## Section 13

### Descriptions

#### Prefix List

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#### Course Numbering

- **0–99**  Pre-baccalaureate (no degree credit)
- **100–299**  Lower – Division Courses
- **300–499**  Upper – Division Courses
- **330–349**  Interdisciplinary Courses – without prerequisites (including cross-listed courses)
- **397**  Directed Studies Courses – variable topic credit courses
- **430–449**  Interdisciplinary Courses – may have prerequisites or require permission from the instructor (including cross-listed courses)
- **490**  Special Topics – variable topics/credit courses
- **492**  Service Learning/Internship Courses – variable credits
- **494**  Independent Research Courses – variable credits
- **496**  Seminar Courses – variable credits
- **497**  Directed Studies Courses – variable topics/credit courses
- **498**  Senior Thesis Courses – variable topics/credit courses
- **499**  Undergraduate Capstone Courses
- **500–699**  Graduate and Teacher Credential Courses
Accounting

ACCT 210  \textbf{FINANCIAL ACCOUNTING (3)}
Three hours lecture per week
Provides an opportunity to explore concepts related to the accuracy, timeliness, measurability, comparability, and relevance of financial and accounting data.

ACCT 220  \textbf{MANAGERIAL ACCOUNTING (3)}
Three hours lecture per week
Prerequisite: \textit{ACCT 210}
Continues the exploration of accounting principles and topics: investing and financing activities, cost and budgeting systems, cash flow analysis, accounting for debt and equity, and introduces using accounting data for decision making.

ACCT 300  \textbf{APPLIED MANAGERIAL ACCOUNTING (3)}
Three hours lecture per week
Prerequisite: \textit{ACCT 210 and ACCT 220} or Equivalent Courses
Prepares and analyzes the principles, methods, procedures, and applications for managerial accounting. Topics include understanding the business environment, cost concepts and classifications, job-order costing, process costing, cost behavior and relationships to volume and profits, variable costing, activity based costing, profit planning, standard costs, relevant costs, capital budgeting decisions, cash flows, economic value added, and financial statement analysis.

Anthropology

ANTH 102  \textbf{CULTURAL ANTHROPOLOGY (3)}
Three hours lecture per week
The study of recent and modern societies using a cross-cultural perspective to gain an understanding on the range of human expression in culture and society. Issues discussed include ethnicity, gender, family structure, kinship, sex and marriage, socio-economic class, religion and the supernatural, language and culture, economics, political and social organization, art, and culture change.
GenEd: C3B, D

ANTH 104  \textbf{INTRODUCTION TO BIOANTHROPOLOGY (3)}
Three hours lecture per week
Examines primate evolution, human genetics, and the natural selection forces affecting human evolution. Understanding adaptations to environments and concepts of race examined.
GenEd: B2

ANTH 105  \textbf{INTRODUCTION TO ARCHAEOLOGY (3)}
Three hours lecture per week
A general survey of the history and goals of archaeology, with an emphasis on methods of data collection, dating, and interpretation. Additional topics include human adaptations to the cultural and natural worlds, the development of complex societies, and the application of archaeological knowledge to the present.
GenEd: C3B, D

ANTH 106  \textbf{CULTURE AND COMMUNICATION: INTRODUCTION TO LINGUISTIC ANTHROPOLOGY (3)}
Three hours lecture per week
Surveys the study of communication from an anthropological perspective. Provides students with an overview of how humans interact and communicate using verbal and nonverbal language. Students learn how language both reflects and shapes thought, culture, and power/status. Exposes students to anthropological theories of language origin, language use, and cultural issues associated with language in cross-cultural contexts.
GenEd: D

ANTH 310  \textbf{CIVILIZATIONS OF AN ANCIENT LANDSCAPE: WORLD ARCHAEOLOGY (3)}
Three hours lecture per week
Traces the relationship between the physical geography and the development of ancient civilizations in Pre-Columbian America, Africa, Asia, and Europe, beginning with the post-glacial period and ending with the rise of feudalism in Europe and Japan and including change from hunting and gathering groups to sedentary agriculturalists and pastoralists giving rise to later complex social organizations. Examines art, architecture, science, religion, trade economic and social systems.
GenEd: D

ANTH 327  \textbf{ORAL HISTORY AND THE COMMUNITY (3)}
Three hours lecture per week
Prerequisite: \textit{ANTH 102} or Consent of Instructor
Outlines and develops the use of oral history as a research method from the 19th century to the present using examples drawn from anthropology, folklore and history. Explores different styles of interview techniques, including directed and open-ended interviews, questionnaires, and equipment with emphasis on broad, community-based research designs.
Student Option: Graded or Credit/No Credit
GenEd: D

ANTH 332  \textbf{HUMAN ECOLOGY (3)}
Three hours lecture per week
Prerequisite: Jr. Standing or Consent of Instructor
This human ecology course places humans into the environment in historical and global contexts. Discusses systems theory as it applies to human adaptation to the environment. Studies the relations among political power, ideology, and resources, integrating concepts from ecology with those from social sciences. Theories and forecasts of human population growth and migration among regions and cultures. Social and environmental impacts of population and age distribution. Natural resource constraints on growth. Topics from land development, resource planning, environmental quality, politics, economic growth, conflicts and wars.
Same as \textit{ESRM 332}
GenEd: D, INTD

ANTH 345  \textbf{HUMAN EVOLUTION AND DIVERSITY (3)}
Three hours lecture per week
Prerequisite: Jr. Standing or Consent of Instructor
Human biological evolution from the African savannah of 5 million years ago to the present, focusing upon adaptation to environmental conditions, disease, diet. Includes segments on ecology, evolutionary theory, genetics, natural selection, non-human primates. Discusses the concept of race from an anthropological perspective. Includes issues of speciation and race, adaptation to cold, heat, desert, tropics, and diseases. Compares ethnicity vs. race.
GenEd: B2, INTD
ANTH 352  APPLIED ANTHROPOLOGY (3)
Three hours lecture per week
Prerequisite: ANTH 102
Examines the applications of theory, methods and skills of the four subfields of anthropology to the solve contemporary social problems. Provides a history of applied anthropology and a conceptual framework for understanding different approaches in the field. Issues and topics covered include international development, social inequality and poverty, business and industry, education, law/criminal justice, environmental issues, and other domains.

ANTH 375  QUALITATIVE RESEARCH METHODS IN ANTHROPOLOGY (3)
Three hours lecture per week
Prerequisite: ANTH 102
Introduction to qualitative data collection and analysis in anthropology. Topics include research design, interviewing, participant observation, cross-verification of data, interactive data gathering, participatory learning, rapid rural appraisal, data interpretation, ethical and legal issues. Formerly known as ANTH 475, changed February 2009.

ANTH 377  ARCHAEOLOGICAL METHOD AND THEORY (3)
Three hours lecture per week
Prerequisite: ANTH 105
In-depth study of the methodological and theoretical foundations of archaeology. Considers the assumptions, models, and techniques archaeologists use to analyze and interpret material culture, as well as the ethical considerations of contemporary archaeological inquiry. Topics covered include research design, dating techniques, field and laboratory methods, classification and debates in modern theory. Class activities may include field and/or laboratory exercises. Formerly known as ANTH 477, changed February 2009.

ANTH 442  THE AFRICAN DIASPORA (3)
Three hours lecture per week
Examines the dispersal of Africans to other continents over the last two thousand years. Special attention will be paid to the African slave trade, identity formation, and nationalism. The course employs interdisciplinary methods borrowed from anthropology, art history, linguistics, and literature. Same as HIST 442
GenEd: D, INTD

ANTH 443  MEDICAL ANTHROPOLOGY: CROSS-CULTURAL PERSPECTIVES ON HEALTH AND HEALING (3)
Three hours lecture per week
Prerequisite: ANTH 102
Three hours lecture per week
This course provides a cross-cultural perspective on human health issues. Uses biological, cultural, and behavioral approaches to understanding the concepts of diseases and their treatment, ethnoscience, health, and complementary and alternative medicine placed in a global perspective.
Student Option: Graded or Credit/No Credit
GenEd: D, INTD

ANTH 444  VALUES AND VALUABLES (3)
Three hours lecture per week
Prerequisite: ANTH 102 or ECON 110
Examination of the intimate linkages between the creation of cultural values and the perception of economic value through the analysis of production and exchange in various cultural contexts. Synthesis of the debates in the field of economic anthropology and application to prehistoric, modern, Western and non-Western societies.
Same as ECON 444
GenEd: D, INTD

ANTH 445  THE SEACOAST THROUGH TIME (3)
Three hours seminar per week
Prerequisite: ANTH 102 or ANTH 105
Places the coastal experience in a broad temporal perspective, envisioning the seacoast as a dynamic interface between the marine and terrestrial environments that have provided humans access to a variety of opportunities related to: resource exploitation, transportation, colonization, cultural interaction, trade, conflict, and inspiration. The course examines the multidirectional ways that humans and the ocean interact. Cultures and societies discussed include prehistoric and contemporary groups from around the globe. Specific groups will vary by semester. Students also examine contemporary pressing problems related to these topics, and apply their knowledge of anthropology to recommend ways of resolving them.
GenEd: D, INTD

ANTH 470  THE DEVELOPMENT OF ANTHROPOLOGICAL PERSPECTIVES (3)
Three hours seminar per week
Prerequisite: ANTH 102
Introduction to the development of anthropological thought from the discipline foundation to recent trends. Surveys and critically analyzes major schools of anthropological thought employed in explaining human behavior and phenomena. Theoretical perspectives discussed include evolutionary theory, functionalism, structuralism, cultural materialism, and symbolic/interpretative anthropology.

ANTH 490  SEMINAR IN ANTHROPOLOGY (3)
Three hours seminar per week
Prerequisite: Consent of Instructor
This seminar explores a different topic each term. Repeatable up to 9 units.
Student Option: Graded or Credit/No Credit
GenEd: D, INTD

ANTH 494  INDEPENDENT STUDY (1-3)
Variable hours activity per week
Prerequisite: Consent of Instructor
Independent contracted study for advanced students of Anthropology. Repeatable up to 6 units may be applied to the major.

ANTH 499  CAPSTONE PROJECT (3)
Three hours seminar per week
Prerequisite: Senior Standing or Consent of Instructor
Complete an original research project based on a specific area in anthropology. Research projects may incorporate service to an area agency.

Arabic

ARAB 101  ELEMENTARY ARABIC I (4)
Four hours lecture per week
Prerequisite: Consent of Instructor
First course in Modern Standard Arabic. Features some exposure to the Egyptian dialect. Aims at developing elementary communicative skills and knowledge about the Arab-speaking world. Not intended for students with prior knowledge of Arabic.
GenEd: C3A

ARAB 102  ELEMENTARY ARABIC II (4)
Four hours lecture per week
Prerequisite: ARAB 101 or Consent of Instructor
Arabic 102 is the second course in Modern Standard Arabic, and features some exposure to the Egyptian dialect. It aims at the continued development of students’ elementary communicative skills and knowledge about the Arab-speaking world. Not intended for students with prior knowledge of Arabic.
GenEd: C3A
Art

ART 100 UNDERSTANDING FINE ARTS PROCESSES (3)
Two hours lecture and two hours activity per week
Entry level art experience for non Art majors. This course integrates elements of drawing, painting, sculpture and mixed media techniques. Students gain an understanding of the function of Art in everyday life through participation in the artistic process.
GenEd: C1

ART 101 WHAT IS ART? (3)
Three hours lecture per week
Introductory art appreciation course that examines art and its meanings and values. Students learn to analyze and interpret art from diverse cultures and artistic traditions.
GenEd: C1, C3B

ART 102 MULTICULTURAL CHILDREN’S ART (3)
Two hours lecture and two hours activity per week
Hands-on creation of artistic projects emphasize the importance of art in the child's development and the understanding of multicultural art traditions in subject matter, materials and processes. Historical contexts and indigenous aesthetics are investigated as they relate to the development of primary skills and appreciation for art and the creative process.
GenEd: C1, C3B

ART 105 DRAWING AND COMPOSITION (3)
Six hours activity per week
Basic fundamentals of drawing are explored through the use of various techniques and media. Investigations into line, value, perspective and composition as related to surface and pictorial space is also investigated.

ART 106 COLOR AND DESIGN (3)
Six hours activity per week
Explorations in basic color theory are conducted within two- and three-dimensional design contexts. Visual elements including line, shape, form and texture are explored incorporating elements of color interaction, harmony and dissonance within a variety of visual motifs.

ART 107 LIFE DRAWING (3)
Six hours activity per week
The study of the human figure and its representation depicted through gesture, contour value and volume.

Anatomy, proportion, foreshortening and structure are explored through observation of props and live models.

ART 108 VISUAL TECHNOLOGIES (3)
Two hours lecture and two hours activity per week
An introductory survey of visual technologies commonly used by artists and designers. Projects explore software applications as they relate to current methods of digital art production. Emphasis is on the development of fundamental computer skills and an understanding of the relationship between digital media and visual design.

ART 110 PREHISTORIC ART TO THE MIDDLE AGES (3)
Three hours lecture per week
Survey of the history of art, artifacts and architecture from the Prehistoric era through the Gothic period. The examination of cultural and conceptual contexts will trace the early development of Western artistic traditions.
GenEd: C1

ART 111 RENAISSANCE TO MODERN ART (3)
Three hours lecture per week
Survey of the history of art and architecture from the European Renaissance through Modern Art. Cultural and conceptual contexts will examine the evolution of the art object as a form of Western cultural expression.
GenEd: C1

ART 112 ART OF THE EASTERN WORLD (3)
Three hours lecture per week
Exploration of painting, architecture and crafts of India, China, Japan and Southeast Asia. An examination of artistic, cultural, and historical events explores the exchange of influences and ideas related to Eastern cultures.
GenEd: C1, C3B

ART 200 ART HISTORY: TOOLS AND METHODS (3)
Three hours lecture per week
An introduction to research, methodologies, analyses and writings specific to the discipline of art history. Utilizes case study analyses selected from a variety of cultures and art periods, and addresses multiple resources available for researching and interpreting art historical material.

ART 201 PAINTING (3)
Six hours activity per week
Prerequisite: ART 105, ART 106 and ART 107
An introduction to basic painting materials and techniques. Experiments in representational and abstract painting will explore oil, acrylic, and water-based media. Particular emphasis will be on the development of fundamental skills and the understanding of color, shape, surface and pictorial structure.

ART 202 SCULPTURE (3)
Six hours activity per week
Prerequisite: ART 105, ART 106 and ART 107
An introduction to basic sculpture materials and techniques. Experiments in representational and abstract sculpture will explore a variety of three-dimensional materials through additive and subtractive sculptural processes. Particular emphasis will be on the development of fundamental skills and the understanding of design, form and structural elements.

ART 203 ILLUSTRATION (3)
Six hours activity per week
Prerequisite: ART 105, ART 106, and ART 107
An introduction to basic materials and rendering techniques utilized in commercial illustration including a variety of media and styles exploring quash, colored pencils, pen and ink, pastels and markers. Emphasis is on the development of fundamental skills and concepts required to execute successful illustrations.

ART 204 GRAPHIC DESIGN (3)
Six hours activity per week
Prerequisite: ART 105 or ART 106 or ART 108 or Consent of Instructor
An introduction to basic concepts in graphic design for print and electronic media. Projects incorporating traditional and digital media explore typography, layout and visual design. Particular emphasis is on the development of fundamental skills leading to the ability to communicate ideas through the use of text and visual imagery.

ART 205 MULTIMEDIA (3)
Six hours activity per week
Prerequisite: ART 105 or ART 106 or ART 107 or COMP 105 or Consent of Instructor
An introduction to techniques and concepts involved in the production of interactive multimedia. Projects explore basic interactive technologies utilized in the creation of digital graphics, websites and computer game designs.
ART 206 ANIMATION (3)
Six hours activity per week
Prerequisite: ART 105 or ART 106 or ART 107 or ART 108 or COMP 105 or Consent of Instructor
An introduction to basic techniques and processes involved in the production of animation. Projects include elements of concept and story development, character design, storyboarding, timing, key framing, inbetweening, and cell production leading to the creation of short works in animation.

ART 207 CERAMICS (3)
Six hours activity per week
Prerequisite: ART 105 and ART 106
Explorations into a wide variety of ceramic ideas, techniques and materials utilized in the development of hand-building methods as applied to sculptural and vessel forms. Basic competence with the potter’s wheel will also be covered. A lab fee is required.

ART 208 THE PHYSICS OF ART AND VISUAL PERCEPTION (3)
Two hours lecture and two hours activity per week
A course on the physics of light, color, art and visual perception. The course will cover the nature of light and optical phenomena, the perception and psychology of color, the reproduction of color in different media, and the analysis of art from a science perspective. The emphasis is on factors which permit the artist and observer to understand and more fully control the design and interpretation of images of all kinds. Demonstrations, experiments, and video/computer simulations are used to analyze signals received by the eyes or instruments.
Same as PHYS 208
GenEd: B1, C1

ART 209 PHOTOGRAPHY (3)
Six hours activity per week
Prerequisite: ART 108
Fundamental techniques and theories of photographic media are explored through studio experiments into various genres of photography including documentary, fine art and commercial applications. Through a series of projects that build upon one another, students produce photographic work that leads toward the development of a personal style and vision.

ART 210 TWO-DIMENSIONAL ART: PAINTING MEDIA AND TECHNIQUES (3)
Six hours activity per week
Prerequisite: ART 108 and ART 201
Studio projects explore media and methodologies in painting, drawing and related two-dimensional art forms. Assignments emphasize the integration of traditional art materials and techniques with related digital art technologies in the creation of two-dimensional art projects.

ART 211 THREE-DIMENSIONAL ART: SCULPTURE MEDIA AND TECHNIQUES (3)
Six hours activity per week
Prerequisite: ART 108 and ART 202
Studio projects explore media and methodologies in sculpture, ceramics and other three-dimensional art forms. Assignments emphasize the integration of traditional art materials and techniques with related digital art technologies in the creation of three-dimensional art projects.

ART 312 DIGITAL MEDIA ART: TIME-BASED IMAGING AND COMPOSITING (3)
Six hours activity per week
Prerequisite: ART 108 and ART 205
Studio projects explore media and methodologies in digital imaging and non-linear compositing for time-based art, digital video and digitally generated animation. Assignments emphasize the integration of traditional art techniques with emerging digital technologies in the development of time-based digital art projects presented on video, CD ROM and DVD.

ART 313 COMMUNICATION DESIGN TECHNOLOGY: GRAPHIC DESIGN FOR PRINT MEDIA (3)
Six hours activity per week
Prerequisite: ART 108 and ART 204
An introduction to digital photography as an art form. Investigations into photographic processes include camera techniques, lighting, color imaging, photographic composition and visual design. Digital photographic software applications, monochrome prints and digital color image manipulation will be explored as related to photographic media and traditions. Photography as a commercial medium will also be investigated.

ART 314 DIGITAL MEDIA ART: DIGITAL PHOTOGRAPHY (3)
Six hours activity per week
Prerequisite: ART 108
Studio projects explore media and methodologies in photography and graphic design for print media. Assignments emphasize the integration of traditional design concepts with digital art technology in projects created for print and Internet applications.

ART 315 ANIMATION MEDIA AND TECHNIQUES (3)
Six hours activity per week
Prerequisite: ART 206
Specialized media and artistic techniques utilized in the creation of animation are incorporated in the production of projects for video, film, multimedia and the Internet. Individual and group assignments explore a range of traditional materials combined with emerging digital processes to produce completed works in animation.

ART 316 DIGITAL ILLUSTRATION AND PAINTING (3)
Six hours activity per week
Prerequisite: ART 108, ART 201 and ART 203
Explorations into the utilization of computer-based technology in the creation of digital illustration and painting. Techniques and processes include digital drawing and painting projects that incorporate the use of vector and raster software programs. Investigations into the various applications of digital-based artwork will also be investigated. A lab fee is required.
ART 323 COMMUNICATION DESIGN TECHNOLOGY: PACKAGING AND PRE-PRESS (3)
Six hours activity per week
Prerequisite: ART 313
Studio topics explore thematic approaches in the development of visual continuity and technical competency working in graphic design, production art and product identity in preparation for mass media distribution. At this phase of study, projects focus on the integration of artistic concept and technological proficiency in the creation of design projects for print, packaging, and publishing. Repeatable for up to 6 units.

ART 324 COMMUNICATION DESIGN TECHNOLOGY: WEB DESIGN (3)
Six hours activity per week
Prerequisite: ART 312 and ART 314
Studio projects investigate artistic techniques and digital applications leading to the design and implementation of Websites. The course explores factors that affect Web layout and design, such as browser, screen resolution, navigation, connection speed, typography, graphics, and color. An introduction to basic HTML will also be covered. Repeatable for up to 6 units.

ART 326 DIGITAL MEDIA ART: 3D COMPUTER ANIMATION (3)
Six hours activity per week
Prerequisite: ART 206 and ART 312 or Consent of Instructor
Studio projects explore applications of digital technologies utilized in the production of 3D Computer Animation. Assignments involve character design, wire frame modeling, texture mapping, lighting techniques, motion paths and animation techniques. Class projects result in the creation of CGI and 3D animation presented on video or DVD. Repeatable for up to 6 units.

ART 327 COMMUNICATION DESIGN TECHNOLOGY: MULTIMEDIA THEORY AND PROCESS (3)
Six hours activity per week
Prerequisite: ART 206 or ART 312 or Consent of Instructor
In-depth exploration of artistic techniques and visual concepts involved in the production of interactive multimedia. Projects investigate interactive technologies utilized in the design and creation of digital graphics, websites and computer games while emphasizing creative project development and artistic skills. Repeatable for up to 6 units.

ART 328 DIGITAL MEDIA ART: PHOTOGRAPHIC THEORY AND PROCESS (3)
Six hours activity per week
Prerequisite: ART 214
Artistic theories and digital imaging processes involved in photography as an art form and commercial medium are explored through in-depth projects including camera techniques, lighting, color imaging, photographic composition and visual design. Digital photographic software applications utilized in the creation of color and monochrome prints as well as custom image manipulation will be investigated. A focus on subject matter, history and trends in photographic media will also be covered. Repeatable for up to 6 units.

ART 329 THREE-DIMENSIONAL ART: CERAMICS THEORY AND PROCESS (3)
Six hours activity per week
Prerequisite: ART 207
In-depth exploration into sculptural and throwing skills, including theories and processes involved in glaze materials and specialized ceramic techniques. Functionality of gas and electric kilns in oxidation and reduction atmospheres will also be covered through individual and class projects that explore the application of ceramic technology and media as a vital and expressive art form. Repeatable for up to 6 units.

ART 330 CRITICAL THINKING IN A VISUAL WORLD (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A critical look at subjective responses and objective reasoning in the assessment of visual images that permeate everyday aspects of contemporary life. Comparative studies evaluate the psychological impact of corporate logos, religious iconography and secular symbolism. The genesis of cultural icons is investigated from a historical perspective in relationship to their role in a global society. GenEd: C1, INTD
ART 331  ART, SOCIETY, AND MASS MEDIA (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
The study of synergetic relationships between visual art and human communication dating back to the roots of civilization. Comparative studies in art and communication link ancient traditions to the development of contemporary mass media including print, photography, film, television and the internet.
Same as COMM 331
GenEd: C1, D, INTD

ART 332  MULTICULTURAL ART MOVEMENTS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A exploration into the arts and crafts originating in African, Asian, Latin American, Middle Eastern and Native American cultures. Emphasis is on the understanding of traditions and historical contexts as well as the exploration of indigenous methods and aesthetics.
GenEd: C1, C3B, INTD

ART 333  HISTORY OF SOUTHERN CALIFORNIA CHICANA/O ART (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An exploration of the Southern California Chicano/a culture focusing on the genesis, vitality and diversity represented in the painting, sculpture and artistic traditions of Mexican American artists. Historical movements, politics, cultural trends and Mexican folklore underlying the development of this dynamic style of art will be investigated within a variety of contexts.
Same as HIST 333, CHS 333
GenEd: C1, C3B, D, INTD

ART 334  THE BUSINESS OF ART (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Exploration into aspects of the art world business including the financial activities of art consultants, private dealers, commercial galleries, corporate art collections, public museums and international auction houses. Case studies in art marketing, gallery and museum management, contracts and commissions, as well as public image and career development will be investigated.
Same as BUS 334
GenEd: C1, D, INTD

ART 335  AMERICAN ETHNIC IMAGES IN NOVELS, FILM AND ART (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the portrayal of ethnic groups from an interdisciplinary perspective that includes, but is not limited to, the literary, historical, and anthropological modes of analysis. The course highlights the ways in which artistic works have shaped the intellectual landscape of the United States as they relate to ethnic peoples.
Same as ENGL 335, HIST 335
GenEd: C2, C3B, INTD

ART 336  ART AND MUSIC: DISSONANCE, DIVERSITY AND CONTINUITY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary analysis of the essential elements defining modern and contemporary art and music. Discusses how artistic characteristics and music issues of the period are connected and intertwined within specific historic and cultural environments.
Same as PAMU 336
GenEd: C1, D, INTD

ART 337  ART ON FILM AND FILM AS ART (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary study of the relationships between film and traditional visual arts such as painting, sculpture and architecture. Comparative analyses expose the visual and conceptual modalities of expression used by film and art to create symbolic meanings and reveal complex links that exist between still and moving images within specific artistic, cultural, and historical contexts.
GenEd: C1, D, INTD

ART 338  PSYCHOLOGY OF ART AND ARTISTS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An inquiry into the mind of the artist and the psychological dynamics that underline the creative process. Emphasis is placed on deciphering personal allegory and universal symbolism hidden within a wide range of visual and conceptual genre in painting, sculpture, film and music. The self-image of the artist will be examined from private and public point of view.
Same as PSY 338
GenEd: C1, E, INTD

ART 339  THE BAROQUE EYE: ART, CULTURE, MONEY AND POWER (3)
Three hours lecture per week
An exploration of the history of visual art and culture during the Baroque through early Romantic periods from the seventeenth into the early nineteenth centuries. This course investigates the complex mixture of visual representation, ideology, global aesthetics and economics in painting, sculpture, prints and the decorative arts in Europe, Asia, and the Middle East.
GenEd: C1

ART 340  THREE-DIMENSIONAL ART: FIGURE SCULPTURE (3)
Six hours activity per week
Prerequisite: ART 107 and ART 201
A studio/activities course focusing on artistic materials, methods and techniques utilized to develop and express painted images of the human form. Rendering the figure from life as well as imaginative motifs provides students with a forum to explore the creative possibilities of their own artistic vision and sensibilities. Repeatable up to 6 units.

ART 341  VISUAL CANONS OF THE ANCIENT WORLD (3)
Three hours lecture per week
This course will discuss the main visual concepts developed during the ancient times. Using examples from Greek and Roman art as well as the ancient cultures of Egypt, Mesopotamia, Asia, and the Americas, this course will explore a variety of artistic paradigms developed in the early stages of human civilization.
GenEd: C1

ART 342  MEDIEVAL WORLD: SPIRITUALITY AND REPRESENTATION (3)
Three hours lecture per week
This course will investigate the essential visual modalities of expression and reflections developed during the medieval period. The discussions will include examples from the western as well as non-western tradition. This course will focus its analysis on revealing the diverse representation and visual meaning of medieval spirituality in a variety of historical and geographical contexts.
GenEd: C1

ART 343  TWO-DIMENSIONAL ART: FIGURE PAINTING (3)
Six hours activity per week
Prerequisite: ART 107 and ART 201
A studio/activities course focusing on artistic materials, methods and techniques utilized to develop and express painted images of the human form. Rendering the figure from life as well as imaginative motifs provides students with a forum to explore the creative possibilities of their own artistic vision and sensibilities. Repeatable up to 6 units.

ART 344  THREE-DIMENSIONAL ART: FIGURE SCULPTURE (3)
Six hours activity per week
Prerequisite: ART 107 and ART 202
A studio/activities course focusing on artistic materials, methods and techniques utilized to develop and express painted images of the human form. Rendering the figure from life as well as imaginative motifs provides students with a forum to explore the creative possibilities of their own artistic vision and sensibilities. Repeatable up to 6 units.
express sculpted images of the human form. Modeling the figure from life as well as imaginative motifs provides students with a forum to explore the creative possibilities of their own artistic vision and sensibilities.

**ART 382  ART FOR SOCIAL MEDIA (3)**
Six hours activity per week
Prerequisite: ART 204, Art 205
A studio activities class involving the production of artwork for social media and evolving digital formats. Concept development, visual design, and motion graphics will be investigated in the production of artwork expressly for applications involving online networks and mobile communication devices.

**ART 383  SCENIC DESIGN (3)**
Six hours activity per week
A studio/activities course utilizing artistic techniques involved in the development of scenic design for theatrical, musical and dance productions. Script analysis, scenery sketching, drafting ground plans, elements of set construction and scenic painting will be covered in a series of studio projects.
Same as PA 383

**ART 384  COSTUME DESIGN (3)**
Six hours activity per week
A studio/activities course in which students develop costume designs through a process of character and script analysis. Period research, visual design, rendering and fabrication skills are achieved through practical exercises. Basic costume construction, including drafting and draping, result in the creation of costumes for theatrical, musical and dance productions. A lab fee is required.
Same as PA 384

**ART 385  AUDIO DESIGN AND RECORDING (3)**
Six hours activity per week
Prerequisite: ART 312 and PAMU 335
An introduction to the fundamental principles of audio production and recording. Applications of analog and digital audio recording systems and their component parts, including sync-sound and digital audio effects for visual media will be covered. Repeatable up to 6 units.
Same as PAMU 385

**ART 386  STORYBOARDING (3)**
Six hours activity per week
Prerequisite: ART 105 and ART 106
Storyboarding focuses on techniques of visual storytelling for the moving image, including work in traditional and computer animation, motion pictures, multimedia, time-based imagery and video game design. Studio projects focuses on understanding and manipulating the graphic language of sequenced visual imagery to tell a story in coherent and compelling visual terms. Emphasis is placed on technique, process of refinement and the visual development of the story. Repeatable up to 6 units.

**ART 391  PRODUCTION (3)**
Six hours activity per week
Prerequisite: Consent of Instructor
Performing, designing, implementing technical projects, or assisting in a CSU Channel Islands Performing Arts production. Topics vary by semester and section and may focus on dance, music, or theatre, or integrate multiple performing and visual arts. Formerly known as PATH 481, changed February 2009. Repeatable up to 12 units.
Graded: Credit/No Credit
Same as PA 391

**ART 420  ADVANCED ARTISTIC PROBLEMS: TWO-DIMENSIONAL ART (3)**
Six hours activity per week
Prerequisite: ART 320
Investigations into the development of advanced concepts, innovative processes and personal artistic style working in two-dimensional art. Students achieve increased artistic depth and advanced technical proficiency in the development of a congruent body of work in painting, drawing and mixed media. Creation of a professional portfolio presented on slides and CD ROM is a required component of the course work. Repeatable for up to 6 units.

**ART 421  ADVANCED ARTISTIC PROBLEMS: THREE-DIMENSIONAL ART (3)**
Six hours activity per week
Prerequisite: ART 321
Investigations into the development of advanced concepts, innovative processes and personal artistic style working in three-dimensional art. Students achieve increased artistic depth and advanced technical proficiency leading to the development of a congruent body of work. Creation of a professional portfolio presented on slides and CD ROM is a required component of the course work. Repeatable for up to 6 units.

**ART 422  ADVANCED ARTISTIC PROBLEMS: DIGITAL MEDIA ART (3)**
Six hours laboratory per week
Prerequisite: ART 322 or ART 325 or ART 326 or ART 328
Investigations into the development of advanced concepts, innovative processes and personal artistic style working in digital media art. Students achieve increased artistic depth and advanced technical proficiency leading to the development of a congruent body of work. Creation of a professional portfolio presented on Video, CD ROM or DVD is a required component of the course work. Repeatable for up to 6 units.

**ART 431  EUROPEAN RENAISSANCE LITERATURE AND ART (3)**
Three hours lecture/discussion per week
Prerequisite: ENGL 103 or ENGL 105 or Equivalent
Examination of the literature and art of the Renaissance of the 15th and 16th centuries in Europe and England, focusing on the re-birth of the human spirit and the legacies of the Renaissance artists and writers.
GenEd: C1, C2, INTD

**ART 432  ARTS OF THE HARLEM RENAISSANCE (3)**
Three hours lecture per week
Prerequisite: Upper Division Standing
Study focusing on the dramatic upsurge of creativity in art, music and literature resulting from social and political undercurrents in the African American cultural revolution in New York during the 1920's. Historical genres and subsequent artistic legacies will also be explored.
Same as ENGL 432, PAMU 432
GenEd: C1, C2, INTD

**ART 433  WOMEN IN THE ARTS (3)**
Three hours lecture per week
An investigation into the historical roles and influences of women artists in Western and non-Western traditions. Women as subject matter in painting, sculpture, photography, film and video will also be explored as related to artistic, social, historical and political issues.
GenEd: C1, D, INTD
ART 434  THE MUSEUM: CULTURE, BUSINESS AND EDUCATION (3)
Three hours lecture per week
An interdisciplinary, in-depth study of a museum from the perspective of art, business, and education. Analyzes how artistic values, business and management issues and educational projects are linked within museum practices. Each term this course is offered it will focus on a specific museum in the area.
Repeatable up to 2 units.
Same as BUS 434, EDUC 434
GenEd: C1, D, INTD

ART 435  POSTMODERN VISUAL CULTURE (3)
Three hours lecture per week
An examination of the major visual components of postmodern culture. This course will explore a wide range of issues related to the multicultural identity of contemporary culture. Developments in the 20th and early 21st centuries such as film, digital media, and critical theory as well as traditional visual forms of expression such as painting and sculptures will be discussed.
GenEd: C1, C3B, INTD

ART 436  MODERN ART (3)
Three hours lecture per week
From nineteenth century Impressionism, through twentieth century Cubism, Surrealism, Abstract Expressionism and Pop Art, this course explores the gamut of concepts, periods, trends and-isms of the modern era (1850-1970).
GenEd: C1, INTD

ART 437  DIVERSITY IN THE VISUAL ARTS (3)
Three hours lecture per week
This course will explore the meaning of diversity in the visual arts. The cross-cultural and chronological examples will address stylistic and conceptual changes within the specificity of various traditions as well as in connection with the global artistic arena.
GenEd: C1, C3B

ART 438  ADVANCED ISSUES IN ART HISTORY, THEORY AND CRITICISM (3)
Three hours lecture per week
A series of investigations of specific topics in art history. Explores art history as a discipline, the development of art theories since antiquity and includes an in-depth analysis of various topics, issues, and works of art leading to the development of sound and comprehensive understandings of art history, theory, and criticism

ART 439  ARTS SEMINAR (3)
Three hours lecture per week
Prerequisite: Senior Standing
Students interact with guest speakers, visiting artists, and industry professionals in a seminar environment. This course also affords students the opportunity to assess their training and summarize artistic achievements through group and individual projects that help prepare them for a variety of careers in the arts.

ART 440  SPECIAL TOPICS IN ART (3)
Three hours lecture per week
Prerequisite: Art Major, Upper Division Standing
Special topics explore a variety of themes investigating the relationships of art and artists to aspects of social commentary, multiculturalism, experimental genres, commerce, first amendment rights and the role of art in a global society. Topics are presented on a rotating basis. Students are given the opportunity to experience in-depth interaction with visiting artists, industry professionals, art scholars and academicians.

ART 441  LECTURE SERIES IN ENTERTAINMENT INDUSTRY (1)
Two hours lecture bi-weekly
Bi-weekly series of guest lectures focusing on aspects of entertainment industry. Entertainment professionals will address topics that cover but are not limited to aspects of management, marketing, production, performance and entertainment-related technologies. Repeatable by topic up to 3 units.
Same as BUS 491, PA 491

ART 442  INTERNSHIP IN THE ARTS (1-3)
Variable hours per week
Prerequisite: Senior Standing, Art Program portfolio review, and Consent of Instructor
Experiential study in a professional artistic environment appropriate to student’s interests and artistic goals. Service learning internship positions are arranged by the university, instructor or student in cooperation with local community organizations or businesses. Internship positions must meet specific criteria set by the Art program and University. Repeatable up to 3 units maximum.

ART 444  DIRECTED INDEPENDENT STUDY (1-3)
Variable hours per week
Prerequisite: Senior Standing, Art Program portfolio review, and Consent of Instructor
Independent art projects are created in conjunction with the supervising faculty. Completed projects are presented for critique and assessment.

ART 445  THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)
Two hours lecture per week
Two hours activity per week
Prerequisite: ART/BUS/PA 491
An interdisciplinary experience: students work directly with faculty and entertainment industry professionals focusing on aspects of talent management, project development, marketing and related technologies that result in the production of an entertainment event.
Same as BUS 495, PA 495

ART 449  ARTS CAPSTONE PROJECT (3)
One hour seminar and two hours field work per week
Prerequisite: Senior Standing, portfolio review and Consent of Instructor
A culminating interdisciplinary experience in which students from various Art disciplines work in groups with fellow artists, non-art majors and community members on projects specifically designed to meet a common goal. Activities supervised by sponsoring faculty are executed on campus and/or on-site in conjunction with community organizations or businesses.

American Sign Language

ASL 101  AMERICAN SIGN LANGUAGE I (3)
Three hours of lecture per week
An introduction to American Sign Language (ASL) and the visual and expressive skills needed for basic communication in ASL including finger-spelling, vocabulary, and grammar.
Appreciation for the culture and diversity of the Deaf community and the contributions of Deaf individuals to literature and the Arts.
GenEd: C3A

ASL 102  AMERICAN SIGN LANGUAGE II (3)
Three hours of lecture per week
A continuing exploration of American Sign Language (ASL) and the visual and expressive skills needed for basic communication in ASL including finger-spelling, vocabulary, and grammar.
Appreciation for the culture and diversity of the Deaf community and the contributions of Deaf individuals to literature and the Arts.
GenEd: C3A
## Bioinformatics

**BINF 500 DNA AND PROTEIN SEQUENCE ANALYSIS (3)**
Three hours lecture per week  
Prerequisite: BIOL 400 or Consent of Instructor  
This course will introduce the computational aspects of biological inference from nucleic acid and protein sequences. Pairwise sequence comparison and multiple sequence alignment will be studied in detail. Additional topics include: RNA structure prediction, conserved sequence pattern recognition (sequence profile analysis), phylogenetic analysis algorithms, sequence data as a means to study molecular evolution, models and algorithms for genetic regulation, contig assembly, PAM and BLOSUM matrices, protein three dimensional structure prediction.

**BINF 501 BIOLOGICAL INFORMATICS (3)**
Three hours lecture per week  
Prerequisite: BIOL 411 or Consent of Instructor  
This course describes relational data models and database management systems with an emphasis on answering biologically important questions; teaches the theories and techniques of constructing relational databases to store various biological data, including sequences, structures, genetic linkages and maps, and signal pathways. Topics include: relational database query language SQL and the ORACLE database management system, summary of currently existing biological databases, web based programming tools, data integration and security, future directions for biological database development.

**BINF 510 DATABASE SYSTEMS FOR BIOINFORMATICS (3)**
Three hours lecture per week  
Prerequisite: BINF 501 and COMP 420, or Consent of Instructor  
This course is an applied, hands-on sequel to BINF 501, designed for students with interests in careers as professional programmers, analysts, designers, and managers involved in design or implementation of large bioinformatic systems. Covers concepts and methods for the design, creation, query and management of large enterprise databases, functions and characteristics of the leading database management systems. Topics include: object oriented database systems, distributed database systems, advanced database management topics, web application design and development, data warehouse systems, database mining.

**BINF 511 COMPUTATIONAL GENOMICS (3)**
Three hours lecture per week  
Prerequisite: BINF 500 and BINF 514 or Consent of Instructor  
Develops theories and statistical methods introduced in core coursework using real-life genomic data sets, with an emphasis on practical applications, hands-on analysis, integrated approaches and collaboration. Introduces students without computer science backgrounds to the major concepts in programming for problem-solving in bioinformatics.

**BINF 512 ALGORITHMS FOR BIOINFORMATICS (3)**
Three hours lecture per week  
Prerequisite: BINF 500 or Consent of Instructor  
This course will cover advanced theory in the area of biological informatics and will build on concepts introduced in BINF 500. Topics include: methods to support construction and application of combinatorial biochemical libraries, applications of algorithmic information theory, string matching, dynamic programming, prediction of three-dimensional protein structure from peptide sequence.

**BINF 513 PROGRAMMING FOR BIOINFORMATICS (3)**
Three hours lecture per week  
Prerequisite: BINF 501 and COMP 462 or Equivalent, or Consent of Instructor  
This course will provide theory and practical training in the development of programming tools and data processing systems for use in genomic/sequence analysis. There will be a strong emphasis on the development of fully-functional web-based applications under the client/server model. Students will be required to complete a term project which will involve the development of a complete client/server application directed toward a relevant bioinformatics task.

**BINF 514 STATISTICAL METHODS IN COMPUTATIONAL BIOLOGY (3)**
Three hours lecture per week  
Prerequisite: MATH 151, BIOL 203 and Consent of Instructor  
Develops theoretical background and practical skills in statistics and probability required for the interpretation and utilization of genomic data. Topics include biological sequence alignment and analysis, sequence structure and function prediction, database searching, gene expression profiling, statistical genetics and phylogenetic inference.

## Astronomy

**ASTR 105 INTRODUCTION TO THE SOLAR SYSTEM (4)**
Three hours lecture and two hours activities per week  
Descriptive introduction to the astronomical properties of the Solar System. Topics include: the historical development of astronomy, the laws that govern the behavior of the Universe, the properties of the stars and galaxies, including their origin and evolution and the Big Bang theory. Activity sessions will include computer-simulated exercises, and two field trips.  
Same as PHYS 105  
GenEd: B1

## Biology

**BIOL 100 EXPLORING THE LIVING WORLD (4)**
Three hours lecture and three hours laboratory per week  
An overview of biology from the molecular to the ecosystem level. Topics include the origin, diversity and evolution of life, ecology of populations and communities, the structure and function of plant and animal organ systems, biological molecules, cellular structure/function, genetics and cell division. No credit given toward the major in Biology. A lab fee is required.  
GenEd: B2

**BIOL 170 FOUNDATIONS OF LIFE SCIENCE (4)**
Three hours lecture and three hours laboratory per week  
This course meets the needs of prospective elementary school teachers. The course will cover a broad spectrum of topics including introduction to scientific inquiry with living organisms, physiology, cell biology, genetics, evolution and ecology. Current issues in biology will also be considered. The laboratories will focus on hands-on activities particularly relevant to elementary school students. No credit given toward the major in Biology. A lab fee is required.  
GenEd: B2
BIOL 200  PRINCIPLES OF ORGANISMAL AND POPULATION BIOLOGY (4)
Three hours lecture and three hours laboratory per week.
An introduction to the biology of organisms including ecology, evolution, diversity and human impacts. The ecology unit includes discussion of population, community, and ecosystem ecology. Evolution covers natural selection and the Darwinian revolution, origin of species, and other evolutionary processes. Diversity covers systematics and taxonomy, and a tour of life on Earth including viruses, prokaryotes, protists, fungi, plants and animals. Human impacts on biological systems will be discussed. A lab fee is required.  
GenEd: B2

BIOL 201  PRINCIPLES OF CELL AND MOLECULAR BIOLOGY (4)
Three hours lecture and three hours laboratory per week.
Prerequisite: CHEM 105 or CHEM 121
This course will cover principles of basic chemistry, biological macromolecules, prokaryotic and eukaryotic cell structure and function, homeostasis, metabolism including both respiration and photosynthesis, cell division, signal transduction, Mendelian genetics, molecular genetics including transcription and translation, and a brief introduction to virology and immunology. The philosophy of science, scientific method and experimental design are foundational to the course. A lab fee is required.  
GenEd: B2

BIOL 203  QUANTITATIVE METHODS FOR BIOLOGY (3)
Three hours lecture per week.
Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or MATH 105 or Equivalent
This course introduces students in the biological sciences to the quantitative skills and technological tools necessary to evaluate the literature and carry out original research in the discipline. Topics include the principles of biological sampling design, hypothesis generation for biological experiments, collection of observational and experimental data, statistical analysis and interpretation of biological data, and the presentation of results. Laboratories will emphasize microcomputer technology and software applications likely to be encountered in the biological sciences.  
GenEd: B3, B4

BIOL 210  HUMAN ANATOMY AND PHYSIOLOGY I (4)
Three hours lecture and three hours laboratory per week.
Study of gross and microscopic anatomy and physiology of the human body. Topics include homeostasis, cell structure/function, histology, the skeletal system, the muscular system, the digestive system and the nervous and sensory systems. A lab fee is required.  
GenEd: B2

BIOL 211  HUMAN ANATOMY AND PHYSIOLOGY II (4)
Three hours lecture and three hours laboratory per week.
Prerequisite: BIOL 210
Study of gross and microscopic anatomy and physiology of the human body. Topics include the integumentary system, the endocrine system, the circulatory system, the immune system, the respiratory system, the urinary system and the reproductive system. A lab fee is required.  

BIOL 212  NEUROBIOLOGY AND COGNITIVE SCIENCE (3)
Three hours lecture per week.
Principles of brain organization and function underlying behavior. Topics include neuroanatomy and physiology of language, vision, sexual behavior; memory and abnormal behavior.  
Same as PSY 212
GenEd: B2, E

BIOL 213  SEX, GERMS AND DISEASES (3)
Three hours lecture/discussion per week.
This is a course to introduce biology of sexually transmitted diseases and their impact on society. It covers reproductive system, factors in the spread of diseases, biology and pathogenesis of infectious agents and sexually transmitted diseases caused by bacteria, viruses, fungi and protozoa. Topics also include impact of current biotechnology in relation to vaccine development, treatment and improved diagnostics of these diseases as well as challenges of these diseases to economy, public health system, individuals, and society at large.  
GenEd: B2, E

BIOL 215  ANIMAL DIVERSITY (4)
Three hours lecture and three hours laboratory per week.
This course will survey the animal kingdom emphasizing the continuity of animal life from simple to more complex body forms and life histories. The diversity of animal life is projected on a framework of basic ecological and evolutionary concepts. Human interactions with animals are explored through management and conservation issues as well as historical examples from the sciences of zoology, classification and evolution. Field trips to selected sites will allow direct examination of local animal diversity. A lab fee is required.  
GenEd: B2

BIOL 217  MEDICAL MICROBIOLOGY (4)
Three hours lecture and three hours of laboratory per week.
Study of disease-causing microorganisms such as bacteria, viruses, fungi, protozoa and parasites, emphasizing microbial structure, genetics, physiology and pathogenesis of microorganisms. Topics also include interaction between pathogens and their hosts, diagnosis, treatment, disease prevention as well as impact of infectious diseases on psychology, society, economy and global affairs. Microbial culturing, identification, differentiation and clinical diagnostic assays will be studied in the laboratory. No credit given toward the biology major except for students enrolled in the Clinical Laboratory Science Emphasis. A lab fee is required.  
GenEd: B2

BIOL 220  STEM CELL TECHNOLOGY, APPLICATIONS AND SOCIAL IMPACT (3)
Three hours lecture per week.
Examines the impact of stem cell technology in our society. Topics include basic concepts of stem cell biology, ethical concerns surrounding stem cell technology both from individual and social points of view, legal aspects of the technology, and an overview of the potential contributions of stem cells to the emerging field of regenerative medicine.  

BIOL 300  CELL BIOLOGY (4)
Three hours lecture and three hours laboratory per week.
Prerequisite: BIOL 201 with a grade of C or better and CHEM 122
Detailed study of the organization and functioning of cells and cellular organelles at the cellular and molecular levels, emphasizing experimental approaches and structural and functional relationships and their regulation and control. Topics include macromolecules, membrane phenomena, metabolism, enzyme kinetics, and cellular events associated with excitable cells and tissues. A lab fee is required.
BIOL 301 MICROBIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 201 with a grade of C or better and CHEM 122
Study of microorganisms of the environment, including disease-causing organisms, their structures and functions and their interactions to their host animals and the environment. A lab fee is required.

BIOL 302 GENETICS (4)
Three hours lecture and one hour recitation per week
Prerequisite: BIOL 201 with a grade of C or better and CHEM 122
Principles of classical transmission genetics, population genetics, with an introduction to modern molecular genetics.

BIOL 303 EVOLUTIONARY BIOLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 200 and BIOL 201
This course will examine principles of biological evolution. Topics include evolutionary genetics, adaptation and natural selection, the fossil record, speciation and macroevolution.

BIOL 304 COMPARATIVE ANIMAL PHYSIOLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 200 and BIOL 201
This course will use a comparative approach to examine physiological principles in a variety of vertebrate and invertebrate animals. Topics include homeostasis, respiration, excretion and physiological adaptations to environmental conditions.

BIOL 305 BIOLOGY OF AGING (3)
Three hours lecture per week
Prerequisite: BIOL 211
Current understanding of biological basis of human aging and senescence processes, including systemic, cellular and molecular mechanisms underlying the transition from health to senescence, evolutionary and comparative aspects of aging, measurement of aging, and the consequences of normal aging processes on various human systems. No credit given toward the Biology major.

BIOL 310 VERTEBRATE BIOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 200
Vertebrate animals are the most visible animals in most ecosystems. Surveys the diversity of vertebrate evolution, physiology, anatomy, ecology, life history and conservation. Regional and marine vertebrates will be emphasized. Identification of common vertebrate animals, especially local forms. Field trips will be required. A lab fee is required.

BIOL 311 PLANT BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200 or Consent of Instructor
Introduction to the structure, function, and diversity of land plants. Topics include basic plant anatomy, morphology, physiology, ecology, evolution, identification, and a survey of major lineages including mosses, ferns, gymnosperms, and flowering plants. A lab fee is required.

BIOL 312 MARINE BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200
Overview of the complexity of marine life including marine plants and animals and the processes that underlie their distribution and abundance in open oceans, coastal regions, estuaries and wetlands. Topics included diverse interactions of organisms in the intertidal zone, over the continental shelves and in the open oceans. Field trips to local marine environments will be taken. A lab fee is required.

BIOL 313 CONSERVATION BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200
This course explores issues surrounding the conservation of biodiversity. Topics to be covered include: species-, population-, and ecosystem-level issues, biodiversity, extinction, sustained yield, exotic species, and reserve design. Management implications and the ecology of issues are integrated throughout the course. A lab fee is required. Same as ESRM 313

BIOL 315 INTRODUCTION TO BIOPHYSICS (4)
Three hours lecture and two hours activity per week
Prerequisite: PHYS 200
Corequisite: BIOL 300
This course applies physical methods to the study of biological systems, including transport processes and membrane phenomena, bioelectric phenomena, photosynthetic systems and visual systems. Biophysical methods will include the techniques of patch clamping and optical tweezers, and the measurement of action potentials and evoked responses. There will be an emphasis on modeling and on problem solving, with appropriate mathematics when necessary. The practical activity session will include computer modeling and simulation, and laboratory demonstrations and exercises. Same as PHYS 315

BIOL 316 INVERTEBRATE ZOOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200
This course will survey invertebrates from simple, single-celled protists to the most complex of invertebrate animals. Over ninety-five percent of the animals on earth are invertebrates -- animals without backbones. Aspects of the ecology, physiology and evolutionary history of this diverse array of animals will be examined. Human interactions with invertebrates and conservation issues will also be highlighted. Field trips will be required. A lab fee is required.

BIOL 317 PARASITOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200
This course surveys the diversity of parasitic animals and protists. The parasitic life mode is found in a broad range of animal and protistan phyla, as well as some plant groups. Parasite-host relationships are often tightly co-evolved. Parasites have remarkable and complex adaptations to allow survival and successful reproduction and dispersal. Topics examined will include evolution and life histories of representative parasites, along with medical and epidemiological factors of those that affect humans or domestic animals. A lab fee is required.

BIOL 318 MEDICAL MYCOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 200
Surveys the structure, nutritional requirements, ecology, and economic importance of fungi. Topics will include the impact of fungi both on natural ecosystems and human civilization with emphasis on the biology of fungi causing major diseases in humans.
BIOL 336  SCIENTIFIC AND PROFESSIONAL ETHICS (3)
Three hours lecture per week
Discussion of ethical issues and societal challenges derived from scientific research and professional activities. Examines the sources, fundamental principles, and applications of ethical behavior; the relationship between personal ethics and social responsibility of organizations; and the stakeholder management concept. Applies ethical principles to different types of organizations: business, non-profits, government, health care, science/technology, and other professional groups.
GenEd: B2, E, INTD

BIOL 334  NATURAL HISTORY OF VENTURA COUNTY (3)
Two hours lecture and three hours laboratory per week
Prerequisite: Junior Standing or Consent of Instructor
This course will explore the biota and ecosystems of Ventura County. Local ecosystems include chaparral, marine, stream, desert, mountain and island. Topics covered will be classification and diversity of conspicuous regional flora and fauna in the field and laboratory, basic ecological and evolutionary principles of botanical and zoological classification, ecosystem diversity and function. Indigenous cultural and colonial era use of biotic resources, history of scientific exploration of the region, conservation and preservation issues, restoration of natural habitats, adaptation, life history and physiology of resident organisms will also be covered. Field trips will be required.
GenEd: B2, INTD

BIOL 333  THE BIOSPHERE (3)
Three hours of lecture per week
Prerequisite: Junior Standing or Consent of Instructor
The biosphere, the region of the planet where life exists, extends up into the atmosphere as well as down into the deepest ocean trenches. This course will examine the origin, workings, and human influence on earth’s biosphere. Topics include evolution of life on earth, atmosphere and climate changes, earth’s resources and human impacts.
GenEd: B2, INTD

BIOL 342  THE ZOO: CONSERVATION, EDUCATION AND RECREATION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary study of zoos and zoological gardens from scientific, managerial, business, recreational and educational perspectives. Analyzes how these perspectives are linked within zoo practices. The course will include an in-depth case study of a local zoo. Field trips to local zoos will be required.
GenEd: D, INTD

BIOL 345  SCIENCE AND PUBLIC POLICY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the relationship between science, politics, and public policy and prepares students to make informed decisions concerning the societal implications of many rapidly advancing avenues of scientific research.
Same as POLS 345
GenEd: D, INTD

BIOL 400  MOLECULAR BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 300 or BIOL 302 with a grade of C or better
Study of informational macromolecules and how they direct molecular processes in both eukaryotic and prokaryotic cells. Topics include structure, function and regulation of the genetic material at the molecular level, gene organization, structures and functions of DNA, RNA and proteins, gene transcription and expression, RNA processing, genomics and proteomics. A lab fee is required.

BIOL 401  BIOTECHNOLOGY AND RECOMBINANT DNA TECHNIQUES (5)
Three hours lecture and six hours laboratory per week
Prerequisite: BIOL 400 with a grade of C or better
Theory and application of molecular biotechnology to problems in medicine, agriculture, forensics, and the environment. This is a laboratory-intensive course emphasizing technical skills in DNA and RNA manipulation, trouble-shooting, experimental design, and data interpretation. A lab fee is required.

BIOL 403  FOUNDATIONS OF STRUCTURAL BIOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 300
Study of structure and function of biological macromolecules. Topics include basic structures and properties of macromolecules in biological systems, molecular evolution, conformational changes of macromolecules and their biological implications and techniques used to determine molecular structure of biological macromolecules. Special emphasis will be placed on the role of structural biology in the design and understanding of both biological and chemical pharmaceutics. A lab fee is required.
BIOL 404 PLANT AND ANIMAL TISSUE CULTURE (3)
Two hours lecture and three hours lab per week
Introductory course in the theory and concepts of animal and plant cell and tissue culturing including the fundamentals of tissue culture techniques, subculturing and maintenance of cell lines and stem cell technology. A lab fee is required.

BIOL 406 EVOLUTIONARY BIOGEOGRAPHY (3)
Three hours lecture per week
Prerequisite: BIOL 303
Examines the spatial and temporal distribution of plant and animal groups with emphasis on historical, environmental and biological processes governing current patterns of species and habitat geography. Integrates theory and analytical tools from geology, paleontology, ecology, evolution and genetics to study the effects of global change on biodiversity.

BIOL 407 BEHAVIORAL ECOLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 200
Examination of the evolutionary and ecological basis for animal behavior. Topics include: cooperative and competitive interactions, mating systems, reproductive behavior and eusociality.

BIOL 408 NANOBIOTECHNOLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 400
This course presents the basis of foundation for understanding how macromolecules combine to form the structural and functional units of the intact cell.

BIOL 416 RADIATION BIOLOGY AND RADIONUCLIDES (3)
Three hours lecture per week
Prerequisite: BIOL 300, PHYS 201, BIOL/PHYS/HETH 434
Topics include: nature and effects of ionizing radiation on biomolecular structures and living cells; applied radiobiology and radionuclides; genetic effects of ionizing radiation and methods of protection and dosimetry.

BIOL 420 CELLULAR AND MOLECULAR IMMUNOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 300 with a grade of C or better and CHEM 122
Study of cellular and molecular aspects of the immune system and its responses against infectious agents and/ or environmental insults. Included are development of the organs and cells of the immune system, genetics of the molecules of the immune system and their functions and interactions during an immune response, immunological disorders such as immunodeficiencies, autoimmune diseases, transplantation, and contemporary immunological techniques used in clinical diagnosis and other modern research and development applications. A lab fee is required.

BIOL 421 VIROLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 301 with a grade of C or better and CHEM 122
Study of aspects of molecular structure, genetics, and replication of viruses and other sub-viral agents such as prions and viroids, virus-host interactions, pathogenesis of viral infections, diagnostic virology, and antiviral vaccines and drugs; emphasis on human pathogens.

BIOL 422 MOLECULAR PLANT PHYSIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 300 with a grade of C or better
Study of principles and methods of plant physiology at the molecular level combined with modern plant technology. Topics include plant tissue and cell culture, genetic engineering and transformation, plant defense, genomics and applications of DNA technology. A lab fee is required.

BIOL 423 HUMAN PHYSIOLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 300 with a grade of C or better and CHEM 122
Study of human physiology at both the cellular and organ system levels including neurophysiology, muscle physiology, cardiovascular physiology, respiration, kidney function, hormone function and reproduction.

BIOL 424 HUMAN GENETICS (3)
Three hours lecture per week
Prerequisite: BIOL 300 and BIOL 302 with grades of C or better and CHEM 122
Basic principles of human inheritance, including the transmission of genetic traits, chromosomal abnormalities and their effects, gene structure and function, pedigree analysis, gene mapping, cytogenetics, mutations and mutagenic agents, cancer genetics, molecular analysis of inherited diseases and genetically controlled phenomena in humans.

BIOL 426 HEMATOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 300
Study of human blood, including histological, physiological, biochemical and clinical examination of blood. Topics include blood cell differentiation, development, iron metabolism, pathology, clinical diagnostic technology. Psychological and societal impact of human blood diseases and their impact on world civilizations and economy will be also studied. A lab fee is required.

BIOL 427 DEVELOPMENTAL BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 300 with a grade of C or better and CHEM 122
This course will use descriptive, experimental and comparative approaches in the study of animal development. Developmental stages including gametogenesis, fertilization, cleavage, gastrulation and organogenesis will be discussed in a variety of animal phyla. The molecular and cellular mechanisms underlying morphogenesis and the evolutionary conservation of developmental mechanisms in various animal phyla will be examined. A lab fee is required.

BIOL 428 BIOLOGY OF CANCER (3)
Three hours lecture per week
Prerequisite: BIOL 300 with a grade of C or better and CHEM 122
Principles of oncology are examined. Included are mechanisms of oncogenesis at cellular and molecular levels, characteristics of cancer, advantages and disadvantages of various therapies of cancer treatment.

BIOL 431 BIOINFORMATICS (4)
Four hours lecture in the lab per week
Prerequisite: BIOL 302 with a grade of C or better
Navigation and manipulation of biological databases. Topics include: multiple sequence alignment, phylogeny estimation, gene expression profiling, protein structure prediction, and functional genomics. Lab fee is required.

GenEd: B2, B4, INTD
B I O L 4 3 2  PRINCIPLES OF EPIDEMIOLOGY AND ENVIRONMENTAL HEALTH (3)
Three hours lecture per week
Prerequisite: BIOL 201 with a grade of C or better and CHEM 122. For Nursing majors and Pre-Nursing students, CHEM 110 and BIOL 217 may substitute for CHEM 122 and BIOL 201. Distribution and dynamics of human health problems and principles and procedures used to determine circumstances under which disease occurs or health prevails and to aid in managing and planning health and environmental systems. The broadened scope of epidemiology is examined through case studies and community and environmental health approach. GenEd: B2, D, INTD

B I O L 4 3 3  ECOLOGY AND THE ENVIRONMENT (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200
Ecological characteristics of natural ecosystems and basic effects of human society upon those systems. Plant and animal distribution patterns in relation to past and present physical and biotic factors. Issues of resource management, population, food production, global environmental problems will also be emphasized to explore future directions. Field trips to local ecosystems will be taken. A lab fee is required. GenEd: B2, INTD

B I O L 4 3 4  INTRODUCTION TO BIOMEDICAL IMAGING (4)
Three hours lecture and two hours activity per week
Prerequisite: BIOL 210 or PHYS 200
The course will present an overview of biomedical images and imaging systems. The fundamental concepts used in several imaging modalities (such as projection radiography, mammography, DEXA, computed tomography, ultrasonography and magnetic resonance imaging) will be examined: the emphasis will be on an intuitive and descriptive presentation of the main components of these systems. Image formation and reconstruction will be addressed. The resulting clinical images will be correlated with the underlying structure and function of the organs, and the diagnostic utility and limitations of the images will be considered. Same as PHYS 434, HLTH 434
GenEd: B1, E, INTD

B I O L 4 5 0  ICHTHYOLOGY: THE BIOLOGY OF FISHES (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 200
This course will survey the diversity of living and fossil fishes. Fishes are the largest and most diverse group of vertebrate animals. Aspects of the ecology, physiology and evolutionary history of these animals will be examined. Extensive human interactions with fishes and particularly conservation issues will be highlighted. Emphasis will be placed on the identification and biology of California coastal and inland species. Field trips will be required. A lab fee is required.

B I O L 4 5 1  ORNITHOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 200, BIOL 201
Introduces the evolution, diversification, anatomy, physiology, classification, ecology, behavior, conservation and special adaptations of birds in the world. It requires study and identification in the field and laboratory. A lab fee is required. Repeatable up to 8 units.

B I O L 4 5 2  ENTOMOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 200
Explore the biology of the most successful and diverse group of organisms on Earth: insects. Insect morphology, physiology, ecology, behavior, taxonomy, and evolutionary history of the major insect orders will be discussed, as will the importance of insects to humans and biological control. Laboratories will emphasize collection, mounting and preservation techniques for insect specimens, as well as identification to the level of insect order and families.

B I O L 4 5 3  METHODS IN POPULATION AND COMMUNITY ECOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: BIOL 200, BIOL 203 and MATH 150
Discuss the mechanisms governing population dynamics and community structure. Mathematical models for population growth, predator-prey interactions, competition, island biogeography, and food webs will be explored. Computer labs will emphasize the analysis of ecological datasets.

B I O L 4 6 4  MEDICAL INSTRUMENTATION (4)
Three hours lecture and two hours lab activity per week
Prerequisite: PHYS/BIO/LHLTH 434
The detection, acquisition, processing and display of diagnostic clinical images. The course will concentrate on the fundamentals of the design of the instruments and the use of appropriate reconstruction algorithms in (computed) radiography, (digital) fluoroscopy, computed tomography, ultrasound, magnetic resonance imaging and radionuclide imaging. Activities will include image reconstruction examples, investigation of recent innovations, and two visits to local radiology departments. Same as PHYS 464

B I O L 4 9 0  SPECIAL TOPICS (1-3)
Three hours seminar per week
Prerequisite: Consent of Instructor
In-depth analysis of current topics in biology. Topics vary each semester. Repeatable by topic.

B I O L 4 9 1  SPECIAL LABORATORY TOPICS (1-3)
Prerequisite: BIOL 300 with a grade of C or better and CHEM 122
Laboratory study of a selected topic, the title of which is to be specified in advance. Repeatable by topic. A lab fee is required.

B I O L 4 9 2  INTERNSHIP (2-3)
Prerequisite: Consent of Instructor and program approval
Supervised work and study in work situations involving biological research and technical skills. May involve service learning. All students are required to attend the Biology Program Senior Capstone Colloquium to present their projects.
Graded: Credit/No Credit

B I O L 4 9 3  SERVICE LEARNING AT THE ZOO (1-3)
One to three hours activity per week
Prerequisite: BIOL/BUS/ECON/EDUC 342 and Consent of Instructor
Working with local zoos individuals or teams of students will engage in service learning projects where they will apply skills and competencies acquired in their academic programs to issues and challenges facing modern zoos.
Student Option: Graded or Credit/No Credit
Biology 501 Laboratory Techniques
Prerequisite: Consent of Instructor and program approval
Laboratory and/or library research that may involve service learning in selected areas of biology conducted under the direction of a faculty member. All students are required to attend the Biology Program Senior Capstone Colloquium to present their projects.
Graded: Credit/No Credit

Biology 502 Techniques in Genomics/Proteomics (3)
One hour lecture and six hours laboratory per week
Prerequisite: BIOL 400, BIOL 401 or BIOL 501 or Consent of Instructor
Provides students with theoretical foundations and practical skills needed for general bioinformatics, genomics, and proteomics analysis. Intensive lab sessions, emphasize applied techniques. Field trips to various local biotechnology facilities will augment the training.

Biology 503 Biotechnology Law and Regulation (3)
Three hours lecture per week
Individual and organizational responsibility in R&D and commercial aspects of biotechnology. Topics include: intellectual property, privacy, government and industrial regulation, liability, ethics, responsible conduct of research, and policy responses to societal concerns in the U.S. and abroad. Case studies involving gene therapy, cloning, and biomaterials in the medical and health sector, and farming and crop modification in the agricultural sector will be explored in detail.

Biology 504 Molecular Cell Biology (3)
Three hours lecture per week
Prerequisite: BIOL 300 and BIOL 400 or BIOL 501 or Consent of Instructor
This course will examine molecular and mechanistic aspects of cell biology. Topics include: cell biochemistry and biosynthesis, cell signaling, regulation of the cell cycle and membrane trafficking.

Biology 505 Molecular Structure (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 504 or Consent of Instructor
Examines the structural biology of proteins. Topics include general principles of protein structure, the biochemical function of proteins, the relationship of protein structure to its function and experimental approaches to determining and predicting protein structure and function.

Biology 506 Molecular Evolution (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 504 and Consent of Instructor
Examines evolutionary change at the molecular level. Topics include: The driving forces behind the evolutionary process, the effects of the various molecular mechanisms on the structure of genes, proteins, and genomes, the methodology for dealing with molecular data from an evolutionary perspective and the logic of molecular hypothesis testing.

Biology 507 Pharmacogenomics and Pharmacoproteomics (3)
Three hours lecture per week
Prerequisite: BINF 500, BIOL 504 or Consent of Instructor
Structural and functional genomics with an emphasis on how these fields operate in drug discovery and optimization. Topics include: genetics of the human response to prophylactic and therapeutic agent, impact of genetic variation on therapeutic efficacy, disease mechanisms, proteomics of genetic and communicable disease, drug action and toxicity, structure encoding, lead discovery and optimization, parallel synthesis, screening virtual libraries.

Biology 508 Advanced Immunology (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 504 or Consent of Instructor
Examines cellular and molecular aspects of the immune system. Topics include: molecular genetics and molecular structure of immunoglobulin, T cell receptor, and the MHC antigens; the functions and dysfunctions of the components of the immune system; applications of immunological technologies in modern scientific research and development.

Biology 509 Plant Biotechnology (4)
Three hours lecture and three hours laboratory per week
Prerequisite: BIOL 504 or Consent of Instructor
Examines the scientific and technical advances which underlie the production of genetically modified crops. Topics include: plant genome organization and gene expression, plant tissue culture and genetic transformation, genetic engineering of crop yield and quality.

Biology 510 Tissue Culture Techniques and Stem Cell Technology (3)
One hour lecture and six hours laboratory per week
Prerequisite: BIOL 504
Examines theory and concepts of animal and plant cell and tissue culturing. Focuses on stem cell technology including types of stem cells, ethics of stem cells, pluripotency, culture methods, characterization, monitoring tools such as imaging and differentiation strategies.
BIOL 511 ADVANCED STEM CELL TECHNOLOGY (3)
One hour lecture per week and Six hours laboratory per week
Prerequisite: BIOL 427 and BIOL 510
A laboratory intensive course focused on the technical aspects of human embryonic stem cell technology. Develops specific technical skills to successfully culture, characterize and maintain pluripotent human embryonic stem cell lines.

BIOL 512 ADVANCED TOPICS IN REGENERATIVE MEDICINE (1)
One hour seminar per week
Prerequisite: BIOL 511
A seminar series involving presentations and discussions of current knowledge of embryonic and adult stem cells and factors that regulate their growth and development. Emphasizes how advances in cell and molecular biology and tissue engineering can be applied to the use of stem cells in regenerative medicine. Discusses social and ethical impacts of stem cell technology.

BIOL 513 CELL CULTURE FACILITY MANAGEMENT (3)
Three hours lecture per week
Prerequisite: BIOL 510
Processes and procedures of managing a cell culture facility. Topics include biosafety standards, record keeping, database organization, personnel management, inventory administration, storage of laboratory reagents and supplies, cell line banking and maintenance, equipment selection and maintenance, and essential concepts for troubleshooting common cell culture problems.

BIOL 516 CLINICAL TRIALS AND QUALITY ASSURANCE (3)
Three hours lecture per week
Prerequisite: BIOL 503
An introduction to the foundational knowledge and skills necessary to successfully conduct clinical trials for new drugs, biologics, and medical devices, including in vitro diagnostics. Topics include a broad overview of the product development process in the pharmaceutical, biopharmaceutical, and medical device industries, the regulatory and operational requirements for clinical study setup and management, monitoring, data management, and closure of clinical trials, the principles of Good Clinical Practice (GCP), and the applications of quality control and quality assurance. The integration of quality assurance throughout the medical product development process will be discussed.

BIOL 600 TEAM PROJECT (4)
Four hours activity per week
Prerequisite: Program approval
In this course, students will work individually and in teams to analyze, research, discuss and report on subjects relevant to the biotechnology industry.

BIOL 601 SEMINAR IN BIOTECHNOLOGY AND BIOINFORMATICS (1)
One hour seminar per week
Discussion of up-to-date research and development findings with guest speakers, visiting scientists and industry professionals.

BIOL 602 STEM CELL TECHNOLOGY INTERNSHIP (1.5-1.5)
Eighteen laboratory hours per week
Prerequisite: BIOL 511
A required two-semester project where students conduct original research in an active stem cell research laboratory at various off campus institutions. Culminates in a final written report and oral presentation. Repeatable for a total of 2 units for the year-long project.
Graded: Credit/No Credit

BIOL 603 BIOTECHNOLOGY INTERNSHIP (3)
Three hours seminar per week
Prerequisite: Consent of Instructor
A one-semester project where students conduct original research in an active research laboratory at various off campus institutions. Culminates in a final written report and an oral presentation at the Program Colloquium.
Graded: Credit/No Credit

BIOL 604 BIOTECHNOLOGY ACROSS NATIONAL BOUNDARIES (2)
Two hours lecture per week
Addresses international efforts in biotechnological innovation, education, global commercialization and impact of biotechnology. Explores collaborations among science, education, industry and government in the age of globalization, ethical standards, international law and regulation in biotechnology and inter- and cross-cultural issues in business operations.

BIOL 605 BIOTECHNOLOGY ACROSS NATIONAL BOUNDARIES FIELD TRIP (1)
Variable hours for field trip
Prerequisite: Consent of Instructor
A field trip examining international efforts in biotechnological innovation, education, global commercialization and the impact of biotechnology through on site visits to appropriate locations.

BIOL 610 CAPSTONE PROJECT FOR MS/ MBA DUAL DEGREE (6)
Six hours seminar per week
Prerequisite: Biology or Business and Economics Program Approval
Culminating experience in the MS/ MBA dual degree program. Students participate in lectures, discussions, case analysis and independent research. Includes a major project involving research, analysis, synthesis and presentation of a topic related to the global biotechnology industry.
Same as BUS 610

Biomedical Engineering

BME 500 BIOLOGICAL SYSTEMS, BIOMECHANICS AND BIOROBOTICS (3)
Two hours lecture and three hours laboratory per week
Prerequisite: BIOL 210 and BIOL 211 or BIOL 424; PHYS 200 and PHYS 201 or BIOL/PHYS 315; and BIOL 300 or CHEM 318 or CHEM 460; and BIOL 400 or BIOL 501
Covers structural and physiological foundations in biomedical engineering, including molecular and cellular, cardiovascular, musculoskeletal and neural systems, and principles and applications of biomechanics and biorobotics in biological systems.

BME 501 FUNDAMENTALS OF TISSUE ENGINEERING AND BIOMATERIALS (3)
Two hours lecture and 3 hours laboratory per week
Prerequisite: BIOL 504, PHYS 200 and PHYS 201 or BIOL/PHYS 315
Covers molecular, cellular, tissue and organ engineering and societal and ethical issues in regenerative medicine. Also considers major types of biomaterials including metallic, ceramic, polymeric, biodegradable, composite, nano and other replacement materials and techniques and procedures used in biomedical engineering.

BME 502 BIOMEDICAL INSTRUMENTATION AND DEVICES: TECHNOLOGY & APPLICATION (3)
Two hours lecture and three hours laboratory per week
Prerequisite: MATH 150, PHYS 200 and PHYS 201 or PHYS 315 or BIOL/PHYS 434
Covers biosignaling processes, instrumentation and devices in measuring, recording, monitoring and diagnosis, modern medical imaging analysis systems, nanodevices, therapeutics, and design and development principles of instruments and devices for diagnostics and therapeutics.
BUS 330  BEHAVIORAL FINANCE: THE PSYCHOLOGY OF DECISION-MAKING (3)
Three hours lecture per week
Examines the influence psychology has on the behavior of financial practitioners and the subsequent effect on financial markets. Investigates psychological variables (such as heuristics, biases, overconfidence, and sentiment) and how the resulting affective and cognitive reactions impact personal and general financial decisions. Examines how to apply behavioral finance in investing, corporate financial decision-making, and financial management.
Same as PSY 330
GenEd: D, E, INTD

BUS 334  THE BUSINESS OF ART (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Exploration into aspects of the art world business including the financial activities of art consultants, private dealers, commercial galleries, corporate art collections, public museums and international auction houses. Case studies in art marketing, gallery and museum management, contracts and commissions, as well as public image and career development will be investigated.
Same as ART 334
GenEd: C1, D, INTD

BUS 335  BUSINESS AND THE PERFORMING ARTS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Exploration of the business elements in the performing arts, including planning, management, and financial activities. Uses an interdisciplinary approach to focus on performing arts as a creative activity and as a business activity. Uses case studies to analyze a comprehensive view of performing arts organizations.
Same as PA 335
GenEd: C1, INTD

BUS 336  SOCIAL ENTREPRENEURSHIP (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Social entrepreneurship is about creating and leading organizations that strive to advance social change. Draws from both theory and practice to explore important trends in the private and social sectors, which are creating space for innovation and opportunities for individuals with business skills to drive positive change. Incorporates case studies, exercises, field trips, group presentations, and a semester-long service project.
Same as SOC 336
GenEd: D, INTD

BUS 339  BUSINESS IN CHINA: HERITAGE AND CHANGE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines from a broad historical perspective a variety of institutions and modernization processes of the Chinese financial market, economic environment, and business practices.
Same as HIST 339
GenEd: D, INTD

BUS 340  BUSINESS AND ECONOMICS IN LITERATURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Explores the ways in which business and economics have been represented in American literature. Employs critical methodologies from the fields of Business, Economics, and Literary studies.
Same as ECON 340, ENGL 340
GenEd: C2, D, INTD

BUS 341  DRUG DISCOVERY AND DEVELOPMENT (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
How are drugs discovered? What determines the price for a drug? What is the difference between a generic and non-generic drug? These questions will be examined with an interdisciplinary approach. Topics include the isolation of compounds from natural sources, the screening of compounds for biological activity, structure-activity relationships of drugs, computer-assisted drug design, combinatorial chemistry, bioinformatics, the FDA approval process for new drugs, and the economic and business aspects of pharmaceutical investment and development.
Same as ECON 341, CHEM 341
GenEd: B1, D, INTD
BUS 342 **THE ZOO: CONSERVATION, EDUCATION AND RECREATION (3)**
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary study of zoos and zoological gardens from scientific, managerial, business, recreational and educational perspectives. Analyzes how these perspectives are linked within zoo practices. The course will include an in-depth case study of a local zoo. Field trips to local zoos will be required.
Same as BIOL 342, ECON 342, EDUC 342
GenEd: D, INTD

BUS 344 **THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)**
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of university, school (K-12), public, and special libraries from business, economic, library science, and educational perspectives. Analyzes how these perspectives are linked within library practices. A study of local libraries and field trips.
Same as ECON 344, EDUC 344, LIB 344
GenEd: D, INTD

BUS 347 **THE UNIVERSITY (3)**
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of institutions of higher education from multiple perspectives including, but not limited to education, teaching and learning, scholarly and creative activities, community service, management, and public policy. Includes case studies of colleges and universities in the region and may include field trips to these institutions.
Same as ECON 347, EDUC 347
GenEd: D, INTD

BUS 349 **HISTORY OF BUSINESS AND ECONOMICS IN NORTH AMERICA (3)**
Three hours of lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the growth and development of the economies of North America since colonial times. Addresses social, ethical, economic and management issues during the development of Canada, the United States, and Mexico. Analyzes the business principles underlying the growth and development of the economies.
Same as ECON 349, HIST 349
GenEd: D, INTD

BUS 343 **THE MUSEUM: CULTURE, BUSINESS AND EDUCATION (3)**
Three hours lecture per week
Prerequisite: Junior Standing
An interdisciplinary study of music museums from the perspectives of music history, appreciation and production, business, economics and education. Analyzes how these disciplines are linked within music museum practices. Includes an in-depth study of a local music museum.
Same as ECON 343, EDUC 343, PAMU 343
GenEd: C1, D, INTD

BUS 345 **THE MUSIC MUSEUM (3)**
Three hours lecture per week
Prerequisite: Junior Standing
An interdisciplinary study of music museums from the perspectives of music history, appreciation and production, business, economics and education. Analyzes how these disciplines are linked within music museum practices. Includes an in-depth study of a local music museum.
Same as ECON 345, EDUC 345, PAMU 345
GenEd: D, INTD

BUS 435 **THE MUSIC MUSEUM (3)**
Three hours lecture per week
Prerequisite: Junior Standing
A study of university, school (K-12), public, and special libraries from business, economic, library science, and educational perspectives. Analyzes how these perspectives are linked within library practices. A study of local libraries and field trips.
Same as ECON 344, EDUC 344, LIB 344
GenEd: D, INTD

BUS 448 **GLOBALIZATION AND DEVELOPMENT (3)**
Three hours lecture per week
Prerequisite: SOC 100
Examines empirical and theoretical issues of globalization from a sociological perspective, to understanding how the forces of globalization affect economic, political and cultural systems of both developed and developing nations.
Same as SOC 448, ECON 448
GenEd: D, INTD

BUS 491 **LECTURE SERIES IN ENTERTAINMENT INDUSTRY (1)**
Two hours lecture bi-weekly.
Bi-weekly series of guest lectures focusing on a variety of issues pertinent to the entertainment industry. Entertainment professionals will address topics that cover but are not limited to aspects of management, marketing, production, performance and entertainment-related technologies. Repeatable by topic up to 2 units.
Same as ART 491, PA 491

BUS 495 **THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)**
Two hours lecture and two hours activity per week
Prerequisite: ART/BUS/PA 491
An interdisciplinary experience: students work directly with faculty and entertainment industry professionals focusing on aspects of talent management, project development, marketing and related technologies that result in the production of an entertainment event.
Same as ART 495, PA 495

BUS 498 **FACULTY-STUDENT COLLABORATIVE RESEARCH IN SOCIAL BUSINESS (2-3)**
Two to six hours activity per week
Prerequisite: BUS/ECON/SOC 203, BUS/ECON/SOC 301 and Consent of Instructor
Engage in the creation of original intellectual or creative work by collaborating with a faculty member on research of a social business. Includes in-depth and possible on-site study of a social business using knowledge from previous courses in the minor/certificate; and the writing of a case study about the chosen social business.
Same as ECON 498, SOC 498

BUS 499 **CAPSTONE (3)**
Three hours lecture per week
Prerequisite: All Lower Division 21 units and other Upper Division 33 units required courses in the Business Major.
An integration of all prior business core subject matter via two major components: 1) Teams of students participate in a PC-based simulation of an ongoing (fictitious) international business. Requires decision-making under uncertainty but within strict deadlines, competitor analysis, and formal oral/written reporting of results.
2) Individually and in teams, students analyze, research, discuss and report on complex written business cases - which provides interdisciplinary exposure.

BUS 500 **ECONOMICS FOR MANAGERS (3)**
Three hours lecture per week
Prerequisite: All Lower Division 21 units and other Upper Division 33 units required courses in the Business Major.
Presents Economics for MBA students, both microeconomics and macroeconomics. Topics include market structure, demand analysis, consumer behavior, nature of the firm, measuring economic activity, inflation, unemployment, money and banking, and the role of the government. Offered with an extensive online component.

BUS 502 **QUANTITATIVE METHODS FOR DECISION-MAKING (3)**
Three hours lecture per week
Overview of core quantitative skills for effective managerial decision-making. Topics include statistical principles, regression analysis, forecasting, multi-attribute decision-making, benefit-cost analysis, and spreadsheet modeling of businesses cases. Offered with an extensive online component.
BUS 520 INTRODUCTION TO ACCOUNTING AND FINANCE (4)
Four hours lecture per week.
Presents an overview of the role of accounting and finance in business. The first part of the course focuses on accounting as the language of business. Topics include basic assumptions and principles of accounting, the content and purpose of financial statements, and uses and limitations of the financial statements. The second part of the course focuses on the role of finance in supporting the functional areas of a business. Topics include time value of money, risk, and capital structure. Offered with an extensive online component.

BUS 526 PRINCIPLES OF MANAGEMENT AND MARKETING (3)
Three hours lecture per week.
Presents an overview of the disciplines of management and marketing. Explains the basic elements of effective management and marketing practices. Combines management and marketing disciplines through case studies, role-play simulations, and computer-based simulations to model managers planning and decision-making processes. Offered with an extensive online component.

BUS 528 SPECIAL TOPICS IN MANAGEMENT INFORMATION SYSTEMS (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in management information systems. Topics vary each semester. Repeatable by topic.

BUS 530 MANAGING BUSINESS OPERATIONS (3)
Three hours seminar per week.
Prerequisite: BUS 520.
Corequisite: BUS 540.
Managing a firm’s business operations involves the design, operation and improvement of systems that create and deliver products and services to customers. Topics include change management, product design, process selection, quality management, supply chain design, strategy and control.

BUS 531 SPECIAL TOPICS IN BUSINESS (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in business. Topics vary each semester. Repeatable by topic.

BUS 532 SPECIAL TOPICS IN SOCIAL BUSINESS (3)
Three hours seminar per week.
In-depth analysis of current topics in social business. Topics vary each semester. Repeatable by topic up to 6 units.

BUS 533 SPECIAL TOPICS IN ECONOMICS (3)
Three hours seminar per week.
In-depth analysis of current topics in economics. Topics vary each semester. Repeatable up to 6 units.

BUS 534 SPECIAL TOPICS IN HUMAN RESOURCE MANAGEMENT (3)
Three hours seminar per week.
In-depth analysis of current topics in human resource management. Topics vary each semester. Repeatable up to 6 units.

BUS 535 SPECIAL TOPICS IN STRATEGY (3)
Three hours seminar per week.
In-depth analysis of current topics in strategy. Topics vary each semester. Repeatable up to 6 units.

BUS 536 SPECIAL TOPICS IN CAREER DEVELOPMENT (3)
Three hours seminar per week.
In-depth analysis of current topics in career development. Topics vary each semester. Repeatable up to 6 units.

BUS 537 SPECIAL TOPICS IN ENTREPRENEURIAL MANAGEMENT (3)
Three hours seminar per week.
In-depth analysis of current topics in entrepreneurial management. Topics vary each semester. Repeatable up to 6 units.

BUS 538 SPECIAL TOPICS IN MANAGEMENT INFORMATION SYSTEMS (3)
Three hours seminar per week.
In-depth analysis of current topics in management information systems. Topics vary each semester. Repeatable up to 6 units.

BUS 539 SPECIAL TOPICS IN BUSINESS OPERATIONS (3)
Three hours seminar per week.
In-depth analysis of current topics in business operations. Topics vary each semester. Repeatable up to 6 units.

BUS 540 FINANCIAL REPORTING AND ANALYSIS (3)
Three hours seminar per week.
Prerequisite: BUS 520.
Corequisite: BUS 530.
Use of financial information in managing an organization. Focuses on analyzing and interpreting financial statements, applying analytical tools and techniques to financial statements in order to make sound investment and operating decisions, and applying standard corporate funding models in corporate financial management.

BUS 541 SPECIAL TOPICS IN FINANCE (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in finance. Topics vary each semester. Repeatable by topic.

BUS 542 SPECIAL TOPICS IN HUMAN RESOURCES (3)
Three hours seminar per week.
In-depth analysis of current topics in human resources. Topics vary each semester. Repeatable by topic.

BUS 543 SPECIAL TOPICS IN STRATEGY (3)
Three hours seminar per week.
In-depth analysis of current topics in strategy. Topics vary each semester. Repeatable by topic.

BUS 544 SPECIAL TOPICS IN MARKETING (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in marketing. Topics vary each semester. Repeatable by topic.

BUS 545 SPECIAL TOPICS IN ACCOUNTING AND TAXATION (3)
Three hours seminar per week.
In-depth analysis of current topics in accounting and taxation. Topics vary each semester. Repeatable by topic.

BUS 546 SPECIAL TOPICS IN BUSINESS ETHICS AND LAW (3)
Three hours seminar per week.
In-depth analysis of current topics in business ethics and law. Topics vary each semester. Repeatable by topic.

BUS 547 SPECIAL TOPICS IN BUSINESS OPERATIONS (3)
Three hours seminar per week.
In-depth analysis of current topics in business operations. Topics vary each semester. Repeatable by topic.

BUS 548 SPECIAL TOPICS IN MANAGEMENT (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in management. Topics vary each semester. Repeatable by topic.

BUS 549 SPECIAL TOPICS IN HUMAN RESOURCES (3)
Three hours seminar per week.
In-depth analysis of current topics in human resources. Topics vary each semester. Repeatable by topic.

BUS 550 THE CONTEMPORARY FIRM (3)
Three hours seminar per week.
Prerequisite: BUS 540.
Provides an intro to the information technology (IT) used in modern organizations and a technical understanding of IT, emphasizing practical experience and management perspectives.

BUS 551 SPECIAL TOPICS IN BUSINESS ETHICS AND LAW (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in business ethics and law. Topics vary each semester. Repeatable by topic.

BUS 552 SPECIAL TOPICS IN MARKETING (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in marketing. Topics vary each semester. Repeatable by topic.

BUS 553 SPECIAL TOPICS IN ACCOUNTING AND TAXATION (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in accounting and taxation. Topics vary each semester. Repeatable by topic.

BUS 554 SPECIAL TOPICS IN MANAGEMENT (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in management. Topics vary each semester. Repeatable by topic.

BUS 555 SPECIAL TOPICS IN BUSINESS OPERATIONS (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in business operations. Topics vary each semester. Repeatable by topic.

BUS 556 SPECIAL TOPICS IN HUMAN RESOURCES (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in human resources. Topics vary each semester. Repeatable by topic.

BUS 557 SPECIAL TOPICS IN MANAGEMENT (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in management. Topics vary each semester. Repeatable by topic.

BUS 558 SPECIAL TOPICS IN BUSINESS OPERATIONS (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in business operations. Topics vary each semester. Repeatable by topic.

BUS 559 SPECIAL TOPICS IN HUMAN RESOURCES (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
In-depth analysis of current topics in human resources. Topics vary each semester. Repeatable by topic.

BUS 560 THE CONTEMPORARY FIRM (3)
Three hours seminar per week.
Prerequisite: BUS 540.
Provides an intro to the information technology (IT) used in modern organizations and a technical understanding of IT, emphasizing practical experience and management perspectives.
BUS 570  COMPETING IN A GLOBAL ENVIRONMENT (6)
Three hours seminar and six hours activity per week
Prerequisite: Completion of all other MBA Core courses
Addresses management concerns for maximum organizational effectiveness in international business. Topics include international market identification, trade practices and policy, legal issues in business, international currency markets, joint ventures, international business strategy, and global management. Intercultural management issues, negotiation, and cross-cultural differences will also be addressed. Uses a computer based business simulation exercise.

BUS 572  GRADUATE INTERNATIONAL EXPERIENCE IN BUSINESS (3)
Three hours lecture per week
Analysis of international business environments, including site visits to appropriate locations. Repeatable up to 4 units.

BUS 610  CAPSTONE PROJECT FOR MS/MBA DUAL DEGREE (6)
Six hours seminar per week
Prerequisite: Biology or Business and Economics Program Approval
Culminating experience in the MS/MBA dual degree program. Students participate in lectures, discussions, case analysis and independent research. Includes a major project involving research, analysis, synthesis and presentation of a topic related to the global biotechnology industry.
Same as BIOL 610

Chemistry

CHEM 101  CHEMISTRY AND THE ENVIRONMENT (3)
Three hours lecture per week
Relates the fundamentals of chemistry to contemporary environmental issues. Introduction to environmental chemistry without assuming any prior knowledge of chemistry and mathematics. Applies scientific principles to environmental problems concerning energy, air quality, the atmosphere, water quality, and waste management. Essential foundational science needed to understand these problems are also discussed.
GenEd: B1

CHEM 105  INTRODUCTION TO CHEMISTRY (3)
Three hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics (ELM) Examination
Introduces the basic principles and concepts in Chemistry. Topics covered include: measurements, units and unit conversion, scientific notation, stoichiometry, atomic structure, the concept of the mole, types of compounds, and problem solving.
GenEd: B1

CHEM 110  CHEMISTRY OF LIFE (4)
Three hours lecture and three hours lab per week
Prerequisite: Satisfy the Entry Level Mathematics (ELM) requirement
Fundamentals of chemistry including the composition of atoms and molecules, mass balance, energy, properties of gases and solutions, solubility, diffusion, ionic strength, acid-base chemistry, and basic nuclear chemistry. Structure and reactivity of inorganic, organic, and biological molecules. Enzyme catalysis, including the metabolism of sugars, lipids, and proteins. Hazards of chemicals and their interactions with the human body. Integrated lecture and laboratory.
A lab fee is required.
GenEd: B1

CHEM 111  CHEMISTRY OF LIFE - PROBLEM SOLVING (1)
One hour of discussion per week
Corequisite: Chem 110, Concurrent enrollment required
An instructor/peer-supervised interactive problem-solving session for students in CHEM 110 where students work in small groups on problems related to the content in CHEM 110.
Graded: Credit/No Credit

CHEM 121  GENERAL CHEMISTRY I (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 121 with a grade of C or better
An introductory chemistry course which provides an overview of the chemical and physical behavior of matter with a focus on quantitative general inorganic, physical, and analytical chemistry including kinetics and thermodynamics of reactions, gas phase and solution equilibria, and qualitative aspects of radiochemistry, organic chemistry, and polymer chemistry. A lab fee is required.
GenEd: B1

CHEM 122  GENERAL CHEMISTRY II (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 121 with a grade of C or better
An introductory chemistry course which provides an overview of the chemical and physical behavior of matter with a focus on quantitative general inorganic, organic, and analytical chemistry including kinetics and thermodynamics of reactions, gas phase and solution equilibria, and qualitative aspects of radiochemistry, organic chemistry, and polymer chemistry. A lab fee is required.
GenEd: B1

CHEM 123  GENERAL CHEMISTRY I PROBLEM-SOLVING (1)
One hour discussion per week
Corequisite: CHEM 121
An instructor/peer-supervised interactive problem-solving session for students in CHEM 121 where students work in small groups on problems related to the content in CHEM 121.
Graded: Credit/No Credit

CHEM 124  GENERAL CHEMISTRY II PROBLEM-SOLVING (1)
One hour discussion per week
Corequisite: CHEM 122
An instructor/peer-supervised interactive problem-solving session for students in CHEM 122 where students work in small groups on problems related to the content in CHEM 122.
Graded: Credit/No Credit

CHEM 250  QUANTITATIVE ANALYSIS (3)
Three hours lecture per week
Prerequisite: CHEM 122 with a grade of C or better
Corequisite: CHEM 251
An examination of analytical chemistry theory and techniques involved in the quantitation of inorganic, organic, and biological species from samples. Emphasis on gravimetric, volumetric, and separation techniques, as well as data analysis and statistics. Examine environmental, biological, and medical applications of the analysis techniques.

CHEM 251  QUANTITATIVE ANALYSIS LABORATORY (1)
Three hours of laboratory per week
Prerequisite: CHEM 122 with a grade of C or better
Corequisite: CHEM 250
A laboratory course designed to provide students with an exposure to the techniques used in the quantitation of inorganic, organic, and biological species from samples using gravimetric
CHEM 301  ENVIRONMENTAL CHEMISTRY - ATMOSPHERE AND CLIMATE (3)
Three hours lecture per week
Prerequisite: CHEM 122 with a grade of C or better
An introductory course to the chemistry of the atmosphere. The focus is the fundamental natural chemical processes of the atmosphere, as well as the anthropogenic effects on this system. These include climate change and other current topics of environmental interest and the science behind these processes.

CHEM 302  ENVIRONMENTAL CHEMISTRY - SOIL AND WATER (4)
Three hours lecture and three hours lab per week
Prerequisite: CHEM 122 with a grade of C or better
Examines the environmental chemistry of the geosphere and the hydrosphere. Natural and anthropogenic effects on the environment in these systems, including effects on living organisms, hazardous waste and its disposal, and measures to alleviate and prevent environmental problems will be discussed. Includes a laboratory for experiments analyzing water, soil, and tissue samples for pollutants.

CHEM 305  COMPUTER APPLICATIONS IN CHEMISTRY (1)
Three hours of laboratory per week
Prerequisite: CHEM 122 with a grade of C or better
This course will introduce the use of computer applications to solve chemical problems and present scientific information. Topics include: on-line journals and literature searches, reading and understanding the scientific literature, computer modeling of molecules, and website development. A lab fee is required.
GenEd: B4

CHEM 311  ORGANIC CHEMISTRY I (3)
Three hours lecture per week
Prerequisite: CHEM 122 with a grade of C or better
The structure and reactions of simple organic molecules and spectroscopic techniques (NMR, GC-MS, IR, and UV-visible) used to characterize molecules.

CHEM 312  ORGANIC CHEMISTRY I LABORATORY (1)
Three hours laboratory per week
Prerequisite: CHEM 311 (or taken concurrently) with a grade of C or better
A laboratory course designed to provide students with an exposure to the techniques and instrumentation (NMR, GC, GC-MS, LC, IR, and UV-visible) used to purify and characterize organic molecules resulting from organic reactions. A lab fee is required.

CHEM 313  ORGANIC CHEMISTRY I PROBLEM SOLVING (1)
One hour discussion per week
Corequisite: CHEM 311
Interactive problem-solving session for students in CHEM 311 where students work in small groups on problems related to the content in CHEM 311.
Graded: Credit/No Credit

CHEM 314  ORGANIC CHEMISTRY II (3)
Three hours lecture per week
Prerequisite: CHEM 311 with a grade of C or better
An examination of the structure, reactions, and spectroscopy of organic compounds containing one or more functional groups, and the structures and reactions of biologically relevant molecules.

CHEM 315  ORGANIC CHEMISTRY II LABORATORY (1)
Three hours laboratory per week
Prerequisite: CHEM 311, CHEM 312, and CHEM 314 (or taken concurrently) with grades of C or better
A laboratory course designed to provide students with experience in single-step and multi-step syntheses and characterization of organic molecules with hands-on access to instrumentation (NMR, GC, GC-MS, LC, IR, and UV-visible). A lab fee is required.

CHEM 316  ORGANIC CHEMISTRY II PROBLEM SOLVING (1)
One hour discussion per week
Corequisite: CHEM 314
Interactive problem-solving session for students enrolled in CHEM 314 where students work in small groups on problems related to the content in CHEM 314.
Graded: Credit/No Credit

CHEM 318  BIOLOGICAL CHEMISTRY (3)
Three hours lecture per week
Prerequisite: CHEM 311 with a grade of C or better
An integrated Organic Chemistry II and Biochemistry course for non-chemists. The topics covered in this course include: the structure and synthesis of sugars, amino acids, DNA, RNA, proteins; enzyme catalysis and inhibition; and the reactions involved in biosynthetic and metabolic pathways. Chem 318 will not count for credit in the Chemistry major or minor.

CHEM 330  THE HISTORY OF SCIENCE: NONWESTERN ORIGINS AND THE WESTERN REVOLUTION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A survey of scientific history from 2000 BCE to the present that considers science as a set of made, lost and found ideas and technologies. Fields of inquiry are examined by tracing their historical and cultural trajectories through the African, Arab, Babylonian, Chinese, Egyptian, Greek, Indian, Incan, Japanese, Mayan and Sumerian worlds.
Same as HIST 330
GenEd: B1, INTD

CHEM 335  THE CHEMISTRY OF THE KITCHEN (3)
Two hours lecture and two hours activity per week
Prerequisite: Junior Standing or Consent of Instructor
An overview of the molecules in foods and the chemical reactions that occur during the preparation of foods. Ingredients and methods from a diverse set of cultural traditions will be considered.
GenEd: B1, INTD

CHEM 341  DRUG DISCOVERY AND DEVELOPMENT (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
How are drugs discovered? What determines the price for a drug? What is the difference between a generic and non-generic drug? These questions will be examined with an interdisciplinary approach. Topics include the isolation of compounds from natural sources, the screening of compounds for biological activity, structure-activity relationships of drugs, computer-assisted drug design, combinatorial chemistry, bioinformatics, the FDA approval process for new drugs, and the economic and business aspects of pharmaceutical investment and development.
Same as ECON 341, BUS 341
GenEd: B1, D, INTD
CHEM 372  PHYSICAL CHEMISTRY LABORATORY (I)
Three hours laboratory per week
Prerequisite: CHEM 371 (or concurrent registration)
This course is designed to introduce experimental physical chemistry including measurement of thermodynamic and kinetic properties. A lab fee is required.

CHEM 373  PHYSICAL CHEMISTRY II (3)
Three hours lecture per week
Prerequisite: CHEM 122 with a grade of C or better, PHYS 101 or PHYS 201, and MATH 150
Introduction to quantum mechanics, atomic and molecular structure, spectroscopy, and statistical mechanics.

CHEM 374  ENERGY AND SOCIETY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Survey of the physical, chemical, and engineering principles involved in the production of energy from current and potential sources and the economical, environmental, and political issues surrounding energy production. The course will also examine factors that influence worldwide energy policy. Examples of topics included: energy conservation, efficient usage and transportation of energy, energy resources, fossil fuels, active and passive solar energy, biomass, fuel cells, nuclear (fission and fusion), and hydroelectric, tidal, geothermal, and wind power.
Same as PHYS 344
GenEd: B1, INTD

CHEM 375  MOLECULAR STRUCTURE DETERMINATION (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 305 (or concurrent enrollment), CHEM 314, CHEM 315 or Consent of Instructor
Examines modern techniques for the determination of the structure of organic and inorganic compounds. Topics include X-ray crystallography, nuclear magnetic resonance spectroscopy, mass spectrometry, infrared spectroscopy, ultraviolet spectroscopy, and molecular modeling. A lab fee is required.

CHEM 376  INORGANIC CHEMISTRY (3)
Three hours lecture per week
Prerequisite: CHEM 305 (or concurrent enrollment), CHEM 314 with a grade of C or better or Consent of Instructor
This course will examine the inorganic chemistry of biological systems including the role of metals such as zinc, iron, copper, manganese, and molybdenum in protein/ enzyme function. The course will discuss principles of coordination chemistry, protein and DNA functional groups and their metal-binding ability, and the role of metal ions in the reaction mechanisms of metalloenzymes.

CHEM 410  ADVANCED ORGANIC SYNTHESIS (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 305 (or concurrent enrollment), CHEM 314, and CHEM 315 or Consent of Instructor
This course will examine modern synthetic reactions and approaches in the design of complex organic molecules. The laboratory introduces students to advanced synthetic reactions and techniques, including inert-atmosphere techniques. A lab fee is required.

CHEM 415  MOLECULAR STRUCTURE DETERMINATION (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 305 (or concurrent enrollment), CHEM 314, CHEM 315 or Consent of Instructor
Examines modern techniques for the determination of the structure of organic and inorganic compounds. Topics include X-ray crystallography, nuclear magnetic resonance spectroscopy, mass spectrometry, infrared spectroscopy, ultraviolet spectroscopy, and molecular modeling. A lab fee is required.

CHEM 416  BIOCHEMISTRY II (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 305 (or concurrent enrollment), CHEM 314 with a grade of C or better or Consent of Instructor
This course will focus on the biochemical reactions that occur in cells. Topics include biosynthesis of proteins, lipids and nucleic acids, photosynthesis, cellular metabolism, and gene expression. A lab fee is required.

CHEM 417  BIOINORGANIC CHEMISTRY (4)
Three hours lecture and three hours laboratory per week
Prerequisite: CHEM 305 (or concurrent enrollment), CHEM 314 with a grade of C or better or Consent of Instructor
This course will examine the inorganic chemistry of biological systems including the role of metals such as zinc, iron, copper, manganese, and molybdenum in protein/ enzyme function. The course will discuss principles of coordination chemistry, protein and DNA functional groups and their metal-binding ability, and the role of metal ions in the reaction mechanisms of metalloenzymes.

CHEM 420  ADVANCED INORGANIC CHEMISTRY (3)
Three hours lecture per week
Prerequisite: CHEM 314 and CHEM 371
Structure and bonding of inorganic compounds, survey of the chemistry of metal and non-metal elements, coordination compounds, organometallic compounds, mechanisms and reactions, and their applications in catalysis and solid state materials.

CHEM 421  SPECIAL TOPICS IN CHEMISTRY (1-3)
Prerequisite: Consent of Instructor
Specialized topics from the fields of Chemistry and Biochemistry. Repeatable by topic.

CHEM 422  SPECIAL LABORATORY TOPICS IN CHEMISTRY (1-3)
Three to Nine hours laboratory per week
Prerequisite: Consent of Instructor
Laboratory study of a selected topic, the title of which is to be specified in advance. Repeatable by topic up to 3 units.
**CHEM 492**  **INTERNSHIP/ SERVICE LEARNING (1-3)**  
Two to Six hours activity per week  
Prerequisite: Consent of Instructor  
Provides student credit for internship work and/or service learning in the community that culminates in a written and oral report. Repeatable up to 6 units.  
Graded: Credit/No Credit

**CHEM 494**  **INDEPENDENT RESEARCH (1-3)**  
Prerequisite: Consent of Instructor  
Provides student credit for independent laboratory research. Repeatable.  
Graded: Credit/No Credit

**CHEM 497**  **DIRECTED STUDIES (1-3)**  
One to three hours independent study per week  
Prerequisite: Consent of Instructor  
Provides student credit for curricular activities under the direction of a Chemistry faculty member. Repeatable up to 6 units.  
Graded: Credit/No Credit

**CHEM 499**  **CHEMISTRY CAPSTONE (2)**  
Two seminar hours per week  
Prerequisite: CHEM 305, CHEM 371  
Students in their final academic year learn to communicate scientific information to other scientists. Students present scientific information from work completed or work-in-progress of their independent research (CHEM 494), internship (CHEM 492), or extensive literature research.

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### Chinese

**CHIN 101**  **ELEMENTARY CHINESE I (4)**  
Four hours lecture per week  
First course in Modern Standard Chinese (Mandarin). Develops elementary communicative skills and knowledge of the Chinese language and cultures. Not intended for students with prior knowledge of Chinese.  
GenEd: C3A

**CHIN 102**  **ELEMENTARY CHINESE II (4)**  
Four hours lecture per week  
Continued development of students' elementary communicative skills in listening, speaking, reading and writing skills, and knowledge of Chinese culture.  
GenEd: C3A

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### Chicano/a Studies

**CHS 100**  **CHICANA/OS IN CONTEMPORARY SOCIETY (3)**  
Three hours lecture per week  
This course offers an introductory study of Chicana/os in contemporary society in the United States. It focuses on areas such as culture, history, fine arts, family, language, education, politics, economics, and social issues as they relate to the Mexican American experience in relationship to other groups in American society.  
GenEd: C3B, D

**CHS 200**  **DIVERSITY IN LATINA/O COMMUNITIES (3)**  
Three hours lecture per week  
Examination of diverse Latina/o communities in the United States from their origins in Latin America to the various ways they have integrated into U.S. society.  
GenEd: C3B, D

**CHS 292**  **CHICANA/O STUDIES SERVICE LEARNING AND CIVIC ENGAGEMENT (3)**  
Two hours lecture and two hours activity per week  
Prerequisite: CHS 100, Sophomore Status or Consent of Instructor  
Introduces students to the practices necessary for effective research and work on issues of social justice in Chicana/o communities. Students will learn how to identify, research, and reflect upon problems through the examination of case studies and hands-on service learning and civic engagement experiences. The course prepares students for more advanced service learning skills required in CHS 492.  
Student Option: Graded or Credit/No Credit  
GenEd: D

**CHS 331**  **TRANSBORDER PERSPECTIVES IN CHICANA/O STUDIES (3)**  
Three hours lecture per week  
Prerequisite: Junior Standing or Consent of Instructor  
Focuses on the major theoretical concepts in transborder studies as they apply to Chicana/o studies in the areas of culture and cultural production, economics, gender issues, health, history, and migration.  
GenEd: C3B, D, INTD

**CHS 333**  **HISTORY OF SOUTHERN CALIFORNIA CHICANA/O ART (3)**  
Three hours lecture per week  
Prerequisite: Junior Standing or Consent of Instructor  
An exploration of the Southern California Chicana/o culture focusing on the genesis, vitality and diversity represented in the painting, sculpture and artistic traditions of Mexican American artists. Historical movements, politics, cultural trends and Mexican folklore underlying the development of this dynamic style of art will be investigated within a variety of contexts.  
Same as ART 333, HIST 333  
GenEd: C3B, D, INTD

**CHS 343**  **HEALTH ISSUES IN THE LATINA/O COMMUNITY (3)**  
Three hours lecture per week  
Prerequisite: CHS 100 or Equivalent  
Examines the health issues affecting the Latina/o community and considers interventions, public health policies, and health promotion programs, used to improve the health status of the Latina/o community.  
Same as NRS 343, COMM 343  
GenEd: C3B, D, INTD

**CHS 350**  **CHICANA/O HISTORY AND CULTURE (3)**  
Three hours lecture per week  
Examines the historical settlement and culture of Chicanas/os in the United States to the present. Particular attention is given to the relationship of the Chicana/o experience to the economic, political, and social institutions of the United States. These institutions are examined in relation to historical movements and developments that span over several centuries.  
Same as HIST 350

**CHS 364**  **CHICANO ENGLISH (3)**  
Three hours lecture per week  
Examination of the social, cultural and linguistic factors that influence the development of Chicano English. Investigates the language use of Chicanos and the sociolinguistic and sociocultural ways of speaking and communicating. Issues of language variety, influence of Spanish, social history and use and function in the Chicano community. Implications for K-12 schooling are addressed.

**CHS 383**  **CHICANA/O LATINA/O IDENTITY AND EMPOWERMENT (3)**  
Three hours lecture per week  
Prerequisite: PSY 100 and/or CHS 100 or Equivalent  
Examines theories of identity development and empowerment applied to Latina/o adolescents and adults living in a multicultural society. Psychological, social, and cultural issues will be examined from the perspective of Latinas/os from diverse ethnic, cultural and socioeconomic backgrounds.  
Same as PSY 383
CHS 401  LATINA/O WORKERS IN A GLOBAL ECONOMY (3)
Three hours lecture per week
Prerequisite: CHS 100 or Equivalent
Examines transborder labor issues within the United States in global context, as immigrant Latina/o workers producing goods and services for a global economy is a world-wide phenomenon, and as technology and policy integrate national and regional economies into a global system.
Same as HIST 402
GenEd: D

CHS 402  SOUTHERN CALIFORNIA CHICANA/O HISTORY AND CULTURE (3)
Three hours lecture per week
Examines the cultural, economic, political, and social experience of Mexicanos of the region from the U.S. conquest to the 1990’s. Particular attention is given to the interactions of this community with other ethnic and racial groups. The course utilizes literature, film, and art as mediums of learning about the culture and history of Chicanos.
Same as HIST 402
GenEd: D

CHS 425  CONTEMPORARY IMMIGRATION ISSUES (3)
Three hours lecture per week
Prerequisite: CHS 100 or Equivalent
Cross disciplinary examination of contemporary immigration and citizenship in the United States in comparison with other countries.
Same as SOC 425

CHS 445  CHICANO CHILD AND ADOLESCENT (4)
Three hours lecture and two hours service learning per week
Examines the socio-cultural experiences and historical political realities pertinent to the daily lives of Chicano, Mexican-origin, and/or Latino children and adolescents. Focus is on historical periods, events, and policies affecting youth populations, its demographic, migration and immigration patterns. Consideration of contemporary issues and effective educational and cultural practices will be used as a resource for teacher knowledge and pertinent classroom projects. Field study requirement involves working in a child-centered setting or related service project.
Same as EDUC 445, HIST 445
GenEd: C3B, D, INTD

CHS 490  SPECIAL TOPICS (3)
Three hours lecture per week
Prerequisite: Consent of Instructor
Investigates a topic of historical or contemporary interest in Chicana/o, Latina/o, and/or transborder studies. Topics vary by semester. Repeatable by topic.

CHS 491  THEORETICAL FOUNDATIONS OF CHICANA/O STUDIES (3)
Three hours lecture per week
Prerequisite: CHS 331, Senior Standing or Consent of Instructor
Guiding theoretical concepts that have shaped Chicana/o Studies. Includes a critical examination of emerging Chicana/o Studies theoretical perspectives in light of contemporary intellectual frameworks in the social sciences, arts, and humanities, post-modernism, critical theory, and critical race theory. Includes analysis of self-representation and socio-cultural developments in the Chicana/o community.

CHS 492  INTERNSHIP/SERVICE LEARNING (1-3)
Two to six hours lecture per week
Prerequisite: CHS 210, CHS 491, or Consent of Instructor
Work/volunteer experience in an appropriate setting. Students are required to write a reflective report of their experience.

CHS 494  INDEPENDENT RESEARCH (1-3)
One to three hours activity per week
Prerequisite: Junior Standing and Consent of an Instructor within or affiliated with the program
Independent reading and/or research project under the supervision of a faculty member. Repeatable up to 3 units.

CHS 497  DIRECTED STUDIES (1-3)
One to three hours per week
Prerequisite: Junior Standing and Consent of Instructor within or affiliated with the program
Exploring existing literature in important Chicana/o Studies topics. Repeatable up to 2 units.

CHS 499  SERVICE LEARNING CAPSTONE IN CHICANA/O STUDIES (1-3)
One to three hours seminar per week
Prerequisite: Upper Division Standing as a Chicana/o Studies major or Consent of Instructor
Students complete a project approved by the faculty advisor which will integrate prior course work with the general expectations of the program. Completed projects will be disseminated to the campus community.

Clinical Laboratory Studies

CLS 500  CLINICAL TRAINING CERTIFICATE PROGRAM
PART ONE (8)
Forty hours field studies per week
Prerequisite: BS in Biology with an Emphasis in Clinical Laboratory Science or Equivalent Educational Credential.
The first phase of clinical training in a clinical laboratory at a partner hospital.
Graded: Credit/No Credit

CLS 501  CLINICAL TRAINING CERTIFICATE PROGRAM PART II (8)
Forty hours field studies per week
Prerequisite: BA in Biology with an Emphasis in Clinical Laboratory Science or Equivalent Educational Credential.
The second phase of clinical training in a clinical laboratory at a partner hospital.
Graded: Credit/No Credit

Communication

COMM 101  PUBLIC SPEAKING (3)
Three hours lecture per week
Introduction to communication theory and the study of the human communication process with an emphasis on effective public communication. Includes intensive practice in public speaking, reasoning, and critical listening.
GenEd: A1

COMM 200  INTRODUCTION TO COMMUNICATION STUDIES (3)
Three hours lecture per week
Prerequisite: COMM 101
Foundational principles and theories of communication provide the student with alternate ways to understand human interaction. Tracing historical and cultural answers to the question, what is communication, guides students to consider alternate paradigms.
GenEd: A1

COMM 210  INTERPERSONAL COMMUNICATION (3)
Three hours lecture per week
Analysis of the role communication plays in interpersonal relationships with special emphasis on intercultural communication. Oral interpersonal communication skills will be stressed.
GenEd: A1

COMM 211  DISCERNING INFORMATION IN AN INTERCONNECTED WORLD (3)
Three hours lecture per week
Provide students with strategies to help them make sense of our information-saturated world. Students should critically assess information, differentiate
the perspectives of information seekers from providers and evaluate our sources of knowledge through issues such as surveillance, surrogates, privacy, information seeking behavior, information control, intellectual property, digital democracy, and emerging information communication technologies.

Student Option: Graded or Credit/No Credit
Same as LIB 211
GenEd: A3, D

COMM 220  GROUP COMMUNICATION (3)
Three hours lecture per week
This course examines communication in the small group context. It will investigate the important theoretical foundations and practical applications of group communication as well as apply those theories and skills to actual group interactions.
GenEd: A1

COMM 230  INTRODUCTION TO JOURNALISM (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105
Designed for students interested in producing print and photo journalism for local community publications. Topics will include journalistic writing styles and techniques, research strategies, interviewing methods, appropriate layout and design techniques. Projects will culminate in a product suitable for publication.
GenEd: A2

COMM 301  ADVANCED PUBLIC SPEAKING (3)
Three hours lecture per week
Prerequisite: COMM 101
Develops advanced skills of persuasion, narratives, language usage, leadership, and the ability to handle difficult speaking situations.

COMM 310  COMMUNICATION RESEARCH METHODS (3)
Three hours lecture per week
Prerequisite: COMM 200
Investigation of methodology and analytical techniques of human communication, including participant observation, interview, focus groups, surveys, conversation and content analysis.

COMM 320  PERSUASION AND ARGUMENTATION (3)
Three hours lecture per week
Prerequisite: COMM 101
Students will debate one another in contemporary topics in health, business and the environment. Students will also participate in creating a public campaign to persuade a larger audience.

COMM 321  MULTICULTURAL CONVERSATIONS (3)
Three hours lecture per week
Focuses on the ways that people from different cultures interact. Students will analyze and participate in conversations with people who claim different group memberships such as regional, religious, ethnic, or national backgrounds, age, gender and sexual orientations.
GenEd: C3B

COMM 322  SOCIOLOGY OF POPULAR CULTURE (3)
Three hours lecture per week
Prerequisite: SOC 100
Examines popular culture from a sociological and a comparative perspective. Emphasizes the impact of mass media on individual behavior, marketing and consumption of amusements and entertainments in the domestic and global marketplace.
Same as SOC 322, ENGL 322

COMM 331  ART, SOCIETY, AND MASS MEDIA (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
The study of synergetic relationships between visual art and human communication dating back to the roots of civilization. Comparative studies in art and communication link ancient traditions to the development of contemporary mass media including print, photography, film, television and the internet.
Same as ART 331
GenEd: C1, D, INTD

COMM 340  CONFLICT MANAGEMENT AND MEDIATION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Focuses on the role of language and dialogue in the construction, escalation and resolution of conflict in interpersonal, organizational, and community contexts. Addresses the social, political, historical and behavioral aspects of conflict and conflict resolution in our society from a variety of disciplinary perspectives.
GenEd: D, INTD

COMM 342  INTERNET-BASED SOCIAL NETWORKS (3)
Three hours lecture per week
Explores the ongoing evolution of Internet-based social networks using an interdisciplinary approach. Incorporates research from sociology, computer science, media studies, and philosophy to understand Internet-based social networks, cultural and structural conditions of online communication, virtual identity construction, management of digital media, and the impact online social networks have on various institutions of society.
Same as COMP 342, SOC 342
GenEd: B4, D, INTD

COMM 343  HEALTH ISSUES IN THE LATINA/O COMMUNITY (3)
Three hours lecture per week
Prerequisite: CHS 100 or Equivalent
Examines the health issues affecting the Latina/o community and considers interventions, public health policies, and health promotion programs, used to improve the health status of the Latina/o community.
Same as CHS 343, NRS 343
GenEd: C3B, INTD

COMM 345  MEDIA LITERACY AND YOUTH CULTURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
This interdisciplinary course examines the relationship between mass communication, mass media, and youth culture. Topics include the theories and effects of mass communication, in particular the effects of mass media on children and adolescents. To develop media literacy, students will apply these concepts to their own experiences with popular media, including television, print, and film.
Same as EDUC 345
GenEd: A1, D, INTD

COMM 346  SCHOOL COMMUNICATION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines written, verbal and nonverbal communication in school settings between teachers and stakeholders. Emphasizes the importance of communication and successful personal interactions.
Same as EDUC 346
GenEd: A1, INTD

COMM 441  HEALTH COMMUNICATION (3)
Three hours lecture per week
Prerequisite: COMP 320
Explores the evolution of health as a major topic in communication studies. Focuses on conversations between health practitioners and patients as well as public health campaigns.
Same as NRS 441
GenEd: D, INTD
COMM 442  ORGANIZATIONAL COMMUNICATION (3)
Three hours lecture per week
Prerequisite: COMM 101 and COMM 210 or COMM 220
This course examines and compares internal and external communicative practices in for profit and nonprofit organizations. By examining a series of case studies, students will integrate knowledge from business and marketing and apply communication competence to the production and analysis of organizational messages.
GenEd: A1, INTD

COMM 443  ENVIRONMENTAL COMMUNICATION (3)
Three hours lecture per week
Prerequisite: ESRM 100 and COMM 101 or COMM 320
Students will analyze and engage in debates about local, national and global environmental disputes. Topics include analysis of risk, community dialogue and strategic environmental messages.
Same as ESRM 443
GenEd: D, INTD

COMM 450  ENVIRONMENTAL CONFLICT RESOLUTION (3)
Three hours lecture per week
Provides practical experience in negotiation and mediation techniques within the context of complex environmental and public policy disputes.
Same as ESRM 450, POLS 450

COMM 490  SPECIAL TOPICS (3)
Three hours lecture per week
Investigates a prominent topic within the field of communication. Topics vary by semester. Repeatable by topic up to 3 units.

COMM 492  INTERNSHIP (1-3)
Two to six hours activity per week
Prerequisite: COMM 300 level
Provides student credit for internship work that applies communication theories and skills within an organization. Repeatable up to 3 units.
Graded: Credit/No Credit

COMM 494  INDEPENDENT STUDY (1-3)
One to three hours independent study per week
Prerequisite: Upper Division Standing and Program approval; Instructor consent
Supervised project involving theoretical research in the field of communication. Repeatable by topic up to 3 units.

COMM 499  CAPSTONE PROJECT (3)
One hour seminar and four hours activity per week
Prerequisite: Senior Standing or Consent of Instructor
Students will work with a community partner to demonstrate how Communication is relevant to an organization that addresses social issues.

——— Computer Science ———

COMP 101  COMPUTER LITERACY (3)
Three hours lecture in the lab per week
An introduction to computer applications, including web applications, word processing, spreadsheets, databases and programming. Not open to Computer Science majors.
GenEd: B4

COMP 102  WEB DEVELOPMENT (3)
Three hours lecture in the lab per week
Prerequisite: COMP 101 or Consent of Instructor
Introduction to the design and development of web pages including use of HTML and scripting languages; multimedia content; and current web development tools.
GenEd: B4

COMP 105  COMPUTER PROGRAMMING INTRODUCTION (3)
Three hours lecture in the lab per week
Prerequisite: COMP 101 or Consent of Instructor
Provides a balanced view of computing and provides an introduction to the world of computer science. In depth coverage of the design, development, and expression of algorithms. Covers a variety of concepts relevant to the beginning student, including computer organization and design. Not open to students who have completed COMP 150.
GenEd: B4

COMP 110  COMPUTER LITERACY FOR EDUCATORS (3)
Three hours lecture per week
An introduction to computer systems, including web applications, word processing, spreadsheets, database emphasizing their use in educational settings.
Same as LS 110
GenEd: B4

COMP 121  INTRODUCTION TO PROGRAMMING IN C (3)
Three hours lecture per week
Introduces the student to problem solving using algorithmic methods implemented in the C programming language. The C programming language is presented in a manner appropriate for students with no prior programming experience. The emphasis is on scientific applications within a UNIX environment.

COMP 150  OBJECT-ORIENTED PROGRAMMING (4)
Four hours lecture in the lab per week
Prerequisite: MATH 105 or Equivalent
Introduction to algorithms, their representation, design, structuring, analysis and optimization. The course introduces the concept of object paradigm, design and implementation of algorithms as structured programs in a high level language.
GenEd: B4

COMP 151  DATA STRUCTURES AND PROGRAM DESIGN (4)
Three hours lecture and three hours lab per week
Prerequisite: COMP 150
Introduction to data structures and the algorithms that use them. Review of composite data types such as arrays, records, strings, and sets. Topics include: the role of the abstract data type in program design, definition, implementation and application of data structures such as stacks, queues, linked lists, trees and graphs; recursion; use of time-complexity expressions in evaluating algorithms; comparative study of sorting and searching algorithms.

COMP 162  COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 105 or COMP 121 or COMP 150
An introduction to computer architecture, assembly language programming, system software and computer applications. Topics include: number systems and data representation; internal organization of a computer; primitive instructions and operations; Assembly language; language translation principles; overview of operating systems.

COMP 221  UNIX SYSTEM PROGRAMMING I (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 151 or IT 151
Fundamentals of the UNIX operating system, including the command line interface (CLI), shell commands and related utilities. C will be covered at an accelerated pace, appropriate for students who already know another programming language. Fundamental C libraries, and basic UNIX system
calls, will be covered. Principles of the program development cycle as applied to a UNIX environment will also be presented.

Same as IT 221

COMP 332 PROGRAMMING LANGUAGES (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 151 and COMP 162
Discussion of issues in the design, implementation, and use of high-level programming languages. Topics include: historical background; how languages reflect different design philosophies and user requirements; technical issues in the design of major imperative (procedural) programming languages; other approaches to programming: functional programming, logic programming, and object-oriented programming.

COMP 342 INTERNET-BASED SOCIAL NETWORKS (3)
Three hours lecture per week
Explores the ongoing evolution of Internet based social networks using an interdisciplinary approach. Incorporates research from sociology, computer science, media studies, and philosophy to understand Internet based social networks, cultural and structural conditions of online communication, virtual identity construction, management of digital media, and the impact online social networks have on various institutions of society.

Same as COMM 342, SOC 342
GenEd: B4, D, INTD

COMP 345 DIGITAL IMAGE PROCESSING (3)
Three hours lecture in the lab per week
Prerequisite: Junior Standing or Consent of Instructor
An introduction to the basic concepts and techniques for digital image restoration and enhancement, analysis, coding and compression. The emphasis is on processes which analyze primarily two-dimensional discrete images represented at the pixel level, including filtering, noise reduction and segmentation. Fourier analysis techniques will be explored. Programming exercises will be used to implement the various processes, and their performance on synthetic and real images will be studied.

Same as PHYS 345, MATH 345
GenEd: B1, B4, INTD

COMP 350 INTRODUCTION TO SOFTWARE ENGINEERING (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 232 and COMP 262
Concepts and techniques for systems engineering, requirements analysis, design, implementation and testing of large scale computer systems. Principles of software engineering for production of reliable, maintainable and portable software products. Emphasis on functional analysis and structured design techniques. Topics include unit, integration and systems testing, configuration management, and software quality assurance practices. Participation in group activities involving analysis, design and implementation of a software intensive system. Introduction to Computer Aided Software Engineering (CASE).

COMP 351 DISTRIBUTED COMPUTING (3)
Three hours lecture per week
Prerequisite: COMP 151
Learn effective use of remote objects and component technologies in computer programs. Study of fundamentals of distributed programming technologies. Build expertise in using modern tools and services to transparently integrate local and remote resources to solve problems.

COMP 362 OPERATING SYSTEMS (4)
Three hours lecture and three hours lab per week
Prerequisite: COMP 262
Examination of the principal types of systems including batch, multiprogramming, and time-sharing. Networked systems are also discussed. The salient problems associated with implementing systems are considered including interrupt or event driven systems, multi-tasking, storage and data base management, and input-output. Emphasis will be placed on some of the simple algorithms used to solve common problems encountered such as deadlock, queue service, and multiple accesses to data. Projects will be implemented to reinforce the lectures.

COMP 420 DATABASE THEORY AND DESIGN (3)
Two hours lecture and three hours lab per week
Prerequisite: MATH 300 or MATH 301 and COMP 151 or IT 151
Topics include: database structure including: structure definition, data models, semantics of relations, and operation on data models; database schemas: element definition, use and manipulation of the schema; elements of implementation.; algebra of relations on a database; hierarchical data bases. Discussion of information retrieval, reliability, protection and integrity of databases.

Same as IT 420

COMP 421 UNIX SYSTEM PROGRAMMING II (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP/IT 221
The use of Unix operating environment including command line Unix utilities, vi and emacs editors, regular expressions, text processors and Unix shells, fundamental Perl and its application in programming CGI. Writing in C utilities that control the operating environment through the use of system calls. Developing programs using Unix facilities.

Same as IT 421
COMP 424  COMPUTER SYSTEM SECURITY (3)
Three hours lecture in the lab per week
Prerequisite: COMP 151 or IT 151 required, COMP 362 or COMP/IT 421 recommended
Same as IT 424

COMP 425  COMPUTER GAME PROGRAMMING (3)
Three hours lecture per week
Prerequisite: COMP 151
This course focuses on exploring software techniques for development of computer-controlled games. The topics include: principles of game design, integrating graphics, animation and audio in games, game control including methods based on artificial intelligence, networking for multi-player games, game optimization and deployment, and game development cycles.

COMP 429  COMPUTER NETWORKS (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 232 and COMP 362 or COMP 221 and COMP 421
Basic software design and analysis considerations in networking computers into coherent, cooperating systems capable of processing computational tasks in a distributed manner; Network topology, routing procedures, message multiplexing and process scheduling techniques will be discussed.
Same as IT 429

COMP 437  FOUNDATIONS OF COMPUTER GAME DEVELOPMENT (3)
Three hours lecture per week
Prerequisite: COMP 105, MATH 137, ART 203, ART 206 or Consent of Instructor
Provides the foundation for a multi-disciplinary approach to computer game development. The students study game design principles; implementation methodologies and technologies; gaming industry management issues, perspectives from art, technology and business.
GenEd: B4, INTD

COMP 445  IMAGE ANALYSIS AND PATTERN RECOGNITION (3)
Three hours lecture in the lab per week
Prerequisite: PHYS/CMP/MATH 345 or Consent of Instructor
The course addresses the issue of analyzing the pattern content within an image. Pattern recognition consists of image segmentation, feature extraction and classification. The principles and concepts underpinning pattern recognition, and the evolution, utility and limitations of various techniques (including neural networks) will be studied. Programming exercises will be used to implement examples and applications of pattern recognition processes, and their performance on a variety of diverse synthetic and real images will be studied.
Same as PHYS 445, MATH 445
GenEd: B1, B4, INTD

COMP 447  SOCIETAL ISSUES IN COMPUTING (3)
Three hours lecture in the lab per week
Prerequisite: Senior Standing
Surveys the role of the digital computer in modern society. Topics include: dangers of the misuse of computers, privacy, copyright, computer crime, legal and social issues, as well as the ethical and appropriate use of computers.
GenEd: B4, D, INTD

COMP 449  HUMAN-COMPUTER INTERACTION (3)
Three hours lecture in the lab per week
The information exchange between humans and computer systems will be examined. Aspects of input/output devices, software engineering, and human factors will be discussed with respect to human-computer interactions. Topics include: text and graphic display; user modeling; program design, debugging, complexity and comprehension; and current research studies and methodologies.
Same as PSY 449
GenEd: B4, E, INTD

COMP 451  ADVANCED OBJECT-ORIENTED PROGRAMMING (3)
Three hours lecture in the lab per week
Prerequisite: COMP 350 and COMP 362
Principles of object-oriented design and programming based on languages such as JAVA, C++, and Smalltalk will be presented. Understanding of the role of objects, methods, message passing, encapsulation, and inheritance for effective programming will be stressed. Language structure versus particular engineering objectives will be analyzed. Design pattern techniques will be an unifying theme.

COMP 452  COMPUTATIONAL BIOINFORMATICS (4)
Four hours lecture in the lab per week
Prerequisite: Programming experience and Statistics, or Consent of Instructor
Basic computational models used in molecular biology will be introduced. Topics include algorithms for string alignments, dynamic programming, structural superposition algorithms, computing with differential information, 3D motifs, Hidden Markov Models, phylogenetic trees, statistical/information techniques for pattern recognition, genetic algorithms.
Same as MATH 452

COMP 454  AUTOMATA, LANGUAGES, AND COMPUTATION (3)
Three hours lecture in the lab per week
Prerequisite: MATH 300
Study of the relation of languages (i.e. sets of strings) and machines for processing these languages, with emphasis on classes of languages and corresponding classes of machines. Phrase structure languages and grammar. Types of grammars and classes of languages. Regular languages and finite state automata. Context-free languages and pushdown automata. Unrestricted languages and Turing Machines. Computability models of Turing, Church, Markov, and McCarthy. Applications to programming languages, compiler design, and program design and testing.

COMP 462  EMBEDDED SYSTEMS (3)
Two hours lecture and three hour lab per week
Prerequisite: COMP 350 and COMP 362 or Consent of Instructor
Covers the design of embedded systems. This includes the analysis of small computer systems designed for robotic mechanisms and common appliances such as cell phones and other handheld devices. Topics include the design, implementation and testing of software used in such systems with special attention paid to maximizing the use of limited computational resources and the need for event-driven real time system responses.

COMP 464  COMPUTER GRAPHIC SYSTEMS AND DESIGN (1)
Two hours lecture and three hours lab per week
Prerequisite: COMP 350 and MATH 240 or COMP 221 and MATH 301
Topics include: fundamental concepts of computer graphics; graphics devices; graphics languages; interactive systems; applications to art, science, engineering and business; trade-offs between hardware devices and software support.
Same as IT 464

COMP 469  ARTIFICIAL INTELLIGENCE/NEURAL NETS (1)
Three hours lecture in the lab per week
Prerequisite: COMP 350 and 362
An exploration of the use of computers to perform computations normally associated with intelligence, pattern formation and recognition using various backprop iterations. Stacks, decision trees and other modern mining tools and computational models for knowledge
representation will be covered. Other topics may include natural language and
imaging.

**COMP 490** TOPICS IN COMPUTER SCIENCE (3)
Three hours lecture per week
Prerequisite: Upperdivision standing
Current issues in computer science.
Repeatable by topic.

**COMP 491** CAPSTONE PREPARATION (1)
One hour activity per week
Prerequisite: COMP 350, COMP 362, Senior Standing in the Computer Science Major
Research and develop a proposal for a significant software project under faculty
supervision.

**COMP 492** INTERNSHIP (1-3)
Variable activity hours per week
Prerequisite: Upperdivision standing and
program approval of written proposal
Supervised work experience and study in an industrial or scientific setting
involving development of computer information related skills. Repeatable by
topic.

**COMP 494** INDEPENDENT RESEARCH (1-3)
Variable activity hours per week
Prerequisite: Upperdivision standing and
program approval of written proposal
Supervised project involving theoretical research in the field of computer science
and its applications. Repeatable by topic.

**COMP 497** DIRECTED STUDIES (3)
Three hours activity per week
Prerequisite: Program approval of written proposal
Supervised project involving library research in the field of computer science
or its applications. Repeatable by topic.

**COMP 499** CAPSTONE PROJECT (3)
Three hours independent study per week
Prerequisite: COMP 491
Design, implement and present a significant software project under faculty
supervision. Repeatable by topic.

**COMP 510** ALGORITHMS (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Design strategies for algorithms and data structures. Theoretical limits to space and time requirements.
Time/space trade-offs. Categories of problems and algorithms. Applications to business, bioinformatics, engineering,
telecommunications and other disciplines. Open problems in the field.

**COMP 510** ADVANCED IMAGE ANALYSIS TECHNIQUES (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the MS Mathematics Program or MS Computer Science Program
Image processing course in the fundamentals of 2-D digital signal processing with emphasis in image processing techniques, image filtering
design and applications. Programming exercises in Matlab (or Octave) will
be used to implement the various processes, and their performance
on synthetic and real images will be studied. Applications in medicine, robotics, consumer electronics and communications.
Same as PhyS 510, MATH 510

**COMP 510** ADVANCED DATABASE SYSTEMS (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
This graduate course covers advanced analysis of Relational Database Management Systems including their
design and implementation. Topics include relational algebras, Entity
Relation Diagrams, first, second, and third Normal Forms, data integrity
constraints, triggers, query optimization, indexing, stored procedures, distributed
databases, database administration issues, transaction processing and scheduling, object oriented database
modeling, and data security.

**COMP 520** SECURITY (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
A survey of security issues and techniques for stand-alone and
networked computer systems including databases, Techniques such as auditing, risk analysis, cost-benefit analysis,
Security standards. Application in various fields.

**COMP 521** NETWORK COMPUTING (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
and Consent of Instructor
Design and programming in Java of distributed systems that use telecommunication networks as their
computing platform.

**COMP 522** COMPUTATIONAL BIOINFORMATICS (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
and Consent of Instructor
Contemporary computational models used in molecular biology and structures
simulations will be introduced. Topics include dynamic programming,
statistical/ information techniques for pattern recognition, algorithms for string
alignments, structural superposition algorithms, computing with differential
information, 3D motifs, Hidden Markov Models, phylogenetic trees, genetic
algorithms.

**COMP 572** PATTERN RECOGNITION (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
New and emerging applications of pattern recognition (PR) such as data
mining, web searching, multimedia data retrieval, face recognition, and cursive
handwriting recognition - require robust and efficient techniques. Statistical
decision making and estimation are fundamental to the study of PR. Pattern
content is analyzed using feature extraction and classification. The
principles and concepts underpinning PR, and the evolution, utility and
limitations of various techniques (including neural networks) will be
studied. Programming exercises will be used to implement examples and
applications of PR processes, and their performance on a variety of diverse
examples will be studied.
Same as PhyS 526, MATH 546

**COMP 548** HUMAN-COMPUTER INTERACTION (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
The design, development and analysis of effective interfaces to computer systems.
Trends in graphical user interfaces.

**COMP 590** ADVANCED SOFTWARE ENGINEERING (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
and Consent of Instructor
Fundamentals of Object-Oriented Design and Analysis. Designing systems
with Unified Modeling Language (UML) and patterns. Applications to other
fields.
COMP 566  GEOMETRY AND COMPUTER GRAPHIC (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Algorithms for geometric analysis and retrieval of 3D shapes from large 3D databases common in several fields, including computer graphics, computer-aided design, molecular biology, paleontology, and medicine. The focus of study will be recent methods for matching, registering, recognizing, classifying, clustering, segmenting, and understanding 3D data.

COMP 569  ARTIFICIAL INTELLIGENCE (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
The course covers the many aspects of how human intelligence might be encoded in computer programs and mechanisms such as robots. This includes topics in Natural Language Processing, Computer Vision, Expert Systems, and Automated Problem Solving.

COMP 570  BIOLOGICALLY INSPIRED COMPUTING (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Study of computing paradigms that have roots in Biology including Neuromorphic Systems, Evolutionary Systems, Genetic Programming, Swarm Intelligence and Artificial Immune Systems.

COMP 572  NEURAL NETWORKS (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Covers the basic ideas of distributed computation with many simple processing units, similar to the neurons of the brain. Topics include: Hopfield style networks applied to optimization problems, and the backpropagation method applied to pattern classification problems. Additional topics include associate memory, binary vs. analog networks, simulated annealing.

COMP 575  MULTI-AGENT SYSTEMS (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Analysis of design issues that currently confront software engineers as they define the electronic ecosystem that will be housed in the computer networks of the future. The course focuses on state-of-the-art agent technology. In this course the student will build an agent development framework and then implement several intelligent agents.

COMP 578  DATA MINING (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
This graduate course covers the fundamentals of Data Mining. Topics include: the analysis of patterns of data in large databases and data warehouses, the application of statistical pattern recognition, and data modeling and knowledge representation. Applications in large databases and gene hunting.

COMP 581  MATHEMATICAL METHODS IN ARTIFICIAL INTELLIGENCE (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
This course presents several branches of mathematics that provide computational basis for Artificial Intelligence. The course covers Trees and Search, The Concepts of Predicate Logic, The Theory of Resolution, Nonmonotonic Reasoning, Probability Theory, Bayesian Networks, Fuzziness and Belief Theory, Classifier Systems, Math for Neural Networks, Elements of Statistics, Decision Trees and Optimization. Same as MATH 581

COMP 590  ADVANCED TOPICS IN COMPUTER SCIENCE (3)
Three hours lecture per week
Selected advanced topics in Computer Science.

COMP 597  MASTER THESIS (1-9)
Supervised research in the field of computer science or its applications. Required to present their research at Graduate Seminar. Repeatable up to 9 units.

COMP 598  MASTER PROJECT (1-9)
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Supervised industrial or scientific project involving design of new solutions in various applications. Required to present projects at the Graduate Seminar.
ECON 305 INTRODUCTION TO MICROFINANCE (1)
One hour seminar per week
Explores the theory and practice of microfinance as a tool for poverty alleviation and economic development. Key elements of microfinance operations and challenges will be discussed.
Graded: Credit/No Credit
Same as BUS 305

ECON 310 INTERMEDIATE MICROECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 110, ECON 111 and MATH 140 or MATH 150
Economic analysis of the decisions of consumers and producers. Emphasis on the theory of consumer behavior, the theory of the firm, price and output determination, and various market structures, factor markets and externalities.

ECON 311 INTERMEDIATE MACROECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 110, ECON 111 and MATH 140 or MATH 150
Determinants of levels of national income, employment, and price levels. Analysis of secular and cyclical changes in economic activity, and the effects of monetary and fiscal policies on these changes.

ECON 320 MONEY AND BANKING (3)
Three hours lecture per week
Prerequisite: ECON 110, ECON 111 and MATH 140 or MATH 150
Nature and functions of money and its relation to prices; the monetary system of the United States; the functions of banks; bank credit; foreign exchange and monetary control; the impact of monetary policy on economic activity.

ECON 329 MANAGERIAL ECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 110, ECON 111 and MATH 140 or MATH 150
Development of the tools of marginal analysis and their application to managerial decisions and planning. Topics include demand analysis, production and cost, pricing and output decisions under different market structures. Product and factor markets will be analyzed.

ECON 331 NARRATIVES OF THE WORKING CLASS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies. Same as ENGL 331, SOCI 331, POLS 331, HIST 331
GenEd: C2, D, INTD

ECON 333 NONPROFIT ORGANIZATIONS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Issues unique to nonprofit organizations including financial, legal, and political. Same as POLS 333
GenEd: D, INTD

ECON 340 BUSINESS AND ECONOMICS IN LITERATURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Explores the ways in which business and economics have been represented in American literature. Employs critical methodologies from the fields of Business, Economics, and Literary studies. Same as BUS 340, ENGL 340
GenEd: C2, D, INTD

ECON 341 DRUG DISCOVERY AND DEVELOPMENT (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
How are drugs discovered? What determines the price for a drug? What is the difference between a generic and non-generic drug? These questions will be examined with an interdisciplinary approach. Topics include the isolation of compounds from natural sources; the screening of compounds for biological activity; structure-activity relationships of drugs; computer-assisted drug design; combinatorial chemistry; bioinformatics; the FDA approval process for new drugs, and the economic and business aspects of pharmaceutical investment and development.
Same as CHEM 341, BUS 341
GenEd: B1, D, INTD
ECON 342  THE ZOO: CONSERVATION, EDUCATION AND RECREATION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary study of zoos and zoological gardens from scientific, managerial, business, recreational and educational perspectives. Analyzes how these perspectives are linked within zoo practices. The course will include an in-depth case study of a local zoo. Field trips to local zoos will be required.
Same as BIOL 342, BUS 342, EDUC 342
GenEd: D, INTD

ECON 344  THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of university, school (K-12), public, and special libraries from business, economic, library science, and educational perspectives. Analyzes how these perspectives are linked within library practices. A study of local libraries and field trips.
Same as BUS 344, EDUC 344, IUB 344
GenEd: D, INTD

ECON 347  THE UNIVERSITY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of institutions of higher education from multiple perspectives including, but not limited to education, teaching and learning, scholarly and creative activities, community service, management, and public policy. Includes case studies of colleges and universities in the region and may include field trips to these institutions.
Same as BUS 347, EDUC 347
GenEd: D, INTD

ECON 349  HISTORY OF BUSINESS AND ECONOMICS IN NORTH AMERICA (3)
Three hours of lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the growth and development of the economies of North America since colonial times. Addresses social, ethical, economic and management issues during the development of Canada, the United States, and Mexico. Analyzes the business principles underlying the growth and development of the economies.
Same as HIST 349, BUS 349
GenEd: D, INTD

ECON 362  ENVIRONMENTAL ECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 110 and ECON 111
Economic analysis of environmental problems and policy. Market failures due to externalities, public goods, and common property resources are examined. Private (market) and public (government) solutions to environmental problems are examined.

ECON 370  THE WORLD ECONOMY (3)
Three hours lecture per week
Prerequisite: ECON 111
Theory, practice, and institutions of the international economy. Topics include international trade and investment, balance of payments, foreign exchange rates, international institutions in the global economy, and international economic policy.

ECON 411  ECONOMICS OF ENTREPRENEURSHIP (3)
Three hours lecture per week
Prerequisite: ECON 110 and ECON 111
Application of economic concepts to entrepreneurial strategies and decisions. Analysis of entrepreneurial activities as related to production, markets, innovation, risk, and the macroeconomy.

ECON 425  LABOR ECONOMICS (3)
Three hours of lecture per week
Prerequisite: ECON 310 or ECON 329
An examination of the employment of labor as a factor of production. Topics include employment, wage rates, unions and collective bargaining, and labor legislation.

ECON 435  THE MUSIC MUSEUM (3)
Three hours lecture per week
Prerequisite: Junior Standing
An interdisciplinary study of music museums from the perspectives of music history, appreciation and production, business, economics and education. Analyzes how these disciplines are linked within music museum practices. Includes an in-depth study of a local music museum.
Same as BUS 435, EDUC 435, PAMU 435
GenEd: D, INTD

ECON 444  VALUES AND VALUABLES (3)
Three hours lecture per week
Prerequisite: ANTH 102 or ECON 110
Examination of the intimate linkages between the creation of cultural values and the perception of economic value through the analysis of production and exchange in various cultural contexts. Synthesis of the debates in the field of economic anthropology and application to pre-historic, modern, Western and non-Western societies.
Same as ANTH 444
GenEd: D, INTD

ECON 448  GLOBALIZATION AND DEVELOPMENT (3)
Three hours lecture per week
Prerequisite: ECON 310 or ECON 329
Examines empirical and theoretical issues of globalization from a sociological perspective, to understanding how the forces of globalization affect economic, political and cultural systems of both developed and developing nations.
Same as SOC 448, BUS 448
GenEd: D, INTD

ECON 450  PUBLIC SECTOR ECONOMICS (3)
Three hours of lecture per week
Prerequisite: ECON 310 or ECON 329
The economic role of government with an emphasis on the allocation and distribution effects of government expenditures and taxation.

ECON 455  URBAN AND REGIONAL ECONOMICS (3)
Three hours of lecture per week
Prerequisite: ECON 310 or ECON 329
Economic analysis of urban and regional problems including the formation of cities, urban finance and services, growth, land use, transportation, income distribution, pollution, congestion, and law enforcement.

ECON 464  NATURAL RESOURCE ECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 310 or ECON 329
Microeconomics and capital theory applied to problems of conserving and managing natural resources. Analysis of public policies affecting renewable and nonrenewable resources including price controls, taxation and leasing. Representative topics include: forestry, fishery, energy, water and mineral economics.

ECON 471  INTERNATIONAL TRADE (3)
Three hours lecture per week
Prerequisite: ECON 310 or ECON 329
The theory of international trade, effects of tariff and non-tariff barriers, and conduct of commercial policy. Topics include theories of comparative advantage, gains from trade, distribution effects of trade, international factor movements and trade restrictions, the political economy of trade and industrial policy.
ECON 472   INTERNATIONAL MACROECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 311 or ECON 320
Macroeconomic analysis of the open economy, the impact of stabilization policies in a global economy, the role of the balance of payments, and the international monetary system. Topics include balance of payments accounts, spot-forward exchange rates, interest rate arbitrage, purchasing-power parity, exchange rate determination and macroeconomic policy in an open economy.

ECON 473   DEVELOPMENT ECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 310 or ECON 311
Economic underdevelopment and its causes from historical, institutional and structural perspectives. Theories and patterns of growth and development, and the role of government, trade, education. Regional focus may vary by semester.

ECON 480   TOPICS IN ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS (3)
Three hours lecture per week
Prerequisite: ECON 362 or ECON 464 or Consent of Instructor
Application of economic analysis to topics in environmental and natural resource economics. Representative topics include: energy problems and policies, the measurement of market and non-market benefits and costs, endangered species management. Repeatable by topic.

ECON 486   INTRODUCTION TO ECONOMETRICS (3)
Three hours lecture per week
Prerequisite: ECON 310 or ECON 329, ECON 311 and MATH 340
Application of mathematical and statistical methods to economic data. Estimation of economic relationships using regression analysis, hypothesis testing, and forecasting.

ECON 488   ECONOMETRICS (4)
Three hours lecture and two hours activity per week
Prerequisite: ECON 310 or 329, MATH 140 or 150, BIOL 202 or MATH 340 or MATH 342
Emphasis on the collection and manipulation of economic data, and the application of econometric methods to business and resource management issues. Development of testable hypotheses, applications of estimation techniques and interpretation of regression results. Use of econometric software applications to estimate statistical relations.

ECON 490   SPECIAL TOPICS (1-3)
Three hours per week
Prerequisite: Consent of Instructor
In-depth analysis of current topics in economics. Topics vary each semester. Repeatable by topic up to 3 units.

ECON 492   SERVICE LEARNING/INTERNSHIP (3)
Six hours per week
Prerequisite: Consent of Instructor
Individual internship through service learning. Repeatable by topic.
Graded: Credit/No Credit

ECON 496   SEMINAR IN ECONOMIC ANALYSIS (3)
Three hours seminar per week
Prerequisite: ECON 310 and ECON 311
In-depth analysis of major events and trends in domestic and international economics. Focus on empirical techniques and the practical application of economics in a variety of settings.

ECON 497   DIRECTED STUDY (1-3)
Variable hours activity per week
Prerequisite: Consent of Instructor
Individual contracted study on topics or research selected by the student and faculty mentor. Repeatable for up to 9 units.
Graded: Credit/No Credit

ECON 498   FACULTY-STUDENT COLLABORATIVE RESEARCH IN SOCIAL BUSINESS (2-3)
Two to six hours activity per week
Prerequisite: BUS/ECON/SOC 203, BUS/ECON/SOC 301 and Consent of Instructor
Engage in the creation of original intellectual or creative work by collaborating with a faculty member on research of a social business. Includes in-depth and possible on-site study of a social business using knowledge from previous courses in the minor/certificate; and the writing of a case study about the chosen social business.
Same as BUS 498, SOC 498

ECON 499   CAPSTONE (3)
Three hours of lecture per week
Prerequisite: ECON 310, ECON 311 and ECON 488 and Senior Standing
In-depth analysis of an economic issue utilizing the theoretical and empirical tools developed in the required major courses. Culminates with a senior paper and a formal presentation.

Early Childhood Studies

ECS 101   INTRODUCTION TO EARLY CHILDHOOD EDUCATION (3)
Two hours seminar and two hours activity per week
An overview to the field of early childhood education paired with structured observational experiences in early childhood settings. Emphasis is placed on gaining an awareness of connections between disciplinary content knowledge about teaching and learning in early childhood. This course will provide students with the opportunity to explore career options for serving young children and families. Thirty hours of field experience in early childhood settings is required. Fingerprint clearance is required.
GenEd: D

ECS 150   FOUNDATIONS OF CHILD AND ADOLESCENT DEVELOPMENT (3)
Three hours lecture per week
Surveys theory and research on child and adolescent development. Focus is theories of development, cognitive, social, emotional and physical development as they are informed by socio-cultural factors.
Same as PSY 150

ECS 221   CHILD, FAMILY AND COMMUNITY IN CALIFORNIA IN THE 21ST CENTURY (3)
Three hours lecture per week
Examines developing children in a societal context focusing on the interrelationship of family, school and community with an emphasis on historical and cultural factors which influence the family and processes of socialization. Focuses on the importance of respectful, reciprocal relationships that support and empower families and the social context of Southern California in the 21st Century.
ECS 320  **EARLY CHILDHOOD SERVICE DELIVERY MODELS & PROGRAMS FOR YOUNG CHILDREN (3)**

Two hours lecture and two hours activity per week  
**Prerequisite:** ECS 101, ECS/PSY 150  
Survey of early childhood service delivery models and programs with an emphasis on policy, recommended practices, and research implications. Historical and theoretical foundations from the primary professional disciplines and agencies serving young children and their families. Interdisciplinary and interagency coordination of early childhood service delivery systems. Examination of environmental arrangements and routines that support diverse child development in school, community, and family settings. Thirty hours of field experience in early childhood settings is required. Meets a course requirement for the Child Development Permit requirements for child, family, and community. Fingerprint clearance is required.

ECS 322  **EARLY CHILDHOOD PROGRAM ADMINISTRATION (3)**

Three hours lecture per week  
**Prerequisite:** ECS 320  
Developing knowledge and competencies in administration of programs for young children; supervision of early childhood personnel and fiscal management; teacher selection; training and supervision; family involvement; and program evaluation.

ECS 325  **TYPICAL & ATYPICAL DEVELOPMENT: BIRTH - AGE 8 (3)**

Two hours lecture per week; two hours activity per week  
**Prerequisite:** ECS/PSY 150  
Focus on typical and atypical development from infancy through eight years of age with an emphasis on the cognitive, social-emotional, language, and physical domains of development. Theories of typical and atypical child development are discussed with implications for applied contexts, including infant/toddler and preschool/early elementary settings. The contexts of development, including families, schools, communities, and culture are presented. Thirty hours of field experience in early childhood settings is required. Fingerprint clearance is required.

ECS 456  **WORKING WITH PARENTS (3)**

Three hours lecture per week  
**Prerequisite:** Senior Standing  
Studies the relationships among families, communities, and educational programs with an emphasis on working with families from various cultures found in Southern California through exploring parental involvement, forms of communication with parents, parent education, and identifying resources for families. Appropriate for all teacher credential students, and other majors in the social service areas that interact with and serve families.

ECS 460  **INFANT/TODDLER ASSESSMENT & INTERVENTION (3)**

Three hours lecture per week  
**Prerequisite:** ECS 320, ECS 325, SPED 345  
Corequisite: ECS 461  
Focus on the developmental and ecological principles of assessment and teaching strategies for infants, toddlers, and young children, ages birth to three, and their families. This course will prepare students to plan and implement individualized, developmentally and culturally appropriate assessment and curricular/teaching strategies for very young children with and without disabilities in diverse settings with a focus on cognitive, social-emotional, language, and physical development. Infant/toddler transition planning to preschool.

ECS 461  **INFANT/TODDLER STUDENT TEACHING & SEMINAR (4)**

Nine hours field studies per week  
One hour seminar per week  
**Prerequisite:** ECS 320, ECS 325, SPED 345  
Corequisite: ECS 460  
Student teaching in center-based settings for infants and toddlers. Students practice assessment and instructional strategies. Seminar is held in conjunction with the student teaching experience to serve as a forum for integrating research, theory, and recommended practices. One full school day of student teaching per week. Fingerprint clearance is required.

ECS 462  **THEORY, METHODS, AND APPLICATION IN BILINGUAL EDUCATION (3)**

Three hours lecture per week  
**Prerequisite:** Senior Standing  
Focuses on young children's content learning using academic English, teaching methods, assessment, and programming regarding multilingual language acquisition and English language development in the classroom.

ECS 463  **CONSULTATION AND COMMUNICATION WITH FAMILIES AND PROFESSIONALS (3)**

Three hours of lecture/discussion per week  
**Prerequisite:** Senior Standing  
Strategies for effectively collaborating, communicating and working in partnership with individuals with disabilities and their families, other caregivers, school administrators, general and special education teachers, specialists and paraprofessionals and community agency and related service personnel. Planning for transition across the life span for learners with special needs.

ECS 468  **EARLY NUMERACY & LITERACY FOR CHILDREN AGES 3 - 8 (3)**

Three hours lecture per week  
**Prerequisite:** ECS 320, ENGL 312  
Corequisite: ECS 470, ECS 471  
Focus on the principles, assessment, and methods of early numeracy and literacy development for children ages three through eight years; with a specific emphasis on English learners, children with special needs, and exceptional learners; issues of multiculturalism and multilingualism are infused throughout the course.

ECS 470  **PRESCHOOL/PRIMARY ASSESSMENT & TEACHING STRATEGIES (3)**

Three hours lecture per week  
**Prerequisite:** ECS 320  
Corequisite: ECS 468, ECS 471  
Focus on the developmental and ecological principles of assessment and teaching strategies for children, three through eight years of age and their families. Prepares students to plan and implement individualized, developmentally and culturally appropriate assessment and curricular/teaching strategies in preschool and early elementary settings. Assessment and teaching methodologies will focus on the promotion of cognitive and social-emotional development, creativity expression and the understanding of social studies and science concepts for diverse children with and without disabilities. Classroom organization and individualized behavioral support strategies will be presented including transition planning from preschool to early elementary settings.
ECS 468  ADVANCED CLASSROOM APPRENTICESHIP (2)
Four hours activity per week. Equivalent of one full day of activity in local public schools.
Prerequisite: Admission to the Accelerated Program or EDAP 364
Corequisite: EDUC 520
Service learning in selected schools under the supervision of classroom teacher.
Graded: Credit/No Credit

EDAP 422  LITERACY 1: MULTICULTURAL/MULTILINGUAL (1)
Three hours lecture per week.
Prerequisite: Admission to the Accelerated Program
Corequisite: Enrolled in a Field Placement or Student Teaching course.
Topics include developmental theory and practice of the reading and writing process across the grade levels; study skills; foundations of reading and writing theory and practice for students who speak English as a first or second language; teaching reading and writing to native English speakers and English Language Learners in English-only, Multilingual and Bilingual contexts. Differentiated instruction and scaffolding for English language learners, special education (including gifted) and English only students.

EDAP 425  HEALTH AND PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (3)
Three hours lecture per week.
Prerequisite: Admission to the Multiple Subject Accelerated Program
Overview of the California elementary school health and physical education curricula. Developmentally appropriate motor activities, maximum participation, fitness, nutrition, games, sports; personal, community and social health and safety. Students learn and practice health and physical education pedagogy (K-8). Including needs of English language learners and special needs students.

EDAP 426  TEACHING GEOMETRY AND MEASUREMENT IN ELEMENTARY SCHOOLS (3)
Three hours lecture per week.
Prerequisite: MATH 208 or Consent of the Program Coordinator; Admission to the Multiple Subject Accelerated Program
Corequisite: EDAP 467 or EDAP 469
Consent of Instructor required for enrollment.
Covers geometry and measurement including geometric interpretation of real numbers, geometric constructions, measurement formulae. Current issues of the modern math curriculum are integrated including problem solving approaches to teaching and learning, problem-based learning tasks, mathematical modeling, authentic assessment and data driven, cognitively guided instructional practices.

EDAP 427  SOCIAL STUDIES IN INTEGRATED ART (3)
Three hours lecture per week.
Prerequisite: Admission to the Multiple Subject Accelerated Program
Focuses on standard based curriculum for the Social Sciences and Arts including needs of English Language Learners, exceptional children, and technology for teaching and learning.

EDAP 428  TEACHING DATA ANALYSIS, PROBABILITY AND MATHEMATICAL REASONING IN ELEMENTARY SCHOOLS (3)
Three hours lecture per week.
Prerequisite: MATH 208 or Consent of the Program Coordinator; Admission to the Multiple Subject Accelerated Program.
Corequisite: EDAP 467 or EDAP 469
Consent of Instructor.
The emphasis in this course is on combining the Probability and Statistics content knowledge with appropriate teaching methods.
EDAP 429  "TEACHING SCIENCE IN ELEMENTARY SCHOOLS (3)"
Three hour lecture per week
Prerequisite: Admission to the Multiple Subject Accelerated Program
Studies the application of methods for teaching physical, life and earth science to K-8 students based on research and theory. Integrates needs of English Language Learners, exceptional children, and technology for teaching and learning.

EDAP 467  "STUDENT TEACHING I (3)"
Twelve weeks of one half-day in schools and four weeks of full-time student teaching
Prerequisite: Admission to the Accelerated Program; SPED 345, EDUC 510, EDUC 512, EDUC 520, and ENGL 475
Participatory observation and teaching in a grade K-3 classroom in a selected school under the supervision of a cooperating classroom teacher and university supervisor, with a student teaching seminar.
Graded: Credit/No Credit

EDAP 471  "STUDENT TEACHING III (5)"
Eight weeks of one day a week in schools and 8 weeks of full time student teaching.
Prerequisite: Admission to the Accelerated Program, EDAP 469
Corequisite: EDAP 472
Participatory observation and teaching in K - 8 classrooms in selected schools under the supervision of a cooperating classroom teacher and university supervisor, with a student teaching seminar.
Graded: Credit/No Credit

EDAP 472  "STUDENT TEACHING SEMINAR III (1)"
Two hour seminar every other week
Prerequisite: Admission to the Accelerated Program, EDAP 469
This course prepares Accelerated Program candidates for the professional job market and for their continued professional training.
Graded: Credit/No Credit

EDCI 600  "CURRICULUM: HISTORY AND ANALYSIS (3)"
Three hours lecture per week
Prerequisite: Admission into the MA in Education
Study of theoretical and historical frameworks for curricular development and decision making. Includes analysis and evaluation of curriculum, reform movements, and impacts on teaching and learning.

EDCI 605  "ASSESSMENT IN THE CLASSROOM (4)"
Four hours lecture per week
Prerequisite: Admission into the MA in Education
An in-depth study of assessment strategies of student learning and an examination of current assumptions about classroom instruction, assessment, and learning. The relationship between theory and practice is emphasized.

EDCI 610  "RESEARCH ON TEACHING (3)"
Three hours seminar per week
Prerequisite: EDUC 615
Concepts, methodologies, and findings of both historical and recent research on teaching. Questions that drive inquiry in the field, evolving research to answer these questions, and the knowledge derived from the study of teaching will be uncovered.

EDCI 630  "ADVANCED ISSUES IN EARLY CHILDHOOD STUDIES (3)"
Three hours lecture per week
Prerequisite: Acceptance into a Masters of Education Program
Investigation into discourses of early childhood development and learning and schooling. The construct of Developmentally Appropriate Practice, supporting consideration of the whole child in research, policy, and educational reforms, will be examined. Culturally Relevant theoretical frameworks and practices, focusing on children’s cultural knowledge, prior experiences, and performance styles to make learning more appropriate and effective, will also be addressed.

EDCI 635  "RESEARCH, POLICY, AND PRACTICE WITH FAMILIES AND YOUNG CHILDREN (3)"
Three hours lecture per week
Prerequisite: Acceptance in a Masters in Education Program and Consent of Instructor
Examines and conducts field research collaborating with families and communities. Special emphasis on the connections among families, young children, and the educational programs families have access to. Emphasis on the Funds of Knowledge of immigrant families and first and second generation immigrant learners in California communities.

EDCI 640  "ISSUES IN ELEMENTARY EDUCATION (3)"
Three hours lecture per week
Prerequisite: Admission into the MA in Education
Investigates issues surrounding effective schooling for grades K-6. Includes philosophies of elementary education, school organization and leadership, curriculum content, standards, instructional and assessment practices, demographic trends, and culturally relevant pedagogy.

EDCI 641  "ADVANCED MATHEMATICS TEACHING METHODS (3)"
Three hours lecture per week
Prerequisite: Admission into the MA in Education
Investigates effective strategies for planning, learning, teaching, and assessing major mathematical concepts and content found in California and national Mathematics Curriculum Frameworks. Emphasizes deepening understanding and meeting the needs of all students,
connections within the mathematics curriculum, communicating mathematical ideas, and incorporating technology.

**EDCI 642** ADVANCED SCIENCE TEACHING METHODS (3)
Three hours lecture per week
Prerequisite: Admission to the MA in Education
Focuses on effective science teaching, learning, and assessment strategies aligned to the national science education frameworks and standards. Emphasis is placed on the application of content and pedagogy in a PK-12 curricular context.

**EDCI 643** ADVANCED METHODS IN THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS (3)
Three hours lecture per week
Prerequisite: Admission to the MA in Education
A theoretical and research-based approach to the teaching of literature and writing with practical applications to secondary schools. Emphasizes responsiveness to student needs, literacy needs, incorporation of technology, and intentionality in planning curriculum.

**EDCI 645** ISSUES IN SECONDARY EDUCATION (3)
Three hours seminar per week
Prerequisite: Acceptance into the MA in Education
Recent trends and issues in secondary schools including organization, purposes and functions, curriculum, and programs. Emphasizes school organization, the nature of the student population, standards, school curricula and programs, and issues of teacher and school change. Formerly EDCI 602, changed Fall 2012.

**EDCI 650** COOPERATIVE LEARNING (3)
Three hours lecture per week
Prerequisite: Admission into the MA in Education
Fundamental knowledge of cooperative learning and analysis derived from its use in classrooms. Development of skills for planning, teaching, and assessment through a research-based framework.

**EDCI 655** ADVANCED CLASSROOM MANAGEMENT THEORY (3)
Three hours lecture per week
Prerequisite: Admission into the MA Education Program
Investigation and discussion of a range of behavior management theories, discipline strategies, organizational procedures, and communication skills. Emphasis will be placed on actual classroom experiences and development of a personal model of discipline.
### EDMS 527 History, Social Studies and Integrated Arts (4)
Four hours of lecture/discussion per week.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** EDMS 562 1-2 units or EDMS 565
- Focuses on curriculum for History, Social Sciences and Arts as delineated by the California Content Area Standards and the Curriculum Frameworks. Includes curriculum development, methods, techniques, planning and assessment in history, social studies and integrated arts. Needs of English Language Learners and exceptional children, technology for teaching and learning are integrated.

### EDMS 529 Science, Health and Physical Education (4)
Four hours lecture/discussion per week.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** EDMS 562 1-2 units or EDMS 565
- Study of the application of recommended methods for teaching physical, life and earth science, health and physical education to students (K-8) based on research and theory. Students reflect upon their personal development and abilities to integrate theory and practice in science, health and physical education with other subject areas. Needs of English Language Learners and exceptional children, technology for teaching and learning are integrated.

### EDMS 562 Field Experience Multiple Subject (Part-Time Program) (1)
Three hours per week.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** Any of the following two: EDMS 522, EDMS 523, EDMS 526, EDMS 527, or EDMS 529
- Participatory observation in selected schools under the supervision of classroom teacher and university supervisor. Repeatable.

### EDMS 565 Initial Student Teaching Multiple Subject (6)
Eight hours per week.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** EDMS 566
- Participatory observation and teaching in selected schools under the supervision of classroom teacher and university supervisor.

### EDMS 566 Initial Student Teaching Seminar Multiple Subject (2)
Bi-weekly two hour discussion.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** EDMS 565
- Facilitates the preparation for and discussion of issues relevant to the student teaching experience. Meets the standards set by the California Commission on Teacher Credentialing. Graded: Credit/No Credit

### EDMS 573 Advanced Student Teaching Multiple Subject (6)
Eight hours per week.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** EDMS 576
- Participatory observation and teaching in selected schools under the supervision of classroom teacher and university supervisor; with a student teaching seminar.

### EDMS 576 Advanced Student Teaching Seminar Multiple Subject (2)
Two hours seminar per week.
- **Prerequisite:** Admission to the Multiple Subject Credential Program
- **Corequisite:** EDMS 576
- This course facilitates the preparation and discussion of practical issues relevant to the student teaching experience. It meets the standards set by the California Commission on Teacher Credentialing. Repeatable up to 4 units. Graded: Credit/No Credit

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**Education – Principals Leadership**

### EDPL 610 Foundations of Curriculum, Instruction, and Assessment (3)
Three hours lecture/discussion per week.
- **Prerequisite:** Admission to the Principals Leadership Program
- Theories for design of curriculum, instruction and assessment in an inclusive school environment will be addressed. Topics include standards based curriculum, differentiated instruction, using assessment data to design on-going instruction at the classroom level, dynamics of the curriculum change process. Course results in the development of a deep and internalized understanding of effective teaching, learning and assessment for all students including English Language Learners and students with special needs.

### EDPL 620 Instructional Leadership of the Collaborative Inclusive School (3)
Three hours lecture/discussion per week.
- **Prerequisite:** Admission to the Principals Leadership Program
- Leadership skills needed for implementation and evaluation of instructional programs that meet the needs of all learners. Focus on skills needed to involve teachers in reform and renewal of educational practice, shared instructional decision making and systematic improvement processes. Topics include skills needed for effective instructional supervision at the program and individual level, development of instructional staff, mentoring, coaching, direct instructional supervision integrated with the personnel decision making process involving hiring, renewal of contracts and granting of tenure.

### EDPL 621 Law and School Management (3)
Three hours lecture/discussion per week.
- **Prerequisite:** Admission to the Principals Leadership Program
- Application of federal, state and local law to school government and management. Topics include legal principles of statutes and case law related to conduct of students, contracts, liabilities, torts, and individual rights; legal framework for the governance of public education; the role of the legislative process in the governance of schools; legal requirements of due process as it relates to students, parents, and school personnel; and special education law and procedures.

### EDPL 622 School Finance and Principles of Applied Leadership (3)
Three hours lecture/discussion per week.
- **Prerequisite:** Admission to the Principals Leadership Program
- Application of the principles of leadership and management as found in the research literature to school and finance and management issues. Topics include public school finance, effective management of fiscal resources and business services at the site, budget development and implementation at the site level to support instructional program priorities and needs of instructional staff in meeting the needs of all students. Communication, human relations, power and authority, decision-making, managing conflict, facilitating change in the context of student management, health, safety, security, school community relations, and school support services (food services, custodial services, facilities maintenance.)
EDPL 623  UNDERSTANDING AND INFLUENCING ORGANIZATIONS IN DIVERSE COMMUNITIES (3)
Three hours lecture/discussion per week
Prerequisite: Admission to the Principals Leadership Program
Organizational theory and leadership skills required to understand and implement change. Topics include organizational structures and the cultural context of schooling, moral and ethical leadership skills needed to guide, build consensus, resolve conflict, support risk-taking, and lead an entire school community in pursuit of a shared vision of educational excellence for all students.

EDPL 624  HUMAN RESOURCE MANAGEMENT IN EDUCATION SETTINGS (3)
Three hours lecture/discussion per week
Prerequisite: Admission to the Principals Leadership Program
Leadership knowledge and skills needed to manage a Human Resource Program including personnel administration, supervision, assignment monitoring, negotiation and administration of contracts, supervision of risk management programs and all legal aspects of Human Resources administration.

EDPL 625  BUILDING COLLABORATIVE, INCLUSIVE LEARNING COMMUNITIES (3)
Three hours lecture/discussion per week
Prerequisite: Admission to the Principals Leadership Program
Understanding and applying the skills needed to build an inclusive learning community. Topics include roles and relationships among students, staff, adults and families, professional development, shared decision making, teacher leadership, supporting special populations within the school, designing and implementing strategic plans focused on improved student achievement for all learners.

EDPL 631  PROFESSIONAL DEVELOPMENT/FIELDWORK I (1-4)
Variable Credit 1-4 hours.
Each 1 Credit is comprised of: 3 seminars at 3 hours each, plus 20 hours of field studies.
Prerequisite: Admission to the Educational Leadership Program
Students, working collaboratively with the university instructor and supervising mentor, design and implement field work experiences that develop the skills to meet the CCTC standards for the Preliminary Administrative Services Credential. Students collect documentation of experiences to be placed in an assessment portfolio. Repeatable up to 4 units.
Graded: Credit/No Credit

EDPL 632  PROFESSIONAL DEVELOPMENT/FIELDWORK II (1-3)
Six Three-hour seminars per semester and 40 hours of field experience
Prerequisite: Admission to the Principals Leadership Program
Continuing assessment of candidate competence for meeting CCTC standards integration of fieldwork, and application of knowledge and skills of entry level administrative position in local school or program settings. May be repeated for a maximum of 4 units.
Graded: Credit/No Credit

Education – Single Subject

EDSS 515  ADOLESCENT DEVELOPMENT FOR SECONDARY EDUCATORS (3)
Three hours lecture per week
Course Focuses on specific aspects of adolescent development that influence teacher-student interactions and relationships in secondary classrooms. Emphasizes the particular challenges and possibilities teachers encounter when working with adolescent students across differences in culture, ethnicity, gender, linguistic heritage, race, sexual orientation, and socioeconomic status.

EDSS 530  GENERAL SECONDARY SCHOOL METHODS (3)
Three hours lecture/discussion per week
Prerequisite: Admission to the Single Subject Credential Program
Corequisite: EDSS 570, EDSS 580, EDSS 575 or EDSS 585
A study of content, methodology, materials and current research in middle school science teaching. Focuses on developing science process skills in middle school students. Emphasizes reflective practice based on California Teacher Performance Expectations and the use and alignment of curricula to the Academic Content Standards for California Public Schools. Includes an emphasis on teaching in multicultural, multilingual and inclusive classrooms.

EDSS 531  TEACHING MATHEMATICS IN MIDDLE SCHOOLS (3)
Three hours lecture per week
Prerequisite: Admission to the Single Subject Credential Program
Corequisite: EDSS 570, EDSS 580, EDSS 575 or EDSS 585
A study of content, methodology, materials and current research in middle school mathematics. Focuses on the state curricular mathematics frameworks appropriate for middle school classrooms. Emphasizes reflective practice based on California Teacher Performance Expectations and the use and alignment of curricula to the Academic Content Standards for California Public Schools. Includes an emphasis on teaching in multicultural, multilingual and inclusive classrooms.

EDSS 532  TEACHING SCIENCE IN MIDDLE SCHOOLS (3)
Three hours lecture/discussion per week
Prerequisite: Admission to the Single Subject Credential Program
Corequisite: EDSS 570, EDSS 580, EDSS 575 or EDSS 585
A study of content, methodology, materials and current research in middle school science teaching. Focuses on developing science process skills in middle school students. Emphasizes reflective practice based on California Teacher Performance Expectations and the use and alignment of curricula to the Academic Content Standards for California Public Schools. Includes an emphasis on teaching in multicultural, multilingual and inclusive classrooms.
EDSS 534  TEACHING SOCIAL STUDIES IN MIDDLE SCHOOLS (3)
Three hours lecture per week
Prerequisite: Admission to the Social Studies Credential Program
Corequisite: EDSS 570, EDSS 575, EDSS 580, EDSS 585
Prepares single subject credential candidates to teach social studies content in middle school classrooms. Primary emphases include the state standards, instructional techniques, and curricular materials commonly used to promote academic achievement in multicultural social studies classes in California. Methods to reach and teach English language learners and students with special needs are also highlighted.

EDSS 540  TEACHING MATHEMATICS IN HIGH SCHOOLS (4)
Three hours lecture per week
Prerequisite: Admission to the Single Subject Credential Program
Corequisite: EDSS 570, EDSS 575, EDSS 580 or EDSS 585
A study of content, methodology, materials and current research in teaching secondary mathematics courses including a focus on literacy. Focuses on the curricular framework of mathematics as appropriate for high school courses. Emphasizes reflective practice based on California Teacher Performance Expectations and the use and alignment of curricula to the Academic Content Standards for California Public Schools. Emphasizes teaching in multicultural, bilingual and inclusive classrooms.

EDSS 541  TEACHING SCIENCE IN HIGH SCHOOLS (4)
Three hours lecture per week
Prerequisite: Admission to the Single Subject Credential Program
Corequisite: EDSS 570, EDSS 575, EDSS 580 or EDSS 585
A study of content, methodology, materials and current research in teaching high school science courses. Focuses on methods, curriculum design, literacy and technology use specific to teaching science courses in grades 9-12. Emphasizes reflective practice based on California Performance Expectations and the use and alignment of curricula to the Academic Content Standards for California Public Schools. Emphasizes teaching in multicultural, multilingual and inclusive classrooms.

EDSS 543  TEACHING ENGLISH IN HIGH SCHOOLS (4)
Four hours lecture per week
Prerequisite: Admission to the Single Subject Credential Program
Corequisite: EDSS 570, EDSS 580, EDSS 575 or EDSS 585
A study of the content and methods of teaching writing that are specific to language development, including a focus on literacy, grammar instruction, student errors, and writing challenges for English language learners; studies the teaching and integration of non-fiction, particularly at the high school level. Emphasizes reflective practice based on teacher performance expectations and the use and alignment of curricula to the academic content standards for California public schools. Emphasizes teaching in multicultural, multilingual and inclusive classrooms.

EDSS 544  TEACHING SOCIAL STUDIES IN HIGH SCHOOL (4)
Four hours lecture per week
Prerequisite: Admission to the Social Studies Credential Program
Corequisite: EDSS 570, EDSS 575, EDSS 580, EDSS 585
Prepares single subject credential candidates to teach social studies content in high school classrooms. Primary emphases include the state standards, instructional techniques, and curricular materials commonly used to promote academic achievement in California’s multicultural social studies classrooms. Methods to reach and teach English language learners and students with special needs are also highlighted.

EDSS 550  ACCESS TO LEARNING: ENGLISH LANGUAGE LEARNERS (3)
Two hours lecture/discussion per week
Prerequisite: Admission to the Single Subject Credential Program
Various curricula and instructional programs designed for English language learners, including placement, grouping, methods of language and content assessment, English language development and specially designed academic instruction in English. Examination and application of theoretical and methodological issues in designing instruction for ELLs in classroom settings through reflective and critical practice.

EDSS 560  ACCESS TO LEARNING: A FOCUS ON INDIVIDUAL DIFFERENCES (2)
Two hours lecture/discussion per week
Prerequisite: Admission to the Single Subject or Special Education Level I Credential Program
Focuses on methods and techniques for identifying and teaching students with special needs, including culturally diverse and gifted and talented students. Addresses collaboration between content area and special education teachers, working with diverse families and the unique issues associated with integrating students with special needs in secondary settings.
Same as SPED 560

EDSS 570  FIELD EXPERIENCE MIDDLE SCHOOL (PART-TIME PROGRAM) (1)
Four hours per week in a middle school setting
Prerequisite: Admission to the Single Subject Credential Program.
Corequisite: One of the following: EDSS 530, 531, 532, 533, or 540
Participatory observation in selected middle schools under the supervision of a classroom teacher and University supervisor. May be repeated for to a maximum of 4 units.
Graded: Credit/No Credit

EDSS 571  STUDENT TEACHING SEMINAR-MIDDLE SCHOOL (2)
Two hours seminar per week
Prerequisite: Admission to the Single Subject Credential Program.
Corequisite: EDSS 575; Concurrent enrollment in or completion of one content methods course.
Weekly meetings to discuss observations and teaching practice during the first student teaching experience. Teacher education performance assessments will be introduced.
Graded: Credit/No Credit

EDSS 575  STUDENT TEACHING MIDDLE SCHOOL (6)
Equivalent of eight weeks of full-time student teaching
Prerequisite: Admission to the Single Subject Credential Program.
Corequisite: EDSS 571
Participatory observation and teaching in selected middle level secondary schools under the supervision of a classroom teacher and University supervisor; with a student teaching seminar.
Graded: Credit/No Credit
EDUC 101 INTRODUCTION TO ELEMENTARY SCHOOLING (3)
Two hours lecture and two hours activity per week
This service learning course provides structured observation and tutoring experiences which reflect a rich array of student diversity in local schools. Emphasis is placed on gaining awareness of connections between discipline knowledge and teaching and learning. This course will help students decide if a career in the elementary teaching profession is the right choice for them. Thirty hours of field experience in elementary schools is required.
GenEd: D

EDUC 320 EDUCATION IN MODERN SOCIETY (3)
Three hours lecture per week
Survey of educational institutions and practices used in different sectors of society. Includes historical and philosophical foundations of American education.
GenEd: D

EDUC 330 INTRODUCTION TO SECONDARY SCHOOLING (3)
Two hours lecture/discussion and two hours field observations per week
Prerequisite: Junior Standing or Consent of Instructor
Corequisite: EDSS 540, EDSS 541, EDSS 542, or EDSS 543
Participatory observation in selected high schools under the supervision of a classroom teacher and University supervisor. May be repeated to a maximum of 3 units.
Graded: Credit/No Credit

EDUC 343 TEACHING DRAMA TO CHILDREN (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Students will participate in theatre games, improvisations, and other tasks that will prepare them to design and implement dramatic activities as a learning tool. Theatre in a broader context will also be examined.
Same as PATH 343
GenEd: C1, INTD

EDUC 344 THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of university, school (K-12), public, and special libraries from business, economic, library science, and educational perspectives. Analyzes how these perspectives are linked within library practices. A study of local libraries and field trips.
Same as BUS 344, ECON 344, LIB 344
GenEd: D, INTD

EDUC 345 MEDIA LITERACY AND YOUTH CULTURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
This interdisciplinary course examines the relationship between mass communication, mass media, and youth culture. Topics include the theories and effects of mass communication, in particular the effects of mass media on children and adolescents. To develop media literacy, students will apply these concepts to their own experiences with popular media, including television, print, and film.
Same as COWM 345
GenEd: A1, D, INTD

EDUC 346 SCHOOL COMMUNICATION (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines written, verbal and nonverbal communication in school settings between teachers and stakeholders. Emphasizes the importance of communication and successful personal interactions.
Same as COWM 346
GenEd: A1, INTD
EDUC 434  THE UNIVERSITY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of institutions of higher education from multiple perspectives including, but not limited to education, teaching and learning, scholarly and creative activities, community service, management, and public policy. Includes case studies of colleges and universities in the region and may include field trips to these institutions.
Same as BUS 347, ECON 347
GenEd: D, INTD

EDUC 404  POLICY LEADERSHIP (3)
Three hours lecture per week
Prerequisite: POLS 150
Explores policy leadership across all levels of society and across educational and political domains. Exposes students to ideas about policy leadership, requiring students to learn about current leaders in the region, the U.S. and abroad as theories and concepts are applied to the real world of politics and policy.
Same as POLS 404

EDUC 431  EDUCATION POLICY AND POLITICS (3)
Three hours lecture per week
Prerequisite: POLS 150 for POLS students or Consent of Instructor
Examines the roles of political institutions in education policy making, the political factors that shape policy formulation and implementation, the values and assumptions of different types of policies, and the links between policy and local-level implementation. Analyzes current and pending policies' effect on schools and classrooms to illustrate how education policy reflects American politics.
Same as POLS 431
GenEd: D, INTD

EDUC 437  THE UNIVERSITY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of institutions of higher education from multiple perspectives including, but not limited to education, teaching and learning, scholarly and creative activities, community service, management, and public policy. Includes case studies of colleges and universities in the region and may include field trips to these institutions.
Same as BUS 347, ECON 347
GenEd: D, INTD

EDUC 435  THE MUSIC MUSEUM (3)
Three hours lecture per week
Prerequisite: Junior Standing
An interdisciplinary study of music museums from the perspectives of music history, appreciation and production, business, economics and education. Analyzes how these disciplines are linked within music museum practices. Includes an in-depth study of a local music museum.
Same as BUS 434, ECON 435, PAMU 435
GenEd: D, INTD

EDUC 445  CHICANO CHILD AND ADOLESCENT (4)
Three hours lecture and two hours service learning per week
Examines the socio-cultural experiences and historical political realities pertinent to the daily lives of Chicano, Mexican-origin, and/or Latino children and adolescents. Focus is on historical periods, events, and policies affecting youth populations, its demography, migration and immigration patterns. Consideration of contemporary issues and effective educational and cultural practices will be used as a resource for teacher knowledge and pertinent classroom projects. Field study requirement involves working in a child-centered setting or related service project.
Same as HIST 445, CHS 445
GenEd: C3B, D, INTD

EDUC 490  SPECIAL TOPICS IN EDUCATION (1-3)
Prerequisite: Consent of Instructor
In-depth analysis of current topics in Education. Topics vary each semester. Repeatable by topic.
Student Option: Graded or Credit/No Credit

EDUC 494  INDEPENDENT RESEARCH (1-3)
Students design and implement a study project in conjunction with a faculty member. Repeatable.
Student Option: Graded or Credit/No Credit

EDUC 497  DIRECTED STUDIES (1-3)
Variable hours per week.
Provides student credit for curricular activities under the direction of an Education faculty member. Repeatable up to 12 units.
Student Option: Graded or Credit/No Credit

EDUC 510  LEARNING THEORY AND DEVELOPMENT APPLIED IN MULTICULTURAL CONTEXTS (3)
Three hours lecture/discussion per week and participation/observation in the public schools. Introduction to psychology of learning and instruction. Major concepts, principles, theories and research related to child and adolescent development; human learning; the cognitive, linguistic, social, emotional and physical development. Students begin to use this knowledge to create learning opportunities that support student development, motivation and learning in a social, cultural, and historical context. Includes learning theories and their application to educational practice in multicultural and multilingual classroom settings.

EDUC 512  EQUITY, DIVERSITY AND FOUNDATIONS OF SCHOOLING (3)
Three hours lecture/discussion per week
Principles of effectively teaching students from diverse language, historical, and cultural backgrounds. Includes skills and abilities and community values. Focus on the major cultural and ethnic groups. Attention to ways of recognizing and minimizing bias in the classroom and ways to create equitable classroom community that emphasize the physical, social, emotional and intellectual safety of all students. Includes study of gender bias, diverse students, families, schools and communities and the student's self-examination of his/her stated and implied beliefs, attitudes and expectations related to these areas of diversity and implications for daily classroom practice.
GenEd: C3B

EDUC 520  OBSERVING AND GUIDING BEHAVIOR IN MULTILINGUAL/MULTICULTURAL AND INCLUSIVE CLASSROOMS (3)
Three hours lecture/discussion per week
Corequisite: EDUC 521
Through this course students observe children's behavior in multilingual/multicultural and inclusive classrooms, learn and apply assessment principles and tools, learn how to guide children's social behavior, and communicate with families. Students learn how to organize and write lesson plans for instruction.

EDUC 521  FIELD EXPERIENCE (1)
Three hours per week in local public schools.
Corequisite: EDUC 520
Participatory observation in selected schools under the supervision of classroom teacher and university supervisor. Fingerprint clearance is required.
Graded: Credit/No Credit
EDUC 615  PRINCIPLES OF EDUCATIONAL RESEARCH (3)
Three hours lecture/discussion per week
Prerequisite: Completion of Baccalaureate Degree
This course provides foundational knowledge about the principles of educational research in order to prepare students to conduct independent, disciplined inquiry and applied research in education.

EDUC 616  MASTERS RESEARCH THESIS/PROJECT (1-3)
Prerequisite: Admission to Masters of Education Program
Consent of Instructor Required
Independent research of topic of choice with advisor approval. Repeatable up to 6 units.
Graded: Credit/No Credit

EDUC 617  ACTION RESEARCH (3)
Three hours lecture per week
Prerequisite: EDUC 615
Introduces Action Research using various qualitative and quantitative methods that can be employed to answer research questions. Students will design an action research project that includes a literature review, research questions, methodology and pilot study that can be conducted at a school or community site.

EDUC 618  COMPREHENSIVE EXAMINATION (1-3)
One to three hour seminar per week
Prerequisite: Advancement to Candidacy and Consent of Instructor
Addresses current issues in schooling that impact the planning and provision of rich educational opportunities to meet the diverse needs of learners; effective channels of communication within the school community; and the transition from pre-to in-service teacher; and teacher induction and professional development.
Graded: Credit/No Credit

EDUC 660  EDUCATION IN A DIVERSE SOCIETY (3)
Three hours lecture/discussion per week
Prerequisite: Completion of Baccalaureate Degree
This course focuses on effective leadership in working with diverse communities of teachers, students, and families and strategies for effectively involving families of diverse cultures in support of their child’s educational achievement. Issues of gender, ethnicity, race, language, culture and disability are addressed in the context of promoting equity and excellence in learning opportunities and social interaction.

EDUC 694  ADVANCED INDEPENDENT RESEARCH (1-4)
One to four hours independent study per week
Corequisite: Student must be enrolled in Graduate or Postbaccalaureate Program
Consent of Instructor Required
For Enrollment
Graduate students design and implement a project or study with supervision from a faculty member.

EDUC 697  ADVANCED DIRECTED STUDIES (1-4)
One to four hours independent study per week
Corequisite: Enrolled in Graduate or Postbaccalaureate Program and Consent of Instructor
Provides a graduate student with credit for curricular activities conducted under the direction of a School of Education faculty member.

English

ENGL 101  STARTING THE STRETCH (1)
One hour online per week
An introduction to the expectations, terminology and conventions of first year writing courses, with discussion of the multiple purposes of college writing and analysis of student/peer writing. Practice in the use of scoring rubrics and introduction to the concept of holistic scoring. Online course.
Graded: Credit/No Credit

ENGL 102  STRETCH COMPOSITION I (3)
Three hours lecture per week
Focuses not on finished products but rather on helping students develop strategies for using writing to construct meaning, which in turn assists in generating thought-provoking discourse for the intended reader. Upon completing this course, students will have learned that all writing involves a recursive process of thinking and writing strategies often referred to as peer review, invention, prewriting, drafting, revising, and editing. This is the first in a two-course sequence of ENGL 102 and ENGL 103.
ENGL 107  ADVANCED COMPOSITION AND RHETORIC (3)
Three hours lecture per week
Prerequisite: A grade of C or better in ENGL 103 or ENGL 105 or ENGL 106 or Equivalent
An intensive, one-semester writing course that emphasizes research as a heuristic for learning, writing as an intellectual dialogue with the authorities represented in the evidence found, and which engages students in judging the merit and appropriateness of discovered evidence. A substantial amount of writing is required.
GenEd: A1, A3

ENGL 110  THEMES IN MULTICULTURAL LITERATURE FOR NON-MAJORS (3)
Three hours lecture per week
Exploration of broad themes in literature across multiple genres and cultures, American and international. Repeatable by topic up to 6 units.
GenEd: C2, C3B

ENGL 120  AMERICAN LITERATURE I (3)
Three hours lecture/discussion per week
Study of major works of American literature from colonial times through 1850, with special attention to literary movements. Major writers will be addressed, as well as lesser-known writers from various cultural and regional backgrounds.
GenEd: A2

ENGL 210  THEMES IN WORLD LITERATURE (3)
Three hours lecture per week
A survey of world literature, focusing largely on texts by non-western authors, organized around one or more themes. Texts studied are primarily written by authors from the following areas: Asia, India and Pakistan, the Middle East, Africa, and Latin America.
GenEd: C2

ENGL 220  AMERICAN LITERATURE II (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 120 or Equivalent or Consent of Instructor
Study of major works of American literature from 1850 to the present, with special attention to literary movements. Major writers will be addressed, as well as lesser known writers from various cultural and regional backgrounds.
GenEd: C2

ENGL 250  BRITISH AND EUROPEAN LITERATURE I (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 103 or 105 or Equivalent
Study of major works of British and European literature from Beowulf to approximately 1650, with special emphasis on the intellectual backgrounds of the Medieval and Renaissance periods.
GenEd: C2

ENGL 260  PERSPECTIVES IN CREATIVE WRITING (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 102 and ENGL 103 or ENGL 105 or ENGL 106
Locate, examine, and analyze professional genres of academic writing within a discipline. Discuss how and why writers publish in a discipline, consider guidelines for writers, and deconstruct the ways that writers organize their material. Practice academic writing genres to gain entry into the secrets of the discipline, and learn how to present according to expectations.
Student Option: Graded or Credit/No Credit

ENGL 311  BILINGUAL LITERARY STUDIES/ESTUDIOS LITERARIOS BILINGUES (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 and SPAN 202 or SPAN 212 or Consent of Instructor
Explores the literature of the Americas written in English and Spanish. Includes works by bilingual U.S. authors and by Latin American authors. Genres may include novels, short stories, drama, and poetry. Texts will be read in the original language; class discussions will be bilingual.
Same as SPAN 311
ENGL 315  INTRODUCTION TO LANGUAGE, STRUCTURE AND LINGUISTICS (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 103 or 105 or Equivalent
An examination of the basic components of human language, including phonology, morphology, syntax and semantics, and the differences/similarities among languages. Students will identify examples of speech parts and their functions, morphologies, and syntax.

ENGL 322  SOCIOLOGY OF POPULAR CULTURE (3)
Three hours lecture per week
Prerequisite: SOC 100
Examines popular culture from a sociological and a comparative perspective. Emphasizes the impact of mass media on individual behavior, marketing and consumption of amusements and entertainments in the domestic and global marketplace.
Same as SOC 322, COMM 322

ENGL 325  MAJOR NON-WESTERN AUTHORS (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 and either ENGL 220 or ENGL 250 (or the Equivalent)
A concentrated study of selected non-Western authors. Authors selected change from term to term; therefore, students may take the course for credit more than once. Repeatable by topic up to 4 units.

ENGL 326  MAJOR BRITISH AND EUROPEAN AUTHORS (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 250 or Equivalent
Concentrated study of selected British and/or European authors. Authors selected change from term to term; therefore, students may take the course for credit more than once. Repeatable by topics.

ENGL 327  MAJOR AMERICAN AUTHORS (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 220 or Equivalent
Concentrated study of selected American authors. Authors selected change from term to term; therefore, students may take the course for credit more than once. Repeatable by topic.

ENGL 328  MYTHOLOGY (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 103 or 105 or Equivalent and one literature course
Study of mythology and the influence it has had on literature, art, music, and the development of cultures. Course topics may include Classical Mythology, Eastern Mythology, Mythology of the Americas, Egyptian Mythology, and others. Repeatable by topic.

ENGL 329  SEMINAR IN TUTORING WRITING (3)
Three hours seminar per week
Prerequisite: Completion of ENGL 105 (or Equivalent) and Sophomore Standing
Introduces the theories that inform university writing centers and their practices.
Graded: Credit/No Credit

ENGL 330  INTERDISCIPLINARY WRITING (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Individual and collaborative writing that integrates research from a variety of disciplines. Students will work on projects that incorporate various forms of research, including electronic, and which result in both oral presentations and academic papers. Each section will be based on a theme appropriate for interdisciplinary research and writing.
GenEd: A2, INTD

ENGL 331  NARRATIVES OF THE WORKING CLASS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies. Same as SOC 331, POLS 331, ECON 331, HIST 331
GenEd: C2, D, INTD

ENGL 332  TEACHING DRAMATIC LITERATURE (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or Equivalent plus one upper division literature course
Explores methods and approaches to teaching dramatic literature in secondary schools and colleges. Focuses on elements of textual exploration and using heuristics from theatre to teach dramatic literature, including, but not exclusively, Shakespeare’s Plays.
Same as PATH 332
GenEd: C2, INTD

ENGL 333  MULTICULTURAL DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
America is a country of many cultures, and each of these has brought legacies of its roots to the American stage. In this course we will read plays written by Native Americans, Hispanic Americans, Asian Americans, African Americans and others. This course is regional in organization rather than chronological, and is organized around one or more themes.
Same as PATH 333
GenEd: C2, C3B, INTD

ENGL 334  NARRATIVES OF SOUTHERN CALIFORNIA (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Ours is a region made up of many cultures which produce the one we call Southern California. In this class we will take a historical approach to study of the narratives - oral, written and filmed - of Southern California. Course work may also include obtaining oral histories and compiling them.
Same as HIST 334
GenEd: C2, D, INTD

ENGL 335  AMERICAN ETHNIC IMAGES IN NOVELS, FILM AND ART (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the portrayal of ethnic groups from an interdisciplinary perspective that includes, but is not limited to, the literary, historical, and anthropological modes of analysis. The course highlights the ways in which artistic works have shaped the intellectual landscape of the United States as they relate to ethnic peoples.
Same as ART 335, HIST 335
GenEd: C2, C3B, INTD

ENGL 336  LITERATURE OF THE ENVIRONMENT (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Involves the student in many forms of dialogue on issues pertinent to humanity’s relationship with Earth. By reading works by writers from diverse fields and by writing in response, the student will gain a better understanding of our planet and its needs. Emphasis will be placed on writing in modes appropriate to the interdisciplinary field of Environmental Science and Resource Management.
GenEd: C2, D, INTD
ENGL 338  SCIENCE AND CONSCIENCE (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
This course is a team-taught, interdisciplinary course that examines various ethical issues within the sciences using case studies. The scientific, historical and social aspects of each case study will be examined from different perspectives. Students will learn scientific concepts which will facilitate an informed understanding of the ethical issues involved.

ENGL 339  PSYCHOLOGY AND LITERATURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
This course looks at the ways in which human psychology manifests in literature and the ways literature instructs us about human psychology. Through reading, writing about, and discussing texts with particularly rich psychological content, issues related to mental health and the human condition will be explored. The course will also cover some theoretical and technical aspects of psychology relevant to the readings.
Same as PSY 339
GenEd: C2, D, INTD

ENGL 340  BUSINESS AND ECONOMICS IN LITERATURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Explores the ways in which business and economics have been represented in American literature. Employs critical methodologies from the fields of Business, Economics, and Literary studies.
Same as ECON 340, BUS 340
GenEd: C2, D, INTD

ENGL 341  MODERN AMERICAN DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Students will read plays and performance texts written by modern American authors from the beginning of the 20th century until today. A study of the range of American dramatic literature in the context of the development of American theatrical performance. Thematically examines avant-garde and alternative forms as well as commercial and mainstream theatre.
Same as PATH 341
GenEd: C2, INTD

ENGL 342  MODERN BRITISH AND EUROPEAN DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Major works of British and European dramatic literature in performance and production from the middle of the 19th century to the present. Thematically organized to examine avant-garde and alternative forms, as well as commercial and mainstream theatre.
Same as PATH 342
GenEd: C2, INTD

ENGL 344  WORLD DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Explores world dramatic literature in performance and production. The focus is largely on plays and performance texts by non-Western authors, and is organized around one or more themes. This course is regional in organization rather than chronological. Texts studied feature the following regions: Asia, Oceania, South Asia & Middle East, Africa, and Latin America.
Same as PATH 344
GenEd: C2, INTD

ENGL 349  PERSPECTIVES ON MULTICULTURAL LITERATURE (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
An introduction to the diversity of American literatures, their unique literary traditions and forms, and what they hold in common. An emphasis on becoming cross-cultural readers and writers aware of how culture influences literature. Formerly ENGL 449, changed Fall 2006.
GenEd: C2, C3B, INTD

ENGL 354  STUDIES IN CULTURAL LITERATURES (I)
Three hours lecture per week
In depth study of the literature of a particular culture chosen by the professor. Various genres, theoretical perspectives, and critical questions may be emphasized, along with comparisons among the literatures of various cultures. Repeatable by topic up to 2 units.
GenEd: C2, C3B

ENGL 360  LITERARY THEORY (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or equivalent and one upper division literature course
Introduces foundational theories currently influencing literary, social studies, and cultural analysis and criticism. Specific schools of theoretical inquiry include structuralist, materialist, psychoanalytic, deconstructive, feminist, gender, queer, postcolonial, critical race, reader response, and cultural studies. This course was formerly known as ENGL 420, changed January 2009.

ENGL 378  CONTEMPORARY NATIVE AMERICAN AUTHORS: TELEcourse (3)
One hour lecture per week and four hours activity per week.
An introduction to the fiction and poetry produced by contemporary Native Americans. Authors of the works studied join the discussion of their work and concepts important to their work. Modes of discourse and the impact of Native American cultures, concerns and philosophy on the fiction and poetry of these authors are the primary focus of the course. Students will meet with the course instructor three times during the semester; otherwise, students will view the telecourse tapes, read the assigned books, read the essays in the workbook, and do the assigned activities explained in the workbook on their own.

ENGL 400  CONTEMPORARY LITERATURE (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 103 or ENGL 105 or Equivalent and one upper division literature course
Survey of world trends in literature, possibly including fiction, non-fiction, poetry and/or drama. Specific topics vary from term to term. Repeatable by topic.

ENGL 410  SHAKESPEARE’S PLAYS (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or equivalent and one upper division literature course
Study of the many aspects of Shakespeare’s plays as literature—language, context, form and style—as well as the ways in which these elements work as parts of a whole, which includes spoken speech and other sounds as well as physical form and movement.
Same as PATH 410

ENGL 430  TRADITION AND TRANSFORMATION: LITERATURE, HISTORY, AND CULTURAL CHANGE (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or HIST 280 or Consent of Instructor
Bringing literature and history together, this course exposes students to a diverse range of work in art, literature, films, and history. It cultivates the students’ intellectual understanding of the topic from both a cross-disciplinary and a cross-cultural perspective. It
ENGL 432  ARTS OF THE HARLEM RENAISSANCE (3)
Three hours lecture per week
Prerequisite: Upper Division Standing
Study focusing on the dramatic upsurge of creativity in art, music and literature resulting from social and political undercurrents in the African American cultural revolution in New York during the 1920’s. Historical geneses and subsequent artistic legacies will also be explored.
Same as ART 432, PAMU 432
GenEd: C1, C2, INTD

ENGL 433  GAY/LESBIAN/BISEXUAL/TRANSGENDER STUDIES (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or Equivalent
Introduction to the field of gay/lesbian/bisexual/transgender studies through the reading of literature and theory.
Same as GEND 433
GenEd: C2, D, INTD

ENGL 434  WOMEN’S FICTION (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 220 or ENGL 250
This course examines the development of contemporary fiction by women and its relationship to men's fiction by men. It compares style and theme across social class and ethnicities, analyzing the historical context of each novel or short story. The course will raise critical questions about a female literary tradition.

ENGL 435  FICTION WRITING (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 260 or Consent of Instructor
The writing of fiction is the focus of this class. The seminar format allows students the opportunity to talk about their writing and to receive critiques from their peers as well as the instructor. Repeatable up to 6 units.

ENGL 463  WRITING FOR THE STAGE (3)
Three hours lecture/discussion per week
Prerequisite: Consent of Instructor
The writing of stage plays is the focus of this class. The seminar format allows students the opportunity to talk about their writing and to receive critiques from their peers as well as the instructor. Repeatable by topic up to 6 units.
Same as PATH 463

ENGL 464  CREATIVE NONFICTION (3)
Three hours lecture/discussion per week
Prerequisite: ENGL 260 or Consent of Instructor
The writing of creative non-fiction is the focus of this class. The seminar format allows students the opportunity to talk about their writing and to receive critiques from their peers as well as the instructor. Repeatable up to 6 units.

ENGL 465  CREATIVE WRITING PROJECT (3)
Six hours activity per week
Prerequisite: Consent of Instructor and completion of ENGL 260 and 9 units from ENGL 461, ENGL 462, ENGL 463, or ENGL 464
Gives students an opportunity apply their expertise by helping to edit and oversee the production of the CSU Channel Islands annual literary journal, thus gaining practical experience of a literary profession.

ENGL 466  SCREENWRITING (3)
Three hours lecture per week
Prerequisite: Consent of Instructor
The writing of screenplays is the focus of this class. The seminar format allows students the opportunity to talk about their writing and to receive critiques from their peers as well as the instructor. Repeatable by topic up to 6 units.
Same as PA 466

ENGL 474  APPROACHES TO ENGLISH GRAMMAR (3)
Three hours lecture per week
Prerequisite: ENGL 315
This course uses various approaches to analyze the form, function, and meaning of English grammar, including alternative ways to understand grammar in the context of real language tasks. Particular attention is paid to cultural and social assumptions about grammar and how they have shaped our attitudes toward language use.

ENGL 480  INTRODUCTION TO GRANTWRITING (3)
Three hours lecture per week
Prerequisite: Upper Division Standing
Introduction to the grantwriting process. Includes needs assessment, researching funders, and preparing a proposal. Students will be encouraged to work collaboratively to identify authentic needs and develop a draft grant proposal that can serve as the seed for an actual proposal.
ENGL 482  TECHNICAL AND BUSINESS WRITING (3)
Three hours lecture per week.
Prerequisite: ENGL 251 or ENGL 330
An overview of the field of technical and business writing. Students will engage in research, interviewing, and production of genres of technical writing, including reports, users guides, manuals, and technical descriptions; and business writing, including business communications and proposals. Current software will be introduced.

ENGL 483  TECHNICAL VISUAL COMMUNICATION (3)
Three hours lecture/discussion per week.
Prerequisite: For Technical Writing Certificate students only, ENGL 482
The focus of this course is two-fold. First, the student will research and write a presentation on a topic of his or her choice, suitable for a specific application (conference, meeting, etc.) and receive critiques from his or her peers and the professor. Second, the student will use that paper to form the basis of a visual presentation using up-to-date technology of various forms.

ENGL 484  TECHNICAL WRITING FOR THE SCIENCES (3)
Three hours lecture/discussion per week.
Prerequisite: For Technical Writing Certificate students only, ENGL 482
Writing for the Sciences requires a specialized understanding of the process of writing as well as the content of the final essay or article. Students will learn to do research in specialized fields and to write for a variety of scientific journals and other publications.

ENGL 485  TECHNICAL WRITING PROJECT/SEMINAR (1)
Three hours activity per week.
Prerequisite: ENGL 310, ENGL 330, ENGL 482, ENGL 483, and ENGL 484, and a passing evaluation on the portfolio of work from the prerequisite courses. ENGL 483 or ENGL 484 may be taken concurrently with ENGL 485.
As the culmination of the Technical Writing certificate program, this course may be an internship, independent study, seminar or a project course. Projects will be devised in consultation with the instructor.

ENGL 490  SPECIAL TOPICS (3)
Three hours lecture per week.
Concentrated study of selected authors or topics. Authors and/or topics change from term to term; therefore, students may take the course for credit more than once. Repeatable by topic up to 6 units.

ENGL 492  INTERNSHIP (1-3)
Variable hours per week.
Prerequisite: Junior or Senior Standing and Consent of Instructor
Service learning/internship experience in business or organizational environment appropriate to student’s professional goals. Positions are arranged collaboratively with faculty, student and local organization and must meet program standards for internships. Repeatable up to 6 units.

ENGL 494  INDEPENDENT STUDY/SENIOR RESEARCH (3)
Three hours activity per week.
Prerequisite: Senior standing and Consent of Instructor
Students may do an independent study to further coursework begun in other courses, obtain an internship which utilizes knowledge gained thus far, or do research in preparation for the senior project. Repeatable.

ENGL 499  CAPSTONE PROJECT/SENIOR SEMINAR (3)
Three hours lecture/discussion per week.
Prerequisite: Senior standing, a passing evaluation of the cumulative portfolio, and Consent of Instructor/Advisor
A culminating research project in English with a substantial paper that augments the B.A. in English.

Environmental Science & Resource Management

ESRM 100  INTRODUCTION TO ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT (3)
Three hours lecture per week.
Prerequisite: ESRM 100 or Consent of Instructor
This course covers a broad spectrum of environmental science topics including: biogeochemical cycles, biological diversity, world food supply, effects of agricultural production on the environment, energy, water and air environments, and societies’ impacts on the environment. Current environmental issues such as loss of biological diversity, global climate change, ozone depletion, and natural resource management will be discussed.
GenEd: B2, D

ESRM 105  ENVIRONMENTAL ISSUES IN GEOGRAPHY (3)
Three hours lecture per week.
Prerequisite: ESRM 100 or Consent of Instructor
The purpose of this course is to introduce the fundamental concepts of environmental law and policy and familiarize students with the various types of legal mechanisms used to protect the environment. A practical grounding in the basic legal concepts central to environmental law and how laws have been applied at the local, state, national, and international level will be gained. Students will also explore the purpose and function of some of
the larger environmental institutions and their relationships with the public, business, and the environmental community.

ESRM 332 HUMAN ECOLOGY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
This human ecology course places humans into the environment in historical and global contexts. Discusses systems theory as it applies to human adaptation to the environment. Studies the relations among political power, ideology, and resources, integrating concepts from ecology with those from social sciences. Theories and forecasts of human population growth and migration among regions and cultures. Social and environmental impacts of population and age distribution. Natural resource constraints on growth. Topics from land development, resource planning, environmental quality, politics, economic growth, conflicts and wars.
Same as ANTH 332
GenEd: D, INTD

ESRM 340 POLITICS AND THE ENVIRONMENT (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Exploration of environmental politics in both the international and domestic contexts.
Same as POLS 340
GenEd: D, INTD

ESRM 341 THE NATIONAL PARK (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary, in-depth study of one or more units of the National Park Service from a variety of perspectives including Political Science, Public Administration, and Environmental Science and Resource Management. The course analyzes how conservation issues and practices, administrative and policy processes and interpretive (educational) programs work within the context of a national public resources agency. Each term this course will focus on one or more park unit in the region.
Same as POLS 341
GenEd: D, INTD

ESRM 342 ENVIRONMENTAL HISTORY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the historical interaction between humans and their environment. Special attention will be paid to the transformations of environments in the Americas and Europe.
Same as HIST 342
GenEd: D, INTD

ESRM 350 ECOLOGICAL RESTORATION DESIGN AND CONSTRUCTION (4)
Two hours lecture and six hours laboratory per week
Prerequisite: ESRM 352
Introduction to environmental engineering. Students will partake in the planning and construction of ecological restoration projects in Santa Barbara, Ventura, and/or Los Angeles Counties. Particular projects will expose students to restoration procedures and techniques central to the restoration of riparian, wetland, and terrestrial communities.

ESRM 351 FIELD METHODS: MONITORING AND ASSESSMENT (4)
Two hours lecture and six hours laboratory per week
Prerequisite: ESRM 352
Examines a wide range of field assessment methods useful for a variety of environmental characterization efforts such as range of transect, time constraint, trapping, and continuous sampling methodologies. Emphasizes practical skills development with students collecting field data and conducting subsequent analyses and assessment. A lab fee is required.

ESRM 352 THEORY AND PRACTICE OF ECOLOGICAL RESTORATION (3)
Three hours lecture per week
Prerequisite: BiOL 433, ECON 362, ESRM 328 and ESRM 329
This course will introduce students to methods and procedures designed to assess and minimize human impacts on natural systems. Topics to be covered include the components of environmental impact reports and assessments, and the processes involved in preparation and approval. Also addressed will be the issues related to mitigating environmental impacts.

ESRM 410 ENVIRONMENTAL IMPACT ASSESSMENT (3)
Three hours lecture per week
Prerequisite: BIOL 433, ECON 362, ESRM 328 and ESRM 329
This course will introduce students to methods and procedures designed to assess and minimize human impacts on natural systems. Topics to be covered include the components of environmental impact reports and assessments, and the processes involved in preparation and approval. Also addressed will be the issues related to mitigating environmental impacts.

ESRM 428 INTERMEDIATE GEOGRAPHIC INFORMATION SYSTEMS (4)
Three hours lecture per week
Prerequisite: ESRM 328
Study of concepts and techniques of geographic information systems, with special emphasis on environmental issues at multiple spatial scales.

ESRM 440 POPULATION STUDIES (3)
Three hours lecture per week
Prerequisite: SOC 100 and MATH 202
This course focuses on the basic concepts, skills and issues in demography and population studies. It will apply concepts to contemporary population issues such as family demography, urban transition, environmental degradation, and economic development.
Same as SOC 440
GenEd: D, INTD

ESRM 443 ENVIRONMENTAL COMMUNICATION (3)
Three hours lecture per week
Prerequisite: ESRM 100 and COMM 101
Students will analyze and engage in debates about local, national and global environmental disputes. Topics include analysis of risk, community dialogue and strategic environmental messages.
Same as COMM 443
GenEd: D, INTD

ESRM 450 ENVIRONMENTAL CONFLICT RESOLUTION (3)
Three hours lecture per week
Prerequisite: ESRM 100 and COMM 101 or COMM 320
Provides practical experience in negotiation and mediation techniques within the context of complex environmental and public policy disputes.
Same as COMM 450, POLS 450
ESRM 462  COASTAL AND MARINE RESOURCE MANAGEMENT (4)
Three hours lecture and two hours activity per week
Prerequisite: BIOL 433, ESRM 200 and ESRM 329
Provides an introduction to marine provinces, physical and biological oceanography, threats to the marine environment across various temporal and spatial scales and various policies and programs to improve resource management.

ESRM 463  WATER RESOURCES MANAGEMENT (4)
Three hours lecture and two hours activity per week
Prerequisite: BIOL 433, ESRM 200 and ESRM 329
Water management principles focusing on surface and ground water hydrology; water conservation, watershed development; water quality measurement and monitoring; water and wildlife/fisheries; and water conflicts.

ESRM 464  LAND USE PLANNING AND OPEN SPACE MANAGEMENT (4)
Three hours lecture and two hours activity per week
Prerequisite: BIOL 433, ESRM 200 and ESRM 329
Examines various approaches to land use planning at the municipal, state, national, and international level focusing on the role of land use planning in managing open space and protected area lands within and adjacent to urban areas.

ESRM 482  ISSUES IN ENVIRONMENTAL PLANNING AND RESOURCE MANAGEMENT (3)
Three hours seminar per week
Prerequisite: BIOL 433, ECON 362 and ESRM 329
Selected issues in resource development derived from current resource policy changes, or other emerging topics of interest.

ESRM 483  ISSUES IN GLOBAL RESOURCE MANAGEMENT (3)
Three hours seminar per week
Prerequisite: Senior Standing or Consent of Instructor
Selected issues in global resource management. Topics may include climate change, ocean management, desertification, air pollution, ozone depletion, patterns of consumption, water pollution, water allocation, international policy or legislative instruments, or other topics as appropriate.

ESRM 490  SPECIAL TOPICS (3)
Three hours seminar per week
Prerequisite: Consent of Instructor
In-depth analysis of current topics in environmental science and resource management. Topics vary each semester.

ESRM 491  CAPSTONE PREPARATION (1)
Two hours activity per week
Prerequisite: Senior standing in the Environmental Science and Resource Management major
Research and develop a proposal for an ESRM project. Repeatable up to 2 units.

ESRM 492  SERVICE LEARNING/INTERNSHIP (3)
Six hours per week
Prerequisite: Consent of Instructor
Individual internship through service learning. Repeatable up to 6 units.
Graded: Credit/No Credit

ESRM 494  INDEPENDENT RESEARCH (1-3)
Variable hours per week
Prerequisite: Consent of Instructor
Individual research on topic selected by the student and faculty mentor. Repeatable.
Graded: Credit/No Credit

FIN 300  BUSINESS FINANCE (3)
Three hours lecture per week
Prerequisite: ACCT 220, MATH 140 or MATH 150
Principles of planning, procuring, and controlling short term and long-term financial resources of business organizations. Topics include: cash and capital budgeting, debt and equity markets, security evaluations, cost and structure of capital.

FIN 321  PUBLIC BUDGETING (3)
Three hours lecture per week
Examines the major concepts of public budgeting and finance in the United States. Key topics of study include: expenditure estimation, revenue forecasting, capital budgeting, budget reform and financial management. The politics that characterizes the budgetary process will be emphasized throughout.
Same as POLS 321

FIN 410  FINANCIAL MARKETS AND INSTITUTIONS (3)
Three hours lecture per week
Prerequisite: FIN 300
Broadly covers the operations, mechanics, and structure of the U.S financial system. Provides an in-depth discussion of selected topics critical to financial management.

FIN 411  CORPORATE FINANCE MANAGEMENT (3)
Three hours lecture per week
Prerequisite: FIN 300
Provides an in-depth coverage of key concepts and theoretical principles of modern corporate finance, including analytical tools necessary for managerial decision making.

FIN 412  INTERNATIONAL FINANCIAL MANAGEMENT (3)
Three hours lecture per week
Prerequisite: FIN 300
Introduction to the multinational financial environment and management. Focuses on foreign exchange markets, foreign exchange risk management, international working capital management, foreign investment analysis, international capital budgeting, international diversification, cost of capital and capital structure of the multinational firm and political risk management.
FIN 413 INVESTMENT ANALYSIS (3)
Three hours lecture per week
Prerequisite: FIN 300
Introduction to different investment instruments and strategies along with the securities available to the investor. Explores types of markets, market indicators, investment banking, types of orders and securities markets regulation.

FIN 421 PUBLIC FINANCIAL MANAGEMENT (3)
Three hours lecture per week
Prerequisite: FIN 300
Examines principles, methods and concepts of financial management used in non-profit sector. Disciplines of accounting, budgeting, operations control, auditing and management are integrated into comprehensive financial systems. Theoretical design and practical implementation issues are explored.

FIN 490 SPECIAL TOPICS (3)
Three hours seminar per week
Prerequisite: Consent of Instructor
In-depth analysis of current topics in finance. Topics vary each semester, repeatable up to 2 units.

FIN 492 SERVICE LEARNING/INTERNSHIP (3)
Six hours activity per week
Prerequisite: Consent of Instructor
Individual internship through service learning. Repeatable.
Graded: Credit/No Credit

FIN 497 DIRECTED STUDY (1-3)
Variable hours per week
Prerequisite: Consent of Instructor
Individual contracted study on topics or research selected by the student and faculty mentor. Repeatable up to 2 units.
Graded: Credit/No Credit

Freedom and Justice Studies

FJS 210 ETHICS FOR A FREE WORLD (3)
Three hours lecture per week
Students will explore concepts and practices of ethics, freedom, and justice by comparing how these have been theorized and practiced in relationship to each other across at least two times periods and cultures. Starting from a foundation in philosophy and developing an interdisciplinary lens, this class examines these foundational concepts and practices especially as engaged across the fields of identity and civil rights-based studies (including religious, ethnic, women’s, gender, sexuality, and disability studies, etc.)
Same as PHIL 210

FJS 340 EXPLORING FREEDOM AND JUSTICE (3)
Three hours lecture per week
Starting from philosophical understandings of identity, community, and democracy the course focuses on themes such as slavery and emancipation; migration, exile, and diaspora; violence and reconciliation. Using an interdisciplinary lens that engages fields as wide-ranging as economics and literature, students will engage in trans-historical, cross-cultural exploration of freedom and justice and the various ways different peoples have attempted to put them into practice. Students will engage tools to analyze the relationship between these concepts and the structure of identity and its material effects.

Gender Studies

GEND 433 GAY/LESBIAN/BISEXUAL/TRANSGENDER STUDIES (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or Equivalent
Introduction to the field of gay/lesbian/bisexual/transgender studies through the reading of literature and theory.
Same as ENGL 433
GenEd: C2, D, INTD

Geography

GEOL 121 PHYSICAL GEOLOGY (4)
Three hours lecture per week and three hours laboratory per week
This course examines the basic composition of the Earth and the dynamic forces which have altered the Earth’s surface through time, including sedimentation, erosion, volcanism, earthquakes, plate tectonics, and mountain-building. Students will understand the immense processes affecting their environment.
GenEd: B1

GEOL 122 HISTORICAL GEOLOGY (3)
Three hours lecture per week
This course focuses upon the geological history of the Earth and the Solar System from the origin of the cosmos to the present, tracing the evolution of the continents and ocean basins, and the evolution of plants and animals through time. Surveys events in Earth’s past of relevance to present environmental issues.
GenEd: B1

GEOL 300 FOUNDATIONS OF EARTH SCIENCE (4)
Three hours lecture and three hours laboratory per week
Prerequisite: PHSC 170
Principles of geology, hydrology, oceanography, meteorology, and astronomy for the elementary school teacher.

GEOL 310 CALIFORNIA GEOLOGY (3)
Three hours lecture per week
Prerequisite: GEOL 121, GEOL 122
Focuses on California’s geologic history, provinces, and resources and will feature field trips to a number of the provinces.

GEOL 321 ENVIRONMENTAL GEOLOGY (4)
Three hours lecture and three hours laboratory per week
Interrelationships between human and natural geologic hazards: tsunami, earthquakes, landslides, subsidence, volcanoes. Explores environmental impact of resource extraction and usage, the importance of understanding the geologic processes and landscape in land use planning, and the means of using geology to minimize conflicts in resource management and disaster preparation.
GenEd: B1
GEOL 322 SEDIMENTOLOGY, STRATIGRAPHY, GROUNDWATER HYDROLOGY (4)
Three hours lecture and three hours lab per week
Prerequisite: GEOL 121
Focuses on the basics of groundwater and the sedimentary materials in which it exists and moves. It begins with sediments and sedimentary facies, continues with determination of aquifer morphology from well data, then embarks on physical hydrogeology. Laboratory exercises and field trips will provide hands-on experience in sedimentary section characterization and water well methods.

Global Studies

GLST 200 INTRODUCTION TO GLOBAL STUDIES (3)
Three hours lecture per week
An introduction to globalization and its effect on governance, economic success, culture, the environment, and other global issues of human concern.
GenEd: D

GLST 433 GLOBAL CITIES (3)
Three hours lecture per week
Prerequisite: Minimum two semesters of beginning college-level foreign language or equivalent proficiency.
Introduces students to interdisciplinary issues faced by global cities. Offers a range of transnational topics, including but not limited to historic and contemporary issues of migration, racism and xenophobia, environmental degradation, global culture, movement of capital, and national identity. Specific global cities and related content to be designed by the instructor(s). Repeatable up to 6 units.
GenEd: C3B, D, INTD

History

HIST 211 WORLD CIVILIZATIONS: ORIGINS TO 1500 (3)
Three hours lecture per week
This survey examines world civilizations from the Neolithic era to the European colonization of the Western Hemisphere. Topics may include, but are not limited to, the development and growth of religions, commerce, and other cultural institutions.
GenEd: D

HIST 212 WORLD CIVILIZATIONS: SINCE 1500 (3)
Three hours lecture per week
This survey examines world civilizations from both regional and global perspectives. Topics may include, but are not limited to, the development and growth of religions, commerce, and other cultural institutions.
GenEd: D

HIST 270 THE UNITED STATES TO 1877 (3)
Three hours lecture per week
Survey of the political, social, economic as well as cultural institutions of the United States from the pre-colonial era to reconstruction. Meets Title V U.S. History and constitution requirement.

HIST 271 THE UNITED STATES SINCE 1877 (3)
Three hours lecture per week
Survey of the political, social, economic as well as cultural institutions of the United States from reconstruction to the present. Meets Title V U.S. History and constitution requirement.

HIST 272 CONSTITUTIONAL HISTORY OF THE U.S. (3)
Three hours lecture per week
Examines the origins of American constitutional thought and practice, the framing and adoption of the Constitution and the Bill of Rights, the establishment of the U.S. Supreme Court and of its power of judicial review. Topics include: major decisions by the Supreme Court in history and their impacts on society, and California state constitution and government. Meets Title V U.S. History and constitution requirement.

HIST 273 THE UNITED STATES TO 1900 (3)
Three hours lecture per week
This course is specially designed for students in the Teaching and Learning Option of the Liberal Studies Program. Examines the history of the United States from the colonial origins to the emergence of a modern industrial system. Emphasis is given to the major social, political, and cultural events during the period from the early 1600's to 1900, such as the encounters between Native Americans and European explorers, the growth of English colonies, the American Revolution, the transformation of American society after Independence, slavery, abolition, the Civil War, and the development of mass immigration and industrialization. Meets Title V U.S. History and constitution requirement.

HIST 274 THE HISTORIAN'S CRAFT (3)
Three hours lecture per week
Prerequisite: Sophomore Standing or Consent of Instructor
This is a survey course on the writing of history. Utilizes and analyzes library resources, oral interviews, and other material in the writing of history.
GenEd: D

HIST 310 HISTORY OF THE MEDITERRANEAN (3)
Three hours lecture per week
Examines the history of the Mediterranean over the last 3000 years. Special attention will be paid to the Greco-Roman heritage, the impact of Christianity and Islam, the rise of Italian merchants, and the tangle between Spain and the Ottoman Empire over the control of the sea.

HIST 316 HISTORY OF MEDIEVAL EUROPE 800-1400 (3)
Three hours lecture per week
A history of Europe from the Carolingian Empire through the high Middle Ages. Investigates the conflict and interaction of Roman, Christian, Islamic, and Germanic cultures, religions, philosophies, and institutions.

HIST 317 RENAISSANCE AND REFORMATION EUROPE 1350-1648 (3)
Three hours lecture per week
Examines the Renaissance and Reformations in European history. Topics include the crises of the late medieval church; humanism in art and literature; the religious developments of the Protestant and Catholic Reformations; the age of civil and religious wars.

HIST 318 THE AGE OF REVOLUTION IN EUROPE 1648-1871 (3)
Three hours lecture per week
A study of significant issues in European history from 1648 to 1871. The course focuses on developments in political theory, natural science and economics as well as the tensions in the old social order which helped instigate the French Revolution, the Napoleonic Wars, and the revolutions of 1848.

HIST 319 EUROPEAN HISTORY, 1871-1945 (3)
Three hours lecture per week
Examines the development of European history from the unification of Germany to the end of the Second World War. Special attention will be paid to the development of powerful ideologies (e.g., communism, fascism), socio-economic change, and imperial expansion.
HIST 330  HIST 331  HIST 332  HIST 333  HIST 334  HIST 335  HIST 336  HIST 337  HIST 338  HIST 339  HIST 340  HIST 341

Three hours lecture per week
Examines the development of European history to the present day. Special attention will be paid to the reconstruction of the continent following the war, the implications of the cold war and the collapse of the Soviet Union, and the emergence of the European Union.

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A survey of scientific history from 2000 BCE to the present that considers science as a set of made, lost and found ideas and technologies. Fields of inquiry are examined by tracing their historical and cultural trajectories through the African, Arab, Babylonian, Chinese, Egyptian, Greek, Indian, Incan, Japanese, Mayan and Sumerian worlds.
Same as CHEM 330
GenEd: B1, INTD

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
The history of dance in relation to historical, socio, and political influences, in the global and western traditions, as well as the history of dance productions. Includes formal productions and performances as well as other types of dance, such as ballroom, ceremonial, or folk dancing. Dance in history is contextualized within multicultural perspectives.
Same as PADA 332
GenEd: C1, INTD

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An exploration of the Southern California Chicano/a culture focusing on the genesis, vitality and diversity represented in the painting, sculpture and artistic traditions of Mexican American artists. Historical movements, politics, cultural trends and Mexican folklore underlying the development of this dynamic style of art will be investigated within a variety of contexts.
Same as ART 333, CHS 333
GenEd: C3B, D, INTD

Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Ours is a region made up of many cultures which produce the one we call Southern California. In this class we will take a historical approach to study of the narratives - oral, written and filmed - of Southern California. Course work may also include obtaining oral histories and compiling them.
Same as ENGL 334
GenEd: C2, D, INTD

Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the portrayal of ethnic groups from an interdisciplinary perspective that includes, but is not limited to, the literary, historical, and anthropological modes of analysis. The course highlights the ways in which artistic works have shaped the intellectual landscape of the United States as they relate to ethnic peoples.
Same as ART 335, ENGL 335
GenEd: C2, C3B, INTD

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Music in its historical context, with special emphasis on the role of music in culture. Historical periods may include the music of the Medieval church, the evolution of opera, the American musical theatre, and jazz, as well as historical and contemporary world music. Examines the societal forces that helped to shape classical and popular musical styles, and how music can and has influenced culture. Music in history is contextualized within multicultural perspectives. Formerly known as PAMU 363, changed February 2009.
Same as PAMU 337
GenEd: C1, C8, INTD

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A survey of the history of theatrical productions. Includes formal productions and performances as well as other types of theatre or dramatization, such as political posturing, i.e., a ruler’s rise to power in historical reality as well as performed or recorded later in theatre, music, and history. Theatre in history is contextualized within multicultural perspectives.
Same as PATH 338
GenEd: C1, C3B, INTD

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines from a broad historical perspective a variety of institutions and modernization processes of the Chinese financial market, economic environment, and business practices.
Same as BUS 339
GenEd: D, INTD

Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the historical interaction between humans and their environment. Special attention will be paid to the transformations of environments in the Americas and Europe.
Same as ESRM 342
GenEd: D, INTD
HIST 349  HISTORY OF BUSINESS AND ECONOMICS IN NORTH AMERICA (3)
Three hours of lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the growth and development of the economies of North America since colonial times. Addresses social, ethical, economic and management issues during the development of Canada, the United States, and Mexico. Analyzes the business principles underlying the growth and development of the economies.
Same as ECON 349, BUS 349
GenEd: D, INTD

HIST 350  CHICANA/O HISTORY AND CULTURE (3)
Three hours lecture per week
Examines the historical settlement and culture of Chicanas/os in the United States to the present. Particular attention is given to the relationship of the Chicanas/o experience to the economic, political, and social institutions of the United States. These institutions are examined in relation to historical movements and developments that span over several centuries.
Same as CHS 350

HIST 351  HISTORY OF AFRICAN AMERICANS (3)
Three hours lecture per week
Examines the experience of Africans and African Americans in America from the colonial period through the twentieth century.
GenEd: C3B

HIST 360  HISTORY OF COLONIAL LATIN AMERICA (3)
Three hours lecture per week
Examines the social, political, economic and cultural foundations of colonial Latin America from the Conquest in the fifteenth century to independence in the early nineteenth century.
GenEd: D

HIST 361  HISTORY OF MODERN LATIN AMERICA (3)
Three hours lecture per week
Examines the social, political, economic and cultural foundations of modern Latin America in countries in the nineteenth and twentieth centuries.
GenEd: D

HIST 365  THEMES IN WORLD HISTORY (3)
Three hours lecture per week
Explores the major trends in global approaches to history. These include anthropological, diaspora, environmental, and world systems approaches. Topics will vary by semester. Repeatable up to 6 units.
GenEd: D

HIST 366  OCEANS OF WORLD HISTORY (3)
Three hours lecture per week
Discusses the main approaches to world history through the lens of the Earth’s three major oceans: Atlantic, Indian, and Pacific.

HIST 369  CALIFORNIA HISTORY AND CULTURE (3)
Three hours lecture per week
Examines the cultural and institutional development of California prior to the 16th century and since.

HIST 371  THE FOUNDING OF THE UNITED STATES (3)
Three hours lecture per week
Study of the Revolutionary era and its political and social influence on the constitution.

HIST 372  UNITED STATES INDUSTRIALIZATION AND PROGRESSIVISM (3)
Three hours lecture per week
Examines the nation’s geographic and industrial expansion. Social and political problems up to the end of WWI will also be examined.

HIST 373  AMERICAN LABOR HISTORY (3)
Three hours lecture per week
This is an in-depth study of the individual, group, and organized experience of the American working people from colonial time to the twentieth century.

HIST 374  UNITED STATES SINCE 1945 (3)
Three hours lecture per week
Examines the cultural, social, and political transformation of the nation after World War II. Among the various topics of the course, specific attention is given to how international affairs influenced domestic life and society.

HIST 380  HISTORY OF THE PACIFIC ISLANDS (3)
Three hours lecture per week
Examines the history of the Pacific from human settlement to the present. Special attention will be paid to cross-cultural encounters, religious conversion, imperialism, and post-colonial realities in the region. The course employs interdisciplinary methods borrowed from anthropology, archaeology, and linguistics.

HIST 391  TRADITIONAL CHINA (3)
Three hours lecture per week
This course studies the social, political, economic, and cultural traditions in China from ancient times to the end of the Ming Dynasty.

HIST 392  MODERN CHINA (3)
Three hours lecture per week
This course explores the social, political, economic, and cultural changes in China from to the rise of the Ch‘ing Dynasty to 1949.

HIST 393  CONTEMPORARY CHINA (3)
Three hours lecture per week
This course examines the social, political, economic, and cultural developments in China since 1949.

HIST 394  TRADITIONAL JAPAN (3)
Three hours lecture per week
This course studies the social, political, economic, and cultural traditions in Japan from ancient times to the fall of the Tokugawa regime.

HIST 395  MODERN JAPAN (3)
Three hours lecture per week
This course studies the social, political, economic, and cultural changes in Japan from the Meiji Restoration to the present.

HIST 396  EAST ASIA: THEN AND NOW (3)
Three hours lecture per week
This course examines the social, political, economic, and cultural foundations in China, Korea, and Japan. Emphasis is given to the profound political, economic, and other transformations taking place in these countries in the twentieth century.

HIST 401  UNITED STATES IMMIGRATION HISTORY, 1840-1945 (3)
Three hours lecture per week
Examines the experiences and contributions of immigrant groups in the United States. Constitutional, political, and social considerations of United States immigration history frame the content study of this course.

HIST 402  SOUTHERN CALIFORNIA CHICANA/O HISTORY AND CULTURE (3)
Three hours lecture per week
Examines the cultural, economic, political, and social experience of Mexicanos of the region from the
U.S. conquest to the 1990’s. Particular attention is given to the interactions of this community with other ethnic and racial groups. The course utilizes literature, film, and art as mediums of learning about the culture and history of Chicanos.

HIST 414
GenEd: D

HIST 412
Three hours lecture per week
This course explores the role of women and gender in human experience. Topics may vary. They include, but are not limited to, gender and work, gender and religion, gender in literature, gender and race, gender and sexuality, gender and family, gender and social change, and constructions of masculinity and femininity. Fulfills the thematic category of the History major.

HIST 415
SOCIETY AND RADICALISM (3)
Three hours lecture per week
This course studies the emergence of different styles of protests and radicalism in the modern world. Topics include, but are not limited to, radical thinkers, theories, philosophies, organizations, strategies, movements, as well as the roles and influences they had in society.

HIST 420
HISTORY OF MEXICO (3)
Three hours lecture per week
Examines the social and political history of Mexico from the period of European contact to the present. The modern phase of Mexico’s history is examined in relation to the overall development of North America.

HIST 421
REVOLUTIONARY MEXICO, 1876-1930 (3)
Three hours lecture per week
Examines the social and political causes and consequences of the Mexican Revolution. Particular attention is also given to the influence and intervention of the United States of America in Mexico’s economic and domestic affairs.

HIST 430
TRADITION AND TRANSFORMATION: LITERATURE, HISTORY, AND CULTURAL CHANGE (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or HIST 280 or Consent of Instructor
Bringing literature and history together, this course exposes students to a diverse range of work in art, literature, films, and history. It cultivates the students’ intellectual understanding of the topic from both a cross-disciplinary and a cross-cultural perspective. It emphasizes reading, writing, analytical skills, and communication skills. Topics and themes may vary under the same title. Repeatable up to 2 units.

HIST 436
PSYCHOLOGY AND HISTORY OF EAST ASIAN WARRIOR CULTURES (3)
Three hours lecture per week
Prerequisite: Upper Division Standing or Consent of Instructor
Examines the psychological and historical roots of warrior cultures in East Asia. Characteristics such as duty, enlightenment, honor, loyalty, and discipline will be examined in the context of the individual and group psychology of warrior cultures throughout history. Psychological and historical conceptions of violence, aggression, and strategy will also be explored. Students will be encouraged to relate values derived from Asian warrior cultures to their own lives, while reflecting on the applicability of these ideas to modern life.

HIST 442
THE AFRICAN DIASPORA (3)
Three hours lecture per week
Examines the dispersal of Africans to other continents over the last two thousand years. Special attention will be paid to the African slave trade, identity formation, and nationalism. The course employs interdisciplinary methods borrowed from anthropology, art history, linguistics, and literature.

HIST 445
CHICANO CHILD AND ADOLESCENT (4)
Three hours lecture and two hours service learning per week
Examines the socio-cultural experiences and historical political realities pertinent to the daily lives of Chicano, Mexican-origin, and/or Latino children and adolescents. Focus is on historical periods, events, and policies affecting youth populations, its demography, migration and immigration patterns. Consideration of contemporary issues and effective educational and cultural practices will be used as a resource for teacher knowledge and pertinent classroom projects. Field study requirement involves working in a child-centered setting or related service project.

HIST 451
HISTORY OF AFRICA SINCE 1800 (3)
Three hours lecture per week
Examines the social, political, economic, and cultural history of Africa since 1800, from the era of the slave trade, through the imposition of colonial rule, to the establishment of modern nation states.

HIST 452
HISTORY OF SOUTHERN AFRICA SINCE 1600 (3)
Three hours lecture per week
Examines the social, political, economic, and cultural history of southern Africa from the pre-colonial era, through the establishment of a permanent European presence, to the establishment of modern nation states.
HIST 470  PEOPLE AND EVERYDAY LIFE IN EARLY AMERICA (3)
Three hours lecture per week
The course focuses on those ordinary men and women whose daily works and activities made what American society was. It covers the time span from the 1600's to the early 1800's. Topics include, but not limited to, popular religion, work ethics and labor systems, family and marriage, festivities, leisure, and games, law and order, mass-control policies, crime and punishment, trades, craftsmanship, farming and industries, issues of gender, race, and ethnicities, early popular unrest, collective actions, and protests.

HIST 490  SPECIAL TOPICS (3)
Three hours lecture per week
Investigates a prominent topic of historical interest. Topics vary by semester. Repeatable by topic.

HIST 491  HISTORIOGRAPHY (3)
Three hours lecture per week
Prerequisite: HIST 280, Senior Standing, or Consent of Instructor
This course surveys major historians and their theoretical and methodological approaches to the discipline from the nineteenth century to the present day. The course is designed to update students to the most influential theories in the study of history. Included in this survey are theoretical approaches based on the writings of Braudel, Foucault, Freud, and Marx.

HIST 492  INTERNSHIP/SERVICE LEARNING (1-3)
Provides students with "hands-on" experience and/or Service Learning opportunities in the historical field.
Student Option: Graded or Credit/No Credit

HIST 493  INDEPENDENT RESEARCH (1-3)
Prerequisite: Junior Standing and Consent of Instructor
Independent reading and/or research project under the direction of a faculty member. Repeatable.
Student Option: Graded or Credit/No Credit

HIST 497  DIRECTED STUDIES (1-3)
Prerequisite: Junior Standing and Consent of Instructor
Exploring an important historical topic under the direction of a faculty member. Significant written reports expected. Topics vary and repeatable.
Student Option: Graded or Credit/No Credit

HIST 499  CAPSTONE IN HISTORY (1-3)
One to three hours per week
Prerequisite: Upper Division Standing as a History Major or Consent of the Program. Under the supervision of a faculty advisor, students complete a project approved by the faculty advisor which will integrate prior course work with the general expectations of the Program. Completed projects may be disseminated to the campus community.
Student Option: Graded or Credit/No Credit

Information Technology

IT 151  DATA STRUCTURES FOR IT (3)
Two hours of lecture and three hours lab per week
Prerequisite: COMP 105 or Equivalent
Introduction to data structures and the algorithms that use them. Review of composite data types such as arrays, records, strings and sets. Topics include: abstract data types, stacks, queues, linked lists, trees and graphs, recursion, and time complexity. No credit given towards Computer Science Degree.

IT 152  PROGRAMMING FOR HEALTH INFORMATICS (4)
Three hours lecture and three hours lab per week
Prerequisite: COMP 151 or IT 151
Introduction to computer programming for Health Informatics professionals. Design and implementation of data structures and algorithms for solving system, network, and security problems in management and administration of Health Information Systems.

IT 221  UNIX SYSTEM PROGRAMMING I (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 151 or IT 151
Fundamentals of the UNIX operating system, including the command line interface (CLI), shell commands and related utilities. C will be covered at an accelerated pace, appropriate for students who already know another programming language. Fundamental C libraries, and basic UNIX system calls, will be covered. Principles of the program development cycle as applied to a UNIX environment will also be presented.
Same as COMP 221

IT 262  COMPUTER ORGANIZATION AND ARCHITECTURE FOR IT (3)
Three hours lecture per week
Prerequisite: COMP 162

IT 380  WEB PROGRAMMING (3)
Three hours lecture in the lab per week
Prerequisite: COMP 151 or IT 151 and MATH 300 or MATH 301
This course provides an overview of the many languages and techniques used in web programming. This includes Java, JavaScript, PHP, Python, Perl, ASP, and ASP. This course focuses on building applications that are useful to IT professionals, such as applications for network security, maintenance and surveillance.

IT 400  eCOMMERCE (3)
Three hours of lecture in the lab per week
Prerequisite: IT 262
Using web programming to extract information, using intelligent search engines, artificial intelligence techniques (expert systems, agents). Topics include: data mining, data warehousing, natural language processing, decision support systems, and intelligent agents.

IT 401  WEB INTELLIGENCE (3)
Three hours of lecture in the lab per week
Prerequisite: IT 402
Using web programming to extract information, using intelligent search engines, artificial intelligence techniques (expert systems, agents). Topics include: data mining, data warehousing, natural language processing, decision support systems, and intelligent agents.

IT 402  ADVANCED WEB PROGRAMMING (3)
Three hours of lecture in the lab per week
Prerequisite: COMP 151 or IT 151 or IT 152
Covers a variety of programming languages, including Java, C, C++, Perl, ASP, and PHP. This course focuses on building applications that are useful to IT professionals, such as applications for network security, maintenance and surveillance.
IT 420  DATABASE THEORY AND DESIGN (3)
Two hours lecture and three hours lab per week
Prerequisite: MATH 300 or MATH 301 and COMP 151 or IT 151
Topics include: database structure including: structure definition, data models, semantics of relations, and operation on data models; database schemas: element definition, use and manipulation of the schema; elements of implementation.; algebra of relations on a database; hierarchical data bases. Discussion of information retrieval, reliability, protection and integrity of databases.
Same as COMP 420

IT 421  UNIX SYSTEM PROGRAMMING II (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP/IT 221
The use of Unix operating environment including command line Unix utilities, vi and emacs editors, regular expressions, text processors and Unix shells, fundamental Perl and its application in programming CGI. Writing in C utilities that control the operating environment through the use of system calls. Developing programs using Unix facilities.
Same as COMP 421

IT 424  COMPUTER SYSTEM SECURITY (3)
Three hours lecture in the lab per week
Prerequisite: COMP 151 or IT 151 required, COMP 362 or COMP/IT 421 recommended
Same as COMP 424

IT 429  COMPUTER NETWORKS (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 232 and COMP 362 or COMP 221 and COMP 421
Basic software design and analysis considerations in networking computers into coherent, cooperating systems capable of processing computational tasks in a distributed manner. Network topology, routing procedures, message multiplexing and process scheduling techniques will be discussed.
Same as COMP 429

IT 464  COMPUTER GRAPHIC SYSTEMS AND DESIGN I (3)
Two hours lecture and three hours lab per week
Prerequisite: COMP 350 and MATH 240 or COMP 221 and MATH 301
Topics include: fundamental concepts of computer graphics; graphics devices; graphics languages; interactive systems; applications to art, science, engineering and business; trade-offs between hardware devices and software support.
Same as COMP 464

IT 490  SPECIAL TOPICS FOR IT (3)
Three hours of lecture per week
Prerequisite: Senior standing in the BSIT program
The course addresses current issues in Information Technology. Specialized topics will be studied. Repeatable by topic.

IT 491  CAPSTONE PREPARATION (1)
Two hours activity per week
Prerequisite: COMP 362 and Senior Standing in the Information Technology Program
Research and develop a proposal for a significant capstone project under faculty supervision.

IT 492  INTERNSHIP (1-3)
Two to six hours activity per week
Prerequisite: Upper-division standing and Program approval of written proposal
Supervised work and study in an industrial or scientific setting involving development of degree-related skills.

IT 499  CAPSTONE PROJECT (3)
Three hours independent study per week
Prerequisite: IT 491
Design, implement and present a significant capstone project under faculty supervision.
**Library**

**LIB 211**
**DISCERNING INFORMATION IN AN INTERCONNECTED WORLD (3)**
Three hours lecture per week
Provide students with strategies to help them make sense of our information-saturated world. Students should critically assess information, differentiate the perspectives of information seekers from providers and evaluate our sources of knowledge through issues such as surveillance, surrogates, privacy, information seeking behavior, information control, intellectual property, digital democracy, and emerging information communication technologies.

Student Option: Graded or Credit/No Credit
Same as: COMM 211
GenEd: A3, D

**LIB 344**
**THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)**
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A study of university, school (K-12), public, and special libraries from business, economic, library science, and educational perspectives. Analyzes how these perspectives are linked within library practices. A study of local libraries and field trips.

Same as: BUS 344, ECON 344, EDUC 344
GenEd: D, INTD

**Liberal Studies**

**LS 110**
**COMPUTER LITERACY FOR EDUCATORS (3)**
Three hours lecture per week
An introduction to computer systems, including web applications, word processing, spreadsheets, database emphasizing their use in educational settings.

Same as: COMP 110
GenEd: B4

**LS 494**
**INDEPENDENT RESEARCH (1-3)**
Prerequisite: Upper-division standing
Students design and implement a study project in conjunction with a faculty member. Repeatable.

**LS 497**
**DIRECTED STUDIES (1-3)**
Prerequisite: Upper-division standing
Provides student credit for curricular activities under the direction of a Liberal Studies faculty member. Repeatable.

**LS 499**
**CAPSTONE PROJECT (3)**
Prerequisite: Senior standing
In conjunction with a faculty advisor, students design and complete a project that integrates prior course work and disseminate the project to the campus community.

**Mathematics**

**MATH 4**
**EARLY START BASIC ALGEBRA SKILLS (1)**
One hour seminar per week
Building intermediate algebraic skills. A review of fundamental concepts of algebra. This course is offered Credit/No Credit only. Credit will satisfy 1 unit of the Early Start Requirement. No Credit will not apply toward the baccalaureate degree. Students may retake Entry Level Mathematics (ELM) to obtain a passing score to move to college level mathematics courses.

Graded: Credit/No Credit

**MATH 5**
**EARLY START INTERMEDIATE ALGEBRA SKILLS (1)**
One hour lecture per week
A review of fundamental concepts of intermediate algebra. Problem solving using graphs and linear and quadratic equations. Credit for this course will satisfy the Early Start Requirement. Credit will not apply toward the baccalaureate degree. Students may retake Entry Level Mathematics (ELM) to obtain a passing score to move to college level mathematics courses.

Graded: Credit/No Credit

**MATH 94**
**INTRODUCTION TO ALGEBRA (0)**
Four hours lecture and one hour activity per week
A review of fundamental concepts of arithmetic, geometry and elementary algebra. Students who earn Credit in this course and in MATH 095 satisfy the Entry Level Mathematics (ELM) requirement. This course is offered Credit/No Credit only. Credit will not apply toward the baccalaureate degree but will apply as 5 units of University Credit.

Graded: Credit/No Credit

**MATH 95**
**INTERMEDIATE ALGEBRA (0)**
Four hours lecture and one hour activity per week
Prerequisite: MATH 094 or an appropriate Entry Level Mathematics Score
A review of concepts of geometry and intermediate algebra with applications. Students who earn Credit in this course satisfy the Entry Level Mathematics (ELM) requirement. This course is offered Credit/No Credit only. Credit will not apply toward the baccalaureate degree but will apply as 5 units of University Credit.

Graded: Credit/No Credit

**MATH 101**
**COLLEGE ALGEBRA (3)**
Three hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Examination
Topic include: basic set theory, number systems and their algebraic properties; systems of equations and inequalities; basic analytic geometry, matrix algebra and elementary functions; and problem solving.

**MATH 105**
**PRE-CALCULUS (4)**
Four hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Examination
Topics include: number systems and their algebraic properties; systems of equations and inequalities; basic analytic geometry of lines and conic sections; elementary functions including polynomial, rational, exponential, and logarithmic, with emphasis on trigonometric functions, fundamental theorem of algebra and theory of equations; polar equations and curves.

GenEd: B3

**MATH 108**
**MATHEMATICAL THINKING (3)**
Three hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Examination or MATH 095
Presents the diversity of mathematics and the spirit in which it is employed in various situations, including different problem-solving strategies, inductive-deductive reasoning, paradoxes, puzzles and mathematical modeling. The contributions of various cultures and influences of other disciplines to mathematical thinking are studied.

GenEd: B3

**MATH 137**
**STRATEGIES AND GAME DESIGN (3)**
Three hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Examination
This course introduces mathematics to the analysis of games. The principles of game theory including graphs, logic, algebra, geometry and probability are connected to game design, computer graphics and game strategies in various contexts. Applicable algorithms and techniques are demonstrated through appropriate computer gaming examples.

GenEd: B3
MATH 140  CALCULUS FOR BUSINESS APPLICATIONS (3)
Three hours lecture per week
Prerequisite: A passing score on the Calculus Placement Examination or MATH 101 or MATH 105
An integrated course in analytic geometry and calculus in the context of business and economics applications. Functions, limits, derivatives, integrals and mathematical modeling are used in problem solving in decision making context.
GenEd: B3

MATH 150  CALCULUS I (4)
Four hours lecture per week
Prerequisite: Passing scores on the Calculus Placement Examination or MATH 105
A course in analytic geometry and calculus. Topics include: elementary and transcendental functions, their properties, limits, derivatives, integrals and mathematical modeling.
GenEd: B3

MATH 151  CALCULUS II (4)
Four hours lecture per week
Prerequisite: MATH 150
Topics include: differentiation, integration, sequences, infinite series, and power series.

MATH 201  ELEMENTARY STATISTICS (3)
Three-hour lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or Math 105 or MATH 101
Critical reasoning using a quantitative and statistical problem-solving approach to solving real-world problems. Topics include: probability and statistics, sample data, probability and empirical data distributions, sampling techniques, estimation and hypothesis testing, ANOVA, and correlation and regression analysis. Students will use standard statistical software to analyze real world and simulated data.
GenEd: B3

MATH 208  MODERN MATHEMATICS FOR ELEMENTARY TEACHING I- NUMBERS AND PROBLEM SOLVING (3)
Three hours lecture per week
Prerequisite: MATH 101
Current issues of modern math curriculum including abstract thinking and problem solving approaches to teaching. Content covers systems of numeration, nature of numbers and fundamental operations, relations and functions, properties of integers, rational and real numbers, and mathematical modeling. Problem solving strategies and geometric interpretations are stressed. Designed for students intending to teach in K-8. This course is not open to students who have credit for Calculus.
GenEd: B3

MATH 230  LOGIC AND MATHEMATICAL REASONING (3)
Three hours lecture per week
Prerequisite: MATH 151
Introduction to modern deductive logic. Critical thinking and abstract approaches to common language. Includes abstract sets and number sets, relations, prepositional logic, common language cases, and theory of quantification.
GenEd: A3, B3

MATH 240  LINEAR ALGEBRA (3)
Three hours lecture per week
Prerequisite: MATH 151
Topics include: matrices, linear systems of equations, determinants, vectors in 2 and 3 dimensions, eigenvalues, the vector space R^n, linear transformations, introduction to general vector spaces and applications.

MATH 250  CALCULUS III (3)
Three hours lecture per week
Prerequisite: MATH 151 with a grade of C or better
Topics include: functions of several variables, solid analytic geometry, partial differentiation, multiple integrals with applications; vector analysis, and line and surface integrals.

MATH 300  DISCRETE MATHEMATICS (3)
Three hours lecture per week
Prerequisite: MATH 230
Topics include: Sets, algebraic systems, axioms, definitions, propositions and proofs. Combinatorics, graph theory, modular calculus. Coding, coding errors and Hamming codes. Students are expected to write mathematical proofs, and communicate mathematical ideas clearly in written and oral form.

MATH 301  DISCRETE MATHEMATICS FOR IT (3)
Three hours lecture per week
Prerequisite: MATH 208 or Consent of Instructor
Current issues of modern math curriculum including abstract thinking and problem solving approaches to teaching. Content covers systems of geometry and geometric interpretation of real numbers, geometric constructions, mathematical modeling, basic probability and statistics. Problem solving strategies are stressed. Designed for students intending to become elementary school teachers.

MATH 318  MATHEMATICS FOR SECONDARY SCHOOL TEACHERS (3)
Three hours lecture in the computer lab per week
Prerequisite: MATH 301
Content is geometry based, but selected topics from algebra, precalculus, and calculus will be discussed. Designed for students intending to teach. Service learning project required.

MATH 329  APPLIED STATISTICS FOR BUSINESS AND ECONOMICS (3)
Three hours lecture in the lab per week
Prerequisite: MATH 101 or MATH 105
Introduction to modern statistical methods used in business and economic analysis. Topics include: sampling, probability, various distributions, correlation and regression, statistical inferences, hypothesis testing, problem solving and the consequences to underlying economical systems.
GenEd: B3
MATH 330 MATHEMATICS AND FINE ARTS (3)
Three hours lecture in the lab per week
Prerequisite: A passing score on the Entry Level Mathematics examination, or MATH 095
The course is specially designed for students interested in fine arts, with the emphasis on understanding geometric patterns and concepts by self-explorations. The course creates a vast reservoir of art-related examples and hands-on experiences, and will give an innovative mathematical background for future artistic endeavors of students.
GenEd: B3, INTD

MATH 331 HISTORY OF MATHEMATICS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Study of breakthrough mathematical ideas and their creators, including historical and scientific context. Important concepts of current mathematics are studied: inception, development, difficulties, significance and various viewpoints will be presented. Lecture-discussion. At least one significant writing assignment is required.
GenEd: B3, D, INTD

MATH 345 DIGITAL IMAGE PROCESSING (3)
Three hours lecture in the lab per week
Prerequisite: Junior Standing or Consent of Instructor
An introduction to the basic concepts and techniques for digital image restoration and enhancement, analysis, coding and compression. The emphasis is on processes which analyze primarily two-dimensional discrete images represented at the pixel level, including filtering, noise reduction and segmentation. Fourier analysis techniques will be explored. Programming exercises will be used to implement the various processes, and their performance on synthetic and real images will be studied.
Same as PHYS 345, COMP 345
GenEd: B1, B4, INTD

MATH 350 DIFFERENTIAL EQUATIONS AND DYNAMICAL SYSTEMS (3)
Three hours lecture per week
Prerequisite: MATH 250 (may be taken concurrently)

MATH 351 REAL ANALYSIS (3)
Three hours lecture per week
Prerequisite: MATH 240 and MATH 250
Topics include: real number system, metric spaces, norms, function spaces, continuity, differentiability, integrability of functions, sequences and series.

MATH 352 PROBABILITY AND STATISTICS (3)
Three hours lecture per week
Prerequisite: MATH 151
Topic include: data gathering, analysis and display, Validity of sampling methods and statistical conclusions. Probability, conditional probability, Bayes’ Theorem, discrete and continuous random variables and their distribution (e.g., binomial, Poisson, hypergeometric, negative binomial, normal, exponential, gamma), moments, bivariate distributions, transformations of random variables, central and other limit theorems. Bayesian estimates, tests of hypotheses, nonparametric tests, decision theory. Modern computer software applications in statistics.

MATH 354 ANALYSIS OF ALGORITHMS (3)
Three hours lecture per week
Prerequisite: MATH 300 and some computer programming experience
Computer-oriented study of seminumerical and non-numerical algorithms. Topics include: sorting, tree searching, generation of combinatorial structures, algorithm proof techniques, best algorithms, programming complexity, and string matching.

MATH 393 ABSTRACT ALGEBRA I (3)
Three hours lecture per week
Prerequisite: MATH 240 or Consent of Instructor
Groups, rings, and fields, the basic algebraic structures in contemporary mathematics.

MATH 399 MODERN TOOLS IN MATHEMATICS (I)
Three hours laboratory per week
Prerequisite: MATH 250 or MATH 350 or Equivalent
Covers the application of basic algebra, Newtonian physics, computational mechanics, linear algebra, probability, and differential equations to game development, simulations and robotics. Project based class wherein concepts are demonstrated by student teams using game engines, 3D graphics tools, and robots.
GenEd: B3, INTD

MATH 430 RESEARCH DESIGN AND DATA ANALYSIS (3)
Three hours laboratory per week
Prerequisite: PSY/MATH 202 with a grade of C or better or MATH 352
Discussion of experimental design, sampling methods, data collection, and methods of data analysis related to scientific fields.
GenEd: A3, B3, INTD

MATH 437 MATHEMATICS FOR GAMES, SIMULATIONS, AND ROBOTICS (3)
Three hours lecture per week
Prerequisite: MATH 137 or MATH 300 or Consent of Instructor
Covers the application of basic algebra, Newtonian physics, computational mechanics, linear algebra, probability, and differential equations to game development, simulations and robotics. Project based class wherein concepts are demonstrated by student teams using game engines, 3D graphics tools, and robots.
GenEd: B3, INTD

MATH 438 PHILOSOPHY OF MATHEMATICS (3)
Three hours lecture per week
Topics include: infinity, paradoxes, Goedel’s incompleteness theorems, whether mathematics is discovered or invented, why mathematical knowledge requires proof, whether mathematics is objective truth or social convention, and the identification of types of mathematical objects.
GenEd: A3, B3, INTD

MATH 445 IMAGE ANALYSIS AND PATTERN RECOGNITION (3)
Three hours lecture in the lab per week
Prerequisite: PHYS/COMP/MATH 345 or Consent of Instructor
The course addresses the issue of analyzing the pattern content within an image. Pattern recognition consists of image segmentation, feature extraction and classification. The principles and concepts underpinning pattern recognition, and the evolution, utility and limitations of various techniques (including neural networks) will be studied. Programming exercises will be used to implement examples and applications of pattern recognition processes, and their performance on a variety of diverse synthetic and real images will be studied.
Same as PHYS 445, COMP 445
GenEd: B1, B4, INTD

MATH 449 OPERATIONS RESEARCH (3)
Three hours lecture per week
Prerequisite: MATH 329 or MATH 352 or Equivalent
Introduction to applied mathematical methods in management sciences. Topics include: linear programming, managerial optimization methods, duality and equilibrium theorems, the simplex method, development of tools and methods required to make decisions and to solve operational problems in economy, decision and risk analysis, modeling and game theory. Topics of parametric programming, large-scale methods, generalized programming.
computations accurately and efficiently. Students learn how ideas from calculus are used to create algorithms to solve mathematical problems numerically.

GenEd: B3, B4, INTD

MATH 450  PARTIAL DIFFERENTIAL EQUATIONS AND MATHEMATICAL PHYSICS (3)
Three hours lecture per week
Prerequisite: MATH 350 or Consent of Instructor
Topics include: vector field theory and Fourier analysis.

MATH 451  COMPLEX ANALYSIS (3)
Three hours lecture per week
Prerequisite: MATH 240 and MATH 250
Topics include: complex variable, analytic functions, complex integration, power series and conformal mappings.

MATH 452  COMPUTATIONAL BIOINFORMATICS (4)
Four hours lecture in the lab per week
Prerequisite: Programming experience and Statistics, or Consent of Instructor
Basic computational models used in molecular biology will be introduced. Topics include algorithms for string alignments, dynamic programming, structural superposition algorithms, computing with differential information, 3D motifs, Hidden Markov Models, phylogenetic trees, statistical/information techniques for pattern recognition, genetic algorithms.

Same as COMP 452

MATH 480  DIFFERENTIAL AND RIEMANNIAN GEOMETRY (3)
Three hours lecture per week
Prerequisite: MATH 351
Topics include: Implicit Function theorem. Differentials, Riemannian manifolds, curvature, local isometries, Gauss-Bonnet Theorem.

MATH 481  TOPICS IN MODERN MATHEMATICS (3)
Three hours lecture per week
Prerequisite: Upper-division standing
New developments in mathematics. Repeatable by topic.

MATH 492  INTERNSHIP (I-3)
Prerequisite: Upper Division Standing and Program approval of written proposal
Supervised work and study in educational, industrial or scientific setting involving development of degree related skills. All students are required to present their projects at the Senior Colloquium. Repeatable.

MATH 493  ABSTRACT ALGEBRA II (3)
Three hours lecture per week
Prerequisite: MATH 393
Field extensions, Galois theory, rings and modules, and further topics on groups, rings, and fields.

MATH 494  INDEPENDENT RESEARCH (I-3)
Prerequisite: Senior standing and Program approval of written proposal
Supervised project involving theoretical research in the field of mathematics or its applications. All students are required to present their projects at the Senior Colloquium. Repeatable.

MATH 497  DIRECTED STUDIES (3)
Prerequisite: Program approval of written proposal
Supervised project involving library research in the field of mathematics or its applications. All students are required to present their projects at the Senior Colloquium. Repeatable.

MATH 499  SENIOR COLLOQUIUM (I)
One hour of seminar per week
Prerequisite: Senior standing
Oral presentations of current advancement in the field, and reports on students’ projects. Repeatable.

MATH 510  ADVANCED IMAGE ANALYSIS TECHNIQUES (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the MS Mathematics Program or MS Computer Science Program
Image processing course in the fundamentals of 2-D digital signal processing with emphasis in image processing techniques, image filtering design and applications. Programming exercises in Matlab (or Octave) will be used to implement the various processes, and their performance on synthetic and real images will be studied. Applications in medicine, robotics, consumer electronics and communications.
Same as PhYS 510, COMP 510

MATH 511  FUNCTIONAL ANALYSIS (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Topics include: metric spaces, function spaces, normed vector spaces, linear operators. Banach spaces, Hilbert space, Spectral theory, and fundamental theorems in functional analysis. Applications in various fields including computer science, bioinformatics, and statistical analysis.

MATH 512  PROBABILISTIC METHODS AND MEASURE THEORY (3)
Three hours lecture per week
Prerequisite: Admission to the MS Mathematics Program or MS Computer Science Program
Introduction to probabilistic methods. Topic include: sigma algebras, measures, integrals, Lebesgue measure, main convergence results and the change of variable results for integrals. Probabilistic methods in computational sciences are studied. Fall 2012 course number changed from MATH 510 to MATH 512.

MATH 513  ADVANCED ALGEBRA (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Topics include: Techniques of Group Theory, Rings Fields, Modules, Galois Theory, Algebraic Number Theory, Algebraic Geometry, Techniques of Linear Algebra, Noncommutative Algebra, and Homological Algebra.

MATH 546  PATTERN RECOGNITION (3)
Three hours of lecture in the lab per week.
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
New and emerging applications of pattern recognition (PR) such as data mining, web searching, multimedia data retrieval, face recognition, and cursive handwriting recognition - require robust and efficient techniques. Statistical decision making and estimation are fundamental to the study of PR. Pattern content is analyzed using feature extraction and classification. The principles and concepts underpinning PR, and the evolution, utility and limitations of various techniques (including neural networks) will be studied. Programming exercises will be used to implement examples and applications of PR processes, and their performance on a variety of diverse examples will be studied.
Same as PhYS 546, COMP 546
MATH 555  ACTUARIAL SCIENCES (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
The course provides a sound grounding in the mathematical, statistical and financial concepts needed for actuarial work, including technical and communication skills. Topics include: probability, statistics, data analysis, mathematical modeling, risk analysis, pension plans, financial economics, and time series. Various software packages are used.

MATH 565  RESEARCH IN MATHEMATICS EDUCATION (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Mathematical research methods in education. Current issues of college level curriculum including systems of geometry, algebra, precalculus, calculus, probability and statistics, linear algebra, differential equations, and discrete mathematics.

MATH 570  COMBINATORICS (3)
Three hours lecture per week
Prerequisite: Graduate Standing or Permission of Instructor
Study of arrangements, patterns, designs, assignments, schedules, connections, and configurations. Existence problems, counting methods and optimization issues. Applications include graphs, networks, experimental design, coding theory, and combinatorial optimization.

MATH 581  MATHEMATICAL METHODS IN ARTIFICIAL INTELLIGENCE (3)
Three hours lecture in the lab per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
This course presents several branches of mathematics that provide computational basis for Artificial Intelligence. The course covers Trees and Search, The Concepts of Predicate Logic, The Theory of Resolution, Nonmonotonic Reasoning, Probability Theory, Bayesian Networks, Fuzziness and Belief Theory, Classifier Systems, Math for Neural Networks, Elements of Statistics, Decision Trees and Optimization. Same as COMP 581

MATH 582  NUMBER THEORY AND CRYPTOGRAPHY (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Topics include: Number theory, finite fields, polynomial rings, elliptic curves, public-key cryptography, zero-knowledge protocols, primality testing, factorization algorithms and applications.

MATH 584  ALGEBRAIC GEOMETRY AND CODING THEORY (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Topics include: Algebraic varieties over algebraically closed fields and finite fields, Hamming codes, cyclic codes, BCH codes, alternant codes, Goppa codes, and codes on graphs.

MATH 587  MARKOV CHAINS AND MARKOV PROCESSES (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Topics include: Central Limit Theorem, Law of Large Numbers, Convergence Theorems, Markov Chains and Markov Processes. Applications in other fields, such as bioinformatics and computer science.

MATH 588  STOCHASTIC ANALYSIS (3)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Topics include: Brownian motion, stochastic integrals, conditional expectation, Kolmogorov’s Theorem, applications of Lebesgue Dominated Convergence Theorem. Introduction to Stochastic Differential Equations will be given.

MATH 590  GRADUATE TOPICS IN MATHEMATICS (3)
Three hours lecture per week
Prerequisite: Graduate Standing/Undergraduate Seniors
New developments in mathematics. Repeatable by topic up to 2 units.

MATH 594  MASTER THESIS (1-9)
Three hours lecture per week
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
Supervised industrial, educational or scientific project involving use of advanced mathematical methods. Required to present projects at the Graduate Seminar. Repeatable up to 2 units.

MATH 599  GRADUATE SEMINAR (1)
Three hours lecture per week
Prerequisite: Graduate standing in MS Math or MS Computer Science, or Consent of Instructor
Oral presentations of current work in mathematics by local and outside speakers; student thesis and project presentations. Repeatable up to 2 units.

Management

MGT 307  MANAGEMENT OF ORGANIZATIONS (3)
Three hours lecture per week
Principles, methods and procedures planning, organizing, leading, and controlling people within organizations. Topics include the history of management thought, organizational culture and design, decision-making, managerial communication, and strategic management.

MGT 325  ENTREPRENEURIAL MANAGEMENT (3)
Three hours lecture per week
Explores the management of start-up and small businesses. Concentrates on initial strategy, location, financing, staffing, daily activities, controls and taxes. Students develop a business plan for a small business.

MGT 326  SCIENTIFIC AND PROFESSIONAL ETHICS (3)
Three hours lecture per week
Discussion of ethical issues and societal challenges derived from scientific research and professional activities. Examines the sources, fundamental principles, and applications of ethical behavior; the relationship between personal ethics and social responsibility of organizations; and the stakeholder management concept. Applies ethical principles to different types of organizations: business, non-profits, government, health care, science/technology, and other professional groups.

Same as BIOL 326
GenEd: D
MGT 410 MANAGEMENT OF INTERNATIONAL BUSINESS (3)
Three hours lecture per week
Prerequisite: MGT 307
Identification and analysis of management systems in cross-border environments. Explores the impact of economic, social, cultural, and political variables on the conduct of profit-making business. Extensive use of case analysis, and performance of a country study project. Formerly known as MGT 310, changed February 2009.

MGT 421 HUMAN RESOURCE MANAGEMENT (3)
Three hours lecture per week
Prerequisite: MGT 307
Examines principles, methods and procedures in the management of human resources. Topics include developing planning objectives for HR management, legal compliance, job analysis, recruiting, selection, training, compensation, and employee relations.

MGT 424 ORGANIZATIONAL BEHAVIOR (3)
Three hours lecture per week
Prerequisite: MGT 307 or by Instructor Consent
An application of behavioral science theory and concepts with a focus on individual, interpersonal and group processes in a diverse work force. Topics include personality traits, emotions, values, work attitudes, work motivation, organizational politics, group effectiveness and conflict. Extensive use of individual and group case analysis.

MGT 471 PROJECT MANAGEMENT (3)
Three hours lecture per week
Prerequisite: MGT 307
Presents the principles of project management, which is a special form of work organization, which focuses on a one-time objective. Discusses all aspects of project management: definition of objectives, selection of team and other resources, establishing of timing and sequences, creation of monitoring and control processes, and development of analysis and reporting mechanisms.

MGT 497 DIRECTED STUDY (1-3)
Variable activity hours per week
Prerequisite: Consent of Instructor
Individual contracted study on topics or research selected by the student and faculty mentor. Repeatable for up to 2 units.
Graded: Credits/No Credit

Management

Information Systems

MIS 310 MANAGEMENT INFORMATION SYSTEMS (3)
Three hours lecture per week
Prerequisite: COMP 101 or Equivalent
Examines application of computer-based information systems to the management of organizations. Topics include use of information to further the organization's mission and strategy, the role of users, the architecture of information, and development of decision-support processes for managers.

MIS 490 SPECIAL TOPICS (3)
Three hours per week
In-depth analysis of current topics in computer information systems. Topics vary each semester. Repeatable by topic up to 2 units.

MIS 492 SERVICE LEARNING/INTERNSHIP (1-3)
Six hours per week
Prerequisite: Consent of Instructor
Individual internship through service learning assignments related to information systems projects.
Graded: Credits/No Credit

Marketing

MKT 310 PRINCIPLES OF MARKETING (3)
Three hours lecture per week
Presents and analyzes the fundamental principles, methods and procedures in modern marketing: planning, pricing, distribution, and promotion. Topics include creating customer value and satisfaction, strategic planning, marketing process and environment, research and information systems, consumer markets and consumer buyer behavior, business markets and business buyer behavior, segmentation, product and services strategy, new-product development and product life cycle strategies, pricing, communications, direct and on-line marketing, and social responsibility and marketing ethics.

MKT 311 CONSUMER BEHAVIOR (3)
Three hours lecture per week
Prerequisite: MKT 310
A comprehensive study of behavioral models and concepts designed to help understand, evaluate, and predict consumer behavior. Stresses analytical thinking about consumer psychology and prediction of how marketing tactics may influence demand for products and services.

MKT 409 MARKETING RESEARCH (3)
Three hours lecture per week
Prerequisite: MKT 310
Fundamentals of marketing research including design, implementation, analysis, interpretation, and reporting. Develop skills in defining research problems, designing surveys, experiments and observational studies, managing data collection, performing data analysis, and communicating results. Emphasis is on the use of marketing research as a component of marketing strategy (making extensive use of statistical techniques).

MKT 410 INTERNATIONAL MARKETING MANAGEMENT (3)
Three hours seminar per week
Prerequisite: MKT 310
Focuses on developing an environmental/cultural approach to global marketing. Topics covered include: cultural and social forces, political and regulatory climate, global buyer behavior, and global marketing strategies. Cases, research, and marketing plans are used to apply marketing concepts to global opportunities and environments.

MKT 411 NEW PRODUCT DEVELOPMENT AND MANAGEMENT (3)
Three hours seminar per week
Prerequisite: MKT 310
Develops the managerial skills and perspectives that contribute to innovative and entrepreneurial new product development and management. Topics include analysis of consumer needs, market analysis, paradigmatic limits to thinking, new product design and development, creativity, innovation, forecasting, resource requirements, product liability issues, and managing new ventures.
NRS 201  INTRODUCTION TO PROFESSIONAL NURSING PRACTICE (3)
Three hours lecture per week
Prerequisite: Admission to clinical nursing program
Corequisite: NRS 201. Theory is exercised in corequisite courses.
Provides the entry level nursing student with an overview of the art and science of nursing, including the philosophy, organizing theory, and desired outcomes of the nursing program. Introduces the core concepts, principles, basic assessment and clinical skills common to all areas and levels of nursing practice. Familiarizes the student with the components and use of the nursing process and presents the delivery of nursing care based on the Neuman Systems Model. Describes the dimensions of the professional role as provider of care, teacher, advocate, coordinator of care, and member of the profession.

NRS 202  INTRODUCTION TO PROFESSIONAL NURSING PRACTICE LAB (2)
Six hours lab per week
Prerequisite: Admission to clinical nursing program
Corequisite: NRS 200
Provides the opportunity for the student to practice assessment skills and apply basic therapeutic nursing interventions in the clinical setting within the context of the Neuman systems Model. Includes clinical experiences in the ambulatory and/or acute or long-term health care settings, as well as simulated experiences in the on-campus Nursing Skills Laboratory.
Graded: Credit/No Credit

NRS 203  THERAPEUTIC NURSING COMMUNICATION LABORATORY (0.5)
One and one half hours laboratory per week
Prerequisite: Admission to the clinical nursing program or instructor consent
Corequisite: NRS 200 and NRS 201
Intensive clinical laboratory in which interpersonal and group therapeutic communication skills are developed. Designed to prepare students to use therapeutic communication skills while functioning in individual nurse-client relationships and in leadership or education roles occurring in group settings involving other professionals, clients, families, and communities.

NRS 204  PHARMACOLOGY OF NURSING PRACTICE (3.5)
Three hours lecture per week and .5 hours laboratory per week
Prerequisite: Admission to the clinical nursing program or instructor consent
Corequisite: NRS 200 and NRS 203
Basic principles of pharmacology with a focus on pharmacokinetics, pharmacodynamics, and related therapeutic implications for major drug categories. Principles and procedures of medication administration covered in laboratory setting.

NRS 220  NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS I (2)
Two hours lecture per week
Prerequisite: NRS 200, NRS 201, NRS 203, and NRS 204
Corequisite: NRS 221
Presents principles of nursing care for adult individuals experiencing chronic health care problems from mild to moderate of the integumentary, sensory, endocrine and cardiac systems in addition to are of the peri-operative client. Uses Neuman Systems Model to guide nursing practice and achieve desired therapeutic outcomes.

NRS 221  NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS LAB I (2)
Six hours laboratory per week
Prerequisite: NRS 200, NRS 201, NRS 203 and NRS 204
Corequisite: NRS 220
Provides the opportunity to apply nursing theory and concepts to the delivery of health care to adult medical-surgical clients in an acute care clinical setting. Nursing care is provided through the use of the nursing process and the Neuman Systems Model and QSEN Quality Safety Education in Nursing standards. Emphasizes the professional role of the nurse in managing clients under stress. A lab fee is required.
Graded: Credit/No Credit

NRS 222  NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS II (4)
Two hours lab per week
Prerequisite: NRS 220 and NRS 221
Corequisite: NRS 223
Provides the opportunity to apply nursing theory and concepts to the delivery of health care to adult medical-surgical clients in an acute care clinical setting. Nursing care is provided through the use of the nursing process and the Neuman Systems Model and QSEN Quality Safety Education in Nursing standards. Emphasizes the professional role of the nurse in managing clients under stress.
Graded: Credit/No Credit

NRS 223  NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS LAB II (4)
Twelve hours lab per week
Prerequisite: NRS 220 and NRS 221
Corequisite: NRS 222 Theory is exercised in corequisite courses
Provides the opportunity to apply nursing theory and concepts to the delivery of health care to adult medical-surgical clients in an acute care clinical setting. Nursing care is provided through the use of the nursing process and the Neuman Systems Model and QSEN Quality Safety Education in Nursing standards. Emphasizes the professional role of the nurse in managing clients under stress.
Graded: Credit/No Credit

NRS 230  NURSING CARE OF MOTHERS, INFANTS, AND WOMEN (2)
Two hours lecture per week
Prerequisite: NRS 200, NRS 201, NRS 203 and PSY 213
Corequisite: NRS 231
Presents nursing concepts and theory related to health care of the mother newborn infant the family and women’s health care. Focuses on the care of families during childbirth bearing years and includes both normal, high-risk conditions, and acute illness. Emphasizes health promotion, growth and development, and application of the Neuman Systems Model and the nursing process to promote adaptation.
NRS 231  NURSING CARE OF MOTHERS, INFANTS, AND WOMEN LAB (2)
Six hours lab per week
Prerequisite: NRS 200, NRS 201 and PSY 213
Corequisite: NRS 230
Provides opportunities for application of the Neuman Systems Model and the nursing process in the direct care of the normal healthy and high risk childbearing and childrearing population. Places emphasis on teaching and health promotion for the newborn infant, and the family in varied clinical settings. A lab fee is required.
Graded: Credit/No Credit

NRS 232  NURSING CARE OF CHILDREN AND FAMILIES (2)
Two hours lecture per week
Prerequisite: NRS 200, NRS 201, NRS 203 and PSY 213
Corequisite: NRS 233
Presents nursing concepts and theory related to health care of the infant, toddler, school-aged child, adolescent, and the family. Focuses on the care of families during childrearing years and includes both normal, high-risk conditions, and acute illness. Emphasizes health promotion, growth and development, and application of the Neuman Systems Model and the nursing process to promote adaptation.

NRS 233  NURSING CARE OF CHILDREN AND FAMILIES (2)
Six hours laboratory per week
Provides opportunities for application of the Neuman Systems Model and the nursing process in the direct care of the normal healthy and ill infants, toddlers, school-aged child, adolescent, and the family in varied clinical settings. Places emphasis on teaching and health promotion for the newborn infant, toddler, school-aged child, adolescent, and the family in varied clinical settings.
Graded: Credit/No Credit

NRS 240  PSYCHIATRIC AND MENTAL HEALTH NURSING (1)
Two hours lecture per week
Prerequisite: NRS 200, NRS 201, NRS 203, NRS 204
Corequisite: NRS 241
Presents theories and concepts related to the care of individuals who require nursing interventions to achieve and maintain mental health. Focuses on use of self-therapeutic communication, and nursing process.

NRS 241  PSYCHIATRIC AND MENTAL HEALTH LABORATORY (2)
Six hours laboratory per week
Prerequisite: NRS 200, NRS 201, NRS 203, NRS 204 and admission to Clinical Nursing Program
Corequisite: NRS 240
Provides opportunities to incorporate therapeutic modalities with individuals experiencing anxiety, crisis, depression, and dysfunctional interpersonal relationships. Focuses on promotion of mental health from the system-based perspective in diverse clinical settings.
Graded: Credit/No Credit

NRS 260  NUTRITION FOR THERAPEUTICS AND HEALTH (2)
Two hours of lecture per week
Prerequisite: BIOL 211 and BIOL 217; Admission to clinical nursing program and Instructor Consent
Provides an overview of the physiological and nutritional basis of health and wellness as related to development, growth, maturation and healthy lifestyles. Focuses on the scientific role of nutrition in health promotion and disease prevention and the therapeutic role of nutrient control in disease states.

NRS 306  PATHOPHYSIOLOGY (3)
Three hours lecture per week
Prerequisite: BIOL 210 and BIOL 211
Examines related pathophysiological disruptions to normal system functioning and the impact of these alterations on the individual throughout the life span. Provides rationale for nursing interventions for common health problems involving the integumentary, sensory, musculoskeletal, gastrointestinal, cardiovascular, endocrine, respiratory, hematological, renal/genitourinary, and neurological body systems.

NRS 310  PROFESSIONAL ROLE TRANSITION FOR THE TRANSFER STUDENT (3)
Three hours lecture per week
Prerequisite: Admission to the RN-to-BSN Nursing Major
Corequisite: NRS 311
Provides the returning RN and /or the transfer student with the conceptual base for the practice of nursing, built around a core of theories and related concepts which will facilitate transition of the student into the baccalaureate nursing curriculum. Familiarizes the student with the components and use of the nursing process and presents the delivery of nursing care based on the Neuman Systems Model. Focus is on the roles of the professional nurse as advocate, educator, provider and coordinator of care.

NRS 311  PROFESSIONAL ROLE TRANSITION SEMINAR FOR THE REGISTERED NURSE (2)
Four hours lab per week
Corequisite: NRS 310
Provides the returning RN an opportunity to apply and discuss the nursing process and the delivery of nursing care based on the Neuman Systems Model in their work settings. The lab will focus on groups discussion of the implementation of the roles of the professional nurse as advocate, educator, provider and coordinator of care and facilitate transition of the student into the baccalaureate nursing curriculum.

NRS 342  COMPLEMENTARY AND ALTERNATIVE HEALTH (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines alternatives to conventional health approaches such as acupuncture, herbal remedies, relaxation, therapeutic massage, naturopathy, qigong, and yoga. Emphasis on individual and social lifestyle approaches, legal and ethical barriers, governmental status and support.
Same as PSY 342
GenEd: C3B, E, INTD

NRS 343  HEALTH ISSUES IN THE LATINA/O COMMUNITY (3)
Three hours lecture per week
Prerequisite: CHS 100 or Equivalent
Examines the health issues affecting the Latina/o community and considers interventions, public health policies, and health promotion programs, used to improve the health status of the Latina/o community.
Same as CHS 343, COMM 343
GenEd: C3B, INTD

NRS 348  HEALTHY AGING (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Explores physical, cultural and psychosocial factors influencing health issues during the elderly years of life. Topics include aging stereotypes, cultural and family influences on the elderly, physiology of aging, lifestyles choices associated with healthy aging, and end of life care.
Same as PSY 348, SOC 348
GenEd: D, E, INTD
NRS 350  NURSING RESEARCH (3)
Three hours lecture per week
Prerequisite: MATH/PSY 202 or Equivalent.
Introduction to the nursing research process and development of skills in reading, analyzing and critiquing research related to nursing. Promotes an understanding of the importance of research utilization in clinical practice.

NRS 352  HEALTH PROMOTION AND PATIENT EDUCATION STRATEGIES (3)
Three hours lecture per week
Prerequisite: NRS 222 and NRS 231 (Generic students only) or admission to RN-to-BSN Nursing major.
Application of the concepts regarding health education and health promotion. Examination of the theories, research, and practice essential patient education integration. The course explores the effects of developmental, motivational, and sociocultural factors on patient teaching, health education, and health promotion.

NRS 354  CULTURAL COMPETENCE IN NURSING (4)
Two hours lecture and four hours field studies per week
Provides the study of culturally competent nursing care in the roles of Provider of Care, Teacher, patient Advocate, member of Profession, and Coordinator of Care. Assists the student to utilize the Campinha Bacote cultural theory to care for diverse populations with health care needs.

NRS 356  VULNERABLE POPULATIONS (3)
Three hours lecture per week
Assists the learner to understand contributing factors in the development of vulnerable populations. Presents concepts of vulnerable populations, health indicators, health determinants, and health disparities. Explores vulnerable populations from global, national, and local perspectives. Implications for nursing research, practice and policy are examined.

NRS 391  TRANSITION TO PROFESSIONAL PRACTICE LABORATORY (3)
Nine hours clinical lab per week
Prerequisite: NRS 222 and NRS 223
Provides an opportunity for the generic nursing student to work in a clinical setting with a RN in managing a caseload of patients to reinforce and enhance clinical skills. NRS 391 is a required course in the major and is work-study with credit and is unpaid with supervising clinical faculty on site. Changed from NRS 491 to 391 Fall 2010.
Graded: Credit/No Credit

NRS 401  ADVANCED CLINICAL ASSESSMENT LAB (2)
Six hours of lab per week
Corequisite: NRS 420 and NRS 421
Advanced practice in clinical assessment including history taking, physical examination and documentation of findings, interpretation of diagnostic testing, psychosocial assessment techniques and health status assessment. Nursing care implications of monitoring and management of clients experiencing more complex medical-surgical health care problems with advanced technical interventions.

NRS 420  NURSING CARE OF THE COMPLEX CLIENT ACROSS THE CONTINUUM (3)
Three hours lecture per week
Prerequisite: NRS 222, NRS 223 and NRS 300
Corequisite: NRS 421 and NRS 401
Principles of nursing care delivery for patients and families experiencing more complex medical-surgical health care problems. Development of skills in managing the care of patients in the acute care setting and/or in the community in order to maintain maximum levels of function, manage symptoms, and increase quality of life. Focusses on nursing case management models, roles and strategies used for managing high-risk client populations and for providing comprehensive care coordination, brokerage, monitoring, discharge planning, client/family advocacy, and nursing interventions.

NRS 421  NURSING CARE OF THE COMPLEX CLIENT ACROSS THE CONTINUUM LABORATORY (3)
Nine hours lab per week
Prerequisite: NRS 222, NRS 223 and NRS 310
Admission to the clinical nursing program.
Corequisite: NRS 420 and NRS 401
Application of nursing theory, management skills, and concepts in the delivery of nursing care to acutely ill or chronically ill adults with increasingly complex medical-surgical problems. Provision of nursing care to members of a high-risk population in the acute care setting from admission through discharge and in the home setting. Implementation of nursing case management strategies and intervention will be used for managing high-risk client populations and for providing cost effective and comprehensive care coordination, brokerage, monitoring.
Graded: Credit/No Credit

NRS 441  HEALTH COMMUNICATION (3)
Three hours lecture per week
Prerequisite: COMM 320
Explores the evolution of health as a major topic in communication studies. Focuses on conversations between health practitioners and patients as well as public health campaigns.
Same as COMM 441
GenEd: D, INTD

NRS 452  COMMUNITY HEALTH NURSING (3)
Three hours lecture per week
Prerequisite: ANTH 443, BIOL 432, NRS 240, NRS 241; Admission to Track 1B Clinical Nursing Program
Corequisite: NRS 453
Examines role of the professional nurse in working with clients, families and aggregates in the community setting. Explores contemporary public health problems and working collaboratively with the community as part of an interdisciplinary team. Assists the student in developing skills in community assessment, program planning and practice interventions to help identified populations within the community maintain their optimum level of health.

NRS 453  COMMUNITY HEALTH NURSING LAB (3)
Nine hours lab per week
Prerequisite: ANTH 443, BIOL 432
Corequisite: NRS 452
Provides clinical experience within the public or community health system. Students work as a member of an interdisciplinary team, and focus on care management of clients receiving services from community agencies, allied clinical experiences and community assessment and planning. Students will identify populations within the community and assist them to maintain their optimum level of health.

NRS 460  NURSING LEADERSHIP AND PROFESSIONAL ISSUES (3)
Three hours lecture per week
Prerequisite: NRS 350 and NRS 352
Corequisite: NRS 461
Examines organizational theory and management practices applied to health care systems and contemporary issues affecting the delivery of health care and discipline and professional practice of nursing. Explores the role of the nurse manager as leader and change agent in the delivery of care to patient groups and communities within complex and diverse health care settings. Provides an overview of health care informatics systems, electronic health records, databases and information literacy.
INTRODUCTION TO THE PERFORMING ARTS (3)
Three hours lecture per week
Overview of the history of performance, cultural traditions, and artistic assumptions in theatre, music, and dance. Requires some involvement in local or campus productions.
GenEd: A1, C1

INTEGRATING DANCE, MUSIC AND THEATRE (3)
Six hours activity per week
Investigation and application of methods and philosophies of performance integrating dance, music, and theatre.
GenEd: A1, C1

INTERNSHIP FOR PERFORMING ARTS (1-3)
Two to six hours of activity per week
Prerequisite: Consent of Instructor
Students with no experience in the Performing Arts will have the opportunity for community involvement with an arts organization. Supervised by a Performing Arts faculty member. Repeatable up to 3 units

INDEPENDENT STUDY (1)
One to three hours independent study per week
Prerequisite: Consent of Instructor and Program Approval
Performing Arts faculty supervised, lower division study of a performing arts subject area of interest to the student. Repeatable up to 6 units, 2 completions allowed.

BUSINESS AND THE PERFORMING ARTS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Exploration of the business elements in the performing arts, including planning, management and financial activities. Uses an interdisciplinary approach to focus on performing arts as a creative activity and as a business activity. Uses case studies to analyze a comprehensive view of performing arts organizations.
Same as BUS 335
GenEd: C1, INTD

AUDIENCE AND PERFORMANCE STUDIES (3)
Two hours lecture and two hours activity per week
Interdisciplinary exploration of performance as an art form, with particular attention to how audience response shapes live performances. History, development, and theory of performance will be integrated with new research on audience-performer interaction to provide the student with a comprehensive and interdisciplinary vision of performance. Students will both study performance and design community-based projects in which they will perform.
GenEd: C1

MUSICAL THEATRE (3)
Three hours lecture per week
Survey of the American musical as an art form in performance and production integrating the three performing arts of theatre, dance, and music. Considers the development of American musical theatre from diverse cultural, historical, and theoretical perspectives using one or more themes. Students have the opportunity to do practical work in the areas of acting, dancing, and singing in their analysis of musical theatre.
GenEd: C1

SCENIC DESIGN (3)
Six hours activity per week
A studio/activities course utilizing artistic techniques involved in the development of scenic design for theatrical, musical and dance productions. Script analysis, scenery sketching, drafting ground plans, elements of set construction and scenic painting will be covered in a series of studio projects.
Same as ART 383

COSTUME DESIGN (3)
Six hours activity per week
A studio/activities course in which students develop costume designs through a process of character and script analysis. Period research, visual design, rendering and fabrication skills are achieved through practical exercises. Basic costume construction, including drafting and draping, result in the creation of costumes for theatrical, musical and dance productions. A lab fee is required.
Same as ART 384

PRODUCTION (3)
Six hours activity per week
Prerequisite: Consent of Instructor
Performing, designing, implementing technical projects, or assisting in a CSU Channel Islands Performing Arts production. Topics vary by semester and section and may focus on dance, music, or theatre, or integrate multiple performing and visual arts. Formerly known as PATH 481, changed February 2009. Repeatable up to 12 units.
Graded: Credit/No Credit
Same as ART 391

PHYSICS OF THE PERFORMING ARTS (3)
Three hours lecture per week
Prerequisite: PA 202
Introduction to the physics of movement, lighting, sound and visual/aural perception. The course emphasizes factors that permit the performance artists to understand and more fully control their performance, with special attention to the study of audience perception. Demonstrations, experiments and video/computer simulations are used to analyze signals received by the performer and the audience.
Same as PHYS 436
GenEd: B1, INTD
PA 490  SPECIAL TOPICS (1-3)
Three hours lecture per week
Prerequisite: Upper Division Standing
Various topics related to performing arts. Repeatable by topic for up to 6 units.

PA 491  LECTURE SERIES IN ENTERTAINMENT INDUSTRY (1)
Two hours lecture bi-weekly
Bi-weekly series of guest lectures focusing on a variety of issues pertinent to the entertainment industry. Entertainment professionals will address topics that cover but are not limited to aspects of management, marketing, production, performance and entertainment-related technologies. Repeatable by topic up to 3 units.

PA 492  INTERNSHIP IN PERFORMING ARTS (1-3)
Two to six hours activity per week.
Prerequisite: Consent of Instructor and Program Approval
Students with previous experience in Performing Arts work will have the opportunity for advanced community involvement in an arts organization. Repeatable up to 6 units, 2 completions allowed.

PA 494  INDEPENDENT STUDY (1-3)
One to three hours independent study per week
Prerequisite: Consent of Instructor
Performing Arts faculty supervised, advanced, in-depth study of a subject area of interest to the student. Repeatable up to 3 units, 2 completions allowed.

PA 495  THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)
Two hours lecture per week
Two hours activity per week
Corequisite: ART/BUS/PA 491
An interdisciplinary experience: students work directly with faculty and entertainment industry professionals focusing on aspects of talent management, project development, marketing and related technologies that result in the production of an entertainment event.

PA 499  PERFORMING ARTS CAPSTONE (3)
Three hours lecture per week
Prerequisite: PA 350, PA 360, Senior Standing
Research and performance in a student’s area of emphasis in the performing arts program.

Performing Arts – Dance

PADA 151  CONDITIONING FOR DANCERS (2)
Four hours activity per week
Utilizes techniques (stretching, yoga, pilates) and principles of conditioning (strength, flexibility, and endurance) to prevent injuries stemming from muscular imbalances, structural problems, postural deviations, improper mechanics or movements. Students will develop individualized conditioning programs to prevent injuries. Repeatable up to 3 units.

PADA 253  JAZZ DANCE I (2)
Four hours activity per week
Activities designed to develop basic jazz dance technique accompanied by historical information relevant to the dance form.

PADA 254  MODERN DANCE I (2)
Four hours activity per week
Beginning modern dance techniques based on major dance pioneers, major points in dance history and language of Modern Dance. Repeatable up to 3 units.

PADA 255  DANCE COMPOSITION AND IMPROVISATION (3)
Six hours activity per week
This course will explore dance composition and improvisation as a tool for building and understanding creative and expressive choreography. Students will investigate potential movement resources of the individual for performance and choreography. Freedom of movement will be encouraged and its relation to choreography will be explored. In this course students will become familiar and proficient in the selection of various musical forms to enhance or guide choreography. Students will also implement choreographic tools in conjunction with the spoken word and in silence. Repeatable up to 3 units.

PADA 256  JAZZ DANCE II (3)
Six hours activity per week
Prerequisite: PADA 253
Activities designed to develop intermediate jazz dance technique and a study of the history of jazz dance.

PADA 353  MODERN DANCE II (3)
Six hours activity per week
Prerequisite: PADA 254
Intermediate modern dance technique with continued development of improvisational skills and beginning dance composition forms.

PADA 355  ADVANCED TECHNIQUE OF CONTEMPORARY DANCE FORMS (3)
Six hours activity per week
Prerequisite: PADA 253, PADA 254, PADA 255, PADA 353, and PADA 354
This course will explore dance composition and improvisation as a tool for building and understanding creative and expressive choreography. Students will investigate potential movement resources of the individual for performance and choreography. Freedom of movement will be encouraged and its relation to choreography will be explored. In this course students will become familiar and proficient in the selection of various musical forms to enhance or guide choreography. Students will also implement choreographic tools in conjunction with the spoken word and in silence. Repeatable up to 3 units.

PADA 358  DANCE ENSEMBLE (2)
Six hours activity per week
Prerequisite: PADA 353 or PADA 354, and Consent of Instructor
A dance repertory and performance class with emphasis in developing skills for performing ballet, modern, jazz, historic and/or other forms of theatrical dance. Repeatable up to 3 units.

PADA 399  PERFORMING ARTS CAPSTONE IN DANCE (3)
Three hours seminar per week
Prerequisite: PADA 353 and PADA 354, Senior Status
Students will join in the capstone experience course and blend their knowledge and practice to produce an interdisciplinary performing arts project. Alternatively, students may receive an internship with a dance company.
Performing Arts - Music

PAMU 100 MUSIC APPRECIATION (3)
Three hours lecture per week
A survey of musical masterpieces of the Western Tradition from the Middle Ages to the present. Emphasis on composers from Bach to Bartok. Includes units on jazz and the music of other cultures.
GenEd: C1

PAMU 109 PRIVATE LESSONS (1)
One half-hour lesson per week
Private music lessons in voice or on an instrument. Repeatable for up to a total of 8 units.

PAMU 161 MUSIC FUNDAMENTALS (3)
Two hours lecture per week
Two hours activity per week
Prerequisite: PAMU 100 or Equivalent, or Consent of Instructor
Basic musicianship skills including interval identification, musical notation, chord construction, key signatures, major and minor scales, rhythmic training, sight-singing, ear training, and basic musical forms. Repeatable up to 4 units.

PAMU 200 HISTORY OF ROCK (3)
Three hours lecture per week
A survey of the evolution of rock music from the 1950's to the present. Includes discussions of predecessor styles such as rhythm and blues and country music.
GenEd: C1

PAMU 202 GROUP GUITAR LESSONS (2)
One hour seminar per week
Two hours activity per week
An introduction to classical guitar in a group format for beginning/intermediate level students. Repeatable up to 4 units.

PAMU 203 GROUP VOICE LESSONS (2)
One hour seminar per week and two hours activity per week
An introduction to classical and musical theatre singing for beginning and intermediate level students. Repeatable up to 4 units.

PAMU 231 THE BEATLES: MUSIC, FASHION AND CULTURE (3)
Three hours lecture per week
An exploration into the music, fashion, films and cultural influences of the Beatles. Examines their musical periods and unique visual presentations, illustrating how they reflected and affected the evolution of contemporary popular music and culture from the 1960 to today.
Same as ART 231
GenEd: C1

PAMU 243 TEACHING MUSIC TO CHILDREN (3)
Three hours lecture per week
An introduction to musical experiences appropriate for children in grades K-6. Consisting of instruction in music fundamentals, general music, vocal music and instrumental music for the classroom teacher; the course also incorporates movement and improvisation in the form of dance and theater. Kodaly, Orff and Dalcroze techniques will be emphasized. Includes music technology in the classroom.
Course was formerly called PAMU 343, changed Fall 2007.

PAMU 261 MUSIC THEORY (3)
Three hours lecture per week
Basic music theory and music fundamentals, set in the context of the Western European common-practice period, for the beginning university-level music student. Special emphasis on the role of popular and commercial music in society, including jazz and musical theatre.

PAMU 307 UNIVERSITY CHORUS (1)
Three hours of rehearsal per week
Prerequisite: Consent of Instructor
Rehearsal and performance of the masterworks of choral literature from the Renaissance through the Modern period. Repeatable for up to 8 units.
GenEd: C1

PAMU 308 UNIVERSITY ORCHESTRA (1)
Three hours of rehearsal per week
Prerequisite: Consent of Instructor
Rehearsal and performance of the masterworks of orchestral literature from the Baroque through the Modern period. Repeatable for up to 8 units.
GenEd: C1

PAMU 309 PRIVATE LESSONS (1)
One half-hour lesson per week
Private music lessons in voice or on an instrument. Study of more advanced techniques. Repeatable for up to 8 units.

PAMU 330 JAZZ IN AMERICA (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
The study of jazz as a uniquely American musical art form, principally through the development of jazz styles. From its roots in Africa and later in New Orleans, jazz will be studied as both a musical and a social phenomenon that originated and was nurtured in the African-American community. The course will explore issues of community, ethnicity, class, and gender in relationship to jazz as a vehicle for both personal and cultural expression. Through recordings, videos, lectures, demonstrations and live performances, students will study jazz and its forerunners, ragtime and blues, from their beginnings to the present day.
GenEd: C1, C3B, INTD

PAMU 332 WORLD MUSIC (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Surveys folk music styles from around the world including Latin American, European, Asian and African. An emphasis on the cultures and indigenous people that surround the music will be highlighted through lectures, listening, readings, viewing and demonstrations.
GenEd: C1, C3B, INTD

PAMU 333 THE VARIETIES OF MUSICAL EXPERIENCE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
The study of music in its cultural and historical contexts, with an emphasis on the role of music as a form of human expression. A broad range of musical styles will be studied, including, but not limited to, European, Asian, and Middle Eastern classical music; American jazz and popular music; and folk music of western and non-western cultures. Students will study the unifying and authenticating nature of music within groups of people, as well as study the experience of music on a personal level.
GenEd: C1, INTD

PAMU 334 THE PHYSICS OF MUSIC (3)
Two hours lecture and two hours activity per week
Prerequisite: Junior Standing or Consent of Instructor
Provides an understanding of music and sound for students interested in music, speech, and language. Extensive use of demonstrations and sound analysis computer programs will be used. The format will include lectures, demonstrations, and hands-on use of the computer programs.
Same as PhyS 335
GenEd: B1, C1, INTD
PAMU 336 ART AND MUSIC: DISSONANCE, DIVERSITY AND CONTINUITY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary analysis of the essential elements defining modern and contemporary art and music. Discusses how artistic characteristics and music issues of the period are connected and intertwined within specific historic and cultural environments.
Same as ART 336
GenEd: C1, D, INTD

PAMU 337 MUSIC IN HISTORY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Music in its historical context, with special emphasis on the role of music in culture. Historical periods may include the music of the Medieval church, the evolution of opera, the American musical theatre, and jazz, as well as historical and contemporary world music. Examines the societal forces that helped to shape classical and popular musical styles, and how music can and has influenced culture. Music in history is contextualized within multicultural perspectives. Formerly known as PAMU 363, changed February 2009.
Same as HIST 337
GenEd: C1, C3B, INTD

PAMU 385 AUDIO DESIGN AND RECORDING (3)
Six hours activity per week
Prerequisite: ART 312 and PAMU 335
An introduction to the fundamental principles of audio production and recording. Applications of analog and digital audio recording systems and their component parts, including sync-sound and digital audio effects for visual media will be covered. Repeatable up to 2 units.
Same as ART 385

PAMU 432 ARTS OF THE HARLEM RENAISSANCE (3)
Three hours lecture per week
Prerequisite: Upper Division Standing
Study focusing on the dramatic upsurge of creativity in art, music and literature resulting from social and political undercurrents in the African American cultural revolution in New York during the 1920's. Historical genuses and subsequent artistic legacies will also be explored.
Same as ENGL 432, ART 432
GenEd: C1, C2, INTD

PAMU 435 THE MUSIC MUSEUM (3)
Three hours lecture per week
Prerequisite: Junior Standing
An interdisciplinary study of music museums from the perspectives of music history, appreciation and production, business, economics and education. Analyzes how these disciplines are linked within music museum practices. Includes an in-depth study of a local music museum.
Same as BUS 435, ECON 435, EDUC 435
GenEd: D, INTD

PAMU 499 PERFORMING ARTS CAPSTONE IN MUSIC (3)
Six hours seminar per week
Prerequisite: PAMU 363, Senior Status
Students will join in the capstone experience course and blend their knowledge and practice to produce an interdisciplinary performing arts project. Alternatively, students may receive an internship with a music company.

Performing Arts - Theatre

PATH 280 ACTING I (3)
Six hours activity per week
Exercises and activities that emphasize voice, movement, and relaxation techniques. Includes improvisation, monologues, and two-character scenes.
GenEd: C1

PATH 281 PLAY ANALYSIS (3)
Three hours lecture/discussion per week
Introduces students to the analytical tools used by theatre professionals and provides practice in applying those tools to a variety of scripts. Studies in dramatic structure and its relationship to performance and production.

PATH 322 TEACHING DRAMATIC LITERATURE (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 or Equivalent plus one upper division literature course
Explores methods and approaches to teaching dramatic literature in secondary schools and colleges. Focuses on elements of textual exploration and using heuristics from theatre to teach dramatic literature including, but not exclusively, Shakespeare’s Plays.
Same as ENGL 332
GenEd: C2, INTD

PATH 333 MULTICULTURAL DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
America is a country of many cultures, and each of these has brought legacies of its roots to the American stage. In this course we will read plays written by Native Americans, Hispanic Americans, Asian Americans, African Americans and others. This course is regional in organization rather than chronological, and is organized around one or more themes.
Same as SPAN 334
GenEd: C2, C3B, INTD

PATH 334 SPANISH LANGUAGE DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Read and analyze one-act plays from diverse parts of the Spanish-speaking world, and focus on majors works for in-depth study and performance. In addition to learning about the historical, cultural and sociological context of the plays, students will learn acting techniques and appropriate Spanish-language vocabulary and phrases. Note: Course is open to all levels of Spanish speakers.
Same as SPAN 334
GenEd: C2, C3B, INTD

PATH 338 THEATRE IN HISTORY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
A survey of the history of theatrical productions. Includes formal productions and performances as well as other types of theatre or dramatization, such as political posturing, i.e., a ruler’s rise to power in historical reality as well as performed or recorded later in theatre, music, and history. Theatre in history is contextualized within multicultural perspectives.
Same as HIST 338
GenEd: C1, C3B, INTD

PATH 341 MODERN AMERICAN DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Students will read plays and performance texts written by modern American authors from the beginning of the 20th century until today. A study of the range of American dramatic literature in the context of the development of American theatrical performance. Thematically examines
avant-garde and alternative forms as well as commercial and mainstream theatre.

**PATH 342  MODERN BRITISH AND EUROPEAN DRAMA AND THEATRE (3)**

Three hours lecture per week

Prerequisite: Junior Standing or Consent of Instructor

Major works of British and European dramatic literature in performance and production from the middle of the 19th century to the present. Thematically organized to examine avant-garde and alternative forms, as well as commercial and mainstream theatre.

Same as ENGL 342

GenEd: C2, INTD

**PATH 343  TEACHING DRAMA TO CHILDREN (3)**

Three hours lecture per week

Prerequisite: Junior Standing or Consent of Instructor

Students will participate in theatre games, improvisations, and other tasks that will prepare them to design and implement dramatic activities as a learning tool. Theatre in a broader context will also be examined.

Same as EDUC 343

GenEd: C1, INTD

**PATH 344  WORLD DRAMA AND THEATRE (3)**

Three hours lecture per week

Prerequisite: Junior Standing or Consent of Instructor

Explores world dramatic literature in performance and production. The focus is largely on plays and performance texts by non-Western authors, and is organized around one or more themes. This course is regional in organization rather than chronological. Texts studied feature the following regions: Asia, Oceania, South Asia & Middle East, Africa, and Latin America.

Same as ENGL 344

GenEd: C2, INTD

**PATH 410  SHAKESPEARE’S PLAYS (3)**

Three hours lecture per week

Prerequisite: ENGL 103 or ENGL 105 or Equivalent and one upper division literature course

Study of the many aspects of Shakespeare’s plays as literature--language, context, form and style--as well as the ways in which these elements work as parts of a whole, which includes spoken speech and other sounds as well as physical form and movement.

Same as ENGL 410

**PATH 463  WRITING FOR THE STAGE (3)**

Three hours lecture/discussion per week

Prerequisite: Consent of Instructor

The writing of stage plays is the focus of this class. The seminar format allows students the opportunity to talk about their writing and to receive critiques from their peers as well as the instructor. Repeatable by topic up to 6 units.

Same as ENGL 463

**PHED 302  MOTOR LEARNING, FITNESS, AND DEVELOPMENT IN CHILDREN (3)**

Two hours lecture per week

Physical education for children, fundamentals of motor learning, health, fitness and age-appropriate activities for elementary school age children. Teaching, planning and implementing an effective physical education program. May be taken concurrently with PHED 303.

GenEd: E

**PHED 303  INSTRUCTIONAL SPOTLIGHT IN PHYSICAL EDUCATION (3)**

Three hours seminar per week

Prerequisite: PA 350, PA 360, Senior Status

Teaching, planning and implementing an interdisciplinary project. Alternatively, students may receive an internship with a theatre company.

**Physical Education**

**PHED 105  ZEN OF SURFING (1)**

Two hours activity per week

Exploration of the physiological and psychological benefits that result from human interaction with forces of nature. Students develop an increased understanding of the ocean and complex dynamics that underlie the sport of surfing. The interrelationship between physical activity and personal aesthetics is explored through weekly surfing activities.

GenEd: E

**PHED 208  INTRODUCTION TO KINESIOLOGY (3)**

Three hours lecture per week

Examines the field of human movement, introduces biomechanics, anatomy, exercise physiology, and motor learning. Basic anatomy, function of the musculoskeletal system, laws of motion, principles of force, equilibrium concepts, and laws governing projectiles will be introduced and applied to various sports activities. The student will develop the ability to analyze skill movements in specific sport activities. This is not an activity/performance course.

GenEd: B1

**PHIL 210  ETHICS FOR A FREE WORLD (3)**

Three hours lecture per week

Students will explore concepts and practices of ethics, freedom, and justice by comparing how these have been theorized and practiced in relationship to each other across at least two times periods and cultures. Starting from a foundation in philosophy and developing an interdisciplinary lens, this class examines these foundational concepts and practices especially as engaged across the fields of identity and civil rights-based studies (including religious, ethnic, women’s, gender, sexuality, and disability studies, etc.)

Same as FJS 210

**Physical Education**

**PHIL 499  PERFORMING ARTS CAPSTONE IN THEATRE (3)**

Three hours seminar per week

Prerequisite: PA 350, PA 360, Senior Status

Students will join in the capstone experience course and blend their knowledge and practice to produce an interdisciplinary performing arts project. Alternatively, students may receive an internship with a theatre company.

**PHED 303**
Physics

PHYS 100  INTRODUCTION TO PHYSICS I (4)
Three hours lecture and three hours laboratory per week.
A non-calculus based introduction to the concepts and principles of physics. The areas covered include classical mechanics, wave motion and thermal physics. Practical examples will be used to illustrate the relationship between physics and other disciplines, especially the life sciences, and to develop problem-solving skills. Laboratory sessions will include computer-simulated experiments.
GenEd: B1

PHYS 101  INTRODUCTION TO PHYSICS II (4)
Three hours lecture and three hours laboratory per week.
Prerequisite: PHYS 100
A non-calculus based introduction to the concepts and principles of physics. The areas covered include electromagnetic theory, light, and atomic and nuclear physics. Practical examples will be used to illustrate the relationship between physics and other disciplines, especially the life sciences, and to develop problem-solving skills. Laboratory sessions will include computer-simulated experiments.
GenEd: B1

PHYS 103  HOW THINGS WORK (3)
Three hours lecture per week.
Introduces the concepts behind everyday objects and experiences. Concentrates on ideas and on familiar scenarios. Designed to excite students’ interests in science while conveying a substantial understanding of our everyday world.
GenEd: B1

PHYS 105  INTRODUCTION TO THE SOLAR SYSTEM (4)
Three hours lecture and two hours activities per week.
Descriptive introduction to the astronomical properties of the Solar System. Topics include: the historical development of astronomy, the laws that govern the behavior of the Universe, the properties of the stars and galaxies, including their origin and evolution and the Big Bang theory. Activity sessions will include computer-simulated exercises, and two field trips.
Same as ASTR 105
GenEd: B1
PHYS 106 APPLIED PHYSICS AND MODERN SOCIETY (3)
Three hours lecture in the lab per week
The course provides an introduction to current topics in applied physics in the fields of solid state physics, semiconductors, superconductors and nano-structures. It shows how scientific knowledge, imagination and ingenuity can combine to offer technological solutions to a variety of topical problems. Industries dealing with, for example, detectors, remote sensing, new materials, medical imaging, biophysics, homeland security, telecommunications, and lasers will be covered.
GenEd: B1

PHYS 107 THE STARS AND BEYOND (3)
Three hours lecture per week
A tour through the stars and galaxies will uncover some major mysteries of the Universe. Topics include: the historical development of astronomy; the laws that govern the behavior of the Universe; the birth, life and death of stars; the collision of galaxies; and evidence for the birth and end of the entire Universe.
GenEd: B1

PHYS 200 GENERAL PHYSICS I (4)
Three hours lecture and three hours laboratory per week
Prerequisite: MATH 150
A calculus-based introduction to the concepts and principles of physics. The areas covered include classical mechanics, wave motion and thermal physics. Practical examples will be used to illustrate the relationship between physics and other disciplines, including the life sciences, and to develop problem-solving skills. Laboratory sessions will focus on computer-simulated experiments.
GenEd: B1

PHYS 201 GENERAL PHYSICS II (4)
Three hours lecture and three hours laboratory per week
Prerequisite: PHYS 200
A calculus-based introduction to the concepts and principles of physics. The areas covered include electromagnetic theory, light, and atomic and nuclear physics. Practical examples will be used to illustrate the relationship between physics and other disciplines, including the life sciences, and to develop problem-solving skills. Laboratory sessions will focus on computer-simulated experiments.
GenEd: B1

PHYS 208 THE PHYSICS OF ART AND VISUAL PERCEPTION (3)
Two hours lecture and two hours activity per week
A course on the physics of light, color, art and visual perception. The course will cover the nature of light and optical phenomena, the perception and psychology of color, the reproduction of color in different media, and the analysis of art from a science perspective. The emphasis is on factors which permit the artist and observer to understand and more fully control the design and interpretation of images of all kinds. Demonstrations, experiments, and video/computer simulations are used to analyze signals received by the eyes or instruments.
Same as ART 208
GenEd: B1, C1

PHYS 301 CLASSICAL MECHANICS (3)
Three hours lecture per week
Prerequisite: PHYS 201, MATH 350
A differential equation-based introduction to classical mechanics. The areas covered include the Lagrangian formulation, variational principles, Hamiltonian mechanics, and the theory of canonical transformations. Some applications to the motion of rigid bodies, systems of coupled oscillators, and celestial mechanics will be presented.

PHYS 304 ELECTROMAGNETISM (4)
Four hours lecture per week
Prerequisite: PHYS 101 or 201, MATH 250
A calculus-based introduction to the concepts and principles of electricity and magnetism. Topics include: electrostatics, magnetism, electromagnetic theory, fields, electromagnetic waves, Maxwell's equations, and the Special Theory of Relativity. A strong emphasis will be on analytical problem-solving skills and applications.

PHYS 305 THERMAL AND STATISTICAL PHYSICS (3)
Three hours lecture per week
Prerequisite: PHYS 201 and MATH 350
Addresses the behavior of energy and matter in systems having a great many particles. Includes both classical and quantum mechanical views of physical systems and begins with the basic concepts of probability and statistics. Particular emphasis will be placed on simple system models for which quantitative results can be obtained and compared to experiment, such as ideal gases and quantum mechanical spin systems. The course includes the statistics of the microcanonical, canonical, and grand canonical ensembles; the relation between classical and quantum statistical mechanics; the Planck distribution, bosons, fermions, and doped semiconductors, among others; and an introduction to kinetic theory.

PHYS 306 MODERN PHYSICS (3)
1.5 hours lecture twice per week
Prerequisite: PHYS 101 or PHYS 201, MATH 151
Survey of modern physics. Topics include: Special relativity, the Bohr model, Quantum mechanics; photons, the photoelectric effect, probability density, matter waves, Schrodinger mechanics of simple systems, the Uncertainty Principle, tunneling, spin and angular momentum, atomic and molecular structure. Selected topics from nuclear and solid state physics. Applications of the principles will be emphasized.

PHYS 310 ELECTRONICS (4)
Three hours lecture and two hours activity per week
Prerequisite: PHYS 101 or PHYS 201
This course covers the basic analog and digital electronic circuits used in a scientific laboratory. Students will be introduced to the operation of simple electronic devices, the basic underlying theory of their operation, and the applications of a few analog and digital ICs. The emphasis is on applications rather than theory. Consequently there is a strong hands-on component to the subject to enable students to gain practical experience. Experiments will include the testing of actual and virtual circuits, and data acquisition.

PHYS 315 INTRODUCTION TO BIOPHYSICS (4)
Three hours lecture and two hours activity per week
Prerequisite: PHYS 200
Corequisite: BIOL 300
This course applies physical methods to the study of biological systems, including transport processes and membrane phenomena, bioelectric phenomena, photosynthetic systems and visual systems. Biophysical methods will include the techniques of patch clamping and optical tweezers, and the measurement of action potentials and evoked responses. There will be an emphasis on modeling and on problem solving, with appropriate mathematics when necessary. The practical activity session will include computer modeling and simulation, and laboratory demonstrations and exercises.
Same as BIOL 315

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PHYS 335  THE PHYSICS OF MUSIC (3)
Two hours lecture and two hours activity per week
Prerequisite: Junior Standing or Consent of Instructor
Provides an understanding of music and sound for students interested in music, speech, and language. Extensive use of demonstrations and sound analysis computer programs will be used. The format will include lectures, demonstrations, and hands-on use of the computer programs.
Same as PAMU 335
GenEd: B1, C1, INTD

PHYS 338  SCIENCE AND CONSCIENCE (3)
Three hours lecture/discussion per week
Prerequisite: Junior Standing or Consent of Instructor
This course is a team-taught, interdisciplinary course that examines various ethical issues within the sciences using case studies. The scientific, historical and social aspects of each case study will be examined from different perspectives. Students will learn scientific concepts which will facilitate an informed understanding of the ethical issues involved.
Same as ENGL 338
GenEd: B1, C2, INTD

PHYS 344  ENERGY AND SOCIETY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Survey of the physical, chemical, and engineering principles involved in the production of energy from current and potential sources and the economical, environmental, and political issues surrounding energy production. The course will also examine factors that influence worldwide energy policy. Examples of topics included: energy conservation, efficient usage and transportation of energy, energy resources, fossil fuels, active and passive solar energy, biomass, fuel cells, nuclear (fission and fusion) processes, and hydroelectric, tidal, geothermal, and wind power.
Same as CHEM 344
GenEd: B1, INTD

PHYS 345  DIGITAL IMAGE PROCESSING (3)
Three hours lecture in the lab per week
Prerequisite: Junior Standing or Consent of Instructor
An introduction to the basic concepts and techniques for digital image restoration and enhancement, analysis, coding and compression. The emphasis is on processes which analyze primarily two-dimensional discrete images represented at the pixel level, including filtering, noise reduction and segmentation. Fourier analysis techniques will be explored. Programming exercises will be used to implement the various processes, and their performance on synthetic and real images will be studied.
Same as MATH 345, COMP 345
GenEd: B1, B4, INTD

PHYS 401  QUANTUM MECHANICS (3)
3.5 hours lecture per week
Prerequisite: PHYS 306 and MATH 350
An introduction to quantum theory, beginning with the Schroedinger equation and the statistical interpretation of the wave function. One-dimensional applications, including the infinite square-well and the harmonic oscillator; in three dimensions, the theory of angular momentum, central potentials, and the hydrogen atom; time-independent perturbation theory, spin, identical particles, and the Pauli exclusion principle. Applications to bound states, tunneling, and the harmonic oscillators applied to photons and phonons in cavities.

PHYS 406  SOLID STATE PHYSICS (3)
Three hours lecture per week
Prerequisite: PHYS 306
Provides an introduction to the physical properties of solids, and their importance in high-tech applications. Focuses on the fundamental, unifying concepts and experimental techniques important in understanding the properties of nuclei and electrons in solids. Considers crystals defects that often control the actual properties of materials. The subjects are chosen to establish the basic principles, to describe phenomena that are responsible for the importance of solids in science and technology, and to include topics of current research.

PHYS 416  RADIOBIOLOGY AND RADIONUCLIDES (3)
Three hours lecture per week
Prerequisite: BIOL 300, PHYS 201, BIOL/PHYS/HITH 434
Topics include: nature and effects of ionizing radiation on biomolecular structures and living cells; applied radiobiology and radionuclides; genetic effects of ionizing radiation and methods of protection and dosimetry.
Same as BIOL 416

PHYS 434  INTRODUCTION TO BIOMEDICAL IMAGING (4)
Three hours lecture and two hours activity per week
Prerequisite: BIOL 210 or PHYS 200
The course will present an overview of biomedical images and imaging systems. The fundamental concepts used in several imaging modalities (such as projection radiography, mammography, DEXA, computed tomography, ultrasonography and magnetic resonance imaging) will be examined: the emphasis will be on an intuitive and descriptive presentation of the main components of these systems. Image formation and reconstruction will be addressed. The resulting clinical images will be correlated with the underlying structure and function of the organs, and the diagnostic utility and limitations of the images will be considered.
Same as BIOL 434, HITH 434
GenEd: B1, E, INTD

PHYS 436  PHYSICS OF THE PERFORMING ARTS (3)
Three hours lecture per week
Prerequisite: PA 202
Introduction to the physics of movement, lighting, sound and visual/aural perception. The course emphasizes factors that permit the performance artists to understand and more fully control their performance, with special attention to the study of audience perception. Demonstrations, experiments and video/computer simulations are used to analyze signals received by the performer and the audience.
Same as PA 436
GenEd: B1, INTD
PHYS 445  IMAGE ANALYSIS AND PATTERN RECOGNITION (3)
Three hours lecture in the lab per week
Prerequisite: PHYS/COMP/MATH 345 or Consent of Instructor
The course addresses the issue of analyzing the pattern content within an image. Pattern recognition consists of image segmentation, feature extraction and classification. The principles and concepts underpinning pattern recognition, and the evolution, utility and limitations of various techniques (including neural networks) will be studied. Programming exercises will be used to implement examples and applications of pattern recognition processes, and their performance on a variety of diverse synthetic and real images will be studied.
Same as COMP 445, MATH 445
GenEd: B1, B4, INTD

PHYS 448  TEAM BASED RESEARCH (3)
Three hours lecture per week
Prerequisite: Upper Division Standing
This is a course where students learn to work together in multidisciplinary teams. Teams are assigned a specific practical problem, and have to apply a variety of physical principles to solve the problem. The solution will incorporate design principles, implementation and technological methodologies, and business/management insight.
GenEd: B1, INTD

PHYS 464  MEDICAL INSTRUMENTATION (4)
Three hours lecture and two hours lab activity per week
Prerequisite: PHYS/BIOL/HETH 434
The detection, acquisition, processing and display of diagnostic clinical images. The course will concentrate on the fundamentals of the design of the instruments and the use of appropriate reconstruction algorithms in (computed) radiography, (digital) fluoroscopy, computed tomography, ultrasound, magnetic resonance imaging and radionuclide imaging. Activities will include image reconstruction examples, investigation of recent innovations, and two trips to local radiology departments.
Same as BIOL 464

PHYS 490  TOPICS IN PHYSICS (3)
Three hours seminar per week
Prerequisite: Upper Division Standing and Consent of Instructor
In-depth analysis of topics in physics. Topics vary each semester. Repeatable.

PHYS 492  INTERNSHIP (3)
Six hours activity per week
Prerequisite: Upper Division Standing and Consent of Instructor
Supervised work and study in industrial or scientific setting involving development of skills related to applied physics. All students are required to present their projects at the Senior Colloquium. Repeatable.
Student Option: Graded or Credit/No Credit

PHYS 494  INDEPENDENT RESEARCH (1-3)
Variable hours per week
Prerequisite: Senior standing and Consent of Instructor
Contracted laboratory and/or library research in selected areas within physics conducted under the supervision of a faculty member. All students are required to present their projects at the Senior Colloquium. Repeatable.

PHYS 497  DIRECTED STUDIES (1-3)
Variable hours per week
Prerequisite: Senior standing and program approval
Supervised project involving reading and library research in the field of physics. All students are required to present their projects at the Senior Colloquium. Repeatable.

PHYS 499  SENIOR COLLOQUIUM (1)
One hour seminar per week
Prerequisite: Senior standing
Oral presentations of current advances in the field, reports on students’ projects in PHYS 492, 494 or 497 courses, and invited lectures. Repeatable.

PHYS 510  ADVANCED IMAGE ANALYSIS TECHNIQUES (3)
Three hours of lecture in the lab per week
Prerequisite: Admission to the MS Mathematics Program or MS Computer Science Program
Image processing course in the fundamentals of 2-D digital signal processing with emphasis in image processing techniques, image filtering design and applications. Programming exercises in Matlab (or Octave) will be used to implement the various processes, and their performance on synthetic and real images will be studied. Applications in medicine, robotics, consumer electronics and communications.
Same as COMP 510, MATH 510

PHYS 546  PATTERN RECOGNITION (3)
Three hours of lecture in the lab per week.
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
New and emerging applications of pattern recognition (PR) such as data mining, web searching, multimedia data retrieval, face recognition, and cursive handwriting recognition - require robust and efficient techniques. Statistical decision making and estimation are fundamental to the study of PR. Pattern content is analyzed using feature extraction and classification. The principles and concepts underpinning PR, and the evolution, utility and limitations of various techniques (including neural networks) will be studied. Programming exercises will be used to implement examples and applications of PR processes, and their performance on a variety of diverse examples will be studied.
Same as MATH 546, COMP 546

POLS 102  COMPARATIVE GOVERNMENT (3)
Three hours lecture/discussion per week
This course introduces the student to the contemporary study of comparative politics. The theme for the course will be democratization and democracy. Topics will include political institutions (constitutions, executives, legislatures, courts, and political parties), political behavior (voting, group activism, and other modes of political participation), and political ideas (political culture, socialization, status of women, and political economy).
GenEd: D

POLS 103  INTRODUCTION TO INTERNATIONAL POLITICS (3)
Three hours lecture/discussion per week
This course offers an overview of current theory, topics, and research in the Political Science subfield of International Relations. Emphasis will be placed on the role of power in international affairs, the structure of the international system, the meaning of security, and the importance of economic relations between nations and regions.
GenEd: D
POLS 140  CALIFORNIA GOVERNMENT AND POLITICS (1)
One hour of lecture per week
Introduction to the structure and function of California state government. Satisfies California state and local government requirement for students who have taken American Government without a California component or who receive Advanced Placement credit for American Government.

POLS 150  AMERICAN POLITICAL INSTITUTIONS (3)
Three hours lecture per week
Examines the major American national and state political institutions and processes, including the presidency, congress, the federal court system, political parties, the electoral system, and major institutions of state government. This course emphasizes how these institutions and processes function within changing American Constitutional principles of the role of law, federalism, shared power, and individual and civil rights. Meets Title 5 US Constitution and State and Local Government requirement.

POLS 300  POLITICAL SCIENCE RESEARCH METHODS (3)
Three hours lecture per week
Introduction to research methods commonly used in political science. Topics include: research design, literature reviews, measurement and observation. Covers quantitative as well as qualitative methods of inquiry.

POLS 301  POLITICAL THEORY (3)
Three hours lecture/discussion per week
Political Theory is devoted to assessing the authority, legitimacy, and justification of various kinds of political arrangements. How should people live together in society? Is democracy really the best form of government? Can a society legislate morality? What do individuals owe their government? What does their government owe them? This course will consider these and related questions through an introductory survey of works by major political philosophers such as Plato, Hobbes, Locke, Mill, and Marx. Ramifications for issues such as freedom of speech, religious liberty, affirmative action, women's rights, economic inequality, criminal punishment, civil disobedience, and revolution will also be explored.

POLS 303  STATISTICAL APPLICATIONS IN THE SOCIAL SCIENCES (4)
Four hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or MATH 105 or Equivalent
Introduces quantitative methods as used in social & behavioral science research with the goal of statistical literacy. Statistical techniques and data analysis unique to the behavioral and social sciences. Descriptive and inferential statistics to test hypotheses. Principles of sampling design, hypothesis testing for behavioral and social science research, data collection techniques, statistical analysis and interpretation of data, as well as written reporting of results. SPSS Statistics software.
Same as SOC 303, PSY 303
GenEd: B3

POLS 304  AGING POLICY AND POLITICS (3)
Three hours lecture per week
Examines the role of political institutions in policy making related to issues of aging. The political factors that shape policy formulation and implementation, the values and assumptions of different types of policies, and the links between policy and implementation. Analyzes current and pending policies' effects on older adults as well as businesses and institutions that serve them to illustrate how aging policy reflects American politics.
Same as HLTH 304

POLS 305  GENDER AND POLITICS (3)
Three hours lecture per week
Examines the role of women as political actors in the United States. Also explores the impact of public policies on women in America.

POLS 306  THE POLITICS OF RACE AND ETHNICITY (3)
Three hours lecture per week
Examines the politics and policy consequences of racial and ethnic identity in the United States. Special attention will be paid to issues of race and politics in contemporary southern California.
GenEd: C3B

POLS 312  INTEREST GROUPS AND COLLECTIVE ACTION (3)
Three hours lecture per week
Prerequisite: POLS 150
The course surveys political interest groups by examining the contrast between political parties and elections versus interest groups and lobbying, the logic behind collective action, the institutional arrangements governments use to channel group demands, and interest group resources, strategies and tactics in asserting influence. The course will examine groups in different issue domains, and make distinctions between interest groups and social movements.

POLS 313  THE UNITED STATES CONGRESS (3)
Three hours lecture per week
Prerequisite: POLS 150
This course addresses the historical development of the Congress, the dynamics of congressional elections, analytical perspectives on the study of Congress, and the major internal mechanisms of the institution including parties, leaders, committees, rules, etc.

POLS 314  THE AMERICAN PRESIDENCY (3)
Three hours lecture per week
Prerequisite: POLS 150
An introduction to major approaches to the study of the presidency, presidential selection, presidential power, interbranch relations, the role of the public, interest groups, and the media, and presidential behavior in the policy-making process. The course also focuses on the historical development of the office.

POLS 315  CONGRESS AND THE PRESIDENCY (3)
Three hours lecture/discussion per week
This course will examine the ongoing struggle between the President and Congress to enact public policy. Students will study the two institutions singly and in their interaction. Particular attention will be placed on the electoral incentives of members of each institution and the inherent difficulties of cooperation in a system of separation of powers.

POLS 316  STATE AND LOCAL POLITICS AND POLICY (3)
Three hours lecture per week
Examines the structures, functions, policies, politics and administration of subnational governments in the United States. Satisfies the California State and local government requirement for students who have taken American Government without a California component or who have received Advanced Placement credit for American Government.

POLS 317  JUDICIAL POWER AND PROCESS (3)
Three hours lecture per week
Study of the American court system, including study of the history, organization, politics and policymaking of the judicial branch.
POLS 318 CAMPAIGNS AND ELECTIONS (3)
Three hours lecture per week
Prerequisite: POLS 150
Explores political parties, campaigns, elections and voting behavior in the American context.

POLS 319 POLITICAL BEHAVIOR AND PUBLIC OPINION (3)
Two hours lecture per week and three hours laboratory per week
Prerequisite: POLS 150
An introduction to the study of individual political behavior. Among the topics covered are the development of political attitudes, political socialization, measuring behavior and opinion, and the uses and abuses of public opinion data.

POLS 320 PUBLIC ADMINISTRATION (3)
Three hours lecture/discussion per week
This course is an introduction to public administration in the United States at the national, state and local levels of government. It will explore the various trends in American public administration, examine the unique circumstances involved in administering public organizations and look at different techniques of public management. Topics of study include: the structure and function of the American system of federalism, organizational theory and behavior, public budgeting and finance, public human resources management and the role of women in public administration.

POLS 321 PUBLIC BUDGETING (3)
Three hours lecture per week
Examines the major concepts of public budgeting and finance in the United States. Key topics of study include: expenditure estimation, revenue forecasting, capital budgeting, budget reform and financial management. The politics that characterizes the budgetary process will be emphasized throughout. Same as FIN 321

POLS 322 GOVERNMENT AND POLITICS OF SELECTED NATIONS (3)
Three hours lecture per week
An intensive study of the politics and government of a nation or group of nations. Topics will include study of the government structure, political processes, political behavior and public policies. Areas of focus vary by semester. Repeatable based on topic up to 2 units.

POLS 327 INTERNATIONAL RELATIONS OF SELECTED AREAS (3)
Three hours lecture per week
Examination of the international political and economic relations among nations of a particular area of the world. Area of focus varies by semester. Repeatable by topic.

POLS 328 UNITED STATES FOREIGN POLICY (3)
Three hours lecture per week
Examines the process of foreign policy making by the United States from several theoretical perspectives.
GenEd: D

POLS 329 INTERNATIONAL LAW AND ORGANIZATIONS (3)
Three hours lecture per week
Studies processes of global governance, which includes a focus on selected international institutions and the basics of international law.

POLS 330 POLITICAL SOCIOLOGY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines power and power structures at all levels of society. The roles of social classes, movements, and institutions in shaping the political process and social influences on political behavior are explored.
Same as SOC 330
GenEd: C3B, D, INTD

POLS 331 NARRATIVES OF THE WORKING CLASS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies.
Same as ENGL 331, SOC 331, ECON 331, HIST 331
GenEd: C2, D, INTD

POLS 333 NONPROFIT ORGANIZATIONS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Issues unique to nonprofit organizations including financial, legal, and political. Same as ECON 333
GenEd: D, INTD

POLS 334 PEACE STUDIES (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examination of theories of and issues in the interdisciplinary field of peace and conflict studies. In-depth analysis of the concepts of peace and war, causes of conflict and war, achieving negative peace, building positive peace, in-depth case studies in nonviolence. Comparison of disciplinary approaches to the field as well as appraisal of interdisciplinary syntheses.
GenEd: D, INTD

POLS 335 POLITICS AND FILM (3)
Two hours lecture and two hours activity per week.
Prerequisite: Junior Standing or Consent of Instructor
Explores the themes, issues and processes of politics through an in depth study of selected films. Area of focus varies by semester.
GenEd: D, INTD

POLS 340 POLITICS AND THE ENVIRONMENT (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Exploration of environmental politics in both the international and domestic contexts.
Same as ESRM 340
GenEd: D, INTD

POLS 341 THE NATIONAL PARK (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
An interdisciplinary, in-depth study of one or more units of the National Park Service from a variety of perspectives including Political Science, Public Administration, and Environmental Science and Resource Management. The course analyzes how conservation issues and practices, administrative and policy processes and interpretive (educational) programs work within the context of a national public resources agency. Each term this course will focus on one or more park unit in the region.
Same as ESRM 341
GenEd: D, INTD
POLS 345  SCIENCE AND PUBLIC POLICY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the relationship between science, politics, and public policy and prepares students to make informed decisions concerning the societal implications of many rapidly advancing avenues of scientific research.
Same as BIOL 345
GenEd: D, INTD

POLS 351  INTERNATIONAL RELATIONS OF AFRICA (3)
Three hours lecture per week
Prerequisite: POLS 103
Explores the history of African states as colonies and the era of independence, the creation of institutions of domination (such as the apartheid state in South Africa and other authoritarian regimes), and the process of democratization. Examines the international political economy of the region, the AIDS crisis, regional politics including political and economic integration through the African Union, Africa's role in international politics, and contemporary conflicts.

POLS 352  INTERNATIONAL RELATIONS OF EUROPE (3)
Three hours lecture per week
Prerequisite: POLS 103
Examines countries of Europe with a special focus on European integration from the late 19th century to the present with comparative study of political systems, societies, and current challenges. Patterns of post-World War II history, political culture, political power and public policy.

POLS 353  INTERNATIONAL RELATIONS OF LATIN AMERICA (3)
Three hours lecture per week
Prerequisite: POLS 103
Examines countries of Latin America from the late 19th century to the present. Focuses on problems these states have faced in their struggle for economic, political, and social development in the broader global system, including the impact of extra-regional states, such as the U.S.

POLS 401  CONSTITUTIONAL LAW (3)
Three hours lecture per week
Examines the scope of rights and liberties under the United States Constitution. Includes a study of the leading decisions of the United States Supreme Court in this area.
GenEd: D, INTD

POLS 402  CIVIL RIGHTS AND CIVIL LIBERTIES (3)
Three hours lecture per week
Examines the scope of rights and liberties under the United States Constitution. Includes a study of the leading decisions of the United States Supreme Court in this area.

POLS 403  COMPARATIVE FOREIGN POLICY (3)
Three hours lecture per week
Prerequisite: POLS 103
Examines the development of foreign policy through review of prominent theoretical perspectives in the comparative foreign policy literature. Application of theories to a number of real world cases of foreign policy decision making by the governments of countries in Africa, Asia, Europe, Latin America, and the Middle East, in different issue areas, including national security policy, foreign economic policy, human rights, environmental policy, and the fight against terrorism.

POLS 404  POLICY LEADERSHIP (3)
Three hours lecture per week
Prerequisite: POLS 103
Explores policy leadership across all levels of society and across educational and political domains. Exposes students to ideas about policy leadership, requiring students to learn about current leaders in the region, the U.S. and abroad as theories and concepts are applied to the real world of politics and policy.
Same as EDUC 404

POLS 426  POLITICS OF DEVELOPING COUNTRIES (3)
Three hours lecture per week
Prerequisite: POLS 103
Examines political, economic and social development in developing countries.

POLS 430  POLITICAL COMMUNICATION (3)
Three hours lecture per week
An analysis of the relationship between mass media and political decision-making. Topics covered include: political communication theories and trends, the relationship between political institutions and the press in the US and in other countries, elections, debates, political campaigning and advertising, new media and politics, political socialization, education, politics and popular culture.
GenEd: D, INTD

POLS 431  EDUCATION POLICY AND POLITICS (3)
Three hours lecture per week
Prerequisite: POLS 150 for POLS students or Consent of Instructor
Examines the roles of political institutions in education policy making, the political factors that shape policy formulation and implementation, the values and assumptions of different types of policies, and the links between policy and local-level implementation. Analyzes current and pending policies' effect on schools and classrooms to illustrate how education policy reflects American politics.
Same as EDUC 431
GenEd: D, INTD

POLS 450  ENVIRONMENTAL CONFLICT RESOLUTION (3)
Three hours lecture per week
Provides practical experience in negotiation and mediation techniques within the context of complex environmental and public policy disputes.
Same as COMM 450, ESRM 450

POLS 490  SPECIAL TOPICS IN POLITICAL SCIENCE (3)
Three hours lecture per week
Prerequisite: Consent of Instructor
Examines a special topic with political or policy significance. Repeatable up to 2 units.

POLS 492  SERVICE LEARNING IN POLITICAL SCIENCE (3)
One hour lecture per week and two hours activity per week
Community based service combined with course work and reflection on a topic with political or policy significance. Repeatable up to three times.

POLS 493  INTERNSHIP IN POLITICAL SCIENCE (3)
Three hours lecture per week
Prerequisite: Consent of Instructor
Community based internship in political science. Repeatable up to 2 units.

POLS 494  INDEPENDENT RESEARCH (1-3)
Prerequisite: Senior standing or Consent of Instructor
Independent research in Political Science conducted under the supervision of a faculty member. Repeatable.

POLS 499  CAPSTONE (3)
Three hours lecture per week
Prerequisite: POLS 300
Integrating and culminating experience in which students work in teams to analyze political or policy issues in a community-based setting.
Psychology

PSY 202 Biostatistics (3)
Three hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or credit for MATH 105 or Equivalent
Critical reasoning using a quantitative and statistical problem-solving approach to solve real-world problems. Uses probability and statistics to describe and analyze biological data collected from laboratory or field experiments. Course will cover descriptions of sample data, probability and empirical data distributions, sampling techniques, estimation and hypothesis testing, ANOVA, and correlation and regression analysis. Students will use standard statistical software to analyze real world and simulated data.
Same as MATH 202
GenEd: B3

PSY 212 Neurobiology and Cognitive Science (3)
Three hours lecture per week
Principles of brain organization and function underlying behavior. Topics include neuroanatomy and physiology of language, vision, sexual behavior; memory and abnormal behavior.
Same as BIOL 212
GenEd: B2, E

PSY 213 Developmental Psychology (3)
Three hours lecture per week
Prerequisite: PSY 100
This course represents an in-depth survey of theory and research in developmental psychology throughout the life span. The course introduces students to the biological, cognitive, emotional, social, and linguistic development from the prenatal period to adulthood.
GenEd: D, E

PSY 220 Human Sexual Behavior (3)
Three hours lecture per week
Prerequisite: PSY 202.
This course covers knowledge about the processes and variations in: sexual functions and reproduction; intimate relationships; sexual and gender role development and behavior; and the social, cultural, historical and moral contexts of sex and love.
GenEd: E

PSY 230 Psychological Research and Statistical Methods I (3-4)
Two hours lecture and one hour activity per week
Prerequisite: PSY 100, PSY 202, or Equivalent, and Upper Division Standing, or Consent of Instructor
Introduction to research methodology and a basic framework to evaluate social and behavioral science research. Topics include how to apply the scientific method within the field of psychology and the social sciences, ethical guidelines and issues related to the research in, and practice of, psychology, how to evaluate research and popular claims in psychology with a critical eye, and computer applications related to statistics and research. Coursework on inferential and descriptive statistical methods will build on material from PSY 202.

PSY 300 Psychological Research and Statistical Methods II (3-4)
Two hours lecture and one hour activity per week
Prerequisite: PSY 300 or PSY 202
Principles and practices of field research methods in basic and applied social science research settings. The relationship between field and laboratory studies are highlighted with a special emphasis on survey and evaluation research methods and study designs, client and respondent relationships, and research and public policy.

PSY 300 Statistical Applications in the Social Sciences (4)
Four hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or MATH 105 or Equivalent
Introduces quantitative methods as used in social & behavioral science research with the goal of statistical literacy. Statistical techniques and data analysis unique to the behavioral and social sciences. Descriptive and inferential statistics to test hypotheses. Principles of sampling design, hypothesis testing for behavioral and social science research, data collection techniques, statistical analysis and interpretation of data, as well as written reporting of results. SPSS Statistics software.
Same as SOC 303, POLS 303
GenEd: B3

PSY 305 Field Research Methods (3)
Three hours lecture per week
Prerequisite: PSY 300 and PSY 301 and PSY 303 or PSY 202
Principles and practices of field research methods in basic and applied social science research settings. The relationship between field and laboratory studies are highlighted with a special emphasis on survey and evaluation research methods and study designs, client and respondent relationships, and research and public policy.

PSY 309 History and Systems of Psychology (3)
Three hours lecture per week
Prerequisite: Upper Division Standing or Consent of Instructor
This course examines the historical development of psychological thought and methodology, from its origins in philosophy, its attempts to emulate the natural sciences, through the Diaspora of contemporary psychological thought. The major schools of psychology will be explored in context of their philosophical, cultural and ethical influences.

PSY 312 Social Psychology (3)
Three hours lecture per week
Prerequisite: Upper Division Standing or Consent of Instructor
This course is an in-depth survey of the major areas of social psychology. Emphasizes an understanding of the important methods, terms, theories, and findings in the field of social psychology.

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PSY 313  CLINICAL AND ABNORMAL PSYCHOLOGY (3)
Three hours lecture per week
Examines the major diagnostic, etiologic, and treatment options for a variety of psychopathologies and psychological disorders. Areas to be covered include how psychologists diagnose, assess, understand the etiology, and treat psychological illness and problems. Topics include: disorders related to anxiety, stress & trauma, mood, schizophrenia and psychosis, eating and substance abuse, memory & organic dysfunctions, personality; social, cultural, and legal issues related to psychopathology.

PSY 314  BEHAVIORAL NEUROSCIENCE (4)
Three hours lecture and two hours laboratory per week
Neuroanatomy, physiology, pharmacology and their application to cognition, emotion, language, learning, motivation, perception and memory.

PSY 315  CHILD PSYCHOPATHOLOGY (3)
Three hours lecture per week
Prerequisite: PSY 100, PSY 213, PSY 313
Examines behavioral disorders in children and introduces the diagnostic criteria and treatment issues related to children. Topics include disorders related to development, learning, behavior, mood, anxiety, schizophrenia, and substance abuse.

PSY 316  PERSONALITY (3)
Three hours lecture per week
Prerequisite: PSY 100
Five hours laboratory
This course considers the major theoretical, application, research, and assessment issues in the study of personality. Emphasis will be placed on the theoretical aspects of personality and the different ways in which these theories are validated. The course will also explore some of the more commonly used personality assessment measures, cultural influences on personality theory, as well as at least one non-Western theory of personality. Formerly known as PSY 217, changed February 2009.
Student Option: Graded or Credit/No Credit

PSY 317  THEORIES OF PERSONALITY (3)
Three hours lecture per week
Prerequisite: PSY 100
This course considers the major theoretical, application, research, and assessment issues in the study of personality. Emphasis will be placed on the theoretical aspects of personality and the different ways in which these theories are validated. The course will also explore some of the more commonly used personality assessment measures, cultural influences on personality theory, as well as at least one non-Western theory of personality. Formerly known as PSY 217, changed February 2009.

PSY 318  LEARNING, COGNITION AND PERCEPTION (4)
Four hours lecture per week
Prerequisite: PSY 100
Examines the ways that people learn, remember and perceive. Basic learning and perceptual processes will be examined within an adaptive framework. The interaction between individual and environment will be examined in a variety of contexts including memory, reasoning, visual perception, speech and language.

PSY 327  PARENTING (3)
Three hours lecture per week
Prerequisite: PSY 100, PSY 211, PSY 213
Examines theories of parent-child relations across the life-span and introduces the theoretical frameworks, research, and applications of parenting techniques and strategies.

PSY 328  BEHAVIORAL FINANCE: THE PSYCHOLOGY OF DECISION-MAKING (3)
Three hours lecture per week
Prerequisite: PSY 100
Examines the influence psychology has on the behavior of financial practitioners and the subsequent effect on financial markets. Investigates psychological variables (such as heuristics, biases, overconfidence, and sentiment) and how the resulting affective and cognitive reactions impact personal and general financial decisions. Examines how to apply behavioral finance in investing, corporate financial decision making, and financial market management.

PSY 330  MEASUREMENT AND TESTING OF GROUPS AND INDIVIDUALS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Covers the principles of measurement as applied to group standardized measures of achievement, special aptitude, intelligence, personality, and interest for use in educational settings. Survey the administering, scoring, and interpreting of these measures. Language and culture issues related to testing will be explored.
GenEd: D, INTD

PSY 333  psycho-pathology of Nazi Germany (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the historical and psychological roots of the Nazi movement in Germany. Areas covered will include the mass psychology of fascism, the psychopathology of Nazi leaders, and the psychological impact of the Holocaust.
GenEd: D, E, INTD

PSY 334  PSYCHOLOGICAL ETHICS AND MORAL PHILOSOPHY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Provides students with a broad overview of some of the main philosophical and moral ideas that are used as a basis for resolving debates in psychology, the mental health fields and public health.
GenEd: D, INTD

PSY 335  PSYCHOLOGY AND LITERATURE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
This course looks at the ways in which human psychology manifests in literature and the ways literature instructs us about human psychology. Through reading, writing about, and discussing texts with particularly rich psychological content, issues related to mental health and the human condition will be explored. The course will also cover some theoretical and technical aspects of psychology relevant to the readings.
GenEd: C2, D, INTD

PSY 336  HISTORY AND PSYCHOLOGY OF NAZI GERMANY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the historical and psychological roots of the Nazi movement in Germany. Areas covered will include the mass psychology of fascism, the psychopathology of Nazi leaders, and the psychological impact of the Holocaust.
GenEd: D, E, INTD
PSY 342  COMPLEMENTARY AND ALTERNATIVE HEALTH (3)
Three hours lecture per week.
Prerequisite: Junior Standing or Consent of Instructor.
Examines alternatives to conventional health approaches such as acupuncture, herbal remedies, relaxation, therapeutic massage, naturopathy, qigong, and yoga. Emphasis on individual and social lifestyle approaches, legal and ethical barriers, governmental status and support.
Same as NRS 342.
GenEd: C3, E, INTD.

PSY 344  PSYCHOLOGY AND TRADITIONAL ASIAN THOUGHT (3)
Three hours lecture per week.
Prerequisite: Junior Standing or Consent of Instructor.
This course examines the differences and similarities between the Western practice of psychology and traditional Asian systems of philosophy and religion. Topics include: health, well-being and enlightenment, pathology, Buddhism, Daoism, and depth psychologies.
GenEd: C3, E, INTD.

PSY 345  INDIVIDUALS WITH DISABILITIES IN SOCIETY (3)
Three hours lecture per week.
Prerequisite: Junior Standing or Consent of Instructor.
Major types of disabilities and giftedness, including definitions, causes, characteristics, and educational implications. Topics include: disability perspectives and social, legal, and educational considerations of disability issues.
Same as SPED 345.
GenEd: D, E, INTD.

PSY 346  HUMAN MOTIVATION (3)
Three hours lecture per week.
Prerequisite: Junior Standing or Consent of Instructor.
Examines different biological, social, learning and cognitive approaches to the topic of motivation. The key theories of motivation will be reviewed and applied. Topics include: contemporary, psychological, biological and sociocultural principles, issues including drug addiction and gang affiliation.
GenEd: E, INTD.

PSY 348  HEALTHY AGING (3)
Three hours lecture per week.
Prerequisite: Junior Standing or Consent of Instructor.
Explores physical, cultural and psychosocial factors influencing health issues during the elderly years of life. Topics include aging stereotypes, cultural and family influences on the elderly, physiology of aging, lifestyles choices associated with healthy aging, and end of life care.
Same as NRS 348, SOC 348.
GenEd: D, E, INTD.

PSY 357  PSYCHOLOGY OF FAMILIES (3)
Three hours lecture per week.
A study of the dynamics of the family as a social system, with emphasis on recent research regarding processes of family change, dissolution, disorganization and reorganization. Traces the historical development of the modern family; role expectations of husbands, wives, parents and children; examines family diversity with respect to ethnicity/race, sexuality, and income.

PSY 370  FUNDAMENTALS OF COUNSELING THEORY (3)
Three hours lecture per week.
Prerequisite: PSY 100, PSY 213, and PSY 217.
Overview of selected counseling theories and models used in private practice, school, and community settings. Focus is on relating theory to practice, counselor-client relationships, counseling in a culturally diverse society, case studies, methods of adult and child assessment, and professional ethics.

PSY 375  PSYCHOLOGY OF HEALTH COUNSELING (3)
Three hours lecture per week.
Prerequisite: PSY 213.
Examines health counseling methods designed to promote good health and prevent illness, deal effectively with the treatment people receive for medical problems, help people cope with and reduce stress and pain, and aid in the recovery, rehabilitation, and psychosocial adjustment of patients with serious health problems.

PSY 383  CHICANA/O LATINA/O IDENTITY AND EMPOWERMENT (3)
Three hours lecture per week.
Prerequisite: PSY 100 and/or CHS 100 or Equivalent.
Examines theories of identity development and empowerment applied to Latina/o adolescents and adults living in a multicultural society. Psychological, social, and cultural issues will be examined from the perspective of Latinas/os from diverse ethnic, cultural and socioeconomic backgrounds.
Same as CHS 383.

PSY 400  CASE STUDIES IN PSYCHOPATHOLOGY AND CLINICAL PSYCHOLOGY (3)
Three hours lecture per week.
Prerequisite: PSY 313 or Consent of Instructor.
An advanced undergraduate course on the etiology, classification, and treatment of human psychopathology.

PSY 420  AFRICAN AMERICAN FAMILIES (3)
Three hours lecture per week.
Examines the structure, values, and behavior patterns of the contemporary African American family as influenced by African culture and kinship systems and the institution of slavery in association with other factors. The orientation to African American family life will emphasize its strengths, weaknesses, adaptations, strong kinship bonds, and family roles.

PSY 424  ORGANIZATIONAL BEHAVIOR (3)
Three hours lecture per week.
Prerequisite: MGT 307 or by Instructor Consent.
An application of behavioral science theory and concepts with a focus on individual, interpersonal and group processes in a diverse work force. Topics include personality traits, emotions, values, work attitudes, work motivation, organizational politics, group effectiveness and conflict. Extensive use of individual and group case analysis.
Same as MGT 424.

PSY 429  INTERGROUP RELATIONS (3)
Three hours lecture per week.
Prerequisite: Junior or Senior Standing.
Provides an overview of the social psychological study of intergroup relations, emphasizing underlying social and individual dynamics. Considers theory and research in the field and the application of these to a variety of societies and groups. Topics include the importance of groups in individual identity development; stereotypes, prejudice, and discrimination; intergroup inequality and injustice; collective action, and social protest.

PSY 432  SEMINAR IN LEADERSHIP (3)
Three hours seminar per week.
Prerequisite: Consent of Instructor.
This course gives students an opportunity to both study and experience communicative, managerial, psychological, and sociological perspectives related to leadership. This includes in-depth study of aggression and dominance, group structure and behavior, decision-making, and the role of personality in leadership.
GenEd: D, E, INTD.
PSY 436 PSYCHOLOGY AND HISTORY OF EAST ASIAN WARRIOR CULTURES (3)
Three hours lecture per week
Prerequisite: Upper Division Standing or Consent of Instructor
Examines the psychological and historical roots of warrior cultures in East Asia. Characteristics such as duty, enlightenment, honor, loyalty, and discipline will be examined in the context of the individual and group psychology of warrior cultures throughout history. Psychological and historical conceptions of violence, aggression, and strategy will also be explored. Students will be encouraged to relate values derived from Asian warrior cultures to their own lives, while reflecting on the applicability of these ideas to modern life.
Same as HIST 436
GenEd: D, E, INTD

PSY 449 CRIMINAL BEHAVIOR (3)
Three hours lecture per week
Prerequisite: PSY 313 or Consent of Instructor
An introduction to the fundamentals of criminal psychology through the study of the psychological factors which relate to or cause criminal behavior in individuals. The practice of forensic psychology, the legal system, law enforcement psychology, prison psychology, and the criminal behavior of groups will also be discussed.

PSY 460 ADDICTION STUDIES (3)
Three hours lecture per week
Prerequisite: PSY 100, PSY 217, and PSY 313
Focuses on the influence of addictive disorders on individuals, family and society. Applies a multidisciplinary analytical framework. Topics include theories of addiction, pharmacology of drug use, assessment, family and community responses, treatment interventions, and policy issues related to societal responses to and treatment of addictions.

PSY 461 ADVANCED TOPICS IN CHILD AND ADOLESCENT DEVELOPMENT (3)
Three hours lecture per week
Prerequisite: PSY 213, PSY 445 or Consent of Instructor
Represents an advanced study of human growth and development. Repeatable by topic up to 2 units.

PSY 470 SEMINAR IN FREUD AND OBJECT RELATIONS THEORY (3)
Three hours lecture per week
Prerequisite: PSY 313 or Consent of Instructor
An overview of the works of Freud and neo-Freudian schools of thought. Emphasis on both structural and developmental models in psychoanalytic thought as applied to the individual and to society at large. Feminist and non-Western cultural interpretations of these theories will also be discussed.

PSY 471 SEMINAR IN JUNGIAN AND ARCHETYPAL PSYCHOLOGY (3)
Three hours lecture per week
Prerequisite: PSY 313 or Consent of Instructor
An overview of the works of Jung and neo-Jungian schools of thought. Emphasis on both structural and phenomenological views of Jung’s work as applied to the individual and to society at large. Structural theories of mythology both Eastern and Western will be discussed in context of Jung’s work.

PSY 492 INTERNSHIP OR SERVICE LEARNING (1-3)
Prerequisite: Upper Division Standing and Consent of Instructor
Supervised work/volunteer experience in an appropriate setting with supervision in the field from an appropriate person with credentials and/or experience in a specialty related to psychology. Students are required to write a report of their experience. Supervised work/volunteer experience in an appropriate setting. Includes supervision in the field from an appropriate person with credentials and/or experience in a specialty related to psychology. Students are required to write a report of their experience. Repeatable.

PSY 982 INTERMEDIATE STATISTICS (1)
Three hours lecture per week
Prerequisite: PSY 300 and PSY 301 or PSY 303 or PSY 202
Presents advanced statistical analyses and their application including factorial designs, multivariate analysis of variance, and multiple regression. Emphasizes on both the theoretical and applied aspects of the various statistical approaches.

PSY 490 TOPICS IN PSYCHOLOGY (1-3)
Up to Three hours lecture per week
Prerequisite: PSY 301 or Consent of Instructor
Provides an in-depth study of some aspect of psychology. Repeatable by topic up to 2 units.
Student Option: Graded or Credit/No Credit

PSY 492 INTERNSHIP OR SERVICE LEARNING (1-3)
Prerequisite: Upper Division Standing and Consent of Instructor
Supervised work/volunteer experience in an appropriate setting with supervision in the field from an appropriate person with credentials and/or experience in a specialty related to psychology. Students are required to write a report of their experience. Supervised work/volunteer experience in an appropriate setting. Includes supervision in the field from an appropriate person with credentials and/or experience in a specialty related to psychology. Students are required to write a report of their experience. Repeatable.

Student Option: Graded or Credit/No Credit
SOC 100  INTRODUCTION TO SOCIOLOGY (3)
Three hours lecture per week
An introductory study of the basic concepts, theoretical approaches, and methods of sociology. Topics include: the analysis and explanation of social structure, social change, group dynamics, socialization and self, social stratification, and cultural diversity.
GenEd: D

SOC 201  SOCIAL PROBLEMS (3)
Three hours lecture per week
Examines social problems in the United States from a sociological perspective. Social problems in the community such as homelessness, poverty, and racism will be explored through integrating classroom discussion, lecture, and reading.
GenEd: D

SOC 202  INTRODUCTION TO RESEARCH METHODS (3)
Three hours lecture per week
Prerequisite: SOC 100
Introduction to the methodology used by sociologists and other social scientists to analyze, describe, and theorize about social issues and structures. Emphasis in both quantitative and qualitative research strategies, the role of theory in guiding research, and the application of scientific logic in the social sciences.

SOC 203  INTRODUCTION TO SOCIAL BUSINESS (3)
Three hours lecture per week
Interdisciplinary overview of Social Business models and their application to social, economic, technological, cultural, political and environmental issues both locally and globally. Introduction to the finance and planning of Social Businesses, as well as comparisons to traditional and other alternative business models.
Same as BUS 203, ECON 203
GenEd: D

SOC 300  STATISTICAL APPLICATIONS IN THE SOCIAL SCIENCES (4)
Four hours lecture per week
Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or MATH 105 or Equivalent
Introduces quantitative methods as used in social & behavioral science research with the goal of statistical literacy. Statistical techniques and data analysis unique to the behavioral and social sciences. Descriptive and inferential statistics to test hypotheses. Principles of sampling design, hypothesis testing for behavioral and social science research, data collection techniques, statistical analysis and interpretation of data, as well as written reporting of results. SPSS Statistics software.
Same as PSY 303, POLS 303
GenEd: B3

SOC 309  TOPICS IN GAY, LESBIAN, BISEXUAL, TRANSGENDER, AND QUEER STUDIES (1)
One hour lecture per week
This course provides an introductory exposure to gay, lesbian, bisexual, and transgendered issues through lecture, presentation, activities, and discussion. Each semester a new topic of importance to gay, lesbian, bisexual, transgendered, and/or queer individuals will be presented. Repeatable up to 3 units.
Graded: Credit/No Credit

SOC 310  RESEARCH METHODS IN SOCIOLOGY (4)
Four hours lecture per week
Prerequisite: SOC/PSY/POLS 303
Focuses on research design and the basic data analysis skills introduced in SOC 303 to examine quantitative and qualitative methods of research. Topics may include: survey research design, hypothesis formulation, questionnaire and interview design, interviewing techniques, scaling, sampling, data preparation and analysis of data. Research ethics and related topics are also addressed.

SOC 330  POLITICAL SOCIOLOGY (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines power and power structures at all levels of society. The roles of social classes, movements, and institutions in shaping the political process and social influences on political behavior are explored.
Same as POLS 330
GenEd: C3B, D, INTD

SOC 331  NARRATIVES OF THE WORKING CLASS (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies.
Same as ENGL 331, POLS 331, ECON 331, HIST 331
GenEd: C2, D, INTD

SOC 336  SOCIAL ENTREPRENEURSHIP (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Social entrepreneurship is about creating and leading organizations that strive to advance social change. Draws from both theory and practice to explore important trends in the private and social sectors, which are creating space for innovation and opportunities for individuals with business skills to drive positive change. Incorporates case studies, exercises, field trips, group presentations, and a semester-long service project.
Same as BUS 336
GenEd: D, INTD

SOC 342  INTERNET-BASED SOCIAL NETWORKS (3)
Three hours lecture per week
Explores the ongoing evolution of Internet based social networks using an interdisciplinary approach. Incorporates research from sociology, computer science, media studies, and philosophy to understand Internet based social networks, cultural and structural conditions of online communication, virtual identity construction, management of digital media, and the impact online social networks have on various institutions of society.
Same as COMM 342, COMP 342
GenEd: B4, D, INTD

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SOC 348  HEALTHY AGING (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Explores physical, cultural and psychosocial factors influencing health issues during the elderly years of life. Topics include aging stereotypes, cultural and family influences on the elderly, physiology of aging, lifestyles choices associated with healthy aging, and end of life care.
Same as NRS 348, PSY 348
GenEd: D, E, INTD

SOC 350  SOCIAL STRATIFICATION: THEORIES OF SOCIAL CLASS (3)
Three hours lecture per week
Prerequisite: SOC 100 and 300 or Equivalent
Analysis of the distribution of wealth, prestige, and power. Examines various approaches to the study of the causes of poverty, life chances of the poor, lifestyles of the wealthy, upward and downward mobility, and class and group conflict in society.

SOC 352  SOCIAL MOVEMENTS (3)
Three hours lecture per week
Prerequisite: SOC 100, SOC 201, SOC 202
The sociology of social movements analyzes the causes and consequences of organized social action. The course examines theories of social movements and a variety of case studies of movements. Particular movements studied vary by semester.

SOC 360  RACE & ETHNICITY (3)
Three hours lecture per week
Prerequisite: SOC 100
This course examines issues of race, religion, ethnic relations and power in the U.S. and elsewhere. Power, prejudice, and discrimination relating to minority status are emphasized.

SOC 370  CRIME AND SOCIETY (3)
Three hours lecture per week
Prerequisite: SOC 100, SOC 201, SOC 202
Examination of forms, causes and the extent of crime in the United States. Focuses on why people break the law, the genesis of norms, and how the law is applied.

SOC 372  URBAN SOCIOLOGY (3)
Three hours lecture per week
Prerequisite: SOC 100
Studies cities and urbanization, including processes of growth and change, the structuring of social space, dynamics of social inequality and the recent conflicts. Addresses processes of suburbanization, issues of race and diversity in the spatial and political dynamics of metropolitan areas, and the phenomenon of global cities.

SOC 374  SOCIOLOGY OF ORGANIZATIONS (3)
Three lecture hours per week
Prerequisite: SOC 100
The sociological study of organizations addresses issues of organizational dynamics (internal processes, origins, development, collapse). This course introduces students to the several dominant perspectives on organizations (rational, natural, and open system perspectives), as well as newer institutionalist approaches focusing on culture and legitimacy.

SOC 410  SOCIOLOGY OF GENDER AND SEXUALITY (3)
Three hours of lecture per week
Prerequisite: SOC 100 and SOC 203
Analysis of gender and sexuality in human society with special attention to gendered socialization practices, issues in equality from historic as well as contemporary and cross-cultural perspectives, and sexual identities and behaviors.

SOC 412  SEX, LOVE AND MONEY: THE FAMILY (3)
Three hours lecture per week
Prerequisite: SOC 100, SOC 201, SOC 202
Analysis of the family as a social institution that meets specific social needs; as a social construction that is culturally bound and malleable, and as a source of social exchange and currency. Presents an understanding of contemporary intimate life in the U.S. by examining the social history of families and current areas of concern.

SOC 415  SOCIOLOGY OF RELIGION (3)
Three hours seminar per week
Prerequisite: Three units in Sociology
Examines religion in contemporary society: beliefs, rituals, organization, and the social functions of major denominations and religious cults. Examines stability and conflict, fundamentalism and secularization, and religion in the context of other social institutions.

SOC 418  SOCIOLOGY OF EDUCATION (3)
Three hours seminar per week
Prerequisite: Three units in Sociology
Course addresses the theoretical, methodological, and descriptive contributions of sociology to the study of education. Issues include access to education, quality of education, and importance of education in perpetuating the social class system.

SOC 420  CLASSICAL SOCIOLOGICAL THEORY (3)
Three hours lecture per week
Prerequisite: SOC 100, SOC 201 and SOC 202
This course explores the origin and development of the discipline of sociology with a particular focus on the classical period: the 19th century to mid-20th century. Students will develop an appreciation for the roots of sociological theorizing by reading the work of such thinkers as Emile Durkheim, Max Weber, W.E.B. DuBois, Karl Marx and others.

SOC 421  CONTEMPORARY SOCIOLOGICAL THEORY (3)
Three hours lecture per week
Prerequisite: SOC 100, SOC 201, SOC 202 and SOC 420
Modern sociological paradigms from the 1960’s forward to the present period including Marxism, neoMarxist modern theory, critical theory, symbolic interaction, rational choice, feminist theories and theories on modernity and post-modernity.

SOC 425  CONTEMPORARY IMMIGRATION ISSUES (3)
Three hours lecture per week
Prerequisite: CHS 100 or Equivalent
Cross disciplinary examination of contemporary immigration and citizenship in the United States in comparison with other countries.
Same as CHS 425

SOC 429  SOCIAL CHANGE IN SPAIN (3)
Three hours lecture per week
Prerequisite: SPAN 202 or SPAN 212 or with Consent of Instructor
Taught in Spanish. Addresses two aspects of Spanish culture, the tremendous social change during the period known as the transition from the dictatorship of Franco to a modern democratic state, as well as how social change is expressed in a variety of social institutions.
Same as SPAN 429
SOC 440  POPULATION STUDIES (3)
Three hours lecture per week.
Prerequisite: SOC 100 and MATH 202
This course focuses on the basic concepts, skills and issues in demography and population studies. It will apply concepts to contemporary population issues such as family demography, urban transition, environmental degradation, and economic development.
Same as ESRM 440
GenEd: D, INTD

SOC 448  GLOBALIZATION AND DEVELOPMENT (3)
Three hours lecture per week.
Prerequisite: SOC 100
Examines empirical and theoretical issues of globalization from a sociological perspective, to understanding how the forces of globalization affect economic, political and cultural systems of both developed and developing nations.
Same as ECON 448, BUS 448
GenEd: D, INTD

SOC 449  CAPSTONE (3)
Three hours lecture per week.
Prerequisite: Completion of all core courses in Sociology.
Complete a research project based on a specific area in the discipline of sociology. Research projects may incorporate service to an area agency.

Spanish

SPAN 101  ELEMENTARY SPANISH I (4)
Four hours lecture per week.
Develops basic functional proficiency in the Spanish language. As students develop their listening, speaking, reading and writing skills, they acquire knowledge about cultural similarities and differences between the U.S. and the Spanish-speaking world. Not for native Spanish speakers or those with two or more years of high school Spanish within the last three years, or those with college level Spanish.
GenEd: C3A

SPAN 102  ELEMENTARY SPANISH II (4)
Four hours lecture per week.
Continuation of SPAN 101. Continued development of basic functional proficiency in Spanish. As students continue to develop their listening, speaking, reading and writing skills, they acquire more basic knowledge about the culture and civilization of the Spanish-speaking world. Students with knowledge beyond this course level will be required to take a higher level Spanish course.
GenEd: C3A

SPAN 105  ELEMENTARY SPANISH FOR K-12 TEACHERS (3)
Three hours of lecture per week.
Prerequisite: SPAN 101 or Equivalent.
Fosters the development of basic functional proficiency in the Spanish language, with emphasis on terminology and interactions related to school settings. The course is designed for those interested in learning to better communicate with Spanish-speaking members of the school population. Topics will include: Spanish alphabet, classroom vocabulary, and communication with parents.
GenEd: C3A

SPAN 201  INTERMEDIATE SPANISH I (4)
Four hours lecture per week.
Prerequisite: SPAN 102 or Equivalent.
Through the study of the culture and civilization of the Hispanic world, students continue to develop their listening, speaking, reading and writing skills in Spanish.
GenEd: C3A, C3B

SPAN 202  INTERMEDIATE SPANISH II (4)
Four hours lecture per week.
Prerequisite: SPAN 201 or Equivalent.
Continuation of SPAN 201. Through the study of the culture and civilization of the Hispanic world, students further develop their listening, speaking, reading and writing skills in Spanish. Includes discussion of Hispanic cultures, with an emphasis on Hispanic communities within the U.S.
GenEd: C3A, C3B

GENED: C3A, C3B

SPAN 211  SPANISH FOR HERITAGE SPEAKERS I (4)
Four hours lecture per week.
Prerequisite: Consent of Instructor.
Designed for students accustomed to hearing Spanish spoken at home, who are able to understand much of what they hear as well as speak some Spanish, and who are interested in further developing their speaking, reading and writing skills in Spanish. Includes discussion of Hispanic cultures, with an emphasis on Hispanic communities within the U.S.
GenEd: C3A, C3B

SPAN 212  SPANISH FOR HERITAGE SPEAKERS II (4)
Four hours lecture per week.
Prerequisite: SPAN 211 or Equivalent or Consent of Instructor.
Continuation of SPAN 211. Designed for students accustomed to hearing Spanish spoken at home, who are able to understand much of what they hear as well as speak some Spanish, and who are interested in further developing their speaking, reading and writing skills in Spanish. Includes discussion of Hispanic cultures, with an emphasis on Hispanic communities in the U.S.
GenEd: C3A, C3B

SPAN 301  ADVANCED SPANISH: PART ONE (3)
Three hours lecture per week.
Prerequisite: SPAN 202 or SPAN 212 or Consent of Instructor.
Enhancement of communicative abilities in listening, speaking, reading, and writing through the examination of topics of cultural interest in the Hispanic world. Student projects may include presentations, in-class debates, journals, cultural portfolio, and service activities.
GenEd: C3A
SPAN 302  ADVANCED SPANISH: PART TWO (3)
Three hours lecture per week
Prerequisite: SPAN 202 or SPAN 212 or Consent of Instructor
Enhancement of communicative abilities in listening, speaking, reading, and writing through the examination of cultural topics of interest in the Hispanic world. Student projects may include presentations, in-class debates, journals, cultural portfolio and service activities. GenEd: C3A

SPAN 304  SPANISH FOR CAREERS AND PROFESSIONS (3)
Three hours lecture per week
Prerequisite: SPAN 301 or SPAN 302 (may be taken concurrently) or Consent of Instructor
Interactive study of Spanish as applied to selected professional fields such as business, education, health, and social services. Students will learn basic vocabulary pertaining to these fields.

SPAN 310  INTRODUCTION TO PROSE, POETRY AND DRAMA (3)
Three hours lecture per week
Prerequisite: SPAN 301 or SPAN 302 or Consent of Instructor
Introductory literature course designed to develop students’ ability to analyze and interpret literary texts in Spanish. Selections of poetry, prose, and dramatic works from among Spanish, Latin American, and U.S. Latino authors will be studied.

SPAN 311  BILINGUAL LITERARY STUDIES/ESTUDIOS LITERARIOS BILINGUES (3)
Three hours lecture per week
Prerequisite: ENGL 103 or ENGL 105 and SPAN 202 or SPAN 212 or Consent of Instructor
Explores the literature of the Americas written in English and Spanish. Includes works by bilingual U.S. authors and by Latin American authors. Genres may include novels, short stories, drama, and poetry. Texts will be read in the original language; class discussions will be bilingual. Same as ENGL 311

SPAN 315  INTRODUCTION TO SPANISH LINGUISTICS (3)
Three hours lecture per week
Prerequisite: SPAN 301 or SPAN 302 or Consent of Instructor
Introduction to the analysis of the Spanish language from various linguistic perspectives, such as phonology, morphology and syntax. Explores the historical development of Spanish, dialectal variation in the Spanish-speaking world, the use of Spanish in the U.S., and language acquisition. Taught in Spanish.

SPAN 320  INTRODUCTION TO SPANISH TRANSLATION (3)
Three hours lecture per week
Prerequisite: SPAN 202 or SPAN 212 or Consent of Instructor
An introduction to the history, theory, and practice of translation from Spanish to English and vice versa. Students will learn strategies, techniques and principles of translation and increase their proficiency in Spanish by translating texts.

SPAN 334  SPANISH LANGUAGE DRAMA AND THEATRE (3)
Three hours lecture per week
Prerequisite: Junior Standing or Consent of Instructor
Read and analyze one-act plays from diverse parts of the Spanish-speaking world, and focus on majors works for in-depth study and performance. In addition to learning about the historical, cultural and sociological context of the plays, students will learn acting techniques and appropriate Spanish-language vocabulary and phrases. Note: Course is open to all levels of Spanish speakers.
GenEd: C2, C3B, INTD

SPAN 350  ADVANCED SPANISH GRAMMAR AND COMPOSITION (3)
Three hours lecture per week
Covers the fundamentals of Spanish accentuation, spelling, punctuation, as well as some advanced grammar and writing elements.

SPAN 411  CIVILIZATIONS AND CULTURES OF LATIN AMERICA (3)
Three hours lecture per week
Prerequisite: SPAN 301 or 302 or Consent of Instructor
Explores the history of the Spanish-speaking regions of Latin America, from pre-Colombian civilizations, to the Spanish conquest, to the present. Students will broaden their knowledge of major geographical, political, religious and literary aspects of Latin American culture.

SPAN 415  SPANISH LANGUAGE VARIATION & DIVERSITY (3)
Three hours lecture per week
Prerequisite: SPAN 315 or Consent of Instructor
This course provides a linguistic exploration of Spanish language variation. It explores different types of language variations, including historical change (language evolution from Latin to Spanish), geographical variation (different dialects in the Spanish-speaking world), and sociolinguistic variation (based on economic class, age, gender, etc.). It also analyzes fundamental issues in bilingualism (such as Spanish-English codeswitching) and other sociopolitical topics relating to the use of Spanish in the United States.

SPAN 420  SPECIALIZED SPANISH TRANSLATION (3)
Three hours lecture per week
Prerequisite: SPAN 320 or Consent of Instructor
Practice and critique of translations of a range of specialized material (legal, business, social science, technical, and audiovisual) both from Spanish to English and vice versa. Review of translation theory, methods, techniques, and problems.

SPAN 421  SPANISH FOR EDUCATORS I (3)
Three hours lecture per week
Prerequisite: SPAN 301 or SPAN 302 or Consent of Instructor
Prepares students to function effectively in Spanish within a school setting. Emphasis is placed on developing the Spanish fluency and vocabulary necessary for classroom and school-related community situations. Course content emphasizes the K-6 school setting. The topics include: General school-related vocabulary, parent-teacher conferences, writing letters, language arts and reading vocabulary, examples of Spanish-language children’s literature, social studies and mathematics. This course does not count toward the Spanish Major.
SPAN 422  SPANISH FOR EDUCATORS II (3)
Three hours lecture per week
Prerequisite: SPAN 301 or SPAN 302 or Consent of Instructor
Prepares students to function effectively in Spanish within a school setting. Emphasis is placed on developing the Spanish fluency and vocabulary necessary for classroom and school-related community situations. Course content emphasizes the K-6 school setting. The topics include: 1) General science vocabulary (parts of the body, illnesses, foods and nutrition, animals, plants, minerals, weather, solar system), 2) General art vocabulary and brief introduction to several Hispanic artists and their work, 3) General music vocabulary and brief introduction to several Spanish-language songs, including children’s songs. This Course does not count toward the Spanish major.

SPAN 429  SOCIAL CHANGE IN SPAIN (3)
Three hours lecture per week
Prerequisite: SPAN 202 or SPAN 212 or with Consent of Instructor
Taught in Spanish. Addresses two aspects of Spanish culture, the tremendous social change during the period known as the transition from the dictatorship of Franco to a modern democratic state, as well as how social change is expressed in a variety of social institutions.
Same as SOC 429

SPAN 450  INTRODUCTION TO LITERARY TRANSLATION (3)
Three hours lecture per week
Prerequisite: SPAN 310 and SPAN 320, or Consent of Instructor
An introduction to the theory and practice of literary translation from Spanish to English and vice-versa. Genres to be studied include poetry, short story, novel, and drama.

SPAN 460  MASTERPIECES OF SPANISH LITERATURE (3)
Three hours lecture per week
Prerequisite: SPAN 310 or Consent of Instructor
Advanced literature course designed to develop reading, writing, and literary analysis. Focuses on selections of poetry, prose, and theater from literary masterpieces of Spanish Literature. Lectures, discussions, and analysis of the texts will be the center of class activities.

SPAN 461  MASTERPIECES OF LATIN AMERICAN LITERATURE (3)
Three hours lecture per week
Prerequisite: SPAN 301 or Consent of Instructor
Advanced literature course that explores major Latin American Literary works. Enhances students’ knowledge of Latin American Literature, history and culture. Develops critical thinking and improve students’ reading and writing skills and Spanish language vocabulary.

SPAN 462  MODERN MEXICAN LITERATURE (3)
Three hours lecture per week
Prerequisite: SPAN 302 and SPAN 310
Advanced literature course that explores major literary works of modern Mexico starting with those that emerged from the Revolution of 1910. Includes the genres of poetry, prose, drama, and essay.

SPAN 490  SPECIAL TOPICS IN SPANISH (3)
Three hours lecture per week
Prerequisite: Consent of Instructor
Selected topics on Spanish language, linguistics, Hispanic cultures, and literatures. Repeatable for up to 2 units.

SPAN 499  CAPSTONE IN SPANISH (2)
Two hours seminar per week
Prerequisite: Senior standing as a Spanish major or Consent of Instructor
Students design and complete a project that integrates prior course work with the University's mission. The project may involve an interdisciplinary activity, a service learning experience, and reflect a multicultural or international perspective.

Special Education

SPED 345  INDIVIDUALS WITH DISABILITIES IN SOCIETY (3)
Three hours lecture per week
Prerequisite: SPAN 310 or Consent of Instructor
Major types of disabilities and giftedness, including definitions, causes, characteristics, and educational implications. Topics include: disability perspectives and social, legal, and educational considerations of disability issues.
Same as PSY 345
GenEd: D, E, INTD
SPED 541 FOUNDATIONS OF SPECIAL EDUCATION (3)
Three hours lecture per week
Prerequisite: Admission to Education Specialist Credential Program and SPED 345, ENGL 475, SPED 530, EDUC 512
Ethical standards, professional practices, laws, regulations and policies related to the provision of services to individuals with disabilities and their families. Models, theories and practices that form the basis for special education practice. History of special education and contributions of culturally diverse groups. Development of professional perspective that reflects status of special education services in society.

SPED 542 MANAGING LEARNING ENVIRONMENTS (3)
Three hours lecture/discussion per week
Prerequisite: Admission to Education Specialist Credential Program
Corequisite: SPED 562 or SPED 570 or SPED 580
Functional assessment of behavior; behavior management strategies, communication styles and their impact on learning; laws, regulations, and strategies for promoting positive and self-regulatory behavior in students. Designing and implementing positive behavioral support plans.

SPED 543 CURRICULUM AND INSTRUCTION FOR SPECIAL EDUCATION (4)
Four hours lecture per week
Prerequisite: Admission to Education Specialist Credential Program and EDUC 510, EDUC 512, ENGL 475 and SPED 345
Corequisite: SPED 570 or SPED 580 or SPED 562 or SPED 585
Identifies the characteristics and needs, and the range of service and delivery models for students with mild to moderate disabilities. Develop unit and lesson plans that adapt and modify curriculum and lessons used in general education. Strategies for collaborating and consulting with paraprofessionals, general education teachers and other professionals.

SPED 544 CURRICULUM AND INSTRUCTION FOR SPECIAL EDUCATION II (4)
Four hours lecture per week
Prerequisite: Admission to Education Specialist Credential Program
Corequisite: SPED 570 or SPED 580 or SPED 585 or SPED 562
Prepares students to identify specific academic needs for students with mild/moderate disabilities using multiple forms of assessment and instruction. Students develop instructional plans to meet the individual needs with mild/moderate disabilities using evidence based practices.

SPED 545 ASSESSMENT OF STUDENTS WITH DISABILITIES (3)
Three hours lecture/discussion per week
Prerequisite: Admission to Education Specialist Credential Program and SPED 541, SPED 542, SPED 543, SPED 570
Basic principles, processes and strategies for assessment. Use of effective assessment techniques, tools and approaches for individuals who are culturally, linguistically, ethically, socio-economically and ability diverse in general education and special education settings to make educational decisions.

SPED 547 AUTISM SPECTRUM DISORDERS IN THE CLASSROOM (2)
Two hours lecture per week
Prerequisite: SPED 345 and SPED 530
Corequisite: Enrollment in a Credential Program
Provides knowledge of how to work with students with autism in a K-12 classroom. Core challenges associated with language and communication, social skills, behavior; and processing and their implications for program planning and service delivery for students with autism. Meets the requirements for the added authorization for Autism, when taken with the Cl Ed Spec credential program.

SPED 549 ACCESS TO LEARNING: A FOCUS ON INDIVIDUAL DIFFERENCES (2)
Two hours lecture/discussion per week
Prerequisite: Admission to the Single Subject or Special Education Level I Credential Program
Focuses on methods and techniques for identifying and teaching students with special needs, including culturally diverse and gifted and talented students. Addresses collaboration between content area and special education teachers, working with diverse families and the unique issues associated with integrating students with special needs in secondary settings.
Same as EDSS 560

SPED 560 FIELD EXPERIENCE (2)
A minimum of one school day in local public schools per week
Prerequisite: Admission to the Education Specialist: Mild/Moderate Disabilities Credential Program
Corequisite: Any of the following: SPED 542, SPED 545, SPED 546
Participatory observation in school settings under the supervision of a university supervisor and/or classroom teacher for Education Specialist Candidates and Approved Interns. Repeatable up to 6 units.
Graded: Credit/No Credit

SPED 561 SPECIAL EDUCATION I (6)
Equivalent to 8 weeks of full time student teaching
Prerequisite: Admission to Education Specialist Credential Program
This is the first of a two part field experience course that provides students with the opportunity to gradually assume the responsibilities of a special education teacher in a public school including teaching, assessing students, IEP development, collaborating with parents, teachers and special services personnel.
Graded: Credit/No Credit

SPED 562 SPECIAL EDUCATION II (6-8)
Equivalent to a minimum of 8 weeks of student teaching.
Prerequisite: Admission to Education Specialist Credential Program
Corequisite: SPED 561
This is the second part of a two part field experience series that provides students with the opportunity to gradually assume the responsibilities of a special education teacher in a public school including teaching, assessing students, IEP development, collaborating with parents, teachers and special services personnel.
Graded: Credit/No Credit
SPED 641  ADVANCED PERSPECTIVES IN SPECIAL EDUCATION (3)
Three hours lecture per week
Prerequisite: Admission to Level II Education Specialist credential program
Corequisite: Working as a special education teacher
This course prepares teachers and administrators to remain abreast of effective advanced practices in the field of special education. Students will demonstrate knowledge and abilities to interpret apply and disseminate current and emerging research, theory, legislation, policy and practice related to special education.

SPED 642  ADVANCED BEHAVIOR AND ENVIRONMENTAL SUPPORT (3)
Three hours lecture per week
Prerequisite: Admission to Level II Education Specialist credential program
Corequisite: Working as a special education teacher
Examination and analysis of theories, research, and best practices of behavior and environmental support for students with disabilities within their own school settings.

SPED 643  ADVANCED ASSESSMENT AND INSTRUCTIONAL PRACTICES FOR DIVERSE LEARNERS (3)
Three hours lecture per week
Prerequisite: Admission to Level II Education Specialist credential program
Corequisite: Working as a special education teacher
This field based seminar course builds upon students knowledge and skills of assessment and instructional methodology learned in their Level I Education Specialist credential. Students have the opportunity to discuss and review current practices in special education on the local, state and national level. Students review current trends in multicultural and bilingual special education. Students will demonstrate and/or apply knowledge in the areas of assessment, technology and other areas that effect special education practices for students with mild/moderate disabilities.

SPED 644  ADVANCED COLLABORATIVE PARTNERSHIPS AND EFFECTIVE COMMUNICATION IN SCHOOL SETTINGS (3)
Three hours lecture/discussion per week
Prerequisite: Admission to Level II Education Specialist credential program
Corequisite: Working as a special education teacher
Examination and analysis of theories, research, and best practices for collaborative partnerships and effective communication within their own school settings and, professional and family environments.

SPED 645  TRANSITION AND CAREER EDUCATION (1)
One hour seminar per week
Prerequisite: Admission to Level II Education Specialist credential program
Corequisite: Working as a special education teacher
Students in this seminar will gain an understanding of transition planning and career education for students with disabilities. Students will demonstrate the ability to write and implement successful transition plans for students transitioning out of public education.

Sped 647  INDUCTION PLANNING AND SUPPORT (1)
Two hours seminar per week
Prerequisite: Admission to level II Education Specialist credential program
Corequisite: Working as a special education teacher
Development of a Level II Professional Induction Plan in collaboration with a University Supervisor and a District Support Provider. The plan will include university and non-university components. The plan will identify the candidate’s professional area of specialization and area of need. The induction plan will build upon the theoretical and practical knowledge gained in the Education Specialist Level I program and guide the candidate in developing a specific emphasis within the field of special education.

SPED 648  SPECIAL EDUCATION (3)
Prerequisite: Admission to MA in Education Program
This seminar will cover the history of disabilities and special education. Students will learn about career services for people with disabilities available from educational and community agencies. Graded: Credit/No Credit

SPED 649  INDUCTION EVALUATION (1)
One hour seminar per week
Prerequisite: SPED 640, 641, 642, 643, 646, and 647
Corequisite: Working as a special education teacher
This field based seminar course will evaluate and finalize candidates’ Professional Level II Induction Plan and Professional Development Portfolio. The candidate will work with his/her University Supervisor and District Support Provider to demonstrate and/or document proficiency in the California State Standards for Education Specialists. The candidate will provide evidence for professional development within an area of need and area of specialization as determined in SPED 641. Repeatable. Graded: Credit/No Credit

SPED 655  HISTORICAL AND CONTEMPORARY PORTRAITS OF DISABILITIES AND SPECIAL EDUCATION (3)
Three hours lecture per week
An examination of the history of disabilities with an emphasis on the social reform movements and prominent philosophies that have shaped contemporary policies for individuals with disabilities in the United States. Focus on the life histories of individuals with disabilities and their families; family support and disability advocacy movements. Examination of the trends in public education and civil rights that have impacted individuals with disabilities in historical and contemporary contexts.

SPED 660  ADVANCED TOPICS: SPECIAL EDUCATION (3)
Three hours seminar per week
Prerequisite: Admission to MA in Education Program
Provides a critical examination of current issues surrounding the field of special education, examples include, instructional methodologies, latest research, legislation and policy, case law, high stakes exams, over-representation of minorities in special education, and teacher shortages.
### University

**UNIV 100 UNIVERSITY LIFE AND COLLEGE SUCCESS (1)**
One hour seminar per week
This course introduces first-year students to university life, the structure and policies of the University and development of strategies and skills to help insure success in college. Through self-evaluation, lecture, activities and class discussion, students will develop an individualized plan for personal, social, academic and professional success. Students will be introduced to a variety of topics which include the transition to academic and campus life, introduction to campus academic and student resources, major and career exploration, academic expectations and resources and skills necessary for success. UNIV 100 is appropriate for freshmen; UNIV 101 is appropriate for transfer students.
*Student Option: Graded or Credit/No Credit*

**UNIV 198 INTRO TO INTERDISCIPLINARY RESEARCH (3)**
Three hours seminar per week
Students develop quantitative and qualitative data collection and interpretation skills, learn to use and evaluate various information sources, and develop an awareness of how both methods and sources arise from disciplinary contexts. Students will be introduced to current theory on interdisciplinary learning and begin to practice methods and processes that lead to interdisciplinary thinking and collaboration. Repeatable up to 6 units.
*GenEd: A3*

**UNIV 250 SECOND YEAR SEMINAR (3)**
Three hours seminar per week
Examining ideas and perspectives in a complex world, this sophomore seminar highlights interdisciplinary connections in scholarship and ways of knowing and fosters in students their development as self-reflective, culturally aware, and responsive community participants. Students gain hands-on experience, knowledge, and skills about local communities and community organizations and learn how different academic disciplines apply to real world problems. Requires community service work, in addition to class time, during the semester. Topical content and community-based projects will vary from semester to semester.
*GenEd: A3, D, E*

**UNIV 150 FIRST YEAR SEMINAR (4)**
Four hours lecture per week
Corequisite: ENGL 102/103, ENGL 105 or ENGL 106
This freshman seminar integrates the CI mission and critical thinking with strategies to promote student success. Students will develop literacies (quantitative, information, scientific, financial, cultural), communication skills (oral and written), and multicultural perspectives (in national and international contexts). The seminar promotes success in major core courses and/or introduces students who have not declared a major to CI's interdisciplinary ways of knowing.
*GenEd: A3, C3B*

**UNIV 298 RESEARCH INVESTIGATIONS (3)**
Three seminar hours per week
Students enter the process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline. As students approach parts of the larger problem, they will decide what methods and types of disciplinary perspectives are
necessary, and will integrate those into a more comprehensive methodology and perspective. Each course is team-taught, connects to areas of current faculty research, contains field research experiences, and incorporates service learning or work with a community partner.

**GenEd: A3**

**UNIV 300 UNIVERSITY LIFE AND COLLEGE SUCCESS FOR TRANSFER STUDENTS (1)**

One hour seminar per week. Facilitates transfer student success on the CI campus by assisting students in their transition to CI; provides support in developing an individualized plan for personal, social, academic, and professional success. Introduces transfer students to university life, the structure and policies of the University, Development of strategies and skills to help ensure student’s success in college. Introduction to campus academic and student resources, major and career exploration, academic expectations and resources and skills necessary for success.

Student Option: Graded or Credit/No Credit

**UNIV 349 TRANSFER YEAR SEMINAR (3)**

Three hours lecture per week. This interdisciplinary seminar for first year transfer students promotes successful intellectual and social transition to CSU Channel Islands through a problem-based approach. Students examine the modern world and issues facing societies from multiple perspectives, and develop and convey to others analyses of and solutions to problems using the methodologies, tools and techniques of academic disciplines. Students will develop inquiry skills that emphasize critical thinking and independent learning as well as identify how universities and specific disciplines relate to social problems. The seminar promotes student's reflection on prior learning at other institutions and its relationship to the CI mission and their degree program, and aims to increase student engagement in intellectual life at the university. Themes will vary.

GenEd: A3, E, INTD

**UNIV 391 UNITED STATES TRAVEL STUDY EXPERIENCE (1-3)**

Two to six hours activity per week. Provides an opportunity for students to earn credit for travel and study within the United States. Students study a topic or discipline associated with the travel destination. Students participate in university sponsored travel that facilitates or enhances specialized study under the direction of faculty from a campus academic program. Students are required to synthesize the results of their course experience in a written, visual or presentation format. Repeatable for credit up to 9 units. A lab fee is required.

**UNIV 392 INTERNATIONAL EXPERIENCE (1-3)**

Provides an opportunity for students to earn credit for travel and study in a country outside the US, where the student is immersed in a foreign culture. With faculty advisor approval, students may participate in a university-sponsored trip abroad or a personal trip abroad. Requires an approved plan of study by the faculty advisor prior to the experience. Repeatable for credit.

GenEd: C3B

**UNIV 398 ADVANCED RESEARCH INVESTIGATIONS (3)**

Three hours seminar per week. Students will explore an interdisciplinary research question in independent groups. With faculty mentoring, students develop their own research plans, drawing on multiple disciplines and the multiple approaches to research. Students will disseminate results through a research paper and presentations on campus and in local schools. In addition, students will be required to identify and apply to relevant summer research programs, internships, and scholarships. Repeatable up to 6 units.

GenEd: A3

**UNIV 491 MODEL UNITED NATIONS (1)**

Two hours of activity per week. Prerequisite: POLS 490 Special Topics: UN. For students participating in the Model United Nations program. Students research and roleplay positions of various countries on selected global issues. Repeatable up to 5 units. Graded: Credit/No Credit

**UNIV 498 FACULTY-STUDENT COLLABORATIVE RESEARCH (3)**

Six hours activity per week. Prerequisite: Consent of Instructor. Students will engage in the creation of original intellectual or creative work by collaborating with a faculty member on a research project of the faculty member’s choosing. Student activities will include reading scholarly publications, research or creative activities both independently and with the faculty mentor; attending workshops, writing, and preparation of a conference presentation. Repeatable up to 9 units.

Student Option: Graded or Credit/No Credit