

ANTH 561. Archaeological Laboratory Methods (3)

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 560.

Application of palynology, paleontology and relevant technologies. Individual laboratory research project required.

ANTH 580. Anthropological Data Analysis (3)

Two lectures and three hours of laboratory.

Prerequisites: Anthropology 101 or 102 and a statistics course.

Recommended: Psychology 270 or Sociology 201.

Computer oriented data analysis class utilizing anthropological data sets. Special section of the SPSS computer workshop is required.

ANTH 582. Regional Anthropology (3)

Prerequisite: Anthropology 102.

Study of societies in a major geographical region of the world such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. See Class Schedule for specific content. May be repeated with new content. Maximum credit six units.

ANTH 583. Topical Anthropology (3)

Prerequisite: Anthropology 102.

Study of a major subdiscipline such as political anthropology, economic anthropology, social anthropology, psychological anthropology, cultural ecology, applied anthropology, anthropological genetics, or environmental archaeology. See Class Schedule for specific content. May be repeated with new content. Maximum credit six units.

ANTH 596. Topics in Anthropology (1-3)

Prerequisite: Consent of instructor.

Advanced topics in anthropology. See Class Schedule for specific content. May be repeated with new content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

GRADUATE COURSES

Refer to the *Graduate Bulletin*.

Arabic (ARAB)

In the Department of Linguistics and

Asian/Middle Eastern Languages

In the College of Arts and Letters

LOWER DIVISION COURSES

Native speakers of Arabic will not receive credit for taking lower division courses in Arabic except with advance approval from the department.

No credit will be given for lower division courses taken after successfully completing any upper division Arabic course taken in Arabic.

No credit will be given for Arabic 101, 102, 201, 202, 301, 302 taken out of sequence.

ARAB 101. Elementary Arabic I (4) [GE]

Introduction to Arabic, with emphasis on language of everyday conversation. Focus on vocabulary and structures needed for elementary speaking, listening, and reading. Not open to students who have completed three years of high school Arabic unless the third course was completed five or more years ago. Not open to students with credit in Arabic 102, 201, or 202.

ARAB 102. Elementary Arabic II (4) [GE]

Prerequisite: Arabic 101 or two years of high school Arabic.

Continuation of Arabic 101. Develops vocabulary and structures needed for elementary speaking, listening, and reading, with emphasis on the language of everyday conversation. Not open to students who have completed four years of high school Arabic unless the fourth course was completed five or more years ago. Not open to students with credit in Arabic 201 or 202.

ARAB 201. Intermediate Arabic I (4) [GE]

Prerequisite: Arabic 102.

Further development of speaking, listening, reading, and writing skills, with emphasis on the language of everyday conversation. Not open to students with credit in Arabic 202.

ARAB 202. Intermediate Arabic II (4) [GE]

Prerequisite: Arabic 201.

Further development of speaking, listening, and reading skills, with emphasis on the language of everyday conversation.

**UPPER DIVISION COURSES
(Intended for Undergraduates)**

All upper division courses in Arabic are taught in Arabic unless otherwise stated.

ARAB 301. Advanced Arabic I (4) [GE]

Prerequisites: Arabic 202; and completion of the General Education requirement in Foundations II.C., Humanities.

Advanced facility in oral expression and writing for practical purposes; exposure to various dialects through newspaper and media Arabic; elements of literary and classical language.

ARAB 302. Advanced Arabic II (4) [GE]

Prerequisites: Arabic 301; and completion of the General Education requirement in Foundations II.C., Humanities.

Continuation of Arabic 301. More advanced writing and longer expository texts. Reading modern and classical texts.

ARAB 330. Arabic Culture (3) [GE]

Prerequisites: Upper division standing; and completion of the General Education requirement in Foundations II.C., Humanities.

Cultures of Arabic speaking peoples of the Near East, Middle East, and North Africa, as reflected in literature, the arts, history, political and social institutions. Taught in English

ARAB 350. Advanced Conversational Arabic (4) [GE]

Prerequisites: Arabic 202; and completion of the General Education requirement in Foundations II.C., Humanities.

Study of one or more spoken varieties of Arabic, with emphasis on advanced conversational proficiency. Social and cultural topics, conversational strategies and stylistic features. Dialect studied varies depending on student interest. May be repeated with new content. Maximum credit eight units.

ARAB 496. Topics in Arabic Studies (1-4)

Topics in Arabic language, literature, culture, and linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit eight units.

Art (ART)

In the School of Art, Design, and Art History

In the College of Professional Studies and Fine Arts

LOWER DIVISION COURSES**ART 100. Drawing and Composition (3) I, II**

Six hours.

The ordering of two-dimensional space through drawing.

ART 101. Two Dimensional Design and Color (3) I, II

Six hours.

Fundamentals of space and color design. Basic course used as a prerequisite for advanced work.

ART 102. Drawing and Composition (3) I, II

Six hours.

Prerequisite: Art 100.

Line and value in drawing; emphasis on structure and proportion, sketching, gesture, and contour drawing.

ART 103. Three Dimensional Design (3) I, II

Six hours.

Prerequisite: Art 101.

Introduction and investigation of design and theory, and practice in three dimensions.

ART 148. Visual Presentation I (3) I, II

Six hours.

Prerequisite: Art 100.

Design drawing techniques including interior presentation drawings, interior detailing, architectural drafting, and lettering. Tools and materials used in the design professions.

ART 157. Introduction to Art (3) [GE] I, II

An illustrated lecture course dealing with the meaning of art derived from an investigation of the principles of art. Designed to increase the understanding and appreciation of art.

ART 158. Arts of Native America, Sub-Saharan Africa, and Oceania (3)

Arts of diverse societies of Native America, Sub-Saharan Africa, and Oceania in cultural context. Art forms from ancient to contemporary period.

ART 203. Life Drawing (3) I, II

Six hours.

Prerequisite: Art 102.

Drawing from the nude model. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 204. Painting (3) I, II

Six hours.

Prerequisites: Art 101 and 102.

Pictorial composition and techniques of painting. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 210. Printmaking (3) I, II

Six hours.

Prerequisites: Art 101 and 102.

Introduction and exploration of basic printmaking media. Emphasis on aesthetic and technical processes in intaglio, lithography, relief and serigraphy. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 216. Sculpture (3) I, II

Six hours.

Prerequisite: Art 103.

Introduction and experimentation of basic sculpture ideas, methods and materials. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 217. Figurative Sculpture (3) I, II

Six hours.

Prerequisite: Art 103.

Creative experimentation with sculptural forms from the human figure. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 220. Design in Crafts (3) I, II

Six hours.

Prerequisite: Art 103.

Visual and structural form in crafts.

ART 231. Beginning Jewelry and Metals (3) I, II

Six hours.

Prerequisite: Art 220.

Design and construction of jewelry and small objects in non-ferrous metals. Basic fabrication, forming, and surface embellishment techniques for metal. Not open to students with credit in Art 331. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 240. Fundamentals of Digital Media (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 100 and 101.

Principles of digital media used in visual communication. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 241. Graphic Design I (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 100, 101, 102, 103. Computer proficiency required with working knowledge of vector graphics software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Principles of two-dimensional design applied to graphic form, including form/counter form, contrast, progression, and sequence.

ART 242. Typography I (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 100, 101, 102, 103. Computer proficiency required with working knowledge of vector graphics and page layout software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Fundamentals of typography including history, theory, and practice with emphasis on study of letterforms and type design; principles of two-dimensional design and hierarchy applied to basic typographic layout. (Formerly numbered Art 243.)

ART 247. The House and Its Environment (3)

Architecture, interior design, landscape and city planning for forming the physical and aesthetic environment. Not open to students with credit in Art 347.

ART 248. Visual Presentation II (3) I, II

Six hours.

Prerequisites: Art 102, 103, 148. **Proof of completion of prerequisites required:** Copy of transcript.

Methods, materials, and tools of the professional environmental designer stressing art principles.

ART 249. Visual Presentation III (3) I, II

Six hours.

Prerequisite: Art 248. **Proof of completion of prerequisite required:** Copy of transcript.

Methods, materials, and tools of the professional environmental designer stressing art principles.

ART 250. The Contemporary House (3) I, II

Six hours.

Prerequisite: Art 248. **Proof of completion of prerequisite required:** Copy of transcript.

Elementary problems in neighborhood planning, house design, and landscaping.

ART 251. Interior Design I (3) I, II

Six hours.

Prerequisites: Art 102 and 103. **Proof of completion of prerequisites required:** Copy of transcript.

Elementary functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume.

ART 258. Introduction to Art History I (3) [GE] I, II

Art development in painting, sculpture, architecture, and handicrafts from the dawn of art to the Renaissance. Illustrated.

ART 259. Introduction to Art History II (3) [GE] I, II

The period from the Renaissance through the modern school treated in the same manner as in Art 258.

ART 263. Asian Art (3)

Arts of Asian countries including China, India, and Japan from prehistoric to pre-modern times. Role of religious belief and state ideology in shaping visual characteristics of regional cultures in Asia.

ART 296. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

**UPPER DIVISION COURSES
(Intended for Undergraduates)**

ART 323. Beginning Furniture Design and Woodworking (3) I, II
Six hours.

Prerequisite: Art 103. Recommended: Art 148.

Principles of design through the making of furniture. Basic techniques in woodworking and joinery. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 325. Beginning Throwing-Ceramics (3) I, II

Six hours.

Prerequisites: Art 102 and 103. Recommended: Art 220.

Basic methods of forming, decorating, glazing, and firing pottery forms with emphasis on the use of the potter's wheel. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 326. Beginning Handbuilt Ceramics (3) I, II

Six hours.

Prerequisites: Art 102 and 220.

Design and construction of handbuilt ceramic forms and application of glaze for surface enhancement. Traditional approaches and contemporary issues. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 331. Beginning Jewelry and Metalwork (3) I, II

Six hours.

Prerequisites: Art 102 and 103. Recommended: Art 220.

Creative design and construction in metal of jewelry and small objects. Techniques in three-dimensional forming and constructions in nonferrous metals. Not open to students with credit in Art 231. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 339A. Software for Graphic Design I (1) Cr/NC

Two hours.

Prerequisites: Art 102, 103, and premajor or major standing.

Software for graphic design including vector, page layout, and image editing software consistent with current industry.

ART 340. Photographic Imagery (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 100, 101, 102, 103; Art 241 and 339A for graphic design majors. **Proof of completion of prerequisites required:** Copy of transcript.

Visual communication and expression using photographic media including photomechanical and digital processes and theory of color and light. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 341. Graphic Design II (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 241, 242, 339A, 345. Computer proficiency required with working knowledge of vector graphics and page layout software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Graphic form with emphasis on visual translation techniques, visual metaphor, signs and symbols.

ART 342A. Typography II (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 242 339A, 345. Computer proficiency required with working knowledge of vector graphics and page layout software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Typographic layout and page systems including theories of visual organization, proportion, and grids with emphasis on expression and communication. (Formerly numbered Art 342.)

ART 342B. Letterpress (3) I, II

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 210 or 242.

History, technology, and process of relief printing using moveable type and photopolymer plates to create individual and collaborative page designs that integrate image and text. Maximum credit six units.

ART 343. Drawing and Illustration for Graphic Design I (3)

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 203 or 204. **Proof of completion of prerequisite required:** Copy of transcript.

Visual notation, sketching, representational drawing, and visual translation related to graphic design.

ART 344A. Design for the Internet I (3) I, II, S

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 240 or 340.

Creative and practical applications of interactive visual communication using digital media fundamental to creation and design of interface, graphics, illustrations, photography, animation, sound, video, and interactive navigation for presentation on the Internet. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required. (Formerly numbered Art 344.)

ART 344B. Design for the Internet II (3) I, II

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 344A.

Intermediate design and development for World Wide Web. Topics include animation, gaming, advanced scripting and Internet art, and experimental applications.

ART 345. History of Graphic Design (3) I

Prerequisites: Grade of C (2.0) or better in Art 258 and 259. **Proof of completion of prerequisites required:** Copy of transcript.

Evolution of graphic communication from prehistory through postmodern design and the digital revolution. (Formerly numbered Art 245.)

ART 346. The Art of the Book I (3)

Six hours.

Prerequisite: Any 300- or 400-level art or design course.

Terminology, tools, materials, and reproduction processes related to the making of books; historical and contemporary book structures; and development of content in the form of image and text. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 347. The House and Its Environment (3) I

Architecture, interior design, landscape, and city planning for forming the physical and aesthetic environment, its simplicities and complexities. Not open to students with credit in Art 247.

ART 348. Three Dimensional Digital Media (3) II

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 148 or 240 or 241 or 242.

Design communication utilizing digital media as it relates to three-dimensional objects and spatial environments.

ART 352. Methods and Materials of Interior Design (3) II

Prerequisite: Art 451.

Topics in successful professional practice including codes, legal liabilities, contractual agreements, project management. Lectures in field settings illustrate methods and materials of installation and explore environmental systems.

ART 357. World Art in Contemporary Life (3) [GE] II

Prerequisite: Completion of the General Education requirement in Foundations II.C., Humanities.

World art and technology from ancient to post modern era and their relationship to contemporary culture and life. Gallery visits required.

ART 371. Medieval Art (3)

Prerequisite: Art 258.

Development of painting, sculpture, and architecture from time of Constantine through Gothic period.

ART 385. Art Education History and Practice (3)

Six hours.

Prerequisites: Art 102, 103, 258, 259.

History and theory of art education. Role of art in child and adolescent development, art heritage, diversity and equity in art education and teaching methodologies. For art majors interested in pursuing the single subject teaching credential.

ART 387. Art for Elementary School Teacher (3) I, II, S

Six hours.

Prerequisite: Art 101, or upper division standing and consent of instructor.

A design-crafts course that explores in depth materials and processes primarily used by the elementary school teacher.

ART 403. Advanced Life Drawing (3)

Six hours.

Prerequisite: Art 203.

Drawing the nude model. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 404. Intermediate Painting (3) I, II

Six hours.

Prerequisite: Art 204.

Concepts that enhance basic painting principles and a broad range of painting issues. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 406. Experimental Processes in Painting and Drawing (3)

Six hours.

Prerequisites: Art 203 and 204.

Structure in picture making. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 407. Black and White Photography as a Fine Art Medium (3) I, II

Six hours.

Prerequisites: Art 102, 103, and six units of studio art.

Black and white photography and darkroom techniques combined with independent research in contemporary art and photography. Criticism in contemporary context. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 408. Color Photography as a Fine Art Medium (3) II

Six hours.

Prerequisite: Art 407 or portfolio review.

Color photography as a fine art medium, including color theory, transparency and negative film exposure controls, darkroom techniques, and electronic flash and lighting techniques for color photography. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 410. Intaglio Printmaking (3)

Six hours.

Prerequisites: Art 203 and 210.

Creative intaglio—etching, drypoint, aquatint, engraving and variations. Emphasis on fine print quality and technical development. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 411. Lithography Printmaking (3) I, II

Six hours.

Prerequisites: Art 101 and 203.

Creative lithography—stone and plate planographic process. Emphasis on fine print quality and technical development. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 416. Intermediate Sculpture (3) I, II

Six hours.

Prerequisite: Art 216.

Individual investigation into sculpture ideas, methods and materials, including clay, metal, plastics, paper or wood. Individual development in sculpture. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 423. Intermediate Furniture Design and Woodworking (3) I, II

Six hours.

Prerequisite: Art 323.

Intermediate individual design: Exploration of materials, processes and function. Specialized techniques focusing on case construction, making of drawers and doors for furniture. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 425. Intermediate Ceramics (3) I, II

Six hours.

Prerequisites: Art 325 and 326.

Continuation of Art 325. Further development of knowledge, skills and philosophy of ceramics through individual creative projects. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 431. Intermediate Jewelry and Metalwork (3) I, II

Six hours.

Prerequisite: Art 231 or 331.

Further development of design and metalworking skills specifically related to jewelry. Specialized techniques such as casting, chasing, stone setting, die forming and enameling. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 432. Metalsmithing (3)

Six hours.

Prerequisite: Art 231 or 331

Creative design and techniques in metalsmithing. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 435. Nonwoven Textile Construction (3) I, II

Six hours.

Prerequisites: Art 102 and 103. Recommended: Art 220.

Textile structures with an emphasis on nonloom techniques. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 436. Textile Design (3) I, II

Six hours.

Prerequisites: Art 102 and 103. Recommended: Art 220.

Application of design for the textile surface, using a broad variety of media and processes appropriate for both the individual designer and commercial reproduction. Media include stencil, block, silk-screen, batik, and tie-dye. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 440. Intermediate Photographic Imagery (3)

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 340.

Visual and creative expression using photographic media with emphasis on refining technical skills, including lighting.

ART 441. Information Graphics (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 339A, 340, 341, 342A, 345. Computer proficiency required with working knowledge of vector graphics, page layout, and digital image editing software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Analysis and translation of complex information into visual communication systems.

ART 442. Typography III (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 339A, 340, 341, 342A, 345. Computer proficiency required with working knowledge of vector graphics, page layout, digital image editing, and motion graphics software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Typographic problem solving including more complex text materials and type with image.

ART 443. Drawing and Illustration for Graphic Design II (3) I, II

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 343. **Proof of completion of prerequisite required:** Copy of transcript.

Drawing and illustration methods, materials, tools, and processes as they relate to graphic design. Maximum credit three units. Students may not re-enroll in this course after earning a grade of C or higher (or Cr). Copy of transcript required.

ART 445A. Professional Practice in Graphic Design (1) Cr/NC I, II

Two hours.

Prerequisites: Grade of C or better in Art 340, 341, 342A, and consent of instructor.

Evolving role of graphic designer in contemporary design practice, standards of professional conduct, and business practices.

ART 445B. Graphic Design Internship (3) Cr/NC I, II

Prerequisites: Grade of C (2.0) or better in two of the following: Art 441, 442, 450, 454, or 541, and portfolio review. Computer proficiency required with working knowledge of vector graphics, page layout, digital image editing, motion graphics, and web design software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Field experience with practicing professionals. Maximum credit six units.

ART 445C. Senior Portfolio/Exhibition (3) II

Six hours.

Prerequisites: Grade of C (2.0) or better in two of the following: Art 441, 442, 450, 454, or 541 for graphic design majors, Art 344B, 448, 540, or 544 for multimedia majors; and portfolio review. Computer proficiency required with working knowledge of vector graphics, page layout, digital image editing, motion graphics, and web design software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Planning, strategy, and development of a comprehensive body of design work to be professionally presented in a portfolio and/or exhibition format.

ART 446. The Art of the Book II (3)

Six hours.

Prerequisite: Art 346.

Creative research focused on concept, context, and form as they relate to communication and personal or collaborative expression within the context of the book. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 448. Sequential Media (3) I, II

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 240 and 341, or 344A, or 348.

Study and presentation of sequential imagery. Maximum credit six units. (Formerly numbered Art 444.)

ART 450. Packaging Design (3) I

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 340, 341, 342A, 345. Computer proficiency required with working knowledge of vector graphics, page layout, and digital image editing software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Principles and theories of design: branding, typography, illustration, and photography applied to three-dimensional form within a specified social and cultural context with emphasis on strategy and concept; structure, functionality and materials; and modular systems.

ART 451. Interior Design II (3) I, II

Six hours.

Prerequisites: Art 249, 250, 251, and completion of portfolio requirement. **Proof of completion of prerequisites required:** Copy of transcript.

Survey, analysis and conceptual design methods of residential interiors stressing materials, equipment, components and structural detailing. Maximum credit six units.

ART 452. Interior Design Practicum (3) Cr/NC I, II

Nine hours of laboratory.

Prerequisite: Art 453. **Proof of completion of prerequisite required:** Copy of transcript.

Field experience with local professional interior designers in client relationships, business procedures, supervision of subcontracted work and installation, and execution of contracts. Maximum credit six units.

ART 453. Interior Design III (3) I, II

Six hours.

Prerequisites: Art 451 and completion of portfolio requirement. **Proof of completion of prerequisites required:** Copy of transcript.

Materials and techniques of nonresidential space planning. Estimating, specification writing, contractual agreements, record keeping, budgets, and project supervision. Required field trips to professional offices, studios, and showrooms.

ART 454. Environmental Graphic Design (3) II

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 340, 341, 342A, 345. Computer proficiency required with working knowledge of vector graphics, page layout, and digital image editing software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Identification and communication systems applied to environmental solutions. Landmark and wayfinding signage systems in interior, exterior, and architectural environments in collaboration with interior design students.

ART 496. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

ART 498. Senior Project (3) I, II

Nine hours for 498A; three hours for 498B.

Prerequisite: Consent of instructor.

Investigation in art. Formal presentation of project.

- A. Studio project
- B. Art History project

ART 499. Special Study (1-3) I, II

Prerequisite: Consent of instructor.

Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

ART 500. Advanced Drawing (3)

Six hours.

Prerequisites: One year of 400-level studio art coursework and consent of instructor.

Drawing emphasizing qualitative aspect of visual subject matter. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 502. Inter-Media (1-3) I, II

Two hours for each unit of credit.

Prerequisites: Art 102 and 103.

Process and materials in plane and space. Maximum credit six units. M.F.A. students: Maximum credit six units applicable to the M.A. degree; nine units applicable to the M.F.A. degree.

ART 503. Life Drawing and Painting (3)

Six hours.

Prerequisites: Art 204 and 403.

Drawing and painting from nude and costumed models. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 504. Advanced Painting (3) I, II

Six hours.

Prerequisite: Six units of Art 404.

Approaches to contemporary concepts in painting. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 506. Contemporary Issues for Studio Artists (3)

Prerequisites: Upper division or graduate standing in art and consent of instructor.

Theory, practice, and philosophy of being an artist. Independent research on current art concepts and issues. Material will encompass the past five years. Field trips.

ART 511. Lithography Printmaking in Color (3) I, II

Six hours.

Prerequisite: Art 411.

Advanced creative lithography printmaking in color. Emphasis on fine print quality in color process and color technology unique to this medium. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 516. Advanced Sculpture (3) I, II

Six hours.

Prerequisite: Art 416.

Individual investigations into sculpture ideas, methods and materials. Individual development in sculpture. Materials may include clay, metal, plastics, paper or wood. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 517. Figurative Sculpture (3)

Six hours.

Prerequisites: Art 216 and 217.

Figurative study with emphasis on individual exploration. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 523. Advanced Furniture Design and Woodworking (3) I, II

Six hours.

Prerequisite: Six units of Art 423.

Advanced individual design: Exploration of materials, process and function. Continued focus on development of personal design statements and specialized techniques. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 525. Advanced Ceramics (3) I, II

Six hours.

Prerequisite: Art 425.

Study of ceramic design through creative projects of clay forms. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 526. Clay and Glaze Technology in Ceramic Design (3)

Six hours.

Prerequisite: Art 425.

Experimentation and application of research concerning the use of ceramic materials and techniques as an integral part of the design process. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 531. Advanced Jewelry and Metalwork (3) I, II

Six hours.

Prerequisite: Art 431.

Problems involving fabrication processes already studied in order to increase technical competence while exploring personal design statements; specialized techniques such as photoetching and electroforming. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 532. Advanced Metalsmithing (3) I, II

Six hours.

Prerequisite: Art 432.

Advanced problems involving metal processes to increase technical competence while exploring personal design statements. Maximum credit six units. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 535. Advanced Nonwoven Textile Construction (3) I, II

Six hours.

Prerequisite: Art 435.

Advanced study in nonloom techniques. Techniques to include: looping, braiding, plaiting, and special fabricating techniques. Experimentation with new man-made fibers and with synthetic commercial dyes. Maximum credit six units.

ART 536. Advanced Textile Design (3) I, II

Six hours.

Prerequisite: Art 436.

Application of design for the textile surface, appropriate for both the individual designer and commercial reproduction. Maximum credit six units.

ART 540. Advanced Photographic Imagery (3) II, S

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 340, or Art 240 and 407.

Visual communication and expression using photographic media, including photomechanical and digital processes. Preparation for multimedia and digital prepress. Maximum credit six units with consent of instructor. Students may not re-enroll in this course after earning six units of C or higher (or Cr). Copy of transcript required.

ART 541. Visual Identity and Branding Systems (3) I, II

Six hours.

Prerequisites: Grade of C (2.0) or better in two of the following: Art 339A, 441, 442, 450, 454. Computer proficiency required with working knowledge of vector graphics, page layout, digital image editing, motion graphics, and web design software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Strategy, planning, and problem solving related to visual communication systems with emphasis on social and cultural context.

ART 542. Typography IV (3)

Six hours.

Prerequisites: Grade of C (2.0) or better in Art 339A, 442. Computer proficiency required with working knowledge of vector graphics, page layout, digital image editing, motion graphics, and web design software consistent with current industry standards. **Proof of completion of prerequisite required:** Copy of transcript.

Individual creative and scholarly research in typography, conceptual and contextual exploration, typographic experimentation based on theory, strategy, and problem solving. Maximum credit six units.

ART 543. Drawing and Illustration for Graphic Design III (3)

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 443. **Proof of completion of prerequisite required:** Copy of transcript.

Strategy and problem solving of professional illustration as related to graphic design; individual conceptual and contextual exploration. Maximum credit six units.

ART 544. Emerging Technologies in Multimedia (3) II

Six hours.

Prerequisite: Grade of C (2.0) or better in Art 448.

Advanced design studies in emerging electronic communications, including cyberstudios, Internet and multimedia. Exploration in collaborative, interdisciplinary, and international projects. Maximum credit six units with consent of instructor.

ART 545. Design Studio (3) I, II

Six hours.

Prerequisite: Grade of C (2.0) or better in two of the following: Art 441, 442, 450, 454, 541, and portfolio review. Computer proficiency required with working knowledge of vector graphics, page layout, digital image editing, motion graphics, and web design software consistent with current industry standards. **Proof of completion of prerequisites required:** Copy of transcript.

Solutions to design problems for clients in a studio environment including business procedures and production management. Development of a professional level portfolio. Maximum credit six units with consent of instructor. Students may not re-enroll in this course after earning six units of C or higher. Copy of transcript required.

ART 547. Environmental Theory (3) II

Prerequisite: Art 247 or 347.

Survey of alternative solutions to the problem of design of the physical environment.

ART 552. Interior Design IV (3) I

Six hours.

Prerequisites: Art 451, 453, and completion of portfolio requirement. **Proof of completion of prerequisites required:** Copy of transcript.

Projects in architectural interiors involving the use and perception of enclosed spaces. Space planning systems analysis. Maximum credit six units.

ART 553. Interior Design V (3) II

Six hours.

Prerequisite: Art 552. **Proof of completion of prerequisite required:** Copy of transcript.

Projects in interiors involving space planning analysis, specification writing, materials selection and furnishing design appropriate to commercial needs. Maximum credit six units.

ART 557. Nineteenth Century European Art (3)

Prerequisite: Art 259.

Development of painting, sculpture, and architecture from the French Revolution to 1900.

ART 558. Twentieth Century European Art to 1945 (3)

Prerequisite: Art 259.

Major developments in the visual arts and art criticism from 1880 to 1945 (Post-Impressionism through Surrealism).

ART 559. Twentieth Century European and American Art Since 1945 (3) I, II

Prerequisite: Art 259. Recommended: Art 558.

Major developments in the visual arts and art criticism since 1945.

ART 560. History of American Art (3)

Prerequisite: Art 259.

Development of painting, sculpture, and architecture from the Native American art and Colonial Period to the present.

ART 561. Art of Pre-Hispanic America (3)

Prerequisite: Art 259.

Art of ancient Meso-America, Central America, Caribbean, and South America from earliest times until contact with Europe.

ART 562. Art of Latin America (3)

Prerequisite: Art 259.

Art and architecture of Latin America from the colonial period to the present. Field trips included.

ART 564. Art of China (3) II

Prerequisite: Art 258 or 259 or 263.

History of Chinese art from prehistoric times through the Ching Dynasty.

ART 565. Art of Japan (3) I

Prerequisite: Art 258 or 259 or 263.

History of Japanese art from prehistoric times to the Meiji Restoration.

ART 566. History of Japanese Painting Tenth to Twentieth Centuries (3) II

Prerequisite: Art 258 or 259 or 263.

History of Japanese painting from tenth to twentieth centuries, emphasizing art from three social groups: aristocrats, warriors, and merchants. Analysis of motifs, iconography, and styles of art schools developed during these periods, reinforced by social history.

ART 567. Art of the Ancient Near East (3)

Prerequisite: Art 258.

Development of painting, sculpture, and architecture of Mesopotamia, Anatolia, the Levant, Ancient Persia, and Egypt from prehistoric times to the first century B.C.

ART 568. Art of Crete, Mycenae, Greece, and Rome (3)

Prerequisite: Art 258.

Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.

ART 569. Art of Sub-Saharan Africa (3)

Prerequisite: Art 158 or 258 or 259 or 263.

Form and content of the art of Sub-Saharan Africa viewed within its cultural context.

ART 570. Art of the Pacific Islands (3)

Prerequisite: Art 158 or 258 or 259 or 263.

Visual arts of the Pacific Islands; recognition of styles and object types and their historical, social, and cultural contexts.

ART 573A. Italian Art of the Fourteenth and Fifteenth Centuries (3)

Prerequisite: Art 259.

Italian arts, architecture, artists, and patrons from fourteenth century Proto-Renaissance period through fifteenth century revival of classical humanism in city states of Florence, Siena, Bologna, Mantua, and Padua.

ART 573B. Italian Art in the Sixteenth Century (3)

Prerequisite: Art 259.

High Renaissance in Florence and Rome, followed by disintegration of classical principles and domination of Mannerism in Central and Northern Italy and history of arts of Venice in sixteenth century.

ART 575. European Art from 1600 to 1750 (3)

Prerequisite: Art 259.

Architecture, sculpture, and painting of the Baroque and Rococo periods.

ART 577. History of Architecture (3)

Prerequisites: Art 258 and 259.

Architecture from primitive times to the present.

ART 578. Seminar in History of Museums and Exhibitions (3) I

Prerequisite: At least one course selected from Art 557, 558, 559, or 560.

Origin, history, and function of the museum. Theories of collecting, museums, and construction of knowledge. Role of elites in formation and construction of museums, controversial exhibitions, exhibitionary practices, and globalism.

ART 591. Gallery Exhibition Design (3) I, II

Six hours.

Prerequisite: Fifteen units of art.

Fundamental art elements and principles applied to the theories and techniques of gallery exhibition design.

ART 593. History and Methodology of Art History (3) II

Prerequisite: Twelve units of upper division art history.

Readings and discussions on the historiography of art and on modern methodologies for art historical research.

ART 596. Advanced Studies in Art and Art History (1-4)

Prerequisites: Twelve units of art and art history and consent of instructor.

Advanced topics in art and art history. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum credit of three units of 596 applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES

Refer to the *Graduate Bulletin*.

Asian Studies (ASIAN)

In the Department of Asia Pacific Studies

In the College of Arts and Letters

LOWER DIVISION COURSES**ASIAN 100. State and Society in the Asia Pacific (3) [GE]**

Social, political, and economic foundations of Asia Pacific societies. Emphasis on diversity of Asian cultures, their relationship with each other and within the global community.

ASIAN 101. Asian Thought and Cultures (3) [GE]

Intellectual and cultural underpinnings of East, Southeast, South, and Central Asia, from ancient to present, by means of a comparative overview of philosophies, religions, literatures, architectural design, visual and performing arts, highlighting continuing influence of tradition in contemporary Asian societies.

ASIAN 296. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

**UPPER DIVISION COURSES
(Intended for Undergraduates)****ASIAN 300. Asia's Global Future (3) [GE]**

Prerequisite: Completion of the General Education requirement in Foundations II.B., Social and Behavioral Sciences required for nonmajors.

Survey of contemporary Asia Pacific region and future prospects, politically, socially, and economically, as historically grounded in cultural and philosophical roots.

ASIAN 303. Imperialism and Nationalism in the Asia Pacific (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations II.B., Social and Behavioral Sciences required for nonmajors.

Relationships between imperialism and nationalism; how nationalism has shaped China, Japan, Taiwan, and states of Southeast Asia. Mid-nineteenth century to present, with emphasis on first half of twentieth century.

ASIAN 310. Contemporary Issues in Asian-American Communities (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations II.B., Social and Behavioral Sciences required for nonmajors.

Diverse processes, economic, political, and cultural, that have shaped formation and continued growth of diasporan communities in Asia Pacific region. Historical origins and contemporary status of diasporan communities.

ASIAN 450. Socio-Cultural and Health Issues Among Asia Pacific Americans (3)

Asia Pacific American communities and social/cultural factors that influence individual and current community health, programs, legislation, and movements aimed at closing health gaps. Emphasis on Filipinos, Indo-Chinese, Chinese, Japanese, and Hawaiians.

ASIAN 458. Asian Traditions (3) [GE] I, II

Prerequisites: Six units of Asian-content courses or upper division standing, and completion of the General Education requirement in Foundations II.C., Humanities required for nonmajors.

Social, cultural, economic, and political traditions of South, Southeast, and East Asia; how they functioned in theory and practice prior to twentieth century.

ASIAN 459. Modern Asian Cultures (3) [GE] I, II

Prerequisites: Six units of Asian-content courses or upper division standing, and completion of the General Education requirement in Foundations II.C., Humanities required for nonmajors.

Interdisciplinary investigation of East and Southeast Asian countries and regions. Western colonialism to rise of Asia as an economic and political power; ethnicity in Asian politics and society; terrorism, leadership struggles, and secessionist movements in Indonesia, Burma, and the Philippines.

ASIAN 460. Contemporary Issues in Filipino-American Communities (3) [GE] I, II

Prerequisites: Upper division standing and completion of the General Education requirement in Foundations II.B., Social and Behavioral Sciences required for nonmajors.

History of Philippines and Filipino immigration to US. Current issues in Filipino American communities to include labor, health, gender and sexuality, race relations, family culture and parenting, youth and the elderly, ethnic identity and empowerment.

ASIAN 471. Business Environment in the Asia Pacific (3)

Prerequisite: Consent of instructor for nonmajors.

Business environment in the Asia Pacific in terms of economic, political, legal, and cultural environment. Emphasis on major economies of the region, Japan, South Korea, and China. (Formerly numbered Asian Studies 330.)

ASIAN 472. Economic Reforms in China (3)

China's economic reforms and their impact on civil society and political development in contemporary China.

ASIAN 496. Experimental Topics (1-4)

Prerequisite: Six units of Asian-content courses.

Selected topics in Asian studies. May be repeated with new content. Maximum credit six units with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

ASIAN 499. Special Study (1-3)

Prerequisites: At least six units of upper division work completed toward the major or minor in Asian studies and consent of the instructor.

Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

- ASIAN 506. War and Memory in the Asia Pacific (3)**
Historiography of the Pacific War and problems associated with historical evidence, memory, authentication, and political uses of history.
- ASIAN 530. Media and Popular Culture in the Asia Pacific (3)**
Media and popular culture in Asia as instruments of social control, agencies of emancipation, expressions of global western power, and a means through which local identities are revitalized.
- ASIAN 531. Spiritual and Intellectual Traditions in the Contemporary Asia Pacific (3)**
Major thinkers or schools of Asian thought in modern times, reflecting East/West encounters and influences of global importance. Spiritual and intellectual aspects, cultural context, social/political/economic dimensions of the thinker or school and impact beyond the original culture.
- ASIAN 533. Minorities and Human Rights in the Asia Pacific (3)**
Human rights regimes and status of minorities in parts of Asia Pacific. Examines notion of "universal rights" within and between countries of the region.
- ASIAN 570. Economic Dynamics of the Asia Pacific (3)**
Sources and causes of regional economic growth. Role of the state, national growth models, enterprise forms and trade. Financial crisis of 1997-98 and subsequent developments to assess future economic prospects for the region.
- ASIAN 596. Selected Studies in Asian Cultures (3)**
Topics on various aspects of Asian studies. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES
Refer to the *Graduate Bulletin*.

Astronomy (ASTR)
In the College of Sciences

LOWER DIVISION COURSES

- ASTR 101. Principles of Astronomy (3) [GE] I, II, S**
Discover the universe: planets, stars, galaxies, and our place in the cosmos; the Big Bang; how stars shine; comets, meteors, nebulae, the Milky Way; black holes and other exotic objects. Not open to students with credit in Astronomy 201.
- ASTR 109. Astronomy Laboratory (1) [GE] I, II, S**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Astronomy 101 or 201.
Demonstration of astronomical principles through observations with astronomical instruments and analysis of astronomical data. A nighttime field trip to Mount Laguna Observatory is required.
- ASTR 201. Astronomy for Science Majors (3) [GE]**
Prerequisite: Satisfaction of the Entry-Level Mathematics requirement.
Directed toward students with a strong interest in science and mathematics. Understanding the night sky, introduction to the solar system, star formation and evolution, extrasolar planets, nature of the Milky Way and other galaxies, origin and fate of the universe. Students with credit in Astronomy 101 and 201 will receive a total of three units of credit toward graduation.

- ASTR 296. Experimental Topics (1-4)**
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

- ASTR 301. Cosmology and Gravitational Collapse (3) [GE]**
Prerequisite: Completion of the General Education requirement in Foundations II. A.1. Physical Sciences.
Einstein's theory of general relativity applied to problems of gravitational collapse (stellar evolution, neutron stars, black holes) and cosmology (origin and evolution of the universe).
- ASTR 310. Astrobiology and the Search for Extraterrestrial Life (3) [GE] I, II**
Prerequisites: Completion of the General Education requirement in Foundations II.A.1. Physical Sciences or II.A.2. Life Sciences.
Extraterrestrial life in our solar system and other planetary systems; formation of stars and planets; UFOs and SETI; origin and evolution of life on earth; life in extreme environments; cosmology and structure of universe.
- ASTR 320. Solar System Astronomy (3) II**
Prerequisites: Astronomy 201 and Physics 197, 197L.
Structures of the planets; their surfaces, atmospheres, and satellite systems; asteroids, comets, and meteoroids. The Sun, its structure, energy production, and influence in the solar system. Life in the solar system.
- ASTR 340. Spherical Astronomy (3) I**
Prerequisites: Credit or concurrent registration in Mathematics 252 and Physics 197.
Problems in spherical astronomy, astronomical coordinate systems, time, general precession, and introduction to celestial mechanics.
- ASTR 350. Astronomical Techniques (3) II**
Prerequisite: Astronomy 201.
Astronomical observation and optics. Data acquisition and reduction for modern astronomical instrumentation including photometry, direct imaging, and spectroscopy. Techniques for obtaining precise measurements and determining measurement uncertainties.
- ASTR 440. Astrophysics of Stars (3) I**
Prerequisites: Credit or concurrent registration in Mathematics 342A and Physics 354.
Radiative transfer theory, atmospheres of stars and the emergent spectrum, interior structure and evolution of stars, stellar pulsations.
- ASTR 450. Astrophysics of Star Systems (3) II**
Prerequisites: Credit or concurrent registration in Mathematics 342A and Physics 354.
Applications of physics in study of star clusters, the interstellar medium and galactic structure, galaxies, and cosmology.
- ASTR 496. Experimental Topics (3)**
Selected topics. May be repeated once with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.
- ASTR 498A. Senior Project (1) I, II**
Prerequisite: A students' academic program must demonstrate that they are on track to graduate within one academic year.
Selection and design of individual projects.
- ASTR 498B. Senior Project (2) I, II**
Six hours of laboratory.
Prerequisite: Astronomy 498A.
Individual research project culminating in a final written report.
- ASTR 499. Special Study (1-3) I, II**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

ASTR 596. Advanced Topics in Astronomy (2 or 3) I, II
Prerequisite: Consent of instructor.

Selected topics in astronomy or astrophysics. May be repeated with new content upon approval of instructor. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES
Refer to the *Graduate Bulletin*.

Biology (BIOL)

In the College of Sciences

LOWER DIVISION COURSES

BIOL 100. General Biology (3) [GE] I, II

Prerequisite recommended: Concurrent registration in Biology 100L.

A beginning course in biology stressing processes common to living organisms. Not applicable to biological sciences majors; see Biology 201A, 201B. Not open after Biology 201A or 201B.

BIOL 100L. General Biology Laboratory (1) [GE] I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 100.

A laboratory course in biology stressing processes common to living organisms. Not applicable to biological sciences majors; see Biology 201A, 201B. Not open after Biology 201A or 201B.

BIOL 101. World of Animals (3) [GE]

Animal adaptation and diversity and their relationship to the development of evolutionary theory. Not applicable to biological sciences majors. Not open after Biology 201A or 201B.

BIOL 101L. World of Animals Laboratory (1) [GE]

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 101.

Laboratory course on evolution and diversity of animals involving field trips and laboratory investigations. Not applicable to biological sciences majors. Not open after Biology 201A or 201B.

BIOL 201A. Principles of Cell and Molecular Biology (4) I, II

Three lectures and three hours of laboratory.

Prerequisites: Chemistry 200 and satisfaction of the English Placement Test requirement.

Principles of biology applying to all organisms, including cell structure, membrane transport, energy metabolism, cell division, classical and molecular genetics, recombinant DNA, population genetics, mechanisms of evolution, and the basis of classification.

BIOL 201B. Principles of Organismal Biology (4) I, II

Three lectures and three hours of laboratory.

Prerequisite: Satisfaction of the English Placement Test requirement. Strongly recommended: Completion of Biology 201A.

Principles of biology covering all organisms, including systematics and diversity of bacteria, protista, fungi, plants and animals, and concepts of physiology, reproduction, development and differentiation, ecology, and the causes of the endangerment of a species.

BIOL 210. Fundamentals of Microbiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 201A; or Biology 100, 212 and Chemistry 100 or 102 or 130.

For nursing and foods and nutrition majors. Study of microorganisms of the environment, including disease-producing organisms, their actions and reactions. Not applicable to biological sciences majors; see Biology 350.

BIOL 212. Human Anatomy (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 100 or 201A.

Grass and microscopic anatomy of organ system of human body.

BIOL 215. Biostatistics (3) [GE] I, II

Two lectures and three hours of laboratory.

Prerequisites: Credit or concurrent registration in Biology 201A or 201B and Mathematics 121 or 141.

Methods and experience in defining and solving quantitative problems in biology, including design of experiments, and parametric and nonparametric statistical techniques. Students with credit or concurrent registration in the following lower division courses will be awarded a total of four units for the two (or more) courses: Biology 215; Administration, Rehabilitation and Postsecondary Education 201; Civil Engineering 160; Economics 201; Political Science 201; Psychology 270; Sociology 201; Statistics 119, 250.

BIOL 224. Marine Topics at Sea World (1) (Offered only in Extension)

Prerequisite: College course in biology.

Marine topics of current interest. May be repeated with different topic and consent of instructor for maximum credit four units. See Extension catalog for specific content.

BIOL 246. Colloquium in Biomedical Sciences (1) II

Prerequisite: University level biology course.

Current biomedical research projects ranging from cell biology to behavioral research. Research paper required. Maximum credit two units.

BIOL 247. Advanced Degree Programs in the Sciences: Application Strategies (1)

Two hours of activity.

Prerequisite: Junior or senior standing.

Instruction in preparing competitive applications to sciences' M.S. and Ph.D. degree programs to include development of the required personal statement. Introduction to sources of financial support, such as national fellowship programs, and development of interview skills and materials. Maximum credit one unit for any combination of Biology 247, 248, 249, 250A-250B-250C.

BIOL 248. Careers in Biological Sciences (1) Cr/NC

Career opportunities in biological sciences. Specialists in major biological areas will present information about their fields and how best to prepare for careers. Maximum credit one unit for any combination of Biology 247, 248, 249, 250A-250B-250C.

BIOL 249. Career Choices in the Health Professions (1)

Career opportunities in allied health professions; trends in health care; discussion of medical ethics; practicing professionals will present about their fields and how best to prepare for careers in their area of health care. Maximum credit one unit for any combination of Biology 247, 248, 249, 250A-250B-250C.

BIOL 250. Preprofessional Topics (1) Cr/NC

A. Topics in Medicine.

B. Topics in Dentistry.

C. Topics in Veterinary Medicine.

Designed to expose the preprofessional student to the profession of his/her choice through speakers and selected readings. Emphasis on alternatives and meeting stresses as a preprofessional student. Maximum credit one unit for any combination of Biology 247, 248, 249, 250A-250B-250C.

BIOL 261. Human Physiology (4) I, II

Three lectures and three hours of laboratory.

Prerequisites: Chemistry 100; Biology 100 or 201A, 212; credit or concurrent registration in Chemistry 130.

Human function viewed from cellular through organ system levels of organization. Intended primarily for prenursing students. Not applicable to biological sciences majors. Not open to students with credit in Biology 336, 436, or 590.

BIOL 277. Medical Terminology (2)

Prerequisite: Biology 201B.

Words and word components used in medical and allied medical practice translated, investigated, and applied.