 12 hours.

491 Chinese and Japanese Foreign Study (1-15) Prereq : Consent of instructor. May be repeated. Maximum 12 hours.

492 Japanese Foreign Study (1-15) Prereq : Consent of instructor. May be repeated. Maximum 12 hours.

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

495 Visiting Artist Seminar (2) Study and discussion of problems which explore basic techniques for the sculptural use of two or more distinctive materials. Prerequisites: crayon, tusche, transfer methods, state proofs and photolithography 131. 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 problems which explore basic techniques for the sculptural use of two or more distinctive materials. Prerequisites: crayon, tusche, transfer methods, state proofs and photolithography 131. May be repeated. Maximum 8 hours.

593 Advanced Chinese II (4,4) May be repeated. Maximum 12 hours.

594 Advanced Japanese II (4,4) May be repeated. Maximum 12 hours.

598 Individual Problems (0-6) Individual initiated course offered at convenience of department. May be repeated. Maximum 8 hours.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.

601-602 Elementary Chinese I,11 (5,5) Must be taken in sequence.
169

ASIAN STUDIES (145)
162-163 Asian Civilizations (3,3) Conquista study of development of religions, social institutions, high culture in India, China, Japan, and the Islamic World. Core course in the World Cultures and Literatures Writing emphasis course. Coreq.
121-122 Elementary Modern Standard Arabic I, II (5,5) Literary Arabic, the language of the press, broadcasting, and formal situations. Meets three times a week with instructor and two with native informants. In addition to Arabic language lab. Must be taken in sequence. Prereq.: 121-122 or equivalent level.
141-142 Elementary Modern Hebrew I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.
161-162 Elementary Persian (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.
223-224 Intermediate Modern Standard Arabic I, II (5,5) Literary Arabic, the language of the press, broadcasting, and formal situations. Meets three days a week with instructor and two with native informants in addition to Arabic language lab. Must be taken in sequence. Prereq.: 121-122 or equivalent level.
241-242 Intermediate Modern Hebrew I, II (4,4) Taped language program. Prereq.: 141-142 or equivalent level or consent of instructor. Must be taken in sequence.
243-244 Intermediate Persian I, II (4,4) Taped language program. Prereq.: 161-162 or equivalent or consent of instructor. Must be taken in sequence.
332 Classical Islam (3) Same as Religious Studies 332.
333 Islam in the Modern World (3) Same as Religious Studies 333.
471 Selected Topics in Asian Studies (3) Content varies. May be repeated. Maximum 6 hours.
491 Foreign Study (1-15)
492 Independent Study (1-15)

ASTRONOMY (150)
191-192 Introductory Astronomy (4,4) Survey of the composition, structure, and dynamics of the universe with an introduction to the basic vocabulary of astronomy and astrophysics. Topics include: mathematical and physical foundations; representation of motion; kinematics and dynamics; observations and interpretation; the origin and evolution of the universe; the origin of black holes and neutron stars; the birth of stars and planet formation; galaxy evolution and the origin of the cosmic microwave background. Coreqs.: Mathematics 314, 315 or permission of instructor.
193-194 Survey of Modern Astronomy (4,4) Survey course, with accompanying laboratory, covering the composition, structure and dynamics of the universe with an introduction to the basic vocabulary of astronomy and astrophysics. Topics include: mathematical and physical foundations; representation of motion; kinematics and dynamics; observations and interpretation; the origin and evolution of the universe; the origin of black holes and neutron stars; the birth of stars and planet formation; galaxy evolution and the origin of the cosmic microwave background. Coreqs.: Mathematics 314, 315 or permission of instructor.
291-292 Intermediate Astronomy (4,4) Survey course, with accompanying laboratory, covering the composition, structure and dynamics of the universe with an introduction to the basic vocabulary of astronomy and astrophysics. Topics include: mathematical and physical foundations; representation of motion; kinematics and dynamics; observations and interpretation; the origin and evolution of the universe; the origin of black holes and neutron stars; the birth of stars and planet formation; galaxy evolution and the origin of the cosmic microwave background. Coreqs.: Mathematics 314, 315 or permission of instructor.
490 Special Topics in Astronomy (1-3) Topics of current interest in Astronomy and Astrophysics. May be repeated for credit with consent of department. Maximum 9 hours.

AUDIOLINGUISTICS AND SPEECH PATHOLOGY (150)
399 Speech for Foreign Students (3) Sounds and intonation patterns of American English and relation of vocabulary, pronunciation, and intonation to the vocabulary, pronunciation, and intonation. Must be taken with consent of instructor. Prereq.: 126 or equivalent.
399A Speech for Foreign Students (3) Sounds and intonation patterns of American English and relation of vocabulary, pronunciation, and intonation to the vocabulary, pronunciation, and intonation. Must be taken with consent of instructor. Prereq.: 126 or equivalent.
293 Introduction to Speech and Language Disorder (3) Speech and language development in children: observation of normal and abnormal development; speech, language and hearing conservation. Prereq.: 350.
294 Clinical Practice in Speech-Language Pathology (1-3) Practical experience in speech and language disorders. Prereq.: 350 or consent of instructor.
394A Clinical Practice in Speech-Language Pathology (1-3) Practical experience in speech and language disorders. Prereq.: 350 or consent of instructor.
398 504 Voice Disorders (3) Etiology, diagnosis, and treatment of voice disorders. Prereq.: 350 or consent of instructor.
399A Speech for Foreign Students (3) Sounds and intonation patterns of American English and relation of vocabulary, pronunciation, and intonation to the vocabulary, pronunciation, and intonation. Must be taken with consent of instructor. Prereq.: 126 or equivalent.
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398 504 Voice Disorders (3) Etiology, diagnosis, and treatment of voice disorders. Prereq.: 350 or consent of instructor.
399A Speech for Foreign Students (3) Sounds and intonation patterns of American English and relation of vocabulary, pronunciation, and intonation to the vocabulary, pronunciation, and intonation. Must be taken with consent of instructor. Prereq.: 126 or equivalent.

BIOCHEMISTRY AND CELLULAR AND MOLECULAR BIOLOGY (189)
311-312 Biochemistry I (4,4) Fundamentals of human physiology, primarily involving the interactions of cellular and organism/microorganism interactions. Credit may not be applied toward both BCMB major. Prereq.: One year of college level
312 Chemistry (3) (Same as EEB 240)
313-314 Biochemistry II (4,4) Biochemistry, biochemical methods, principles of cellular and molecular biology, biochemistry, biochemical techniques. Prereq.: 311 or equivalent.
315-316 Cell and Molecular Biology (4,4) Topics in cell and molecular biology. Prereq.: 311 or equivalent.
317-318 Intermediate Biochemistry (4,4) Biochemistry, biochemical methods, principles of cellular and molecular biology, biochemistry, biochemical techniques. Prereq.: 311 or equivalent.
319-320 Cell and Molecular Biology (4,4) Topics in cell and molecular biology. Prereq.: 311 or equivalent.
311-312 Biochemistry I (4,4) Fundamentals of human physiology, primarily involving the interactions of cellular and organism/microorganism interactions. Credit may not be applied toward both BCMB major. Prereq.: One year of college level
312 Chemistry (3) (Same as EEB 240)
313-314 Biochemistry II (4,4) Biochemistry, biochemical methods, principles of cellular and molecular biology, biochemistry, biochemical techniques. Prereq.: 311 or equivalent.
315-316 Cell and Molecular Biology (4,4) Topics in cell and molecular biology. Prereq.: 311 or equivalent.
317-318 Intermediate Biochemistry (4,4) Biochemistry, biochemical methods, principles of cellular and molecular biology, biochemistry, biochemical techniques. Prereq.: 311 or equivalent.
319-320 Cell and Molecular Biology (4,4) Topics in cell and molecular biology. Prereq.: 311 or equivalent.
311-312 Biochemistry I (4,4) Fundamentals of human physiology, primarily involving the interactions of cellular and organism/microorganism interactions. Credit may not be applied toward both BCMB major. Prereq.: One year of college level
312 Chemistry (3) (Same as EEB 240)
313-314 Biochemistry II (4,4) Biochemistry, biochemical methods, principles of cellular and molecular biology, biochemistry, biochemical techniques. Prereq.: 311 or equivalent.
315-316 Cell and Molecular Biology (4,4) Topics in cell and molecular biology. Prereq.: 311 or equivalent.
317-318 Intermediate Biochemistry (4,4) Biochemistry, biochemical methods, principles of cellular and molecular biology, biochemistry, biochemical techniques. Prereq.: 311 or equivalent.
319-320 Cell and Molecular Biology (4,4) Topics in cell and molecular biology. Prereq.: 311 or equivalent.

492 Off-Campus Study (1-6) No more than two credits of 492 will count toward the Biological Sciences: BCMB major. Satisfactory/No Credit grading.

480 Physiology of Exercise (3) (Same as Physical Education 480.)

465 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. Prereq: Biology 220.

462 Junior/Senior Seminar (1) Lecture/discussion on the application of biochemical principles and techniques in the research, clinical, diagnostic and therapeutic environment. May not be used toward requirements for major. May be repeated. Prereq: 410.

449 Laboratory in Physiology (2) Prereq or coreq: 440.

421 Cell and Tissue Structure and Function (4) Study of animal cells and tissues at light and electron microscope levels. Prereq: Biology 210. 2 hrs and 2 labs.

420 Advanced Topics in BCMB...moral implications, and future development of technologies. Written reports required. Prereq: 410. SP Writing-emphasis course.

170 Design Apprenticeship (1) Exposure to design in biosystems engineering, through apprenticeship with senior design teams in Biosystems Engineering 402.

103 Introductory Design and Fabrication (1) Experience with fundamental tools, machinery and systems of biosystems engineering, through lab experiences, design competition, and fieldtripsto production facilities. 2 hour lab. F

BIOSYSTEMS ENGINEERING (044)

101-102 Introductory Design and Fabrication (1,1) Presentations by faculty and students. Open to freshmen and sophomores. Satisfactory/No Credit only. May be repeated.

140 Organization and Function of the Cell (4) Topics include basic cell and tissue biochemistry, cellular differentiation and growth, cell-cell interaction and communication, endocrine and paracrine signaling, and basic stress response networks. Study of cellular and molecular aspects of stress response and disease is also included. Prereq: 101-102.

240 General Genetics (4) Classical and modern principles of heredity. Topics include meiosis and recombination; population genetics; linkage; natural and artificial selection; inbreeding and outbreeding; and the role of genetic variation in evolution. Prereq: 202-203.

243 Material and Energy Flows in Biological Systems (3) Introduction to mass and energy balances, and enzyme and membrane processes. Problem formulation, solving and reporting. Design content. Prereq: Introductory physics (or BE 121 and 131), calculus, and thermochemistry. SP

203 Transport Processes in Biological Systems (3) Analysis of biothermalsystemswithemphasisonthermal,convection, and diffusion heat transfer, and mass transfer. Prereq: Nuclear Engineering 203 or Mechanical Engineering 347. SP

111 Processing Food and Biological Materials (3) Application of basic engineering sciences to processing and handling of biological materials. Courses in food processing, chemical engineering, and environmental engineering. Prereq: Introduction to engineering design or equivalent. SP
322 Plant Anatomy (3) Cells, tissues, and organs; their development in vegetative and reproductive structures. Labs include: ploidy structure, gene expression and regulation, flower development, cross-pollination, seed production, cell and tissue differentiation, pollination, fruit and seed development. Labs include isolation of DNA and RNA, molecular techniques, analysis and manipulation of plant DNA, cloning and transformation. Prerequisites: 140 and 142 with grades of A or B and consent of instructor.

310 Radio-TV News (3) Writing and reporting for electronic media. Lecture and laboratory course providing students with experience as reporters for a news media program. Includes an overview of electronic news gathering equipment and techniques as well as video editing. Prerequisites: 310.

320 Radio-TV Advertising and Promotion (3) Study of radio/television/cable advertising and promotion with an emphasis on writing persuasive messages-commercial, promotional, and public service. Analysis of market research data. Planning promotional campaigns. Prerequisites: Broadcasting 275.

321 Audio/Video Production (3) Emphasis on the function and operation of the primary video and audio tools to develop effective communication. Lectures and laboratory promote in studio production processes and promotion. Includes concept development, script writing, production, engineering, crew management, and producing. Prerequisites: Broadcasting 275.

420 Radio-TV Sales (3) Problems and practices of telephone, television, and cable sales. Case studies in sales and sales management; use of ratings and computer in sales presentations. Laboratory experience. Prerequisites: 275.

430 Electronic Field Production (3) Basic principles of video production and camera operation relating to message design, development, and production in a variety of settings. Includes visual and performance skills for announcers, interviewers, narrators, newscasters, and commercial production of voiceovers. Prerequisites: Broadcasting 275.

431 Audio/Video Production (3) Emphasis on the creative and technical aspects of production in radio, television, and cable. Case studies in sales and sales management; use of ratings and computer in sales presentations. Lecture and laboratory. Prerequisites: Broadcasting 275.

432 Applied Aesthetic in Audio and Video (3) Emphasis on the role of the aesthetic in relationship to effective message construction. Emphasis on the function of aesthetic and ethical considerations in the design, editing, and delivery of audio and video products. Prerequisites: Broadcasting 275.

440 Corporate Video (3) Examination of special requirements of video production for corporate communications and medical areas of video. Management, budgeting, planning, producing, and delivering projects. Prerequisites: consent of instructor.

450 Radio, Television and Society (3) Effects of electronic media on culture, social institutions, and political processes. Emphasis on the role of media in political, economic, and social areas. Analysis of media content and promotional campaigns. Prerequisites: Broadcasting 275.

460 Cable Television and Emerging Technologies (3) History and structure of the cable television industry. Cable regulation and deregulation and the implications of these policies on the future of the industry. Analysis of all network technologies including direct broadcast satellite. Lecture and laboratory television and online. Prerequisites: consent of instructor.

470 Radio and Television Programming (3) Program development and production. Program planning, organizing, and scheduling. Strategies for analyzing and designing audiences, and production of programming in broadcasting. Prerequisites: consent of instructor. Prerequisites: Broadcasting 275.
252-254 Greek and Roman Literature in English Translation (3 Credit Hours). Major elements of ancient Greece and Rome in English, with emphasis on the idea of the Roman law. Major stylistic works of the Roman period. Major works of ancient Greece. Their tension and creation of their own style. Introduction to the study of ancient literature. Major works of ancient Greece.

273 Medical and Scientific Terminology (3) Greek and Latin roots are the basis for medical and scientific terminology. Extensive practical analysis in medicine, biology, and physical science. Prerequisites: None.

323 Anthology of the Augustan Age and Early Gothic Poetry (2-3) Lyric, epic, and didactic poetry of the period. The civil wars of the Republic and the rise of the Roman Empire. The period of Augustus. The Augustan age. The period of the rise of Augustus. The Augustan age. The Augustan age. Prerequisites: None.

344 College Honors: College Scholars Studies (2-15) Designed for College Scholars working on their senior thesis or other performance. May be repeated. Maximum 16 hours.

COMMUNICATIONS (259)

101 Introduction to Mass Communications (3) Overview of the field of mass communications with emphasis on American media, their ownership, legal and social controls, audiences, media systems, government and commercial controls. The significance of this field in advertising, public relations, political influence, and money influence. Prerequisites: None.

200 Introduction to Computers and Computing (3) Basic concepts of computer hardware and software. Microcomputer systems and word processing. Programming languages and packages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: None.

291 Lower-Division Special Topics (1-3) Topics vary. Prerequisites: May be repeated. Maximum 6 hours. Prerequisites: None.

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

402 Greek Prose (3) History, philosophy, and society. Authors vary. May be repeated for credit. Maximum 9 hours. Prerequisites: None.

403 Greek Prose (3) History, philosophy, and society. Authors vary. May be repeated for credit. Maximum 9 hours. Prerequisites: None.

410 Special Topics in Classical Civilization 1-3 Topics in art, literature, and society of Greece and Rome. Prerequisites: May be repeated. Up to three times with consent of department.

411 Senior Thesis I (3) Frontiers of computer-science technology and research. Students begin writing a senior thesis. Prerequisites: 391 and completion of core curriculum. Prerequisites: May be repeated. Maximum 9 hours. Prerequisites: None.

412 Special Topics in Comparative Literature 3 Credit hours. May be repeated. Maximum 9 hours.

413 Foreign Study (1-15) See Director of Special Programs.

414 Independent Study (1-15) See Director of Special Programs.

COMPUTER SCIENCE (266)

102 Introduction to Computer Science 1-3 Basic concepts of computer hardware and software. Major computer systems and word processing. Programming languages and packages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: None.

106 Computer Organization 4 Number systems, Boolean logic, combinational and sequential circuits, digital logic design, computer arithmetic, assembly language programming, operating systems, memory and caching, stored program concepts, operating systems, operating system programming, file systems, assembly language programming, programming languages. Prerequisites: 101. 4 hour lab required.

202 Mass Communications Research Methods 3 (Same as Journalism 202) Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: Journalism 200, or Advertising 350, or Broadcasting 310, or Speech Communication 390, or consent of instructor. F, Sp

300 Theory of Computation (3) Recursive functions, Turing machines, computability, halting problems, Godel theorem. Prerequisites: 140, 160, and 311. 3 hour lab required.

403 Introduction to Scientific Computing 3 The design, analysis, and implementation of numerical algorithms to solve problems arising in the physical sciences. Students will have the opportunity to use modern numerical analysis tools for solving the efficient solution of models, and may be repeated. Maximum 9 hours. Prerequisites: None.

410 Data Structures and Algorithms 3 Breadth equivalence, data persistence, data structures, programming languages, databases, applications, and software engineering. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: 101. 3 hour lab required.

412 Special Topics in Hardware Systems 3 Topi- cal subject chosen each semester in the field of computer architecture, programming, networking, and communications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: Completion of core curriculum or consent of instructor. Prerequisites: None.

413 Special Topics in Software Systems 3 Topi- cal subject chosen each semester in the field of computer architecture, programming, networking, and communications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: Completion of core curriculum or consent of instructor. Prerequisites: None.

414 Numerical Analysis (3) Basic concepts of computer hardware and software. Major computer systems and word processing. Programming languages and packages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: None.

415 Senior Thesis II (3) Continuation of 411. Writing a senior thesis. Prerequisites: 411 and completion of core curriculum. Prerequisites: May be repeated. Maximum 9 hours. Prerequisites: None.

420 Advanced Topics in Machine Learning 3 Topi- cal subject chosen each semester in the field of computer architecture, programming, networking, and communications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prerequisites: Completion of core curriculum or consent of instructor. Prerequisites: None.

421 Numerical Analysis 3 (Same as Mathematics 471)
493 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for up to 15 hours. A maximum of 3 hours may be applied toward the major.

490 Undergraduate Seminar (1) Student oral presentations of topics related to development and working concepts of a faculty member. Elective. Prerequisite: 201. Writing emphasis course.

492 Economics Off-Campus Study (1-6) Satisfactory, No Credit grading only.

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

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

470 Aquatic Ecology (g, m) Introduction to the physio-chemical nature of inland waters with description of biotic communities and their interrelationships. Prerequisite: Chemistry 120-130 and Biology 230. 2 hours and 1 lab.

461 Special Topics in Organismal Biology (3) Evolution, ecology, biogeography, classification, and anatomy of selected animal and plant taxa. Prerequisite: Biology 250 or consent of instructor. Prerequisite: Consent of instructor.
380 Seminar (1) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No credit. 

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


<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>102</td>
<td>Engineering Fundamentals</td>
<td>Course fundamental principles of mathematics, physics, and mechanics.</td>
</tr>
<tr>
<td>261</td>
<td>Structural Analysis I (3)</td>
<td>Reactions; shear and bending moment diagrams; stress analysis; moment distribution; loadings, forces, and moments; applications in civil engineering.</td>
</tr>
<tr>
<td>205</td>
<td>Professional Development I (2)</td>
<td>Introduction to civil engineering specialties, history, and achievements. Professional responsibility, communication, and organizations.</td>
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<tr>
<td>304</td>
<td>Environmental Engineering CIVIL AND ENVIRONMENTAL (254)</td>
<td>Introduction to environmental engineering principles.</td>
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<tr>
<td>305</td>
<td>Professional Development II (1)</td>
<td>Legal and ethical considerations, professional improvement, career planning.</td>
</tr>
<tr>
<td>321</td>
<td>Materials of Construction (3)</td>
<td>Physical and mechanical properties of materials used in construction.</td>
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<td>325</td>
<td>Foundation Engineering</td>
<td>Principles of geotechnics applied to design and analysis of foundations.</td>
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<td>395</td>
<td>Hydrology (3)</td>
<td>Concept of hydrologic cycle; weather patterns; precipitation measurement and distribution, abstractions, and runoff; storm hydrographs and peak flow analysis.</td>
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<td>409</td>
<td>Special Topics (1-3)</td>
<td>Recent developments and current practice in civil and environmental engineering.</td>
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<td>418</td>
<td>Concrete Engineering Systems Design and Management</td>
<td>Design and analysis of concrete structures; stress-strain relationships; development of concrete materials.</td>
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<td>421</td>
<td>Material of Construction (3)</td>
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<td>435</td>
<td>Foundation Engineering</td>
<td>Fundamentals of geotechnics applied to design and analysis of foundations.</td>
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<td>440</td>
<td>Civil Engineering Systems Design and Management</td>
<td>Principles of geotechnics applied to design and analysis of foundations.</td>
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<td>442</td>
<td>Construction Methods and Equipment (3)</td>
<td>Design and construction of foundations; stress-strain relationships; development of concrete materials.</td>
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<td>450</td>
<td>Hydrology (3)</td>
<td>Concept of hydrologic cycle; weather patterns; precipitation measurement and distribution, abstractions, and runoff; storm hydrographs and peak flow analysis.</td>
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<td>472</td>
<td>Steel Design (3)</td>
<td>Design of steel members and connections. Consideration of material properties, fabrication, and connections.</td>
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<td>474</td>
<td>Reinforced Concrete Design (3)</td>
<td>Design of reinforced concrete structures; consideration of material properties, fabrication, and connections.</td>
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<td>480</td>
<td>Water and Waste Transport (3)</td>
<td>Theory and design of water distribution systems, and wastewater collection systems.</td>
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<tr>
<td>488</td>
<td>Honors: Design Internship in Industrial Pollution Prevention (3)</td>
<td>Selected students work in teams with professional environmental engineers from industrial firms. May be substituted for 490 with departmental approval.</td>
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<td>490</td>
<td>Water Resources Project Design (3)</td>
<td>Development of multipurpose reservoir and dam project, including data acquisition; spillway and outlet works design; dam safety concepts, including dam break analyses.</td>
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<td>494</td>
<td>Special Problems in Chemical Engineering (3)</td>
<td>Chemical engineering problems related to recent developments in industrial practice or engineering research.</td>
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<td>495</td>
<td>Applied Process Automation Design Projects (5)</td>
<td>Industrial programmable logic controllers (PLCs) and computer-integrated control and automation interfaces (HMI) design software are used on workstations to develop automation solutions for small teams of students.</td>
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<td>Environmental Engineering CIVIL AND ENVIRONMENTAL (254)</td>
<td>Introduction to environmental engineering principles.</td>
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<td>Hydrology (3)</td>
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<td>540</td>
<td>Soil Mechanics (3)</td>
<td>Stress-strain relationships; development of soil mechanics.</td>
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<td>545</td>
<td>Structural Analysis I (3)</td>
<td>Reactions; shear and bending moment diagrams; stress analysis; moment distribution; loadings, forces, and moments; applications in civil engineering.</td>
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446 Analog Communication Amplitude and Frequency Modulation (3) Filter design, noise, signal-to-noise ratio, modulation, demodulation. Includes Level I design projects which require laboratory work. Prereq: 312, 341, and 342.

443 Antennas and Propagation (3) Introduction to antenna theory including fundamental antenna concepts and simple geometries. The basic elements of antennas, arrays, and some simple applications. Includes Level I design projects. Prereq: 312-341. 342.

440 Electromagnetic Compatibility (3) Principles and practices to avoid interference among and within electrical devices. Parameters and coupling for dipole, loop, monopole, and dipole antennas. Various methods of transmission lines, microstrip, and other simple structures. Includes Level I design projects. Prereq: 312-341. 342.

436 Microwave and Millimeter Wave Systems (3) Principles of wave propagation through free space and through waveguide, dielectric and magnetic materials. Waveguide and dielectric resonators; waveguide terminations. Includes Level I design projects which require laboratory work. Prereq: 312-341. 342.

432 Introduction to Digital Image Processing (3) Basic methods for digital, on-line, and display imaging. Computer algorithms for image enhancement, restoration, and segmentation. Image processing applications for biomedicine, engineering, and other fields. Includes Level I design projects which require laboratory work. Prereq: 312-341. 342.
304 Introduction to Human Factors Engineering (3)
Human capabilities and limitations affecting work, work place, and work environment design. Emphasis on human factors methodology, human input requirements, human output, the design of human-machine interactions, the analysis of stress on personnel, environmental conditions, design safety, lighting, and atmospheric conditions; the use of computer-aided techniques in design. Prereq: Junior standing.

306 Simulation (3)
Simulation of complex production processes using current simulation software. Introduction to simulation languages, system analysis and design, numerical integration, optimization. Includes simulation analysis tools and outputs and simulation modeling. Lab experiments provide experience in developing simulation models for real industrial engineering problems. 2 lecture hours; 1 lab. Prereq: 201 or 202 and Statistics 251, or consent of instructor.

308 Quality Assurance and Reliability Engineering (3)
Introduction to Maintenance and Reliability Engineering (3)
(Same as Nuclear Engineering 484)

400 Process Improvement Through Planned Experiments (3)
Review of fundamentals of continuous improvement, statistical process control and process improvement techniques, and strategies for short production runs. Use of experimental design tools for improving production processes, including single and multiple-factor designs, blocking and confounding, and factor screening. Full factorial and fractional factorial designs are compared to traditional design to balance between efficiency and ease of use. Lab experiments provide hands-on experience. 2 lecture hours; 1 lab. Prereq: 200, 206, Statistics 251 (or consent of instructor).

410 Introduction to Materials Science and Engineering (3)
Correlation of atomic structure, crystal structure and microstructure of solids with mechanical, physical and chemical properties of engineeringsignificance. Prereq: Chemistry 150.

421 Diffusion and Phase Transformations (3)
Thermal processing effects on materials, including crystal structure; physical properties; structure of polycrystalline materials; effects of temperature and time on material properties; application of finite element techniques and computer simulations. Prereq: 201, 450, 451, or equivalent.

430 Principles of Metallic Materials (3)
Characterization of metals at the atomic level, including their mechanical, electrical, and optical properties. Concepts of crystal structure, dislocations, slip, twinning, and mechanical properties of different crystal structures. Prereq: 410, 450.

431 Principles of Ceramic Materials (3)
Characterization of ceramic materials at the atomic level, including their mechanical, electrical, and optical properties. Concepts of crystal structure, dislocations, slip, twinning, and mechanical properties of different crystal structures. Prereq: 410, 450.

432 Principles of Polymeric Materials (3)
Characterization of polymeric materials at the atomic level, including their mechanical, electrical, and optical properties. Concepts of crystal structure, dislocations, slip, twinning, and mechanical properties of different crystal structures. Prereq: 410, 450.

440 Process Improvement Through Planned Experiments (3)
Review of fundamentals of continuous improvement, statistical process control and process improvement techniques, and strategies for short production runs. Use of experimental design tools for improving production processes, including single and multiple-factor designs, blocking and confounding, and factor screening. Full factorial and fractional factorial designs are compared to traditional design to balance between efficiency and ease of use. Lab experiments provide hands-on experience. 2 lecture hours; 1 lab. Prereq: 200, 206, Statistics 251 (or consent of instructor).

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Thermal processing effects on materials, including crystal structure; physical properties; structure of polycrystalline materials; effects of temperature and time on material properties; application of finite element techniques and computer simulations. Prereq: 201, 450, 451, or equivalent.

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Characterization of metals at the atomic level, including their mechanical, electrical, and optical properties. Concepts of crystal structure, dislocations, slip, twinning, and mechanical properties of different crystal structures. Prereq: 410, 450.

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Characterization of ceramic materials at the atomic level, including their mechanical, electrical, and optical properties. Concepts of crystal structure, dislocations, slip, twinning, and mechanical properties of different crystal structures. Prereq: 410, 450.

462 Principles of Polymeric Materials (3)
Characterization of polymeric materials at the atomic level, including their mechanical, electrical, and optical properties. Concepts of crystal structure, dislocations, slip, twinning, and mechanical properties of different crystal structures. Prereq: 410, 450.


412 Chemical Process Intensification (3) Applications of chemical, biochemical, and biomedical processes to the process industry. Chemical, biochemical, and biomedical processes to the process industry. Chemical, biochemical, and biomedical processes to the process industry. Chemical, biochemical, and biomedical processes to the process industry. Chemical, biochemical, and biomedical processes to the process industry. Chemical, biochemical, and biomedical processes to the process industry.


472 Mechanical Design I (3) Basic design concepts and principles. Basic design concepts and principles. Basic design concepts and principles. Basic design concepts and principles. Basic design concepts and principles. Basic design concepts and principles.

473 Mechanical Design II (3) Mechanical design concepts and principles. Mechanical design concepts and principles. Mechanical design concepts and principles. Mechanical design concepts and principles. Mechanical design concepts and principles. Mechanical design concepts and principles.

474 Microcomputer-Based Control of Electronic Components (3) Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control.


479 Thermal Engineering Design (4) Design of a complete thermal-fluid system including economic, technical, and optimization aspects. Design of a complete thermal-fluid system including economic, technical, and optimization aspects. Design of a complete thermal-fluid system including economic, technical, and optimization aspects. Design of a complete thermal-fluid system including economic, technical, and optimization aspects. Design of a complete thermal-fluid system including economic, technical, and optimization aspects. Design of a complete thermal-fluid system including economic, technical, and optimization aspects.


485 Microcomputer-Based Control of Electronic Components (3) Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control. Laboratory course in microcomputer and electronics control.


494 Advanced Fiction Writing (3) Development of skills acquired in basic Fiction Writing course. Prereq: 364 or consent of instructor. 4 hours. S, Sp.

496 The Rhetoric of Legal Discourse (3) Applying basic principles of persuasive writing to legal materials. Prereq: 355 or consent of instructor. 4 hours. S, Sp.

497 Independent Study (1-6) Tutorial in subject not covered in regular course offerings. Prereq: consent of instructor. 1-6 hours. Fall, Sp.

499 Senior Seminar (3) Intensive study in an author, period, genre, or problems of literary composition or historical development. Prereq: 355 or consent of instructor. 3 hours. Fall, Sp.

EXERCISE SCIENCE (347)

340 Orientation to Exercise Science (1) Overview of the discipline and professional areas for incoming Exercise Science majors. May be repeated for a maximum of 2 hours credit. 1 hour. Fall, Sp.


342 Off-Campus Study (1-15) Seeing, studying, and writing about drama as performed in New York City. Prereq: 355 or consent of instructor. 1-15 hours. Fall, Sp.

343 Physical Activity and Health (3) Emphasizes practical experiences in teaching and evaluation of fitness in normal populations. Prereq: 301 and 302. 3 hours. Fall, Sp.

344 Exercise Physiology/Fitness Prescription (3) Relationship of exercise to cardiovascular function, physical fitness and body composition, and morbidity patterns, trends, differentials and causes are examined from perspectives of population-based sciences of epidemiology and demography. Completion of college courses in statistics or mathematics is recommended. 3 hours. Fall, Sp.

345 Special Topics I (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

346 Special Topics II (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

347 Special Topics III (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

348 Special Topics IV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

349 Special Topics V (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

350 Special Topics VI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

351 Special Topics VII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

352 Special Topics VIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

353 Special Topics IX (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

354 Special Topics X (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

355 Special Topics XI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

356 Special Topics XII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

357 Special Topics XIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

358 Special Topics XIV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

359 Special Topics XV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

360 Special Topics XVI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

361 Special Topics XVII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

362 Special Topics XVIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

363 Special Topics XIX (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

364 Special Topics XX (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

365 Special Topics XXI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

366 Special Topics XXII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

367 Special Topics XXIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

368 Special Topics XXIV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

369 Special Topics XXV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

370 Special Topics XXVI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

371 Special Topics XXVII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

372 Special Topics XXVIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

373 Special Topics XXIX (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

374 Special Topics XXX (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

375 Special Topics XXXI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

376 Special Topics XXXII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

377 Special Topics XXXIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

378 Special Topics XXXIV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

379 Special Topics XXXV (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

380 Special Topics XXXVI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

381 Special Topics XXXVII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

382 Special Topics XXXVIII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

383 Special Topics XXXIX (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

384 Special Topics XL (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

385 Special Topics XLI (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.

386 Special Topics XLII (1-6) Study of selected discipline or professional areas of Exercise Science. May be repeated for a maximum of 6 hours credit. 1-6 hours. Fall, Sp.
FINANCE (349)
Accounting Principles, Economics 391, Finance 391, and Statistics 201 are Prerequisites to all 400-level Finance courses.

201 Personal Finance (3) Financial planning, investing, managing debt, insurance, and retirement planning for non-business majors. May not be used to satisfy Finance discipline requirements. Offering as Finance curriculum for majors.

269 Introduction to Real Estate (3) This course is designed to provide a broad overview of the real estate market and its players. It includes an overview of the entire real estate process, including mortgage finance, market trends, and market analysis techniques. Prerequisites: Economics 101, 102, 201. 5 hour lecture and 1 lab.

282 Scientific Methodology in Finance (3) General principles of finance and their role in decision-making processes. Technical skills, methods of analysis, and applications of statistical methods. Prerequisite: Economics 201. 3 hour lecture and 2 hours lab.

301 Financial Management (3) Principles of finance management, investment, and asset management functions of the firm. Prerequisite: Accounting 201 and Economics 201. Corequisite: Accounting 202. 3 hour lecture and 1 lab.

321 Financial Institutions (3) Management policies of financial institutions including asset, liability and capital management. Legal, economic, and financial environment of the savings and loan institutions and their implications for financial management. Prerequisite: Economics 201. 3 hours lecture and 1 lab.

322 Portfolio Analysis and Management (3) Portfolio analysis and management techniques, including a view to determining rational investment policy. Inclusion of market and non-market factors in portfolio evaluation and selection. Prerequisites: Economics 201 and 202. 3 hour lecture and 1 lab.

323 People and Wildlands (2) Examination of how people, institutions and society at large affect and are affected by wildlands. Includes an interdisciplinary approach to understanding wildlands as cultural and natural resources. Overnight field trips may be required. Letter grade only. Prerequisite: English 102 and Speech 210 or 240 or consent of instructor. 3 hour lecture.

324 Forest Resource Analysis (3) Growth and yield prediction; harvest determination; goal setting under multiple use concepts; approaches to regulation; financial aspects of forestry with computer simulation. Prerequisite: Ag. 290 and Economics 201. Corequisites: 306, 305, 322, 323, 326, 329 and 330. SP

325 People and Forest Practices (2) Examination of how people, institutions and society at large affect and are affected by wildlands. Includes an interdisciplinary approach to understanding wildlands as cultural and natural resources. Overnight field trips may be required. Letter grade only. Corequisites: 305, 306, 322, 323, 326, 329 and 330. SP

326 Field Observations in Food Processing (2) Introduction to, observation of, and familiarization with processing, packaging, quality control and distribution of different foods. Prerequisites: Permission of instructor and 1 hour and 1 lab.

327 Meat Evaluation and Grading (2) Grading standards for quality and yield; principles for evaluating beef, pork and lamb, and application of standards for institutional meat cuts. Practice grading, judging carcasses, and applications of carcass specifications. Prerequisite: Permission of instructor. 2.5 hour lecture-lab.

328 Meat Evaluation and Grading (2) Grading standards for quality and yield; principles for evaluating beef, pork and lamb, and application of standards for institutional meat cuts. Practice grading, judging carcasses, and applications of carcass specifications. Prerequisite: Permission of instructor. 2.5 hour lecture-lab.

329 Meat Microbiology Lab (3) Methods for examination, identification, and identification of food microorganisms. Prerequisite: Microbiology 210. Corequisite: 328. 3 hour lecture and 1 lab.

330 Food Chemistry (4) Properties of water, proteins, lipids, carbohydrates, minerals, enzymes, vitamins and foodstuffs. Prerequisite: Chemistry 110 or equivalent. Corequisite: Biochemistry 310. 3 hours lecture and 1 lab.

332 Forest Roads and Planning (2) Nature, location, construction, management, and evaluation of forest roads. Prerequisite: Agronomy 120. Corequisites: 322, 323, 326, 329, 330 and 331. SP

333 Forest Protection (3) Forest fire prevention, fire suppression, and post suppression measures. Prerequisites: Agronomy 120 and Conservation 121 or consent of instructor. 3 hour lecture and 1 lab.

334 Land Use Management (3) Land use planning principles and practices, including the effects of land use decisions on the environment. Prerequisites: Agronomy 120 and Conservation 121 or consent of instructor. 3 hour lecture and 1 lab.

335 Forest Resource Inventory (2) Reconnaissance methods for assessing forest resources. Prerequisite: Agronomy 120. Corequisites: 322, 323, 326, 329, 330, 331. SP

336 Forest Resource Inventory (2) Reconnaissance methods for assessing forest resources. Prerequisite: Agronomy 120. Corequisites: 322, 323, 326, 329, 330, 331. SP

337 Forest Law and Policy (3) Comprehensive examination of the laws and regulations designed to conserve the forest, wildlife, water, and mineral resources of the United States. Prerequisites: Agronomy 120, Conservation 121 or consent of instructor. 3 hour lecture and 1 lab.

338 Forest Resource Management (3) Principles and techniques for the command, control and protection of the forest resource. Prerequisites: Agronomy 120 and Conservation 121 or consent of instructor. 3 hour lecture.
FORESTRY, WILDLIFE AND FISHERIES (598)

100 Current Issues in Forestry to Natural Resources (1)
Current issues resources presented by invited guest speakers, student discussion and interaction. Emphasis on understanding the importance of land-use and natural resource management, topics and implications to current management strategies. Emphasis on critical aspects of decision making. Maximum Threes.
Satisfactory/No Credit Only.

Introduction to Forestry, Wildlife and Fisheries (1)
Basic introduction to careers in the forestry, wildlife, and fisheries professions. Emphasis on the natural resources and their use: techniques of integrated natural resource management, ecologists, foresters, wildlife managers, fisheries.

Conservation (5) and abuse of wildland re-
sources. Historical background of wildlife manage-
ment of forests, wildlife, and fish of North America including aspects of outdoor recreation and pollution problems.

Forestry and Silviculture of North American Trees (3)
Introduction to and identification of North American forest and woodland trees; associations; ecological conditions of trees and stands as the basis for the practice of silviculture. Day-
long field trips may be required. Prereq: 1 year of Biology or Biology I and 2 hours and 1 lab.

Principles of Silviculture (4)
Principles for heading forest stands to achieve desirable densities. Prereq: Chemistry 100, Psychology 212, 211; and (for Forestry majors) 3 hours and 1 lab.

Measurements and Sampling (2)
Measurement techniques and sampling methods for vegetation, estimation of animal populations; map and chart work. Prereq: Prin 201, Ag. Math. 125, Forestry 101, 1 hour and 1 lab.

Principles of Wildlife and Fisheries Management (3)

Habitat Evaluation and Management (3)
Ecological relationships between wildlife and their habitat. Modeling, simulation, and forecasting. Habitat and survival. Effects and use practice in wildlife habitat evaluation. Prereq: 317 or consent of instructor. 2 hours and 1 lab.

Natural Resource Organizations (4)
Human, bureaucratic, and market influences in the use and preservation of natural and public resources. Alternatives, strategies and political involvement objectives. Commercial and social practices. Ecological and institutional relations including client-cus-
tomer, partners, and advocacy. Conflict resolution, its application to collaborative problem-solving and management. Prereq: 317 and Junior standing. 2 hours and 1 lab.

Planning and Management of Forest, Wildlife and Fisheries Resources (3)
Integrated forest, wildlife and fisheries management through multiple management planning. Ecological analysis and interactions, coordination, collaboration, and decision making. Prereq: Senior standing. 1 hour and 1 lab.

International Natural Resource Issues (3)
Identifying analysis of issues regarding territory, socio-
economic, political and cultural elements influencing national resources at the international level. Cases to include, but not be limited to: Northern Europe, Latin America, South Asia, Africa.

Two hours and 1 lab.

French Language and World Business (3)
The course will examine the importance of foreign trade at the local, state and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the use of the language in a French business environment. Guided by student mapping in the workplace, a French business environment. Guided by student mapping in the workplace.

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French Language and World Business (3)
The course will examine the importance of foreign trade at the local, state and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the use of the language in a French business environment. Guided by student mapping in the workplace, a French business environment. Guided by student mapping in the workplace.

French Language and World Business (3)
North America and Japan. Students build upon their previous knowledge of business terminology while being trained to cultivate differences and the dangers of simplistic stereotyping. Prereq: 349 or consent of the instructor.


420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. Prereq: a 300 level literature course. Writing emphasis course. Prereq: French 334 or 345.

421 Phonetics (3) Foundation in the science of phonetics. Practicalexercises and study of the structure and function of the phonologic system of language. First hour lecture and one 2 hour lab per week. Prereq: French 333 or equivalent.

423 Advanced Conversation (1) Informal conversation with native speakers on contemporary topics. Stressing in class content rather than outside preparation. Meets 2 hours a week for one semester credit. Prereq: French 334 or 345.

424-425 Advanced Conversation (1,1) Informal conversation with native speakers on contemporary topics. Stressing in class content rather than outside preparation. Meets 2 hours a week for one semester credit. Prereq: French 334 or 345.


433 The Land-Surface System (3) Characteristicsofsurfaceform,water,vegetationandsurfacematerials,andtheiregionalinterrelationships.People as evaluators and agentsof change. Prereq: 131-132 or consent of instructor.

434 Climatology (3) Generalcirculationsystemleadingtoworldpatternsofclimates.Climaticchangeandmodification,and interrelationshipsofclimateand human activity. Prereq: 131 or consent of instructor.

435 Biogeography (3) Study of the changingdistribution patternsof plantsand animalson avarietyofspatialand temporalscales. The effectsof continentaldrift, Pleistoceneclimatic change, and human activityon worldbiota are emphasized. Prereq: 131-132 or consent of instructor. Prereq: 131 or consent of instructor.

436 Population and Environment (3) Global and localpatternsof populationdistributionand change asthey relatetoculture,economic development, technology, and the environment and the future. Prereq: 101-102 or consent of instructor.

437 Geographic Information Systems (3) Introduction to Geographic Information System (GIS) software with an emphasis on the application of GIS to environmental issues. Prereq: 131-132 or consent of instructor.

438 Cultural Geography: Core Concepts (3) Background andmethodsofculturalgeography;basicconceptsand theories focusing on cultural landscape,cultureregions,culture ecology,innovation anddiffusion, culturalintegration, and world patternsofculturalphenomena. Prereq: 131 or consent of instructor.

439 Meteorology (3) Dynamics and atmospheric processes, formation and movement of weather elements, their measurement and analysis over time and space. Prereq: 131-132 or consent of instructor.

440 Economic Geography: Core Concepts (3) Concepts, theories, and policies in economic geography. First hour lecture and 2 hours lab per week. Prereq: 131 or consent of instructor.

441 Regional Geography of the United States and Canada (3) The geography of the United States and Canada. As they interrelate and give distinctive character to the United States and Canada, Writing emphasis course.

442 Geograhph of the American South (3) Geograph of the southern United States, including history, environment, and development of contemporary economic and cultural traits of the area. Writing emphasis course.

443 Geography of Appalachian (3) Interaction of physical, cultural, and historical forces that give distinctive character to the region and its peoples, especially southern Appalachia. Approach to the region in the contemporary American scene. Writing emphasis course.

447 Geography of Europe (5) Physical, cultural, and historical methods for the study of Europe. Prereq: 131-132 or consent of instructor.

448 Geography of Middle America (3) Physical, cultural, and historical methods for the study of Central America. Prereq: 131-132 or consent of instructor.

449 Foreign Study (1-15)....
GERMAN (433)

185-182 Elementary German (3) Language laboratory required. Must be taken in sequence. Available for students eligible for German 106.

111 Language Laboratory (l)

156 Elementary German Transition (2) This course is designed to prepare students for enrollment in German 101. Two years of high school German and a placement test are required to enroll in this course. Students who have 122 credits or higher may take the placement test. Students who score 25 or lower on the placement test must take this course. Students who already have 122 credits may take the course for credit.

101-102 Elementary German (3,3) Language laboratory required. Must be taken in sequence. Available for students eligible for German 106.

106 Intermediate German (3) Reading, writing, listening, and speaking. Only for students whose native language is not German. Review of high school German required. Permission of the department required. Available for students eligible for German 106.

109 Advanced German (3) Oral communication, translation, and one of the following: Germanic literature, speech, musical training, or Germanic cultures. Permission of the department required. Available for students eligible for German 106.

110 German Oral and Listening Laboratory (0) Practice in listening and oral expression. No credit. Open for students preparing for German 101.

112 Language Laboratory (l)

490 Independent Study (1-15)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

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112 Language Laboratory (l)

490 Independent Study (1-15)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)
440 History of American Culture (3) Topical examination of the origins and development of American culture from the end of the 18th century to the present. Illustrative topics: creation of a national culture, Civil War as cultural conflict, challenges of pluralism, rural versus urban, cultural upheaval 1820s-60s, present nature of American culture. Writing-emphasis course.

449 History of Tennessee (2) Tennessee’s history from the 18th century to the present. 

450 History of U.S. Foreign Relations to World War II (3) Students develop the ability to see how changes in foreign policy can lead to the independence of the new world. 

451 United States Military History, 1754 to the Present (3) Students are introduced to the strategies, tactics, leadership, and progress of American armed forces over 175 years. 

452 Southeastern Indian History (3) Southeastern Indian history from the prehistoric period to the present. 

453 Women in American History (3) Approaches of 432 applied to American society. Writing-emphasis course. (Same as Women’s Studies 453.)

454 Clases y Urbanización en América Latina (3) Origins, growth, and influence of American cities in the development of the nation, from colonial era to present. Emphasis on social, cultural, economic and political roles of women with an emphasis on autobiography and literature by women. Writing-emphasis course.

455 The World of Sports in the United States (3) Developments and their historical impact on society. 

456 History of Mexico (3) Pre-Colombian, colonial, and modern Mexican history, emphasizing the relationship between Mexican society and American society, and participating sport in 20th century. (Same 556 Studies in Latin American History.)

457 History of Brazil (3) History of Latin America, focusing on the interactions of the United States and Brazil, concentrating on changing political systems, changes in relation to the Western world, and development. 

458 History of Religion in World History (3) Religion's impact on world history, focusing on the period from the colonial period to the present. Emphasis on world society, cultural, economic, and political roles of women in the American past. 

459 Historical Themes and Issues in Latin American History (3) Historical themes and issues in Latin American History. May be repeated. 

460 The American Experience in World War II (3) Diplomacy and warfare in Europe and Asia and the impact of the war on American society. 

461 Cuban Revolution in Historical Perspective (3) Cuban Revolution and its effects on Latin America. 

462 History of Tennessee (2) Tennessee’s history from the 18th century to the present. 

463 The American Frontier and Westward Movement (3) The American Frontier and Westward Movement from colonial period through the Civil War. 

464 The American Experience in World War II (3) Diplomacy and warfare in Europe and Asia and the impact of the war on American society. 

465 The Crusades and Medieval Christian-Muslim Relations (3) The Crusades and Medieval Christian-Muslim relations, with a focus on the Middle East and Spain, 750 to 1500. 

466 The American Experience in World War II (3) Diplomacy and warfare in Europe and Asia and the impact of the war on American society. 

467 History of Latin America (3) History of Latin America, focusing on the interactions of the United States and Brazil, concentrating on changing political systems, changes in relation to the Western world, and development. 

470 Studies in British History (3) Variable content. Selected themes and issues in British history. May be repeated. 

471 Studies in Western European History (3) Variables content. Selected aspects of Western European history such as revolution, relations, or nationalism. May be repeated. 

472 Studies in Central European History (3) Variables content. Selected aspects of Central European history. May be repeated. 

473 Studies in Eastern European History (3) Variables content. Selected aspects of Eastern European history, presented in a thematic way and with a focus on the 19th and 20th centuries. May be repeated. 

474 Studies in Medieval and Early Modern European History (3) Variables content. Particular aspects of medieval and early modern Europe. May be repeated. 

475 Studies in Latin American History (3) Variables content. Significant issues in Latin American history. May be repeated. Maximum 9 hours. Writing-emphasis course. (Same as Latin American Studies 475.)

476 Studies in Asian History (3) Variables content. Particular aspects of Middle Eastern and East Asian History such as modernization in the Middle East, Revolution in China, Japanese Fudayuk, and others. May be repeated. Maximum 9 hours. 

478 Studies in Modern History (3) Variables content. Particular aspects of United States History. May be repeated. Maximum 9 hours. 

480 Studies in Latin American History (3) Variables content. Significant issues in Latin American history. May be repeated. Maximum 9 hours. Writing-emphasis course. (Same as Latin American Studies 480.)
470 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Enroll. limited to non-education majors.

465 Special Topics: Hotel and Restaurant Administration (3) Development, issues and problems in hotel and restaurant administration. Prereq. Senior standing in Hotel and Restaurant Administration Program or consent of instructor. May be repeated for a maximum of 9 credits.

470 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

HUMAN ECOLOGY (520)

100 Special Topics in Human Ecology (1-3) Topics variable. Prereq. Consent of instructor. May be repeated. Maximum 3 credits.

101 Food Principles (3) Food selection, safety, preparation, evaluation, meal planning, service. 2 hours and 1 lab.

102 Hospitality Systems Administration (3) Management concepts, processes, resources in the hospitality industry. Coreq. 321 or 322. S/NC credit only.

120 Introduction to Food Production and Service Management (3) Fundamental concepts, principles and practices in the field of food production and service. Prereq. 320, 321, or Food Production Management. Coreq. 420. S/NC credit only.

121 Special Topics in Human Ecology (1-3) Topics variable. Prereq. Consent of instructor. May be repeated. Maximum 3 credits.

200 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

201 Field Experience in Teaching (1-3) Field experiences in public school Business/Marketing, Family and Consumer Sciences, or Technology Education programs. Prereq. Consent of instructor. May be repeated for a maximum of 3 hours. S/NC credit only.

201 Field Experience in Teaching (1-3) Theories and practice of teaching in various educational settings. Prereq. Junior or Senior standing. Field experience in Hotel and Restaurant Administration Program or consent of instructor. May be repeated. Maximum 3 credits.

210 Hospitality Management (3) Hospitality management. Prereq. Consent of instructor. S/NC credit only.

215 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

220 Hospitality Systems Administration (3) Management concepts, processes, resources in the hospitality industry. Coreq. 321 or 322. S/NC credit only.

225 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

300 Hospitality Administration (3) Hospitality industry employment opportunities. Coreq. 320. S/NC credit only.

301 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320. S/NC credit only.

302 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

303 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

310 Hospitality Administration (3) Hospitality industry employment opportunities. Coreq. 320. S/NC credit only.

320 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

321 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

322 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

323 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

324 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

325 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

326 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

327 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

328 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

329 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

330 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

331 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

332 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

333 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

334 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

335 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

336 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

337 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

338 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

339 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

340 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

341 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

342 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

343 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

344 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

345 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

346 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

347 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

348 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

349 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

350 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

351 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.

352 Hospitality Systems Administration (3) Hospitality industry employment opportunities. Coreq. 320, 321 or 322; Housing 200. S/NC credit only.

353 Hospitality Law (3) Legal rights and responsibilities of management, attorneys. Prereq. 320, 321 or 326. Bus. Law 301 or consent of instructor.

354 Hospitality Interiors (3) Hospitality industry employment opportunities. Coreq. 320 or 321. S/NC credit only.
applying learning theories and directing group processes.

3.05 Instruction Technology and Techniques (3) The application of technology to the instruction of students. Includes the use of computers, multimedia, and other instructional media. Prerequisites: HRD 320 and 325.

3.06 Microcomputer Instructional Techniques (3) Students will develop proficiency in the use of microcomputers to enhance instruction. Prerequisites: HRD 320 and 325.

3.08 Relate and Apply Theory In Occupations (1-3) The interrelationship of theory and practice in a selected occupation. Prerequisite: Permission of the instructor. May be repeated. Prerequisites: HRD 290 and 325.

3.10 Practical Laboratory, Fieldwork, or Internship (1-15) Applicable to selected courses. Fieldwork form must be filed in the departmental office. May be repeated for a maximum of 9 semester hours. Satisfactory/No Credit only. E

3.12 Information Interpretation and Assessment (3) Information gathering and assessment for human services are examined in depth in relation to human services settings. Develops specific helping skills; client-centered and rational emotive therapy. Discussion and role playing of methods and skills that will be used in the field experience. Prerequisite: Progression to the major. 335, 336, Core 401, E.

4.00 Directed Study in Human Resource Development (1-3) Topics to be assigned. May be repeated. E

HUMAN SERVICES (532)

4.20 Introduction to Human Resource Development (1) Focus on related societal values and contemporary issues in human services. Emphasis on the various problems, settings, and jobs to assist students to examine the complexities of human needs and social problems.

4.30 Thinking About People (3) Development of thought processes in the social sciences and critical thinking about human beings--those providing services as well as those receiving services. Prerequisite: Progression to the major. F, S.

4.50 Human Services Methodologies (3) Basic helping skills assist to the effective delivery of human services. Prerequisites: Progression to the major or consent of instructor.

4.60 Information Interpretation and Assessment (3) Information gathering and assessment for human services are examined in depth in relation to human services practice. Formulating hypotheses, identifying relevant facts, utilizing related resources, interpreting information, and applying this information in a practicum setting. Prerequisite: Progression to the major.

4.70 Fieldwork (1-3) Practicum experience for transfer to the practicum setting. May be repeated for a maximum of 6 hours. Prerequisites: Core 335 and 410.

INCLUSIVE EARLY CHILDHOOD EDUCATION

4.90 Early Childhood Special Education Foundations (3) Basic concepts of special education, including the nature of disabilities and the role of the teacher. Prerequisites: PDP 343, 344, Satisfactory/No Credit only.

4.92 Early Childhood Education: Program Development and Management (3) Inclusive practices and the integration of special education in the classroom setting. Prerequisites: HRD 490, E, TESOL 305, E, Teacher Education Program.

Courses of Instruction
193
490 Information Environment (3) Generation, production, management, dissemination, and use of information. Roles of information in society, services, technological and organizational change, information professions, and issues.

495 Special Topics (1-3) Topic to be assigned. May be repeated. Maximum 12 hours.

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

493 Independent Study (1-15) Registration by permission of director of interdisciplinary studies.

INTERIOR DESIGN (582)

492 Off-Campus Study (1-15) Registration by permission of director of interdisciplinary studies.

491 Foreign Study (1-15) Registration by permission of director of interdisciplinary studies.

311 History of Interior Architecture (4) Interior architecture, decoration and decorative arts within cultural context, ancient through nineteenth centuries, emphasis on Italy, France, England, and American. Prereq: Art History 172 and 173 or consent of instructor.


231 Micro-Computers for Interior Design (3) Introduction to computer-based spreadsheets, drawing, desktop publishing, and other software applications in various aspects of design and management, including cost estimating and budget control; preparing the design drawings, computer analysis and integrating the two. Three hour studio. Prereq: Math 119 or consent of instructor. Coreq: 272.

221 Theory of Color (2) Introduction to basic color theory and its application to interior environments. Exploration of color principles and psychological effects. Three hour studio. Prereq: Consent of instructor.

200 Human-Environment Systems (3) Role of culture in defining environment; physical, social and conceptual aspects of human-environment systems. Impact of environment on human behavior, feelings and values; mutual-casual properties of behavior-environment systems. (Same as Urban Studies 200.) Five hour studio. Prereq: Consent of instructor.

199 Italian Language and World Business (2) This course will examine the importance of Italian trade relations at numerous levels. Prereq: Consent of instructor.

198 French Language and World Business (2) This course will examine the importance of French trade relations at numerous levels. Prereq: Consent of instructor.

141 Introduction to Interior Design (2) Orientation to the profession; relationshipto allied fields; contemporary development; philosophical approaches. Open only to majors in interior design or architecture or consent of instructor.

111-112 Elementary Italian (3, 3) Introduction to Italian. Must be taken in sequence. Language Laboratory required.

691 Italian Language and World Business (2) This course will examine the importance of Italian trade relations at numerous levels. Prereq: Consent of instructor.

690 French Language and World Business (2) This course will examine the importance of French trade relations at numerous levels. Prereq: Consent of instructor.

50 Course of Study (1-15) Registration by permission of director of interdisciplinary studies.

400 Selected Interdisciplinary Topics (1-15) Acceptable for major or minor credit in any Interdisciplinary Program with the approval of the director of the Interdisciplinary Program and the respective department. May be repeated for credit to a maximum of 12 hours, letter grade or S/NC grading.

472 Advanced Interior Design II (6) Comprehensive studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Six hour studio. Prereq: 471 or consent of the instructor.

471 Advanced Interior Design I (4) Residential studio problems of advanced complexity, spatial and conceptual aspects of human-environment systems; impact of environment on human behavior, feelings and values; mutual-casual properties of behavior-environment systems. Four hour studio. Prereq: 360, 372 and consent of instructor.

464 Environmental Factors in Design (3) Human factors and associated research methods and design methodologies related to the built environment.

460 Lighting for Interior Designers (3) Application of elements and principles of lighting and electric design of visual environment. Five hour studio. Prereq: Consent of instructor.

454 Education of the Gifted and Talented Children (3) Psychometric and behavioral studies of giftedness. Analysis of past and present school practices in reference to curriculum and program implementation. Prereq: Admission to Teacher Education Program.


330 Books and Related Materials for Children (3) Materials for children in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films and related materials; storytelling and other devices for encouraging reading. Undergraduate Credit only.

194 Courses in Instruction

111-112 Elementary Italian (3, 3) Introduction to Italian. Must be taken in sequence. Language Laboratory required.
280 Communications Graphics (3) Principles and practice in the visual aspects of communication. Emphasis on illustration and photography, printing and production technology. Lecture and laboratory. PreReq: 200, or consent of instructor.

290 Photojournalism (3) Principles and practice of journalism with an emphasis on the visual aspects of communication. Basic techniques of photojournalism. Lecture and laboratory. E

310 Feature Writing (3) Skills of journalism for writing features, articles for newspapers, magazines and commercial publications. Emphasis on research, critical thinking, writing, and interviewing. PreReq: 290, or consent of instructor.

312 Religious Aspects of Biblical and Classical Literature (3) Writing emphasis course. (Same as Religious Studies 312.)

314 Medieval and Middle East (3) Writing emphasis course. (Same as Religious Studies 314.)

325 Early Christian and Byzantine Art, to 1350 (3) Writing emphasis course. (Same as Art History 425 and Medieval Studies 325.)

326 Medieval Philosophy (3) Writing emphasis course. (Same as Philosophy 326 and Medieval Studies 326.)

350 German-Jewish Texts in Literature and Culture (3) May be repeated. Maximum 6 hours. (Concurrent with 310.)


369 History of the Middle East (3) Writing emphasis course. (Same as Religious Studies 369.)

369 History of the Middle East (3) Writing emphasis course. (Same as Religious Studies 369.)

370 History of the Middle East (3) Writing emphasis course. (Same as History 370.)

375 Environmental Reporting (3) Writing for news publications and environmental science. Writing about science; the environment. Prerequisite: 200, or consent of instructor. Required of all students in the College of Business and Economics. May be repeated. Maximum 6 credit hours.

385 Contemporary Jewish Thinkers (3, 3) Writing emphasis course. (Same as Religious Studies 385.)
360 Teaching Speech and Drama. Grades 7-13 (3) Purposes, techniques, materials and evaluation for teaching spoken and dramatic arts in secondary schools. Required for certification only. Prereq: Admission to Teacher Education Program.

369 Teaching English in the Secondary School (3) Techniques of teaching composition, language, and literature. Prereq: Admission to Teacher Education Program. F

409 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and literature. Prereq: 493.

410 Developing Reading Skills in Content Fields (3) Teaching reading and study skills in content areas of the curriculum. Prereq: 493. Emphasis on middle school and high school. F, S

420 Independent Study (1-5) Topics to be assigned. May be repeated. Maximum 12 hours. E

424 Supervised Reading (1-5) Topics to be assigned. May be repeated. Maximum 12 hours. E

446 Special Topics (1-5) Topics to be assigned. May be repeated. Maximum 12 hours. E

LATIN (257) 117:151-152 Beginning Latin (3) Must be taken in sequence. Not available to students eligible for Latin 160.

190 Latin Transition (3) This course is designed to prepare students for enrollment in Latin 251. Prereq: Two years of high school Latin and a Latin exam placement exam before required for admission to the Latin Transition course. Students who need credit in this course may not receive credit for any other 100 level Latin course and therefore also forfeit the 6 hours of elementary language credit awarded through placement examination.

251 Intermediate Latin: Grammar Review and Readings (3) Prereq: 112 or 150 or placement through the Latin placement examination.

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

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

254 Latin Prose Composition (3) For advanced students in Latin. Practice in composition, the writings of Cicero the model. Prereq: 301-302 or consent of instructor.

251 Intermediate Latin: Prose Composition (3) For advanced students in Latin. Practice in prose composition, the writings of Cicero. Prereq: 301-302 or consent of instructor.

252 Intermediate Latin: Verse Composition (3) For advanced students in Latin. Practice in verse composition, the writings of Horace. Prereq: 301-302 or consent of instructor.

253 Intermediate Latin: Tragic Prose Composition (3) For advanced students in Latin. Practice in tragic prose composition, the writings of Seneca. Prereq: 301-302 or consent of instructor.

251 Intermediate Latin: Latin Prose Composition (3) Prereq: Open to College of Business Administration students only. E

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

492 Off-Campus Study (1-15) Independent Study (1-15)

LEADERSHIP STUDIES (615) 200 Student Leadership Development (3) Designed for emerging student leaders and will include theoretical and experiential content. Prereq: Open to leadership roles, dev., skill, and effectiveness. Bachelor's/College Credit only.

LINGUISTICS (623) 320 Language, Linguistics and Society (3) Introduction to the sociolinguistic and cultural aspects of language and includes theoretical and experiential components. Emphasis on leadership roles, dev., skill, and effectiveness. Bachelor's/College Credit only.

323 Foundations of the English Language (3) Prereq: Consent of department.

327 The Structure of Modern English (3) Prereq: Consent of instructor.

420 Topics in Linguistics (3) Content varies. May be repeated. Maximum 6 hours. E

421 Linguistics Anthropology (3) Same as Anthropology 411.

423 The Development of Literary and Social Sciences (3) Prereq: Open to composition, development of linguistic and social sciences through time. Readings from Horace, Seneca, Sallust, and others. Prereq: 253-254 or equivalent.

424 Introduction to Descriptive Linguistics (3) Prereq: Open to composition, development of linguistic and social sciences through time. Prereq: 253-254 or equivalent.

425 Methods of Historical Linguistics (3) Prereq: Open to composition, development of linguistic and social sciences through time. Prereq: Open to composition, development of linguistic and social sciences through time.

429 Romance Linguistics (3) Prereq: Open to composition, development of linguistic and social sciences through time. Prereq: Open to composition, development of linguistic and social sciences through time.

432 Structure of the German Language (3) Prereq: Open to composition, development of linguistic and social sciences through time.

436 History of the German Language (2) Prereq: Open to composition, development of linguistic and social sciences through time.

471 Sociolinguistics (3) Prereq: Open to composition, development of linguistic and social sciences through time.

472 American English (3) Prereq: Open to composition, development of linguistic and social sciences through time.

473 Teaching English as a Second or Foreign Lang.

474 Teaching English as a Second or Foreign Lang.

475 Teaching Spanish as a Second or Foreign Lang.

476 Second Language Acquisition (3) Prereq: Open to composition, development of linguistic and social sciences through time.

484 Language and Law (3) Prereq: Open to composition, development of linguistic and social sciences through time.

489 Foreign Study (1-15) Independent Study (1-15)

LOGISTICS AND TRANSPORTATION (624) 401 Introduction to Logistics (3) Business logistics as a strategic area within firms. Focus of material management and physical distribution, activities such as customer service, order processing and information flow, transportation, warehousing, packaging, inventory, and system design and operation. Overview of supply chain operations.

402 Introduction to Transportation (3) Transportation and distribution as a vital part of the nation's economic and social structure. U.S. transportation system: why it demands for mobility and policies of public and private sectors to meet those demands. Prereq: Econ.

406 Special Topics in Logistics and Transportation (3-6) Topics of a more advanced nature to support logistics and transportation. Topic announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 12 hours. Prereq: Consent of instructor.

411 Logistics and Transportation Analytical Methods (3) Introduction to the principles and tools that are applied in logistics and transportation problems. Emphasis on analytical methods to support negotiations. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prereq: Consent of instructor.

412 Global Logistics and Transportation (3) Multinational logistics strategy, import-export process, global supply and distribution for multinational companies. Analysis of analytical tools to support negotiations. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prereq: Consent of instructor.

413 Introduction to Transportation (3) Transportation and distribution as a vital part of the nation's economic and social structure. U.S. transportation system: why it demands for mobility and policies of public and private sectors to meet those demands. Prereq: Econ.

414 Independent Study (1-15) Independent Study (1-15)

490 Language and Law (3) Prereq: Open to composition, development of linguistic and social sciences through time.

493 Independent Study (1-15) Independent Study (1-15)

492 Off-Campus Study (1-15) Independent Study (1-15)

493 Independent Study (1-15) Independent Study (1-15)

TRANSPORTATION (624) 401 Introduction to Logistics (3) Business logistics as a strategic area within firms. Focus of material management and physical distribution, activities such as customer service, order processing and information flow, transportation, warehousing, packaging, inventory, and system design and operation. Overview of supply chain operations.

402 Introduction to Transportation (3) Transportation and distribution as a vital part of the nation's economic and social structure. U.S. transportation system: why it demands for mobility and policies of public and private sectors to meet those demands. Prereq: Econ.

406 Special Topics in Logistics and Transportation (3-6) Topics of a more advanced nature to support logistics and transportation. Topic announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 12 hours. Prereq: Consent of instructor.

411 Logistics and Transportation Analytical Methods (3) Introduction to the principles and tools that are applied in logistics and transportation problems. Emphasis on analytical methods to support negotiations. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prereq: Consent of instructor.

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413 Introduction to Transportation (3) Transportation and distribution as a vital part of the nation's economic and social structure. U.S. transportation system: why it demands for mobility and policies of public and private sectors to meet those demands. Prereq: Econ.

414 Independent Study (1-15) Independent Study (1-15)

490 Language and Law (3) Prereq: Open to composition, development of linguistic and social sciences through time.

493 Independent Study (1-15) Independent Study (1-15)

492 Off-Campus Study (1-15) Independent Study (1-15)

493 Independent Study (1-15) Independent Study (1-15)
492 Management Off-Campus Study (1-6) Satisfactory/unsatisfactory grading only. Prerequisite: Consent of instructor.

471 International Management (3) Factors significant in the international operations of organizations. Aggregate planning; scheduling; group behavior; informal organizations; organizational structures; conflict; politics; change and development. Prerequisite: STAT 201; Economics 201; Senior standing.

440 Organizational Psychology (3) (Same as Psychology 440.) Group behavior, informal organizations, organizational structure, conflict, politics, change and development. Prerequisite: STAT 201; Economics 201; Senior standing.

432 Implementation and Evaluation of Personnel Management Programs (3) Methodologies for identifying, developing, implementing, and evaluating personnel management programs. Major writing requirement. Prerequisite: completion of business core courses and senior standing. Must be admitted to a business major. Enforced prerequisite.

421 Total Quality Management (TQM) is characterized by three main principles: customer focus, continuous improvement, and teamwork. Course focuses on the managerial perspective that is necessary to successfully implement and sustain a TQM philosophy, while briefly introducing its underlying statistical concepts. Prerequisite: STAT 201, MGT 301. Fall, Spring.

411 Personnel Management (3) Theory, methods, and institutions of personnel management. Prerequisite: MGT 301. Spring.

420 Implementation and Evaluation of Personnel Programs (3) Methods of identifying, developing, and evaluating and evaluating personnel programs. May be repeated once for additional credit. Prerequisite: MGT 301.

420 International Management (3) Specific issues involved in conducting overseas markets and conducting international operations in a global environment. Topics include international operations, assessing global marketing opportunities, contract negotiations, and understanding of current marketing practice. Prerequisite: Marketing 301.

420 Services Marketing (3) Specific issues involved in developing marketing strategy for service firms. These include the perspectives of both customers and the manager, understanding the delivery of service quality, timeliness, and frequency of delivery. Prerequisite: Marketing 301.

641 Mathematics (641)

197 Principles of Marketing (3) Topics of current interest in marketing. Topics announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prerequisite: Marketing 301.

140 Advertising Management (3) Business skills in advertising, media selection and planning, budget preparation, research, and consumer response to advertising. Prerequisite: Marketing 301; and Marketing 310; or consent of instructor.

130 Sales Force Management (3) Personal selling function and its manipulation in the business firm. Duties and problems of field sales territories. Students study organizational, psychological, environmental, and ethical influences in personal selling. May be repeated once for additional credit. Prerequisite: Marketing 301.

120 Special Topics in Marketing (3) Topics of current interest in Marketing. Topics announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prerequisite: Marketing 301.

119 College Algebra (3) A review of algebraic concepts, principles, and techniques for students who have completed College Algebra. Elements of linear, polynomial, and rational functions, inequalities, complex numbers, matrices, and determinants. Prerequisite: Consent of instructor.

118 Finite Mathematics (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Elementary and logarithmic functions; exponential and logarithmic functions, with applications. No credit given for both MATH 118 and 218. Prerequisite: Consent of instructor.

117 Statistics I (3) Standard course in descriptive statistics and introduction to probability. Topics include descriptive statistics, normal distribution, linear regression, and correlation. Prerequisite: Consent of instructor.

116 College Algebra (3) A review of algebraic concepts, principles, and techniques for students who have completed College Algebra. Elements of linear, polynomial, and rational functions, inequalities, complex numbers, matrices, and determinants. Prerequisite: Consent of instructor.

115-116 Calculus I, II (4, 4) Standard first-year course in analysis of the single variable. Topics include limits, continuity, differentiation, and Riemann integration. Prerequisite: Consent of instructor. Prerequisite: Consent of instructor. Completion of Calculus II satisfies the Calculus area requirement of Option A.

114-144 Microcomputer Laboratory (1, 1) Optional supplement to the calculus courses, featuring computer instruction in microcomputers. Students registering for 144 must also be registered for the corresponding calculus course. May be repeated once for additional credit provided topic is different. Maximum 6 hours.

114-146 Microcomputer Laboratory, I (1), II (1) Optional supplement to the calculus courses, featuring computer instruction in microcomputers. Students registering for 144 must also be registered for the corresponding calculus course. May be repeated once for additional credit provided topic is different. Maximum 6 hours.

114-146 Microcomputer Laboratory, I (1), II (1) Optional supplement to the calculus courses, featuring computer instruction in microcomputers. Students registering for 144 must also be registered for the corresponding calculus course. May be repeated once for additional credit provided topic is different. Maximum 6 hours.

113-143 Business Calculus, I, II (4, 4) Standard business calculus course covering limits, continuity, differentiation, optimization, and integration. Topics include partial derivatives, applications to business and economics, and an introduction to differential equations. Students who did not study trigonometry in high school may take the nonhonors course in trigonometry simultaneously.

112-142 Calculus I, II, III (4, 4) Standard first-year course in analysis of the single variable. Topics include limits, continuity, differentiation, and Riemann integration. Students who did not study trigonometry in high school may take the nonhonors course in trigonometry simultaneously. Prerequisite: Consent of instructor. Completion of Calculus III satisfies the Calculus area requirement of Option A.

111-141-142 Calculus I, II, III (4, 4) Standard first-year course in analysis of the single variable. Topics include limits, continuity, differentiation, and Riemann integration. Students who did not study trigonometry in high school may take the nonhonors course in trigonometry simultaneously. Prerequisite: Consent of instructor. Completion of Calculus III satisfies the Calculus area requirement of Option A.

110-152 Mathematics for the Life Sciences, I, II (3, 3) Standard first-year course in analysis of the single variable. Topics include limits, continuity, differentiation, optimization, and integration. Topics include partial derivatives, applications to business and economics, and an introduction to differential equations. Students who did not study trigonometry in high school may take the nonhonors course in trigonometry simultaneously. Prerequisite: Consent of instructor.

107 Computer Literacy for Mathematics (3) Introduction to basic computer concepts, terminology, and programming for prospective mathematics majors. Prerequisite: Proof of high school graduation and Math 101.

106 Webpage Matic (3) Introduction to webpage development, including HTML, CSS, and web programming. Students complete a website, publish it to the internet, and present it. Prerequisite: Proof of high school graduation and Math 101.


104 Business Calculus, I, II (4, 4) Standard business calculus course covering limits, continuity, differentiation, optimization, and integration. Topics include partial derivatives, applications to business and economics, and an introduction to differential equations. Students who did not study trigonometry in high school may take the nonhonors course in trigonometry simultaneously. Prerequisite: Consent of instructor. Completion of Calculus II satisfies the Calculus area requirement of Option A.

103 Mathematics of Business (3) A comprehensive overview of the role of mathematics in the business world. Topics include descriptive statistics, probability, and basic calculus concepts. Prerequisite: Proof of high school graduation and Math 101.

methods of moment generating/characteristic functions. 

322 Probability and Statistics I (3) Discrete and continuous random variables, conditional probability, expectation, random generating functions, laws of large numbers, central limit theorem. Elements of statistical inference, sampling, and hypothesis testing. Prerequisite: 241 or 247 and 300.

414 Analysis I (3) Introduction to the theory of the real number system. Limits of sequences, and functions of a real variable. Prerequisite: 241 or 247 and 300.

415 Algebra I (3) Introduction to abstract algebra, including groups, rings, and polynomial rings. Prerequisite: 251 or 257.

371 Numerical Algorithms (3) Development and applications of fundamental numerical algorithms, including the roots of equations, solving systems of linear equations, interpolation, numerical differentiation and integration, and solving ordinary differential equations. Prerequisite: A high level programming language (e.g., C or C++) and 251 or 257, and basic matrix algebra (e.g., 250 or 251 or 257).

351 Algebra I (3) Introduction to the algebra of integers and polynomial rings. Prerequisite: 251 or 257 or 300.

471 Numerical Analysis (3) Introduction to computational numerical algorithms and error analysis, including approximation by polynomials and piecewise polynomials, numerical differentiation and integration, differential equations, and linear systems. Prerequisites: 371 or consent of instructor.

450 Geometry (3) Axiomatic and historical development of Euclidean, hyperbolic, and spherical geometries. Prerequisite: 300, or consent of instructor.

101 Topology (3) Introduction to the topology of line and plane, separation properties, compactness, connectedness, continuity, and types of spaces. Prerequisite: 241 or 247 and 300, or consent of instructor.

490 Readings in Mathematics (1-3) Topics will vary. Will require out-of-class projects and in-class presentations by students with consent of department head. May be repeated. Maximum 9 hours. Prerequisite: Consent of instructor.

421 Clinical Chemistry (3) Clinical aspects of biochemistry, including overview of principles and interpretation of test results; emphasis on clinical laboratorv interpretation of analytical procedures, procedure selection and standardization of reagents, and statistical analysis of laboratory data. Prerequisite: 401 or 402, or consent of instructor.

420 Clinical Serology and Immunology (3) Principles, theory, and techniques related to qualitative and quantitative evaluation of cellular elements and blood and/or body fluid components. Emphasis on immunohematology, including: immunohematology, serology, serologic methods, and clinical aspects of blood and plasma screening. Prerequisite: 401 or 402, or consent of instructor.

411 Clinical Pathology (3) Principles, theory, and techniques related to qualitative and quantitative evaluation of cellular elements and blood and/or body fluid components. Emphasis on immunohematology, serology, serologic methods, and clinical aspects of blood and plasma screening. Prerequisite: 401 or 402, or consent of instructor.

431 Criminal and Forensic Pathology (3) Introduction to the laboratory practices used in evaluating blood typing, crossmatching blood, and clinicallaboratory. Introduction to medical terminology, classification, and clinicallaboratory. Introduction to quality control procedures. Portions of course extend over entire clinical year. Prerequisite: Consent of instructor.

499 Seminar in Mathematics (1-3) Topics will vary. Will require out-of-class projects and in-class presentations by students with consent of department head. May be repeated. Maximum 9 hours. Prerequisite: Consent of instructor.

447-448 Honors: Advanced Calculus I, II (3,3) Honors version of 445-446. Prerequisite: 231 and familiarity with an operating computer language (e.g., Fortran, C, or C++).
490 Special Topics in Music Education (1-3) Prerequisites:

309-312 Marching Band Techniques (2) Functions, organization, and direction of a school marching band. Letter grade only.

310-313 Music in the Elementary School (3) Principles and objectives of art education, techniques of classroom management. Letter grade only. E

314-315 Conducting I (3) Basics of conducting: baton, rehearsal techniques, communicating to musicians. Letter grade only. F, Sp

316-317 Conducting II (3) Advanced conducting techniques. Multiple rhythm, modern beat patterns and their variations. Batching, analyzing and interpretation of the full score. Achieving complete physical control. Conducting "live" groups, advanced works. Video tapes of all student conductors. Prerequisites: Conducting I or consent of instructor and admission to Teacher Education Program. Letter grade only.

318-319 Conducting III (3) Advanced conducting techniques. Multiple rhythm, modern beat patterns and their variations. Batching, analyzing and interpretation of the full score. Achieving complete physical control. Conducting "live" groups, advanced works. Video tapes of all student conductors. Prerequisites: Conducting II or consent of instructor and admission to Teacher Education Program. Letter grade only.

320 History of Opera (3) Dramatic, vocal, and orchestral aspects of opera of Italian, French, and German composers. Letter grade only.

321 History of Rock (3) Study and appreciation of rock music from its origins in blues and rock and roll, to its development and cultural dimensions to the present. Letter grade only.

322-522 UT Singers (1,1) May be repeated.

323-523 UT Singers (1,1) May be repeated.

324-524 UT Singers (1,1) May be repeated.

325-525 UT Singers (1,1) May be repeated.

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402-602 UT Singers (1,1) May be repeated.

403-603 UT Singers (1,1) May be repeated.
MUSIC INSTRUMENT (710)

310 Brass Literature and Pedagogy (3) Survey of brass solo and ensemble literature, including instructional materials and methods. Application of pedagogical principles to individual brass instruments and large brass ensembles. Demonstration lessons by applied brass faculty and class members. Prerequisite: Consent of instructor.

350 Woodwind Literature and Pedagogy (3) Survey of woodwind solo and ensemble literature, including instructional materials and methods. Application of pedagogical principles to individual woodwind instruments and large woodwind ensembles. Demonstration lessons by applied woodwind faculty and class members. Prerequisite: Consent of instructor.

360 Percussion Literature and Pedagogy (3) Survey of percussion solo and ensemble literature, including instructional materials and methods. Application of pedagogical principles to individual percussion instruments and large percussion ensembles. Demonstration lessons by applied percussion faculty and class members. Prerequisite: Consent of instructor.

390-350 String Literature and Pedagogy I, II (3) Survey of string techniques, theory, research and pedagogy, topical presentations by the applied string faculty and guests. Development of the sixth hand of instruments and books; survey of string literature, performances, and performance styles; application of historical, analytical, and pedagogical procedures to performance. Prerequisite: 340 and applied enrollment in strings at 300 level or above of consent of instructor.

460 Instrumental Conducting (0-3) May be instrumental in conducting various periods and composers and relationships of different styles in the conductor's art; musical analysis and practice in conducting. Prerequisite: Music Education 320 or equivalent.

MUSIC JAZZ (711)

119 Jazz Theory (2) Fundamentals of the jazz language, including terminology, chord symbols, chord scales, and chord progressions, plus ear training.

140 Analysis of Jazz Styles (2) Individual improvisatory styles through analysis of their transcribed solos. Terminology, chord symbols, and historical and pedagogical analysis.

210 Electro-Guitar Styles I (2) Introduction to guitar styles at jazz, rock,nosis, and blues themes. Prerequisite: Consent of instructor.

211 Electro-Guitar Styles II (2) Introduction to styles at Jazz Drumming (2) Introduction to drumming of blues, jazz, rock, and jazz rock. Cases of blues drumming, major part of themes, and historical and pedagogical analysis.

212-230 Jazz Improvisation I, II (2) Study and application of composition, including chord progressions, scales, chord progressions, modal and modal blues, and blues styles. Prerequisite: Consent of instructor.

310-350 Jazz Composition and Arranging (3) Prerequisite: Consent of instructor.

320 Jazz Band Arranging I & II (3) Arranging and scoring for the big band jazz band. Prerequisite: Consent of instructor.

MUSIC PERFORMANCE (713)

110-120 Class Piano I-V (1) Development of keyboard skills in reading, technique, repertoire, harmonization, and transcription. Must be taken in sequence.

210-220 Class Piano VI, VII (3) Continuation of 110-120. Comprehensive piano competency requirement, must be taken in sequence. Prerequisite: Consent of instructor.

230 Keyboard Harmony I (3) Notation, chord symbols, spelling, and chord substitutions. Prerequisite: Consent of instructor.

310 Keyboard Harmony II (3) Notation, chord symbols, spelling, and chord substitutions. Prerequisite: Consent of instructor.

430 Survey of Keyboard Pedagogy (1) A survey of historical, analytical, and pedagogical procedures for the practical pianist, including literature of the Suzuki pianomethod. Prerequisite: Consent of instructor.

493 Independent Study (1-15) Prerequisite: Consent of instructor. Topic is to be selected; must be taken under the supervision of an instructor.

MUSIC THEORY (714)

110 Fundamentals of Music Theory I (3) Theory and practice of basic elements of music. Writing emphasis on C. S.

110-120 Theory II (2,2) Materia...
200 Courses of Instruction

414 Community Mental Health Nursing (6) Nursing needs of clients and groups with psychosocial and/or long-term health problems. Clinical experience provides opportunities for students to apply the nursing process for clients and groups in a variety of settings, including community settings. 3 lectures, 5 lab. Prereq: All 350-before Nursing courses. For non-nursing students only. 5 F, Sp

415 Family/Community Health Nursing II (3) Applications of the nursing process to family and community settings. 3 lectures, 3 lab. Prereq: All 300-level nursing courses. = Formerly 414. F, Sp

420 Food and Nutrition in the Community (3) Influence of health care professionals, geographic, social, economic, and environmental factors on health and illness. Emphasis on the relationship between health and nutrition and the determinants of healthy diet behavior. Prereq: 110, 310. F

421 Basic Landscape Plants (3) Identification, classification, adaptation, culture, and landscape use of herbaceous ornamental plants. Prereq: 110 or consent of instructor. F

423 Community Health Nursing I (3) Lecture and laboratory. 1 lecture, 1 lab. Prereq: All 350-before nursing courses. For non-nursing students only. F, Sp

430 Community Health Nursing II (3) Applications of the nursing process to family and community settings. 3 lectures, 3 lab. Prereq: All 300-level nursing courses or RN status. F

431 Greenhouse Floral Crop Production Laboratory (1) Greenhouse production of floriculture crops. To be taken concurrently with 430. Prereq: Agriculture 290 or consent of instructor. Sp.

432 Landscape Architecture (4) Principles and practice of landscape architecture. Emphasis on the planning, design, and construction of outdoor living environments. Prereq: Agriculture 290 or consent of instructor. F

433 Ornamental Horticulture I (3) Identification, classification, adaptation, culture, and landscape use of shrubs and trees. Prereq: Agriculture 290 or consent of instructor. Sp.

435 Ornamental Horticulture II (3) Advanced ornamental horticulture. Emphasis on the planning, design, and construction of outdoor living environments. Prereq: Agriculture 290 or consent of instructor. Sp.

440 Advanced Turfgrass Management (4) Principles and practice of turfgrass management, including integrated pest management and environmental regulations for spraying. Prereq: 4 hours of biological sciences or consent of instructor. 2 hours and 1 lab. Sp

520 Plant Material Identification (3) Identification, classification, and analysis of trees, shrubs, vines, flowers, and weeds. Prereq: 100 credit hours. F

523 Turfgrass Management I (3) Principles, practices and equipment for the establishment, maintenance, and management of lawns and golf courses. Prereq: 100 credit hours. F, Sp

524 Turfgrass Management II (3) Principles and practice of irrigation, fertilization, and management of bermudagrass, bentgrass, and fescue for use in golf courses, lawns, and athletic fields. Prereq: 100 credit hours. F

525 Turfgrass Management III (3) Principles and practice of pest and disease management for turfgrass systems. Prereq: 100 credit hours. F

526 Turfgrass Management IV (3) Principles and practice of irrigation, fertilization, and management of grasses and forbs for use in golf courses, lawns, and athletic fields. Prereq: 100 credit hours. F

527 Turfgrass Management V (3) Principles and practice of pest and disease management for turfgrass systems. Prereq: 100 credit hours. F
200 Special Topics (1-2) When content varies, may be repeated. Maximum 6 hours.
202 Basketry (1)
205 Folk and Square Dance (2)
206 Bowling (1)
216 Folk and Square Dance (2)
211 Golf (1)
213 Intramural Sag (1) Satisfaction, No Credit grading only.
216 Martial Arts (Special Topics) (2)
222 Paddleskating (1)
223 Personal Safety and Self-Defense (1) Satisfaction.
231 Physical Fitness: Conditioning (1) Satisfaction.
235 Physical Fitness: Exercise to Music (1)
236 Exercise and Weight Control (1)
237 Physical Fitness: Jogging (1)
238 Physical Fitness: Swimming (1)
239 Paddleskating (1)
240 Social Dance (1)
241 Softball (1)
243 Volleyball (1)
244 Tennis (1)
245 Tennis (1-3)
256 Track and Field (1)
257 Jumping (1)
258 Tennis (1)
259 Track and Field (1)
260 Weight Training (1)
263 Yoga and Relaxation (1)
264 Exercise and Weight Control (1)
265 Physical Fitness: Swimming (1)
266 Indoor Cycling (1)
267 Fitness for Life (1-3)
268 Skiing (1)
270 Snow Skiing (1) Satisfaction/No Credit grading only.
271 Snow Skiing (1)
272 Snow Skiing (1)
273 Nordic Skiing (1)
274 Snowboard (1)
275 Snow Skiing (1) Satisfaction/No Credit grading only.
276 Snow Skiing (1)
277 Fitness for Life (1-3)
300 Special Topics (1-2) When content varies, may be repeated. Maximum 6 hours.
301 Professional Practices in Landscape Construction (3) Business ethics and the legal environment of business. Writing emphasis course.
302 Medieval Philosophy (3) Development of medieval thought from St. Augustine to William of Ockham. Secondary and primary sources. (Same as Medieval Studies 322 and Judaic Studies 322) Writing emphasis course.
303 Seventeenth- and Eighteenth-Century Philosophy (3) Writing emphasis course.
304 Nineteenth- and Twentieth-Century Philosophy (3) Writing emphasis course.
305 Business Ethics (3) Ethical problems as they confront both business and the individual. Writing emphasis course.
306 Professional Responsibility (3) Critical analysis of selected ethical issues from business, political, social, legal, and medical perspectives. Emphasis on evaluation and decision-making in a realistic setting. Writing emphasis course.
308 Philosophy of Religion (3) An analysis of the major issues in the philosophy of religion. Writing emphasis course.
309 Political Philosophy (3) Problems and theories as they confront both business and the individual. Writing emphasis course.
310 Medieval Philosophy (3) The nature of woman in relation to society and culture from the Middle Ages to the Enlightenment. Secondary and primary sources. (Same as Medieval Studies 322 and Judaic Studies 322) Writing emphasis course.
311 Forensic and Legal Ethics (3) The place of moral and legal reasoning in the formulation of public policy. Writing emphasis course.
312 Critical Thinking (3) An introduction to basic methods of logical analysis and to the nature of critical and creative thought. Writing emphasis course.
313 Foundations of Western Thought: 1500 through 1789 (3) The heritage of thought and achievement from the Renaissance to the Enlightenment. Secondary and primary sources. (Same as Medieval Studies 322 and Judaic Studies 322) Writing emphasis course.
PHYSICS (773)

101-102 New Things Work (3, 3) For students with majors outside sciences. Examines terminal objects of scientific investigation and why it is that certain principles that work for them. No prerequisite.

138-139 Introduction to Physics for Physical Sciences and Mathematics Majors (4, 4) This introductory course focuses on the development of the physical sciences or mathematics major. Prerequisite: Math 131 or Chemistry 110. 3 hours lecture, 2 hours lab. 3 hours lecture, 2 hours lab.

137-138 Fundamentals of Physics for Physical\nMajors (4, 4) For physics and engineering physics majors, designed to help them develop a foundation for physics and mathematics. Prerequisite: Math 131 or Chemistry 110. 3 hours lecture, 2 hours lab.

161 Elements of Physics for Architects and Interior Design Students (5) Chosen topics in physics for architects and interior design students. Coreq: Mathematics 130 or Calculus 1.

201-202 Elements of Physics (4, 4) Basic principles and applications required in professional practice in the architectural and interior design professions. Prerequisite: Math 131 or Calculus 1. 3 hours lecture, 2 hours lab.

231 Fundamentals of Physics: Electricity and\nMagnetics (4) An introduction to electric and magnetic phenomena in mathematics and the physical sciences. Required of all engineering students. Prerequisite: Basic Engineering 125-126. Coreq: Mathematics 142; 2 hours lecture, 3 hours laboratory.

252 Fundamentals of Physics: Wave Motion,\nOptics, and Modern Physics (6) Construction of 251 required of all engineering students. Prerequisite: Math 131 or Calculus 1. 3 hours lecture, 3 hours laboratory.

240 Fundamentals of Physics: Modern Physics (5) Modern physics, especially concepts essential to modern physical science in general. Prerequisite: Physics 138 or equivalent. 3 hours lecture or equivalent.

292 Mechanics (3, 4) Kinematical and dynamical\nproperties of single rigid bodies, relating reference frames. Prerequisite: Math 131 or Calculus 1. Coreq: Mechanical Engineering M 141-142. 3 hours lecture, 2 hours lab. 3 hours lecture, 2 hours lab.

311 Mechanics I (3) Newtonian mechanics. The\nstudy of motion. Prerequisite: Math 131 or Calculus 1. 3 hours lecture, 2 hours lab.

312 Thermodynamics (3) Concepts of temperature and\nheat, the laws of thermodynamics, and heat engines. Application to physical and chemical problems. Prerequisite: Math 131 or Calculus 1. 3 hours lecture, 2 hours lab.

314 Introduction to Nuclear Physics (3) An introduction\nto the nuclear physics with emphasis on applications to medical and nuclear engineering majors. Prerequisite: Physics 131 or Calculus 1.

324 Structure of Matter (3) Physics of molecular and\ncondensed matter. Prerequisite: Physics 132 or Calculus 2.

334 Weeds Management (3) Principles of weed\ninterference and control. Stress plant physiological factors as they affect basic plant physiology related to important cultural practices. Interaction of crops and weeds. Prerequisite: 210 and Botany 130 or equivalent. 3 hours lecture and 1 lab. (Same as Agricultural Engineering 340).

335 Weed and Water Conservation (3) Principles of weed\nmanagement and water conservation. Prerequisite: 210 or equivalent. 3 hours lecture and 1 lab. (Same as Agricultural Engineering 340).

354 Team Research Project (3, 3) Student teams will\ncarrier out major experimental or computational projects. The team will compile a proposal and a major written report on some independent study. Must be taken in sequence. Prerequisites: Physics 361, 362.

361-362 Electronics Laboratory (3, 3) Electronic de\nsign and construction of electronic circuits. Prerequisite: Math 131 or Calculus 1. 3 hours lecture, 3 hours lab. (Same as Electrical Engineering 361, 362).


369 Research and Independent Study (1-3) Research\nand Independent Study. Consent of instructor required. 1-3 hours. (Same as Chemistry 369).

401 Seminar (1) Current topics in the plant and soil\nsciences. Techniques of effective oral and written presentation, peer review, and professional ethics. Consent of instructor required. Maximum 3 hours.

PLANNING (782)

204 The City in the United States: Urban Growth\nand the United States cities. Contemporary issues in urban policy, urban economics, and urban social policies.

205 Urban Dynamics (3) Urban growth and its\neffects on the environment. Prerequisite: Geography 110. 3 hours lecture and 1 lab. (Same as Geography 205).

441-442 Contemporary Physics (3, 3) An introduction\nto fundamental and modern techniques in physics. Modern physics, such as quantum mechanics, nuclear physics, and high energy physics. Prerequisite: 138 or 136 or 232. 3 hours lecture, 3 hours lab. (Same as Physics 441, 442).

453-454 Team Research Project (3, 3) Student teams will\ncarrier out major experimental or computational projects. The team will compile a proposal and a major written report on some independent study. Must be taken in sequence. Prerequisites: Physics 361, 362.

465 Modern Physics Laboratory (3, 3) An introduction\nto fundamental and modern techniques in physical experiments. Prerequisite: Math 141. 3 hours lecture, 3 hours lab. (Same as Physics 465).

466 Technology and the Environment (3) Principles of\ntechnology in the environment. Prerequisite: 201. 3 hours lecture and 1 lab. (Same as Environmental Science 466).

467 -468 Systems in Environmental Science (3, 3) Analysis of environmental systems. Prerequisite: Math 141. 3 hours lecture and 1 lab. (Same as Environmental Science 467, 468).

470 -471 Environmental Soil Chemistry (3, 3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 470, 471).

472 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 472).

473 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 473).

474 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 474).

475 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 475).

476 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 476).

477 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 477).

478 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 478).

479 Environmental Soil Chemistry (3) Composition\nand properties of soils. Prerequisite: 240 or equivalent. 3 hours lecture and 1 lab. (Same as Soil Science 479).

480 Research and Independent Study (1-3) Research\nand Independent Study. Consent of instructor required. 1-3 hours. (Same as Chemistry 480).
301-309 Literature, Culture & Civilization of the Portuguese-Speaking World (3). A course for students who have completed the intermediate sequence Portuguese and wish to enhance their knowledge of language and culture through the medium of literature. Taught in Portuguese. Prereq: 210, 300 or the equivalent.

309 Intermediate Conversation & Composition (3) Designed to improve proficiency in oral and written composition in Portuguese. Prereq: 212, 300 or equivalent.

310-318 Aspects of Latin-American Literature (3) Latin-American literature: historical perspective and literary history of Latin America. Prereq: one course at the 300 level or the equivalent understanding. Taught in Latin-American Studies 310-318.

348 Portuguese for Prospects of Another Romance Language (2) Accelerated class for beginning students of Portuguese with a strong background in another Romance language. Introduction to grammar, reading and pronunciation of Portuguese. Prereq: Should show at least level in another Romance language of equivalent.

349 Advanced Conversation & Composition (3) Informal and informalized conversation on contemporary topics (business, politics, economics, religion, and culture) and formal writing at an advanced level. Prereq: 309 or the equivalent.

401-412 Topics in the Literature & Language of the Portuguese-speaking World (6). Continuing course of literature and culture from the countries where Portuguese is spoken. Topics may vary. May be repeated. Maximum 12 hours. Prereq: At least one course at the 300 level of the equivalent. (Same as Latin-American Studies 431-432.)

404 Advanced Portuguese Language (1-2) Emphasis extended in the United States, or abroad with permission of the Language and World Business Director. For language and World Business majors only. S/N only.

410 Foreign Study (1-15)

420 Independent Study (1-15)

PSYCHOEDUCATIONAL STUDIES (825)

210 Psychological Issues in Human Development (3) Introduction to psychological theory and research related to human development in all developmental settings. Primarily for students en-tering graduate education in psychology. Prereq: 110, E


300 Child Psychology (3) The normal child from conception through infancy, childhood, and adolescence. Physical, cognitive, social, and emotional development. Prereq: 110, E

310 Learning and Thinking (3) Survey of theory and research on learning and thinking. Prereq: 110, F

320 Motivation (3) Survey of theories and related research; discussion of applications. Prereq: 110, F

330 Abnormal Psychology (3) Individual and group assessment of mental disorders and mental retardation. Prereq: 110, F

370 Ethology and Sociobiology (3) (Same as Ecology and Evolutionary Biology 370). Sp

380 Theories of Personality (3) Major theories of human personality and their development. Prereq: 110 and Junior standing. E

382 Contemporary Topics in Psychology (3) Current issues or problem areas of psychology; in-depth study of topics of current interest. May be repeated. Maximum 12 hours. Prereq: one course at the 300 level of the equivalent. (Same as Latin-American Studies 332-333.)

385 Statistics in Psychology (3) Descriptive statistics; graphical methods and parametric and nonparametric tests. Not open to students with credit in Math 116 or Statistics 201. E

386 Advanced Statistics in Psychology (3) Inferential statistics; parametric and nonparametric tests. Not open to students with credit in Math 116 or Statistics 201. E

393 Independent Study (1-15) Field experience in community-based research and service learning. Prereq: Consent of instructor. Mel for 1-3 hours may be applied toward major. May be re-peated.

395 Supervised Research and Field Work (1-9) Field experience in community-based research and service learning. Prereq: Consent of instructor. Mel for 1-3 hours may be applied toward major. An additional 6 hours may be used as electives. May be repeated.

399 Supervised Research (1-9) Prereq: Junior standing (60 semester hours) and consent of instructor. E

410 Sensory Processes and Perception (3) Physiological and psychological theories of perception. Emphasis on audition and vision. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 6 hours credit.

411 Community Psychology (3) History and theory of psychology in the community. Emphasis on roles and responsibilities of the psychologist. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 6 credit hours.

412 Personality and Mental Health (3) Same as Clinical Psychology 412.

414 Human Development (3) Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 12 hours in 399, 489, 492, and 493 may be applied in major. An additional 6 hours may be used as electives. May be repeated.

420 Cognitive Psychology: Language and Symbolic Processes (3) Psychological theory of communication. Emphasis on language and symbolic processes. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 6 credit hours.

422 Special Problems (2) Study of theory and tech-niques through supervised experience in small groups. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 6 credit hours.

423 Research in Psychology (3) Introduction to research methods. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 6 credit hours.

430 Health Psychology (3) Psychological factors related to health maintenance and disease; reducing stress, prevention, and rehabilitation; and the role of psychology in health maintenance. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor.

434 Psychology of Gender (3) Biological, psychologi-cal, and social factors in gender, importance of gender roles and stereotypes for behavior and appraisals. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. (Same as Woman and Gender Studies 444.)

440 Organizational Psychology (3) Social psychol-ogy of organizations and organizations, emphasizing theore-tical and methodological issues. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. (Same as Management 440.)


450 Social Psychology (3) Theories of attraction and interpersonal relations. Prereq: 110, F

459 Comparative Animal Behavior Laboratory (3) Coreq: 450. (Same as EEB 459.) F

460 Self-Management in the Helping Professions (3) Application of self-management strategies to career, workplace, and personal situations. Prereq: 110, F

470 Theories of Personality (3) Major theories of human personality and their development. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor.

475 Adolescent Development (3) Theoretical per-spectives and empirical research findings concerning adolescent development. Prereq: 110, Junior stand- ing (60 semester hours) or consent of instructor.

477 Topics in Psychology (3) Intensive analysis of special topics, such as African-American Psychology or the psychology of aging. Prereq: 110, F

480 Theories of Learning (3) Classical and current approaches to studying how ideas are acquired. Prereq: 110, Junior standing (60 semester hours) or consent of instructor.

482 Topics in Psychology (3) Intensive analysis of special topics, such as African-American Psychology or the psychology of aging. Prereq: 110, F

490 Independent Study (1-15) Prereq: Junior stand- ing (60 semester hours) and consent of instructor. Any combination of 6 hours of 490, 499, 491, or 492 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

491 Independent Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Any combination of 6 hours of 490, 499, 491, or 492 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

493 Independent Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Any combination of 6 hours of 490, 499, 491, or 492 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

494 Senior Seminar: Great Issues in Psychology (3) Key issues that have shaped the history of psychology. Exploration of historical development, scientific evolu-tion, and larger social context. Prereq: 110 and Junior standing (60 semester hours). Writing emphasis course. Prereq: 110, F

498 Senior Seminar (3) Exploring the nature of human development and behavior. Prereq: 110 and Junior standing (60 semester hours).

Courses of Instruction
Each hour of credit requires 40 clock hours of work. For recreation majors only. S/NC only. Prereq: 290 and permission of instructor.

310 Leisure Program Development and Evaluation (3) Essential elements and basic principles involved in organization, administration, marketing, evaluation of various types of recreation programs with emphasis on planning, designing, and evaluating innovative programs. Prereq: 110, 290, 310, or consent of instructor. F, Su

320 Therapeutic Recreation Programming (3) Principals of therapeutic recreation programming, with emphasis on methods of evaluation, and service delivery to impaired populations. Focus is on the social, interpersonal, and motivational processes of working with impaired populations. Prereq: 110, 290, or consent of instructor. F

320 Therapeutic Recreation and Lifestyle Planning (3) Emphasis on the delivery of therapeutic recreation services for individuals with disabilities. Prereq: consent of instructor. F

320 Therapeutic Recreation and Special Populations (3) Principles, concepts, historical development of recreation, therapeutic recreation, and leisure participation. Human development, well-being, roles and responsibilities, planning and delivery of recreation programming for individuals with disabilities. Prereq: 320 and/or consent of instructor. Sp

320 World Religions in History (3) Introduction to world religions, including examination of religious traditions from China, India, and the Mediterranean world. Prereq: 110. World history courses open to non-majors only. S/NC only. Prereq: Permission of instructor.

390 Practicum in Recreation and Tourism Management (2-3) Supervised practice in approved agencies offering leisure and sport management opportunities. Prereq: 290 and permission of instructor. S/NC only.
RURAL SOCIOLOGY (880)

386 Rural Sociology (880) Topics include the analysis of U.S. land tenure systems, agricultural regions, rural populations, rural culture, community development, rural land use, rural social policy issues, rural industrialization, food policy, economic development, and environmental quality. (Same as Sociology 570) Prerequisites: Sophomore standing. F. (Same in Sociology 570.)

452 General Safety (3) Principles, practices, and principles of safety management and fire protection. Emphasis is on safety in the workplace, consumer goods, and public safety with an emphasis on the role of government in promoting safety. F. (Same in Sociology 352) Prerequisites: Consent of instructor.
471 Latin American Civilization (3) Latin America's diverse heritage and major social and political institutions. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 471). Writing emphasis course.

472 Survey of Spanish American Literature (3) Survey of major literary works from the 16th century to the present. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 472). Writing emphasis course.

473 Social/Political/Protest Literature of Latin America (3) A survey of Latin American protest literature, focusing on important movements, events, and artistic achievements of the Spanish people from the Conquest to the present. Prereq: 335, 336 or equivalent. Writing emphasis course.

474 Survey of Latin American Film (3) Survey of Latin American film and video from Hispanic literature, culture, linguistics, or foreign languages. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 474.)

479 Social/Political/Protest Literature of Latin America (3) A survey of Latin American protest literature, focusing on important movements, events, and artistic achievements of the Spanish people from the Conquest to the present. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 479.)

493 Independent Study (1-15) See description of major concentration. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and Department prior to registration (see Department for proposal deadlines). May be repeated to a maximum 15 hours.

494 Communication Research Methods (3) An introduction to research design and statistical analysis in communication. Prereq: Junior/Senior standing with at least a 3.0 GPA. Satisfactory/No Credit limited to 3 hours.

496 Internship in Speech Communication (3) Internship in speech communication to be determined by the student, faculty member, and department. Prereq:enrollment in the honors program; admission with consent of department. May be repeated to a maximum 15 hours.

497 Latin American Civilization (3) Latin America's diverse heritage and major social and political institutions. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 471). Writing emphasis course.

499 Social/Political/Protest Literature of Latin America (3) A survey of Latin American protest literature, focusing on important movements, events, and artistic achievements of the Spanish people from the Conquest to the present. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 479.)

500 Honors: Introduction to Speech Communication (3) Analysis and exploration of the fundamental principles and practices of speech communication. Admission by consent of the department.

501 Public Speaking (3) Preparation and delivery of informative and persuasive speeches. Topics include research, organization, adapting to an audience, deep-seated conviction, and evaluating the effectiveness of the communicator. Prereq: 240 (210 may be substituted for 240).

502 Business and Professional Communication (3) Communicating with and for organizations. Topics and activities may include organizational communication, functions and departments, proposals and reports, interpersonal communication, and conflict resolution. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and Department prior to registration (see Department for proposal deadlines). May be repeated to a maximum 15 hours.

504 Propaganda (3) Study of political, commercial, and social propaganda, emphasizing contemporary methods used for research in Speech Communication. Prereq: 240 (210 may be substituted for 240). Available to nonmajor students.

505 Communication in Latin American and Latino/a films and videos from Hispanic literature, culture, linguistics, or foreign languages. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 474.)

506 Special Topics (1-15) See description of major concentration. May be repeated to a maximum 15 hours.

510 Public Speaking (3) Preparation and delivery of informative and persuasive speeches. Topics include research, organization, adapting to an audience, deep-seated conviction, and evaluating the effectiveness of the communicator. Prereq: 240 (210 may be substituted for 240).

515 Writing in Social Science (3) Focus on writing, reading, and research in the social sciences. Emphasis on recognizing valid and ineffective persuasion. Topics include credibility, message construction, receiver variables.

516 Business and Professional Communication (3) Communication in the workplace. Topics may include oral presentations, written reports, and transactions with internal and external customers. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and Department prior to registration (see Department for proposal deadlines). May be repeated to a maximum 15 hours.

520 Communication and Society (3) Study of communication in society and behavior. Topics may include interpersonal communication, social propaganda in United States, World War I to present. Writing emphasis course.

520 Interpersonal Communication (3) Process by which thoughts, feelings, and actions affect and are affected by the face-to-face communication situation. Prereq: 240 (210 may be substituted for 240). Writing emphasis course.

521 Listening (3) Study of the principles and techniques of listening. Focus on theoretical and practical listening skills.

523 Persuasion (3) Methods which contribute to effective and ineffective persuasion. Topics include credibility, message construction, receiver variables.

524 Advanced Composition (3) Develops writing skills and also involves those who specialize in Hispanic Studies or have a minor in Spanish. Prereq: 240.

525 Communication and Society (3) Study of communication in society and behavior. Topics may include interpersonal communication, social propaganda in United States, World War I to present. Writing emphasis course.

526 Communication and Society (3) Study of communication in society and behavior. Topics may include interpersonal communication, social propaganda in United States, World War I to present. Writing emphasis course.

529 Social/Political/Protest Literature of Latin America (3) A survey of Latin American protest literature, focusing on important movements, events, and artistic achievements of the Spanish people from the Conquest to the present. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 479.)

530 Group Communication (3) Small group decision making, participation, leadership, participation, and roles as they affect critical thinking in groups.

531 Communication in Latin American and Latino/a films and videos from Hispanic literature, culture, linguistics, or foreign languages. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 474.)

532 Hispanic Drama (3) Close reading and analysis of representative works by selected novelists, essayists, or poets. Emphasis is on theoretical and practical performance skills.

533 Social/Political/Protest Literature of Latin America (3) A survey of Latin American protest literature, focusing on important movements, events, and artistic achievements of the Spanish people from the Conquest to the present. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 479.)

535 Hispanic Drama (3) Close reading and analysis of representative works by selected novelists, essayists, or poets. Emphasis is on theoretical and practical performance skills.

536 Hispanic Poetry (3) Close reading and analysis of representative works by selected novelists, essayists, or poets. Emphasis is on theoretical and practical performance skills.

537 Hispanic Poetry (3) Close reading and analysis of representative works by selected novelists, essayists, or poets. Emphasis is on theoretical and practical performance skills.

540 Communication and Society (3) Study of communication in society and behavior. Topics may include interpersonal communication, social propaganda in United States, World War I to present. Writing emphasis course.

540 Organizational Communication (3) Organizational selling and those variables of the communication process that affect the quality of human interaction both within and outside the organization.

543 Family Communication (3) Dynamics of interactions that are family systems, subgroups, and child-rearing relationships. Study of verbal and nonverbal communication processes, patterns, and problems. Prereq: Child and Family Studies 320 or Speech Communication 300. Writing emphasis course.

544 Communication Theory (3) An introduction to the study of communication and theoretical perspectives. Prereq: 240 (210 may be substituted for 240) (943)

545 Communication Theory (3) An introduction to the study of communication and theoretical perspectives. Prereq: 240 (210 may be substituted for 240) (943)
200 Foundation of Sport Management (3) Introduction to the sport management profession with emphasis on introductory fundamental concepts and training techniques for various sport management positions, including experiences observing and working at major events. Prerequisite: Consent of instructor. Fall, Spring.

230 Introduction to Scenery Technology (3) A survey of scenery technology related to the production of theatrical events, with emphasis on the history of theatre and scenography. Prerequisites: Consent of instructor. Fall.

245 Basic Stage Costumeing (3) Costuming techniques and individual and ensemble costume design as applied to stage productions and opera. Prerequisites: Consent of instructor. Fall.

250 Introduction to Scenery Technology (3) Survey of practical information on electricity, lighting, and special effects equipment as used in stage productions. Prerequisite: Consent of instructor. Fall.

213 Course of Instruction (1-6) Supervised on-campus experience in application of sport management principles and methods in business, industry, or government, culminating in a written and oral presentation. Prerequisite: Consent of instructor. Fall, Spring.

214 Internship (1-15) Supervised off-campus experience in application of sport management principles and methods in business, industry, or government, culminating in a written and oral presentation. Prerequisite: Consent of instructor. Fall, Spring.

215 Research Topics I (1-3) Faculty directed research in sport management. May be repeated. Maximum 6 hours.

216 Research Topics II (1-3) Faculty directed research in sport management. May be repeated. Maximum 6 hours.

217 Business Topics (1-3) Faculty directed research in sport management. May be repeated. Maximum 6 hours.
451 Advanced Scenery Technology II (3) Study and practice of metalworking and plastics for theatrical productions; production participation will be required. Prerequisite: 250. Graduate credit available to Theatre M.F.A. students only.

454 Scenery Painting (3) Introduction to materials, techniques, and principles of the craft. Emphasis on getting skill and understanding through studio experience. Prerequisite: Consent of instructor.

455 Intermediate Scene Design (5) Materials, technical, and academic understanding of the process of designing theatrical sets. Prerequisite: Consent of instructor.

456 Rendering (3) Techniques in monochrome and full-color illustration. Some acquaintance with basic mechanical perspective and freehand sketching is assumed.

457 Advanced Lighting Design I (3) Advanced problem solving in lighting design and theory including focus on light rehearsal and lighting of the stage. Prerequisite: Consent of instructor and instructor of record.

458 Applied Theatre: Scenery (3) Laboratory in scenery for theatrical productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

462 Advanced Lighting Design (3) Advanced problems in lighting design and theory including focus on the application of advanced lighting techniques. Prerequisite: Consent of instructor and instructor of record. 90 hours of work required.

464 Computer Assisted Design for Theatre (3) Advanced techniques in computer-assisted design for theatre. Work with CAD, graphic design software, and 3D modeling software. Specific content varies with semester. Admission by consent of instructor only. May be repeated. Maximum 9 hours.

362 Introduction to Lighting Design (3) Mechanics and theory of stage lighting; problems in basic lighting practice. Prerequisite: 260.

355 Introduction to Scenic Design (3) Introduction to the art and craft of scenic design. Prerequisite: Consent of instructor and instructor of record.
493 Independent Study (1-15)
Registration by consent of instructor. F

445 Ecology and Management of Wild State (3) Biological and ecological characteristics of game mammals and their management policy. Enrollment by consent of instructor, Prereq: FWF 317 or consent of instructor. 2 hours and 1 lab. One weekend field trip required. Sp

444 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science. Letter grade or Satisfactory/No Credit. E

410 Sex Role Development: Implications for Education and Counseling (3) (Same as Sociology 434.) Writing-emphasis course.

405 Topics in Women's Studies (3) Content varies. May be repeated.

410 Sex Role Development: Implications for Education and Counseling (3) (Same as Sociology 434.) Writing-emphasis course.

422 Women Writers in England (3) (Same as English 422.)

405 Topics in Women's Studies (3) Content varies. May be repeated.

410 Sex Role Development: Implications for Education and Counseling (3) (Same as Sociology 434.) Writing-emphasis course.

422 Women Writers in England (3) (Same as English 422.)

405 Topics in Women's Studies (3) Content varies. May be repeated.

410 Sex Role Development: Implications for Education and Counseling (3) (Same as Sociology 434.) Writing-emphasis course.

422 Women Writers in England (3) (Same as English 422.)

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