### Course Numbering

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<td>100–299</td>
<td>Lower-Division Courses</td>
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<td>300–499</td>
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<tr>
<td>330–349</td>
<td>Interdisciplinary Courses—without prerequisites (including cross-listed courses)</td>
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<tr>
<td>397</td>
<td>Directed Studies Courses—variable topic credit courses</td>
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<td>430–449</td>
<td>Interdisciplinary Courses—may have prerequisites or require permission from the instructor (including cross-listed courses)</td>
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<td>490</td>
<td>Special Topics—variable topics/credit courses</td>
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<td>492</td>
<td>Service Learning/Internship Courses—variable credits</td>
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### Accounting

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<tr>
<th>Course</th>
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<tr>
<td><strong>ACCT 210</strong></td>
<td><strong>FINANCIAL ACCOUNTING</strong> (3)</td>
<td>Three hours lecture per week</td>
<td>Introduction to accounting principles: accumulation, measurement, and evaluation of accounting data. Topics include internal controls, financial statement analysis and interpretation, and use of spreadsheets in accounting applications.</td>
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<tr>
<td><strong>ACCT 220</strong></td>
<td><strong>MANAGERIAL ACCOUNTING</strong> (3)</td>
<td>Three hours lecture per week</td>
<td>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.</td>
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<tr>
<td><strong>ACCT 290</strong></td>
<td><strong>FINANCIAL AND MANAGERIAL ACCOUNTING: INTENSIVE REVIEW</strong> (1)</td>
<td>Prerequisites: ACCT 210 and ACCT 220 or equivalent</td>
<td>Corequisites: ACCT 300</td>
</tr>
<tr>
<td><strong>ACCT 300</strong></td>
<td><strong>APPLIED MANAGERIAL ACCOUNTING</strong> (3)</td>
<td>Three hours lecture per week</td>
<td>Prerequisites: ACCT 210 and ACCT 220 or equivalent courses</td>
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<tr>
<td><strong>ACCT 410</strong></td>
<td><strong>INTERNATIONAL ACCOUNTING</strong> (3)</td>
<td>Three hours lecture per week</td>
<td>Prerequisites: ACCT 210 and ACCT 220</td>
</tr>
<tr>
<td><strong>ACCT 490</strong></td>
<td><strong>SPECIAL TOPICS</strong> (3)</td>
<td>Three hours seminar per week</td>
<td>Prerequisites: Consent of the instructor</td>
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<tr>
<td><strong>ACCT 492</strong></td>
<td><strong>SERVICE LEARNING/INTERNSHIP</strong> (3)</td>
<td>Six hours per week</td>
<td>Prerequisites: Consent of the Instructor</td>
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<tr>
<td><strong>ACCT 497</strong></td>
<td><strong>DIRECTED STUDY</strong> (1-3)</td>
<td>Variable hours per week</td>
<td>Prerequisites: Consent of the instructor</td>
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### Anthropology

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<tr>
<td><strong>ANTH 102</strong></td>
<td><strong>CULTURAL ANTHROPOLOGY</strong> (3)</td>
<td>Three hours lecture per week</td>
<td>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. Student Option: Graded or Credit/No Credit</td>
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<tr>
<td><strong>ANTH 104</strong></td>
<td><strong>INTRODUCTION TO BIOANTHROPOLOGY</strong> (3)</td>
<td>Three hours lecture per week</td>
<td>Examines primate evolution, human genetics, and the natural selection forces affecting human evolution. Understanding adaptations to environments and concepts of race examined. Student Option: Graded or Credit/No Credit</td>
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ANTH 105  INTRODUCTION TO ARCHAEOLOGY (3)
Three hours lecture per week
Examines the methods and theories archeologists use to understand the past. Origin and evolution of humans, physical and cultural adaptation, and social complexity.
Student Option: Graded or Credit/ No Credit
GenEd: D

ANTH 106  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 300  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.
Student Option: Graded or Credit/ No Credit
GenEd: D

ANTH 323  NATIVE AMERICANS OF CALIFORNIA TO THE 1850s (3)
Three hours lecture per week
This course examines the development of Native American peoples and cultures in California as they adapted to diverse environments. The environmental history of the last glacial and post-glacial periods will be examined to provide a backdrop for human history. Using archaeological, historical, and ethnographic sources, the culture history of California's Native Americans will be traced from antiquity to the 1850s. The impact of Spanish exploration, colonization, and the mission system will be traced from the perspectives of both the Native Americans and their colonizers.
Student Option: Graded or Credit/ No Credit
GenEd: C3B, D

ANTH 327  ORAL HISTORY AND THE COMMUNITY (3)
Three hours lecture per week
Prerequisites: 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  HUMAN ECOLOGY (3)
Three hours lecture per week
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 ESRM 332
GenEd: D, Interdisciplinary

ANTH 345  HUMAN EVOLUTION AND DIVERSITY (3)
Three hours lecture per week
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.
Student Option: Graded or Credit/ No Credit
GenEd: B2, Interdisciplinary

ANTH 352  APPLIED ANTHROPOLOGY (3)
Three hours lecture per week
Prerequisites: 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
Prerequisites: ANTH 102
Introduction to qualitative data collection and analysis in anthropology. Topics include research design, interview, 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 443  MEDICAL ANTHROPOLOGY: CROSS-CULTURAL PERSPECTIVES ON HEALTH AND HEALING (3)
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, Interdisciplinary

ANTH 444  VALUES AND VALUABLES (3)
Three hours lecture per week.
Prerequisites: ANTH 105
In-depth study of the methodological and theoretical foundations of anthropology. Considers the assumptions, models, and techniques anthropologists use to analyze and interpret material culture, as well as the ethical considerations of contemporary anthropological 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, Interdisciplinary

ANTH 470  THE DEVELOPMENT OF ANTHROPOLOGICAL PERSPECTIVES (3)
Three hours seminar per week.
Prerequisites: ANTH 102
Introduction to the development of anthropological thought from the discipline's 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.
Prerequisites: Consent of the instructor
This seminar explores a different topic each term. Repeatable by topic.
Student Option: Graded or Credit/No Credit
GenEd: C3A

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 120  PAINTING (3)
Six hours activity per week
Prerequisites: 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
Prerequisites: 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 form and structural elements.

ART 203  ILLUSTRATION (3)
Six hours activity per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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. Lab fee 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.
Prerequisites: 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 230  THE ART OF CREATING JOURNALISM (3)
Three hours lecture per week.
Prerequisites: ENGL 103 or ENGL 105
This course will integrate concepts from English/Journalism, Education and Art. It is 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. No credit given toward the Art major. Same as LS 230, ENGL 230
GenEd: A2

ART 310  TWO-DIMENSIONAL ART: PAINTING MEDIA AND TECHNIQUES (3)
Six hours activity per week.
Prerequisites: 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 311  THREE-DIMENSIONAL ART: SCULPTURE MEDIA AND TECHNIQUES (3)
Six hours activity per week.
Prerequisites: 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 COMPOSING (3)
Six hours activity per week.
Prerequisites: 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.
Prerequisites: ART 108 and ART 204
Studio projects explore media and methodologies in typography 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 314  DIGITAL MEDIA ART: DIGITAL PHOTOGRAPHY (3)
Six hours activity per week.
Prerequisites: ART 108
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 315  ANIMATION MEDIA AND TECHNIQUES (3)
Six hours activity per week.
Prerequisites: 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
Prerequisites: 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. Lab fee required.

ART 317  VIDEO GAME PRODUCTION (3)
Six hours activity per week
Prerequisites: ART 205 and ART 326
An art workshop course focused on conceptualizing, designing, and producing a 3D video game. Industry standard game development tools will be used to create a game that is a work of art in terms of gameplay, story, interface, and visual appeal.

ART 320  TWO-DIMENSIONAL ART: PAINTING THEORY AND PROCESS (3)
Six hours activity per week
Prerequisites: ART 310
Studio topics explore thematic approaches in the development of visual continuity and technical competency working in painting, drawing and related art processes. At this phase of study, projects focus on the integration of artistic concept, technique and proficiency in the use of two-dimensional media in the creation of individual works of art. Lab fee required. Repeatable for up to 6 units.

ART 321  THREE-DIMENSIONAL ART: SCULPTURE THEORY AND PROCESS (3)
Six hours activity per week
Prerequisites: ART 311
Studio topics explore theoretical approaches in the development of visual continuity and technical competency working in sculpture, ceramics and related art processes. At this phase of study, projects focus on the integration of artistic concept, technique and proficiency in the use of three-dimensional media in the creation of individual works of art. Repeatable for up to 6 units.

ART 322  DIGITAL MEDIA ART: TIME-BASED GRAPHICS AND VISUAL EFFECTS (3)
Six hours activity per week
Prerequisites: ART 312
Studio topics explore thematic projects involving 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 323  COMMUNICATION DESIGN TECHNOLOGY: PACKAGING AND PRE-PRESS (3)
Six hours activity per week
Prerequisites: 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
Prerequisites: ART 204 and ART 205
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 325  DIGITAL MEDIA ART: DIGITAL FILMMAKING (3)
Six hours activity per week
Prerequisites: ART 312 and ART 314
Studio projects focus on filmmaking as an art form. Emerging digital technologies simulate traditional motion picture production. Assignments include aspects of producing, storyboarding, directing, cinematography, lighting, and editing in digital formats, resulting in short digital film projects presented on DVD. Repeatable for up to 6 units.

ART 326  DIGITAL MEDIA ART: 3D COMPUTER ANIMATION (3)
Six hours activity per week
Prerequisites: ART 206 and ART 312 or consent of the instructor
Studio projects explore applications of digital technologies utilized in the production of 3D Computer Animation. Assignments involve character design, wireframe 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
Prerequisites: 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 331  ART, SOCIETY, AND MASS MEDIA (3)
Three hours lecture per week
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, Interdisciplinary

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

ART 333  HISTORY OF SOUTHERN CALIFORNIA CHICANA/O ART (3)
Three hours lecture per week
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: C3B, D, Interdisciplinary

ART 334  THE BUSINESS OF ART (3)
Three hours lecture per week
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, Interdisciplinary

ART 335  AMERICAN ETHNIC IMAGES IN NOVELS, FILM AND ART (3)
Three hours lecture/discussion per week
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, Interdisciplinary

ART 336  ART AND MUSIC: DISSONANCE, DIVERSITY AND CONTINUITY (3)
Three hours lecture per week
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, Interdisciplinary

ART 337  ART ON FILM AND FILM AS ART (3)
Three hours lecture per week
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, Interdisciplinary

ART 338  PSYCHOLOGY OF ART AND ARTISTS (3)
Three hours lecture per week
An inquiry into the mind of the artist and the psychological dynamics that underlie 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, Interdisciplinary
ART 351  THE BAROQUE EYE:  
ART, CULTURE, MONEY  
AND POWER (3)  
Three hours lecture per week. 
An exploration of the history of visual  
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 352  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 353  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 354  TWO-DIMENSIONAL ART:  
FIGURE PAINTING (3)  
Six hours activity per week.  
Prerequisites: 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 355  THREE-DIMENSIONAL ART:  
FIGURE SCULPTURE (3)  
Six hours activity per week.  
Prerequisites: ART 107 and ART 202.  
A studio/activities course focusing on  
artistic materials, methods and techniques  
utilized to develop and 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 356  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 357  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. Lab fee required.  
Same as PA 384

ART 358  PRODUCTION (3)  
Six hours activity per week.  
Prerequisites: Consent of instructor.  
Performing, designing, implementing  
technical projects, or assisting in a CSUCI  
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 359  ADVANCED ARTISTIC PROBLEMS:  
TWO-DIMENSIONAL ART (3)  
Six hours activity per week.  
Prerequisites: 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 360  ADVANCED ARTISTIC PROBLEMS:  
THREE-DIMENSIONAL ART (3)  
Six hours activity per week.  
Prerequisites: ART 320.  
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  
in three-dimensional 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 361  ADVANCED ARTISTIC PROBLEMS:  
DIGITAL MEDIA ART (3)  
Six hours laboratory per week.  
Prerequisites: 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 423  ADVANCED ARTISTIC PROBLEMS: COMMUNICATION DESIGN TECHNOLOGY (3)
Six hours activity per week.
Prerequisites: ART 323 or ART 324
Investigations into the development of advanced concepts, innovative processes and personal artistic style working in communication arts and design technology. Students achieve increased artistic depth and advanced technical proficiency leading to the development of a congruent body of work. Creation and presentation of a professional portfolio in print and interactive CD ROM 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.
Prerequisites: ENGL 103 or ENGL 105 or equivalent
Examined 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 legacy of the Renaissance artists and writers.
Same as ENGL 431
GenEd: C1, C2, Interdisciplinary

ART 432  ARTS OF THE HARLEM RENAISSANCE (3)
Three hours lecture per week.
Prerequisites: 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 1920s. Historical geneses and subsequent artistic legacies will also be explored.
Same as ENGL 432, PAMU 432
GenEd: C1, C2, Interdisciplinary

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, Interdisciplinary

ART 434  THE MUSEUM: CULTURE, BUSINESS AND EDUCATION (3)
Three hours lecture per week.
This course is 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 9 units.
Same as BUS 434, EDUC 434
GenEd: C1, D, Interdisciplinary

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, Interdisciplinary

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, Interdisciplinary

ART 451  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 489  ARTS SEMINAR (3)
Three hours lecture per week.
Prerequisites: 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 490  SPECIAL TOPICS IN ART (3)
Three hours lecture per week.
Prerequisites: 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 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.
Same as BUS 491, PA 491

ART 492  INTERNSHIP IN THE ARTS (1-3)
Variable hours per week.
Prerequisites: Senior standing, Art Program portfolio review, and consent of the 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 494  DIRECTED INDEPENDENT STUDY (1-3)
Variable hours per week.
Prerequisites: Senior standing, Art Program portfolio review, and consent of the instructor.
Independent art projects are created in conjunction with the supervising faculty. Completed projects are presented for critique and assessment.

ART 495  THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)
Two hours lecture per week.
Two hours activity per week.
Corequisites: 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 499  ARTS CAPSTONE PROJECT (3)
One hour seminar and two hours field work per week.
Prerequisites: Senior standing, portfolio review and consent of the 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
### 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

### Bioinformatics

**BINF 500** **DNA AND PROTEIN SEQUENCE ANALYSIS (3)**

Three hours lecture per week

Prerequisites: BIOL 400 or consent of the 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 511** **COMPUTATIONAL GENOMICS (3)**

Three hours lecture per week

Prerequisites: BINF 500 and BINF 514 and consent of the 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

Prerequisites: BINF 500 or consent of the 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

Prerequisites: BINF 501 and COMP 462 or equivalent, or consent of the 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

Prerequisites: BIOL 203, MATH 151 or consent of the instructor

Techniques in statistical inference and stochastic modeling required for the interpretation and utilization of genomic data, including biological sequence alignment and analysis, sequence structure and function prediction, database searching, gene expression profiling, statistical genetics, phylogenetic inference and genetic epidemiology.
BINF 514  STATISTICAL METHODS IN COMPUTATIONAL BIOLOGY (3)
Three hours lecture per week
Prerequisites: 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.

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 organismal biology including the diversity, comparative structure, organ system function, development, phylogeny, taxonomy and systematics of prokaryotes, protists, fungi, plants and animals. Discussion of the principles of evolution including speciation and natural selection, the environmental impact and ecosystem interaction of plants and animals, the behavior of animals, population genetics and population biology. 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
Prerequisites: 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
Prerequisites: 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.

BIOL 211  HUMAN ANATOMY AND PHYSIOLOGY II (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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
BIO 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 disease, 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

BIO 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

BIO 217 MEDICAL MICROBIOLOGY (4)
Three hours of 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

BIO 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.

BIO 300 CELL BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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.

BIO 301 MICROBIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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.

BIO 302 GENETICS (4)
Three hours lecture and one hour recitation per week
Prerequisites: 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
Prerequisites: BIOL 200 and 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
Prerequisites: 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 310  VERTEBRATE BIOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisites: 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 AND ECOLOGY (4)
Three hours lecture and three hours laboratory per week
A general introduction to diverse structures and functions of plants and their relationship to the environment. Identification of local native plants and plant communities, uses of native plants by Native Americans, and human and environmental impacts on native plant communities. Field trips to local sites will be taken. A lab fee is required.

BIOL 312  MARINE BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: PHYS 200
Corequisites: 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
Prerequisites: 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
Prerequisites: 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 per week
Three hours laboratory per week
Prerequisites: 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 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. Topics also include integrity of scientific research and literature and responsibilities of scientists to society, intellectual property, ethical practices in professional fields, ethical dilemmas in using animal or human subjects in experimentation, gene cloning, animal cloning, gene manipulation, genetic engineering, genetic counseling, and ethical issues of applying biotechnology in agricultural fields.
Same as MGT 326
GenEd: B2, Interdisciplinary

BIOL 331  BIOTECHNOLOGY IN THE TWENTY-FIRST CENTURY (3)
Three hours lecture per week
Presentation of recent advances in biotechnology and discussion of societal implications. Topics include the processes and methods used to manipulate living organisms, or the substances and products from them, for use in medicine, agriculture, food production, gene therapy, forensics and warfare. The social, ethical and political issues raised by modern biotechnology will be discussed. No credit given toward the biology major.
Same as BUS 331
GenEd: B2, D, Interdisciplinary

BIOL 332  CANCER AND SOCIETY (3)
Three hours lecture per week
The underlying molecular causes of cancer, the impact of environmental and genetic factors on cancer causation and prevention, recent advances in diagnosis and treatment of the disease, and the impact that this disease, which will affect one in three adults, has on society. No credit given toward the biology major.
GenEd: B2, D, Interdisciplinary

BIOL 333  EMERGING PUBLIC HEALTH ISSUES (3)
Three hours lecture per week
Discussion of emerging infectious diseases and other health related issues with global concerns such as AIDS, tuberculosis, sexually transmitted diseases, cardiovascular diseases, animal and bird diseases which may be transmitted to people, food and blood safety issues, environmental public health hazards, immigration and public health issues, potential biological weapons and their impact on human and animal populations in the world and the ecosystem.
GenEd: B2, E, Interdisciplinary

BIOL 334  NATURAL HISTORY OF VENTURA COUNTY (3)
Two hours lecture and three hours laboratory per week
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, Interdisciplinary

BIOL 335  THE BIOSPHERE (3)
Three hours lecture per week
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, Interdisciplinary

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

BIOL 345  SCIENCE AND PUBLIC POLICY (3)
Three hours lecture per week
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, Interdisciplinary

BIOL 400  MOLECULAR BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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
Prerequisites: 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, troubleshooting, experimental design, and data interpretation. A lab fee is required.
BIOI 402  TOXICOLOGY (3)
Three hours lecture per week
Prerequisites: BIOL 201 with a grade of C or better and CHEM 122
An in depth study of toxic chemicals and their interactions within the ecosystems. Topics include the origin, fate, chemical and biological detection, and quantification of pollutants and toxins and their impact on organisms at the molecular, biochemical, cellular, physiological, organismal, and community levels of organization. Basic toxicology, genetic toxicology, environmental mutagenesis and the molecular basis of mutation induction will be covered.

BIOI 403  FOUNDATIONS OF STRUCTURAL BIOLOGY (4)
Three hours lecture and three hours lab per week
Prerequisites: 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 pharmaceuticals. A lab fee is required.

BIOI 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.

BIOI 405  BIOCHEMICAL ENGINEERING (4)
Three hours lecture and three hours lab per week
Prerequisites: CHEM 318
Emphasizes quantitative engineering aspects of biology including the microbial synthesis of commercial products, environmental biotechnology, and the manufacture of biopharmaceuticals through recombinant microorganisms, transgenic animals, and plants. Consideration will be given to protein isolation and purification, microbial kinetics and energetics, enzyme kinetics, and operation of bioreactors. A lab fee is required.

BIOI 406  EVOLUTIONARY BIOGEOGRAPHY (3)
Three hours lecture per week
Prerequisites: 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.

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

BIOI 408  NANOBIO TECHNOLOGY (3)
Three hours lecture per week
Prerequisites: 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.

BIOI 416  RADIOBIOLOGY AND RADIONUCLIDES (3)
Three hours lecture per week
Prerequisites: 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 PHYS 416

BIOI 420  CELLULAR AND MOLECULAR IMMUNOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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 422  MOLECULAR PLANT PHYSIOLOGY (4)
Three hours lecture and three hours laboratory per week.
Prerequisites: 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  CELLULAR AND MOLECULAR NEUROBIOLOGY (3)
Three hours lecture per week.
Prerequisites: BIOL 300 with a grade of C or better and CHEM 122.
Study of the nervous system at cellular and molecular levels including cellular structure of neurons and their function and interactions, neurotransmitters and their function and regulation, chemical agents and their effects on neuronal cells and normal responses by the cells and the molecules of the nervous system and their responses under adverse conditions.

BIOL 424  HUMAN PHYSIOLOGY (3)
Three hours lecture per week.
Prerequisites: 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 425  HUMAN GENETICS (3)
Three hours lecture per week.
Prerequisites: 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.
Three hours laboratory.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.

BIOL 432  PRINCIPLES OF EPIDEMIOLOGY AND ENVIRONMENTAL HEALTH (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary.

BIOL 433  ECOLOGY AND THE ENVIRONMENT (4)
Three hours lecture and three hours laboratory per week.
Prerequisites: 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.

BIOL 434  INTRODUCTION TO BIOMEDICAL IMAGING (4)
Three hours lecture and two hours activity per week.
Prerequisites: 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, Interdisciplinary

**Biol 450** ICHTHYOLGY: THE BIOLOGY OF FISHES (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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.

**Biol 451** ORNITHOLOGY (4)
Three hours lecture and three hours lab activity per week
Prerequisites: 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.

**Biol 454** MEDICAL INSTRUMENTATION (4)
Three hours lecture and two hours lab activity per week
Prerequisites: PHYS/BIOI/HLTH 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 PHYS 464

**Biol 490** SPECIAL TOPICS (1-3)
Three hours seminar per week
Prerequisites: Consent of the instructor
In-depth analysis of current topics in biology. Topics vary each semester. Repeatable by topic.

**Biol 491** SPECIAL LABORATORY TOPICS (1-3)
Prerequisites: 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.

**Biol 492** INTERNSHIP (2-3)
Prerequisites: Consent of the 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

**Biol 493** SERVICE LEARNING AT THE ZOO (1-3)
One to three hours activity per week
Prerequisites: BIOL/BUS/ECON/EDUC 342 and consent of instructor
Working with a local zoo, individuals or teams of students will engage in service learning projects. Students will apply skills and competencies acquired in their academic programs to issues and challenges facing modern zoos. Repeatable up to 6 units.
Student Option: Graded or Credit/No Credit
Same as UNIV 493, BUS 493, ECON 493, EDUC 493

**Biol 494** INDEPENDENT RESEARCH (1-3)
Prerequisites: Consent of the 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

**Biol 497** DIRECTED STUDY (1-3)
Prerequisites: Consent of the instructor and program approval
Reading and 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

**Biol 499** SENIOR CAPSTONE IN BIOLOGY (3)
Three hours lecture per week
Prerequisites: Consent of instructor
Integration of previous coursework, knowledge and skills as they apply to specific topics in Biology and the impact of biological science on society. Emphasis will be placed on analysis of scientific literature, problem solving and oral and written communication skills.

**Biol 500** INTRODUCTION TO BIOPHARMACEUTICAL PRODUCTION OPERATIONS (3)
Three hours lecture per week
An introduction to biopharmaceutical production systems and processes. Topics include manufacturing, unit operations and supporting infrastructures, product distribution, quality assurance and control, facility engineering and maintenance, utility operations, regulatory compliance, and laboratory support.

**Biol 501** FUNDAMENTS OF CELLULAR AND MOLECULAR BIOLOGY (4)
Four hours lecture per week
Study of essential topics in cellular and molecular biology. Topics include: structure and function of biological macromolecules, membranes and cellular organelles; cell signaling, synthesis of DNA, RNA and proteins; gene organization, transcription and expression; basic molecular biology laboratory techniques.
Biol 502  Techniques in Genomics/Proteomics (3)
One hour lecture and six hours laboratory per week
Prerequisites: BIOL 400, BIOL 401 or BIOL 501 and consent of the 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.

Biol 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, 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.

Biol 504  Molecular Cell Biology (3)
Three hours lecture per week
Prerequisites: BIOL 300 and BIOL 400 or BIOL 501 and consent of the 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.

Biol 505  Molecular Structure (4)
Three hours lecture and three hours laboratory per week
Prerequisites: BIOL 504 and consent of the 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.

Biol 506  Molecular Evolution (4)
Three hours lecture and three hours laboratory per week
Prerequisites: BIOL 504 and consent of the 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.

Biol 507  Pharmacogenomics and Pharmacoproteomics (3)
Three hours lecture per week
Prerequisites: BINF 500, BIOL 504 and consent of the 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.

Biol 508  Advanced Immunology (4)
Three hours lecture and three hours laboratory per week
Prerequisites: BIOL 504 and consent of the 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.

Biol 509  Plant Biotechnology (4)
Three hours lecture and three hours laboratory per week
Prerequisites: BIOL 504 and consent of the 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 manipulation to confer resistance to herbicides, pests and disease and strategies for engineering stress tolerance and the improvement of crop yield and quality.

Biol 510  Tissue Culture Techniques and Stem Cell Technology (3)
One hour lecture per week
Six hours laboratory per week
Prerequisites: 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
Six hours laboratory per week
Prerequisites: 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
Prerequisites: 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.
And bioinformatics (1)

BIOL 513 CELL CULTURE FACILITY MANAGEMENT (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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 602 STEM CELL TECHNOLOGY INTERNSHIP (1.5)
Eighteen laboratory hours per week.
Prerequisites: 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 6 units for the year-long project. Graded Credit/No Credit

BIOL 603 BIOTECHNOLOGY INTERNSHIP (3)
Three hours seminar per week.
Consent of instructor required for enrollment.
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 oral presentation at the Program Colloquium. Graded Credit/No Credit

BIOL 604 BIOTECHNOLOGY ACROSS NATIONAL BOUNDARIES (2)
Two hours lecture per week.
Consent of instructor required for enrollment.
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. An optional element of this course is a field trip to international businesses and education systems.

BIOL 610 CAPSTONE PROJECT FOR MS/MBA DUAL DEGREE (6)
Six hours seminar per week.
Prerequisites: 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

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Business

BUS 110 BUSINESS LAW (3)
Three hours lecture per week
Introduction to the legal and regulatory environment of business, emphasizing the USA legal system. Topics include contracts, personal property, litigation, antitrust, labor agreements, discrimination, environmental protection and international trade and law.

BUS 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 ECON 305

BUS 320 BUSINESS OPERATIONS (3)
Three hours lecture per week
Prerequisites: MATH 140 or MATH 150
Exploration and application of quantitative techniques, systems analysis and operations analysis of business functions, with an emphasis on the optimization of process and operational efficiencies. A variety of management science methodologies will be applied to theoretical and real-world situations.

BUS 331 BIOTECHNOLOGY IN THE TWENTY-FIRST CENTURY (3)
Three hours lecture per week
Presentation of recent advances in biotechnology and discussion of societal implications. Topics include the processes and methods used to manipulate living organisms, or the substances and products from them, for use in medicine, agriculture, food production, gene therapy, forensics and warfare. The social, ethical and political issues raised by modern biotechnology will be discussed. No credit given toward the biology major.
Same as BIOL 331
GenEd: B2, D, Interdisciplinary

BUS 333 NONPROFIT ORGANIZATIONS (3)
Three hours lecture per week
Issues unique to nonprofit organizations including financial, legal, and political. Same as POLS 333, COMM 333, ECON 333
GenEd: D, Interdisciplinary

BUS 334 THE BUSINESS OF ART (3)
Three hours lecture per week
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, Interdisciplinary

BUS 335 BUSINESS AND THE PERFORMING ARTS (3)
Three hours lecture per week
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, Interdisciplinary

BUS 336 SOCIAL ENTREPRENEURSHIP (3)
Three hours lecture per week
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, Interdisciplinary

BUS 339 BUSINESS IN CHINA: HERITAGE AND CHANGE (3)
Three hours lecture per week
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, Interdisciplinary

BUS 340 BUSINESS AND ECONOMICS IN AMERICAN LITERATURE (3)
Three hours lecture/discussion per week
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, Interdisciplinary

BUS 341 DRUG DISCOVERY AND DEVELOPMENT (3)
Three hours lecture per week
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, Interdisciplinary

BUS 342 THE ZOO: CONSERVATION, EDUCATION AND RECREATION (3)
Three hours lecture per week
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, Interdisciplinary
BUS 344  THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)
Three hours lecture per week
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. The course will include study of local libraries. The course will include field trips to local libraries.
Same as ECON 344, EDUC 344, LIB 344
GenEd: D, Interdisciplinary

BUS 347  THE UNIVERSITY (3)
Three hours lecture per week
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. The course will include 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, Interdisciplinary

BUS 349  HISTORY OF BUSINESS AND ECONOMICS IN NORTH AMERICA (3)
Three hours lecture per week
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, Interdisciplinary

BUS 420  CASES IN STRATEGY (3)
Three hours seminar/discussion per week
Prerequisites: Senior standing or consent of the instructor
A case study seminar that integrates functional areas of business into the development and analysis of strategy and strategic planning. Emphasizes practical strategic solutions that could reasonably lead to success in the marketplace. Topics include: Competitive Analysis, Value Chain Analysis, Globalization Strategies and Strategies for Chaotic Environments.

BUS 424  BUSINESS, GOVERNMENT, AND SOCIETY (3)
Three hours lecture per week
Prerequisites: MGT 307
Discussions of the history and interactions of American business, government, and society. Topics include the history of business power, social responsibility and ethical theories, governmental regulation, managing environmental quality, and consumerism.
GenEd: D

BUS 434  THE MUSEUM: CULTURE, BUSINESS AND EDUCATION (3)
Three hours lecture per week
This course is 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 9 units.
Same as ART 434, EDUC 434
GenEd: C1, D, Interdisciplinary

BUS 448  GLOBALIZATION AND DEVELOPMENT (3)
Three hours lecture per week
Prerequisites: 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, Interdisciplinary

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 3 units.
Same as ART 491, PA 491

BUS 493  SERVICE LEARNING AT THE ZOO (1-3)
One to three hours activity per week
Prerequisites: BIOL/BUS/ECON/EDUC 342 and consent of instructor
Working with a local zoo, individuals or teams of students will engage in service learning projects. Students will apply skills and competencies acquired in their academic programs to issues and challenges facing modern zoos. Repeatable up to 6 units.
Student Option: Graded or Credit/No Credit
Same as UNIV 493, BIOL 493, ECON 493, EDUC 493

BUS 495  THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)
Two hours lecture per week
Two hours activity per week
Corequisites: 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 499  CAPSTONE (3)
Three hours lecture per week
Prerequisites: 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.
A course in economics for MBA students covering material from 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. May be 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. May be offered with an extensive online component.

BUS 504  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. May be offered with an extensive online component.

BUS 506  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 good management practices. Describes the key aspects of effective marketing. Combines management and marketing disciplines through cases, role-play simulations, and computer based simulations that are used to model managers’ planning and decision-making processes. May be offered with an extensive online component.

BUS 508  BUSINESS ETHICS AND LAW (3)
Three hour seminar per week.
An overview of the ethical environment for business operations, with a special emphasis on the legal environment. Explores decision-making frameworks for managers in addressing ethical and legal issues that confront modern business organizations. May be offered with an extensive online component.

BUS 510  HIGH PERFORMANCE MANAGEMENT (3)
Three hours seminar per week.
Corequisites: BUS 520
Develops the managerial skills that affect individual and group performance in organizations. Topics include managerial communication, team-building, negotiation, conflict resolution, and intercultural management.

BUS 520  STRATEGY AND LEADERSHIP (3)
Three hours seminar per week.
Corequisites: BUS 510
An integrated overview of strategy, strategic planning and strategic management for business leaders. Through the use of complex business cases, the course analyzes the major elements of strategic management and the interactions among major participants. Special emphasis is given to the role of leadership in the strategic management process.

BUS 521  SPECIAL TOPICS IN MANAGEMENT (3)
Three hours seminar per week.
Prerequisites: Consent of instructor
In-depth analysis of current topics in management. Topics vary each semester. Repeatable by topic.

BUS 530  MANAGING BUSINESS OPERATIONS (3)
Three hours seminar per week.
Prerequisites: BUS 520
Corequisites: BUS 540
Building on previous business courses this courses develop skills required for managers to operate a business organization. Topics include change management, product design, process selection, quality management, supply chain design, strategy and control. Managing a firm’s business operations involves the design, operation and improvement of systems that create and deliver an organization’s product and services to customers.

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

BUS 540  FINANCIAL REPORTING AND ANALYSIS (3)
Three hours seminar per week.
Prerequisites: BUS 520
Corequisites: BUS 530
Provides an understanding of the use of financial information in managing an organization. The course 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 lecture per week
Prerequisites: Consent of instructor
In-depth analysis of current topics in finance. Topics vary each semester. Repeatable by topic.

BUS 550 THE CONTEMPORARY FIRM (3)
Three hours seminar per week
Prerequisites: BUS 540
This course emphasizes the strategic and management issues associated with the effective use of information technology. Topics include information systems & control, databases and data mining, systems development, IT infrastructure and strategy.

BUS 560 THE ENTREPRENEURIAL MANAGER (3)
Three hours seminar per week
Prerequisites: BUS 540
A course that focuses on aspects of starting a new business, with an emphasis on recognizing and creating opportunities. Also develops the managerial skills and perspectives that contribute to innovative and entrepreneurial management in growing and established organizations. Topics include attributes of entrepreneurs and entrepreneurial careers, evaluating opportunities, writing business plans, consumer and market analysis, new product design and development, creativity, innovation, forecasting, resource requirements, financing, and managing new ventures.

BUS 570 COMPETING IN A GLOBAL ENVIRONMENT (6)
Three hours seminar and six hours activity per week
Prerequisites: Completion of all other MBA Core courses
Acknowledging the global environment in which business operates, this course 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.

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 6 units.

BUS 610 CAPSTONE PROJECT FOR MS/ MBA DUAL DEGREE (6)
Six hours seminar per week
Prerequisites: 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
Prerequisites: A passing score on the Entry Level Mathematics (ELM) requirement
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 per week
Prerequisites: 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. No credit given towards the Chemistry major. Lab fee required.
GenEd: B1

CHEM 111 CHEMISTRY OF LIFE - PROBLEM SOLVING (1)
One hour of discussion per week
Corequisites: 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
Prerequisites: Passing score on the Chemistry Placement Examination or CHEM 105
An introductory chemistry course which provides an overview of the chemical and physical behavior of matter with a focus on qualitative and quantitative general inorganic, physical, and analytical chemistry. Lab fee required.
GenEd: B1
CHEM 122  GENERAL CHEMISTRY II (4)
Three hours lecture and three hours laboratory per week.
Prerequisites: 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. Lab fee required. GenEd: B1

CHEM 123  GENERAL CHEMISTRY I PROBLEM-SOLVING (1)
One hour discussion per week.
Corequisites: 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.
Corequisites: 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.
Prerequisites: CHEM 122 with a grade of C or better.
Corequisites: CHEM 251
An examination of analytical chemistry theory and techniques involved in the quantification 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.
Prerequisites: CHEM 122 with a grade of C or better.
Corequisites: CHEM 250
A laboratory course designed to provide students with an exposure to the techniques used in the quantification of inorganic, organic, and biological species from samples using gravimetric and volumetric analyses, potentiometric titrations, atomic absorption spectrometry, UV-visible spectroscopy, GC, and GC/MS. Lab fee required.

CHEM 301  ENVIRONMENTAL CHEMISTRY · ATMOSPHERE AND CLIMATE (3)
Three hours lecture per week.
Prerequisites: 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 per week.
Prerequisites: 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.
Prerequisites: 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. Lab fee required. GenEd: B4

CHEM 311  ORGANIC CHEMISTRY I (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: 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. Lab fee required.

CHEM 313  ORGANIC CHEMISTRY I PROBLEM SOLVING (1)
One hour discussion per week.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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, IC, IR, and UV-visible). Lab fee required.

CHEM 316  ORGANIC CHEMISTRY II PROBLEM SOLVING (1)
One hour discussion per week.
Corequisites: 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.
Prerequisites: 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.
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, Interdisciplinary

CHEM 335  THE CHEMISTRY OF THE KITCHEN (3)
Two hours lecture per week.
Two hours activity per week.
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, Interdisciplinary

CHEM 341  DRUG DISCOVERY AND DEVELOPMENT (3)
Three hours lecture per week.
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, Interdisciplinary

CHEM 343  FORENSIC SCIENCE (3)
Two hours lecture and three hours laboratory per week.
A survey of the various chemical and biological techniques used in obtaining and evaluating criminal evidence. Topics include: chromatography; mass spectrometry (LC-MS, GC-MS); atomic absorption spectrometry; IR, UV, fluorescence, and X-ray spectroscopies; fiber comparisons; drug analysis; arson/explosive residue analysis; toxicological studies; blood typing; DNA analysis; population genetics; firearm identification; and fingerprint analysis.
GenEd: B1, Interdisciplinary

CHEM 344  ENERGY AND SOCIETY (3)
Three hours lecture per week.
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 PHYS 344
GenEd: B1, Interdisciplinary

CHEM 371  PHYSICAL CHEMISTRY I (3)
Three hours lecture per week.
Prerequisites: CHEM 122 with a grade of C or better, PHYS 101 or PHYS 201, and MATH 150
This course is designed to introduce thermodynamics and kinetics. Areas covered will include the laws of thermodynamics, changes in state, chemical equilibrium, gas kinetic theory, rates of reactions, and experimental methods used to determine chemical reaction rates.

CHEM 372  PHYSICAL CHEMISTRY LABORATORY (1)
Three hours laboratory per week.
Prerequisites: CHEM 371 (or concurrent registration)
This course is designed to introduce experimental physical chemistry including measurement of thermodynamic and kinetic properties. Lab fee required.

CHEM 373  PHYSICAL CHEMISTRY II (3)
Three hours lecture per week.
Prerequisites: 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 410 ADVANCED ORGANIC SYNTHESIS (4)

Three hours lecture and three hours laboratory per week.
Prerequisites: 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. Lab fee required.

CHEM 415 MOLECULAR STRUCTURE DETERMINATION (4)

Three hours lecture and three hours laboratory per week.
Prerequisites: CHEM 305 (or concurrent enrollment), CHEM 314, CHEM 315 or consent of instructor.
This course will examine modern techniques for the determination of organic, inorganic, and biological molecular structure. Topics include X-ray crystallography, nuclear magnetic resonance spectroscopy, mass spectrometry, infrared spectroscopy, ultraviolet spectroscopy, and molecular modeling. Lab fee required.

CHEM 420 ADVANCED INORGANIC CHEMISTRY (3)

Three hours lecture per week.
Prerequisites: 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 430 INSTRUMENTAL ANALYSIS AND LABORATORY (4)

Three hours lecture and three hours laboratory per week.
Prerequisites: CHEM 250, CHEM 251, CHEM 305 (or concurrent enrollment or consent of instructor), and CHEM 315 with a grade of C or better.
This course is designed to introduce chemical analysis using instrumental methods. Areas covered will include atomic and molecular spectroscopy, chromatography, and mass spectroscopy. Lectures will focus on theory and application of these techniques to organic, inorganic, and biochemical analysis. Experimental design, materials used in scientific apparatus, vacuum science and electronic circuits will also be examined. Lab fee required.

CHEM 460 BIOCHEMISTRY I (4)

Three hours lecture and three hours laboratory per week.
Prerequisites: CHEM 314 with a grade of C or better.
This course will examine the physical and chemical properties of biological molecules. Topics include: the structure and function of nucleic acids, proteins, lipids, and carbohydrates. Lab Fee Required.

CHEM 461 BIOCHEMISTRY II (4)

Three hours lecture and three hours laboratory per week.
Prerequisites: CHEM 305 (or concurrent enrollment), CHEM 460 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. Lab fee required.

CHEM 465 BIOINORGANIC CHEMISTRY (4)

Three hours lecture and three hours laboratory per week.
Prerequisites: 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 490 SPECIAL TOPICS IN CHEMISTRY (1-3)

Prerequisites: Consent of instructor.
Specialized topics from the fields of Chemistry and Biochemistry. Repeatable by topic.

CHEM 491 SPECIAL LABORATORY TOPICS IN CHEMISTRY (1-3)

Three to Nine hours laboratory per week.
Prerequisites: Consent of instructor required for enrollment.
Laboratory study of a selected topic, the title of which is to be specified in advance. Repeatable by topic up to 6 units.

CHEM 492 INTERNSHIP/ SERVICE LEARNING (1-3)

Two to Six hours activity per week.
Prerequisites: 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)

Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
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

Chicana/o Studies

CHS 100 CHICANA/O STUDIES 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 per week.
Two hours activity per week.
Prerequisites: 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: C3B, Interdisciplinary

CHS 331 TRANSBORDER PERSPECTIVES IN CHICANA/O STUDIES (3)
Three hours lecture per week.
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, Interdisciplinary

CHS 333 HISTORY OF SOUTHERN CALIFORNIA CHICANA/O ART (3)
Three hours lecture per week.
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, HIST 333
GenEd: C3B, D, Interdisciplinary

CHS 343 HEALTH ISSUES IN THE LATINA/O COMMUNITY (3)
Three hours lecture per week.
Prerequisites: 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
GenEd: C3B, Interdisciplinary

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 Chicano’s 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.
Prerequisites: 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
CS 401  LATINA/O WORKERS IN A GLOBAL ECONOMY (3)
Three hours lecture per week
Prerequisites: CHS 100 or equivalent
Examines transboundary 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.

CS 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 1990s. 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

CS 425  CONTEMPORARY IMMIGRATION ISSUES (3)
Three hours lecture per week
Prerequisites: 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

CS 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 Chicanos, 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 EDUC 445, HIST 445
GenEd: C3B, D, Interdisciplinary

CS 490  SPECIAL TOPICS (3)
Three hours lecturer per week
Prerequisites: Consent of instructor
Examines a topic of historical or contemporary interest in Chicana/o, Latina/o, and/or transborder studies. Topics vary by semester. Repeatable by topic.

CS 491  THEORETICAL FOUNDATIONS OF CHICANA/O STUDIES (3)
Three hours lecture per week
Prerequisites: 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.

CS 492  INTERNSHIP/SERVICE LEARNING (1-3)
Two to six hours lecture per week
Prerequisites: 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.

CS 494  INDEPENDENT RESEARCH (1-3)
One to Three hours activity per week
Prerequisites: 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.

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

CS 499  SERVICE LEARNING CAPSTONE IN CHICANA/O STUDIES (1-3)
One to three hours seminar per week
Prerequisites: 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 Lab Science

CLS 500  CLINICAL TRAINING CERTIFICATE PROGRAM PART ONE (8)
Prerequisites: 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 TWO (8)
40 hours field studies per week
Prerequisites: 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.
Prerequisites: 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 301  ADVANCED PUBLIC SPEAKING (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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  CULTURAL CONVERSATIONS (3)
Three hours lecture per week.
Prerequisites: COMM 101
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.
Prerequisites: 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.
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, Interdisciplinary

COMM 333  NONPROFIT ORGANIZATIONS (3)
Three hours lecture per week.
Issues unique to nonprofit organizations including financial, legal, and political.
Same as POLS 333, ECON 333, BUS 333
GenEd: D, Interdisciplinary

COMM 335  POLITICS AND FILM (3)
Two hours lecture and two hours activity per week.
Explores the themes, issues and processes of politics through an in-depth study of selected films. Area of focus varies by semester.
Same as POLS 335
GenEd: D, Interdisciplinary

COMM 336  MULTICULTURAL LITERATURE AND COMMUNICATION (3)
Three hours lecture per week.
Examines issues of cross-cultural communication in interpersonal and intergroup settings. Works of literature which take cross-cultural communication as a theme will be examined.
Same as ENGL 336
GenEd: A1, C2, Interdisciplinary

COMM 340  CONFLICT MANAGEMENT AND MEDIATION (3)
Three hours lecture per week.
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, Interdisciplinary
COMM 345 MEDIA LITERACY AND YOUTH CULTURE (3)
Three hours lecture per week.
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, Interdisciplinary

COMM 346 SCHOOL COMMUNICATION (3)
Three hours lecture per week.
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, Interdisciplinary

COMM 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.
Same as POLS 430
GenEd: D, Interdisciplinary

COMM 441 HEALTH COMMUNICATION (3)
Three hours lecture per week.
Prerequisites: 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 NRS 441
GenEd: D, Interdisciplinary

COMM 442 ORGANIZATIONAL COMMUNICATION (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary

COMM 443 ENVIRONMENTAL COMMUNICATION (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary

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
GenEd: B4

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 6 units.

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

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

COMM 499 CAPSTONE PROJECT (3)
One hour seminar per week.
Four hours activity per week.
Prerequisites: 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. Includes service learning component. Not open to Computer Science majors.
GenEd: B4

COMP 102 WEB DEVELOPMENT (3)
Three hours lecture in the lab per week.
Prerequisites: COMP 101 or consent of the instructor
Introduction to the design and development of web pages. Use of HTML and scripting languages. Use of multimedia content. Current web development tools. Including web site database applications.
GenEd: B4

COMP 105 COMPUTER PROGRAMMING INTRODUCTION (3)
Three hours lecture in the lab per week.
Prerequisites: have completed COMP 150.
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
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.
Prerequisites: Programming experience
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)
Four hours lecture in the lab per week.
Prerequisites: 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)
Three hours lecture per week.
Prerequisites: 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  INTRODUCTION TO UNIX AND C FOR PROGRAMMERS (3)
Three hours lecture per week.
Prerequisites: COMP 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.

COMP 232  PROGRAMMING LANGUAGES (3)
Three hours lecture in the lab per week.
Prerequisites: 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 262  COMPUTER ORGANIZATION AND ARCHITECTURE (3)
Three hours lecture per week.
Prerequisites: COMP 151 and COMP 162
Extension of basic addressing concepts to more advanced addressability such as base register and self relative addressing. Topics include: comparative computer architecture focusing on such organizations as multiple register processors and stack machines; basics of virtual memory, input/output; introduction to the concept of microprogrammable systems; low-level language translation process associated with assemblers; system functions such as relocatable loading and memory management; application of data structure and hashing techniques to the above.

COMP 337  SURVEY OF COMPUTER GAMING (3)
Three hours lecture per week.
This course provides the student with a broad understanding of the world of computer gaming. This includes the evaluation and analysis of the cultural, historical, literary, psychological, and technological impact of computer gaming on society. The course will survey the different types of computer games such as educational, sports, first person shooter, adventure, and strategy, along with an overview of the design, implementation, and testing issues that confront game developers. The student will construct, submit and evaluate several written reports during the semester.
GenEd: B4, Interdisciplinary

COMP 345  DIGITAL IMAGE PROCESSING (3)
Three hours lecture in the lab per week.
Prerequisites: Consent of the 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, Interdisciplinary
COMP 350  INTRODUCTION TO SOFTWARE ENGINEERING (3)
Three hours lecture in the lab per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: COMP 262
Examination of the principal types of systems including batch, multi-programming, 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 deadlocks, queue service, and multiple accesses to data. Projects will be implemented to reinforce the lectures.

COMP 362  OPERATING SYSTEMS (4)
Three hours lecture in the lab per week
Prerequisites: COMP 262
Examination of the principal types of systems including batch, multi-programming, 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 deadlocks, queue service, and multiple accesses to data. Projects will be implemented to reinforce the lectures.

COMP 420  DATABASE THEORY AND DESIGN (3)
Three hours lecture in the lab per week
Prerequisites: MATH 300 or MATH 301
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.

COMP 421  UNIX FOR PROGRAMMERS (3)
Three hours lecture per week
Prerequisites: COMP 350 and COMP 362
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.

COMP 424  COMPUTER SYSTEM SECURITY (3)
Three hours lecture in the lab per week
Prerequisites: COMP 350 and COMP 362

COMP 425  COMPUTER GAME PROGRAMMING (3)
Three hours lecture per week
Prerequisites: COMP 429 and COMP 464
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)
Three hours lecture in the lab per week
Prerequisites: COMP 232 and COMP 362
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.

COMP 437  FOUNDATIONS OF COMPUTER GAME DEVELOPMENT (3)
Three hours lecture per week
Prerequisites: COMP 105, MATH 137, ART 205, ART 206 or instructor permission
This course lays down the foundation for a multi-disciplinary approach to computer game development. The students study game design principles followed by implementation methodologies and technologies. Management issues in the gaming industry are also examined. The students develop an understanding of how various perspectives from art, technology and business come together in the creation of compelling and profitable game entertainment.
GenEd: B4, Interdisciplinary

COMP 445  IMAGE ANALYSIS AND PATTERN RECOGNITION (3)
Three hours lecture in the lab per week
Prerequisites: PHYS/COMP/MATH 345 or consent of the 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, Interdisciplinary
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, Interdisciplinary

Advanced Object-Oriented Programming (3)

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 Patterns techniques will be an unifying theme.

Automata, Languages, and Computation (3)

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.

Embedded Systems (3)

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.

Computer Graphic Systems and Design I (3)

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.

Artificial Intelligence/Neural Nets (3)

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 imagining.

Topics in Computer Science (3)

Current issues in computer science. Repeatable by topic.

Capstone Preparation (1)

One hour seminar per week. Supervised work and study in an industrial or scientific setting involving development of degree-related skills. All students are required to present their projects at the Senior Colloquium. Repeatable by topic.

Internship (1-3)

Supervised work and study in an industrial or scientific setting involving development of degree-related skills. All students are required to present their projects at the Senior Colloquium. Repeatable by topic.

Independent Research (1-3)

Supervised project involving theoretical research in the field of computer science and its applications. All students are required to present their projects at the Senior Colloquium. Repeatable by topic.
**COMP 497**  **DIRECTED STUDIES (3)**  
Prerequisites: Program approval of written proposal  
Supervised project involving library research in the field of computer science or its applications. All students are required to present their projects at the Senior Colloquium. Repeatable by topic.

**COMP 499**  **CAPSTONE PROJECT (3)**  
Three hours activity per week  
Prerequisites: 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  
Prerequisites: 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 520**  **ADVANCED DATABASE SYSTEMS (3)**  
Three hours lecture in the lab per week  
Prerequisites: 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 524**  **SECURITY (3)**  
Three hours lecture in the lab per week  
Prerequisites: 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 529**  **NETWORK COMPUTING (3)**  
Three hours of lecture in the lab per week  
Prerequisites: 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 532**  **COMPUTATIONAL BIOINFORMATICS (3)**  
Three hours of lecture in the lab per week  
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program and consent of the instructor  
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 566**  **GEOMETRY AND COMPUTER GRAPHIC (3)**  
Three hours of lecture in the lab per week  
Prerequisites: 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 575  MULTI-AGENT SYSTEMS (3)
Three hours lecture in the lab per week
Prerequisites: 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 lecture in the lab per week
Prerequisites: 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
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program
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)
Prerequisites: 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.

COMP 599  GRADUATE SEMINAR (1)
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program
Oral presentations of current advancements in the field, reports on students’ research, master thesis, and projects. Repeatable.

Economics

ECON 110  PRINCIPLES OF MICROECONOMICS (3)
Three hours lecture per week
The application of economic reasoning to the decisions of consumers and producers. Topics include opportunity cost, resource allocation, the price system, the organization of industry, market failures, distribution of income, public sector economics.
GenEd: D

ECON 111  PRINCIPLES OF MACROECONOMICS (3)
Three hours lecture per week
Study of the workings of the economy. Topics include national income accounting, business cycles, employment and unemployment, inflation, economic growth, financial institutions, fiscal and monetary policy, and international trade.
GenEd: D

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
Prerequisites: 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 in various market structures, factor markets and externalities.

ECON 311  INTERMEDIATE MACROECONOMICS (3)
Three hours lecture per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
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, HIST 331, POIS 331
GenEd: C2, D, Interdisciplinary
ECON 333  NONPROFIT ORGANIZATIONS (3)
Three hours lecture per week
Issues unique to nonprofit organizations including financial, legal, and political.
Same as POLS 333, COMM 333, BUS 333
GenEd: D, Interdisciplinary

ECON 340  BUSINESS AND ECONOMICS IN AMERICAN LITERATURE (3)
Three hours lecture/discussion per week
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, Interdisciplinary

ECON 341  DRUG DISCOVERY AND DEVELOPMENT (3)
Three hours lecture per week
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, Interdisciplinary

ECON 342  THE ZOO: CONSERVATION, EDUCATION AND RECREATION (3)
Three hours lecture per week
An interdisciplinary study of zoos and zoological gardens from scientific, managerial, business, recreational and educational perspectives. Analyzes how these perspectives are linked within the 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, Interdisciplinary

ECON 343  CAPITAL THEORY (3)
Three hours lecture per week
Intertemporal choice and decision-making under uncertainty in our financial lives. Topics include: multi-period consumption, multi-period production, capital budgeting, modern portfolio theory and financial management.
Same as ECON 343
GenEd: D, Interdisciplinary

ECON 344  THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)
Three hours lecture per week
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. The course will include study of local libraries. The course will include field trips to local libraries.
Same as BUS 344, EDUC 344, LIB 344
GenEd: D, Interdisciplinary

ECON 347  THE UNIVERSITY (3)
Three hours lecture per week
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. The course will include 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, Interdisciplinary

ECON 349  HISTORY OF BUSINESS AND ECONOMICS IN NORTH AMERICA (3)
Three hours lecture per week
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, Interdisciplinary

ECON 362  ENVIRONMENTAL ECONOMICS (3)
Three hours lecture per week
Prerequisites: ECON 110 and ECON 111, or ECON 300
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
Prerequisites: 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
Prerequisites: 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 415  INDUSTRIAL ORGANIZATION (3)
Three hours lecture per week
Prerequisites: ECON 310 or ECON 329
A theoretical and empirical examination of the structure, conduct and performance of industries. Topics include market structures, games and strategy, and pricing strategy.

ECON 425  LABOR ECONOMICS (3)
Three hours lecture per week
Prerequisites: 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 444  VALUES AND VALUABLES (3)
Three hours lecture per week
Prerequisites: 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, Interdisciplinary

ECON 448  GLOBALIZATION AND DEVELOPMENT (3)
Three hours lecture per week
Prerequisites: 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, BUS 448
GenEd: D, Interdisciplinary

ECON 450  PUBLIC SECTOR ECONOMICS (3)
Three hours lecture per week
Prerequisites: 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 lecture per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: ECON 310 or ECON 329
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 474  TOPICS IN ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS (3)
Three hours lecture per week
Prerequisites: ECON 362 or ECON 464 or consent of the 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 477  INTRODUCTION TO ECONOMETRICS (3)
Three hours lecture per week
Prerequisites: 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 478  APPLIED MANAGERIAL ECONOMETRICS (4)
Three hours lecture and two hour lab per week
Prerequisites: MATH/PSY 202 or MATH 329 or 352, ECON 310 or ECON 329 and MATH 150
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 480  SPECIAL TOPICS (1-3)
Three hours per week
Prerequisites: Consent of the instructor
In-depth analysis of current topics in economics. Topics vary each semester. Repeatable by topic up to 6 units.

ECON 482  SERVICE LEARNING/INTERNSHIP (3)
Six hours per week
Prerequisites: Consent of the instructor
Individual internship through service learning. Repeatable by topic.
Graded Credit/No Credit

ECON 483  SERVICE LEARNING AT THE ZOO (1-3)
One to three hours activity per week
Prerequisites: BIOL/BUS/ECON/EDUC 342 and consent of instructor
Working with a local zoo, individuals or teams of students will engage in service learning projects. Students will apply skills and competencies acquired in their academic programs to issues and challenges facing modern zoos. Repeatable up to 6 units.
Student Option: Graded or Credit/No Credit
Same as UNIV 493, BIOL 493, BUS 493, EDUC 493
**Course Descriptions 2010 – 2011**

**ChiLDhood EduCAtion (3)**

**ECS 101**

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**

Three hours lecture per week

Surveys theory and research on child and adolescent development. Focus is on theories of development, cognitive, social, emotional and physical development as they are informed by socio-cultural factors. Same as PSY 150

**ECS 221**

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 300**

Two hours activity per week

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 320**

Two hours lecture per week; two hours activity per week

Prerequisites: ECS 101, PSY 210

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**

Three hours lecture per week

Prerequisites: 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**

Two hours lecture per week; two hours activity per week

Prerequisites: PSY 213

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**

Three hours lecture per week

Prerequisites: 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 parent 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 AND 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 activity per week.
One hour seminar per week.
Prerequisites: 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 468  EARLY NUMERACY & LITERACY FOR CHILDREN AGES 3 - 8 (3)
Three hours lecture per week.
Prerequisites: ECS 320, ECS 325, 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 AND TEACHING STRATEGIES (3)
Three hours lecture per week.
Prerequisites: ART 102, ECS 325, ECS 330, HIST 222, PHED 302, SPED 345
Corequisites: 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, creative 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 471  PRESCHOOL/PRIMARY STUDENT TEACHING AND SEMINAR (4)
Fourteen (14) hours activity per week.
One hour seminar per week.
Prerequisites: ECS 468, ECS 470
Student teaching in preschool and early elementary school settings. Students practice assessment and instructional strategies with children ages 3 through 8 years. 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 for the first eight weeks and three full days for the last eight weeks. Fingerprint clearance is required.

ECS 494  INDEPENDENT RESEARCH (1-3)
One to three hours per week independent study.
Prerequisite: Consent of instructor
Students design and implement a study project in conjunction with a faculty member. Repeatable up to 6 units.

ECS 497  DIRECTED STUDY (1-3)
One to three hours per week directed study.
Prerequisites: Consent of instructor
Provides student credit for curricular activities under the direction of an Education faculty member. Repeatable up to 6 units.

ECS 521  FIELD EXPERIENCE (1)
Three hours per week in local public schools.
Prerequisites: Senior standing and admission to the ECS Program; Consent of instructor
Participatory observation in selected schools under the supervision of classroom teacher and university supervisor. Repeatable up to 4 units.

ECS 562  FIELD EXPERIENCE EARLY CHILDHOOD STUDIES II (2)
One full school day per week in local public schools.
Prerequisites: Senior standing and admission to the ECS Program; Consent of instructor
Participatory observation in selected schools under the supervision of classroom teacher and university supervisor. Repeatable up to 8 units.

Education - Accelerated Program

EDAP 364  INITIAL CLASSROOM APPRENTICESHIP (1)
Three hours activity per week, equivalent of one half-day activity in local public schools and one hour of seminar every other week.
Prerequisites: Admission to the Accelerated Program or consent of instructor
Service in selected schools under the direction of an Education faculty member. Repeatable up to 6 units.
Graded Credit/No Credit
EDAP 365  ADVANCED CLASSROOM APPRENTICESHIP (2)
Four hours activity per week, equivalent of one full day of activity in local public schools
Prerequisites: Admission to the Accelerated Program or EDAP 364
Corequisites: EDUC 520
Service learning in selected schools under the supervision of classroom teacher.
Graded Credit/No Credit

EDAP 422  LITERACY 1: MULTICULTURAL/MULTILINGUAL (3)
Three hours lecture per week
Prerequisites: Admission to the Accelerated Program
Corequisites: 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; literacy and language development needs of English learners and exceptional children; technology for teaching and learning is integrated.

EDAP 423  LITERACY 2: MULTICULTURAL/MULTILINGUAL (3)
Three hours lecture per week
Prerequisites: Admission to the Multiple Subject Accelerated program; EDAP 422
Corequisites: Enrolled in a field placement or student teaching course
Teaching literacy to all children (grades 3-6) with special attention to needs of English Language Learners and exceptional children, technology for teaching and learning are integrated.
Topics include reading and writing skills across the content areas and literature-based instruction for 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
Prerequisites: Admission to the Multiple Subject Accelerated Program
Overview of the California elementary 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
Prerequisites: MATH 208 or Consent of the Program Coordinator
Corequisites: EDAP 467 or EDAP 469
Graded Credit/No Credit
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
Prerequisites: 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
Prerequisites: MATH 208 or Consent of the Program Coordinator
Corequisites: EDAP 467 or EDAP 469
Graded Credit/No Credit
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
Prerequisites: Admission to the Multiple Subject Accelerated Program
Corequisites: EDAP 428
Graded Credit/No Credit
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
Prerequisites: Admission to the Accelerated program; SPED 345, EDUC 510, EDUC 512, EDUC 520, and ENGL 475
Corequisites: EDAP 467 or EDAP 469
Graded Credit/No Credit
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.
EDAP 468  STUDENT TEACHING SEMINAR I (1)
Two hour seminar every other week
Prerequisites: Admission to the Accelerated Program
Corequisites: EDAP 467
Graded Credit/No Credit
EDC 602  ISSUES IN SECONDARY EDUCATION (3)
Three hours seminar per week
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.

EDCI 610  RESEARCH ON TEACHING (3)
Three hours seminar per week
Prerequisites: 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.

EDAP 469  STUDENT TEACHING II (3)
Twelve weeks of one half day in schools and 4 weeks of fulltime student teaching.
Prerequisites: Admission to the Accelerated Program, EDAP 467
Corequisites: EDAP 470
Participatory observation and teaching in a grade 4 - 6 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 470  STUDENT TEACHING SEMINAR II (1)
Two hour seminar every other week
Prerequisites: Admission to the Accelerated Program, EDAP 467
Corequisites: EDAP 469
This course facilitates the preparation, implementation and completion of the California Teacher Performance Assessment task. It is a required course in the Accelerated Program in Liberal Studies. It meets the standards set by the California Commission on Teacher Credentialing.
Graded Credit/No Credit

EDAP 471  STUDENT TEACHING III (5)
Eight weeks of one a day a week in schools and 8 weeks of full time student teaching.
Prerequisites: Admission to the Accelerated Program, EDAP 467
Corequisites: 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
Prerequisites: 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

EDM 550  THEORY AND METHODS OF BILINGUAL EDUCATION (2)
Two hours lecture per week
Prerequisites: Admission to the Education Specialist: Mild/ Moderate Disabilities Credential Program or Holder of Valid Teaching Credential
This course increases the ability of participants to work and communicate cross-culturally and effectively with students and parents from diverse cultural and socio-economic backgrounds. to identify and apply basic cross-cultural, language and academic development competencies, to participate in culturally and linguistically effective programs, and to develop and use appropriate and responsive teaching strategies for multilingual/multicultural populations. This course addresses the needs of teachers faced with the growing diversity that exists in today’s classrooms.

EDM 560  APPLICATION OF MAINSTREAM AND ENGLISH LANGUAGE DEVELOPMENT (2)
Two hours lecture per week
Prerequisites: Admission to the Education Specialist: Mild/ Moderate Disabilities Credential Program or Holder of Valid Teaching Credential
Application of content and teaching methods for second language learners. Design of curricular and instructional programs for Language Minority/Limited English Proficient/English Language Development student, methods of language and content assessment, role and utilization of primary language, the use of SDAIE (Specially Designed Academic Instruction in English) in content instruction.
EDM 522  LITERACY 1: MULTICULTURAL/MULTILINGUAL (4)
Three hours of lecture/discussion per week
Prerequisites: Admission to the Multiple Subject Program
Corequisites: A field placement, student teaching or consent of instructor
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; literacy and language development needs of English learners and exceptional children; technology for teaching and learning is integrated.

EDM 523  LITERACY 2: MULTICULTURAL/MULTILINGUAL (3)
Three hours lecture per week
Prerequisites: EDM 522
Corequisites: Field placement, student teaching.
Differentiated literacy instruction and scaffolding for English learners, special education (including gifted) and English only students. Topics include reading and writing skills, literature-based instruction for native English speakers and English learners in English-only, Multilingual and Bilingual contexts. Appropriate technologies for teaching and learning are integrated.

EDM 526  MODERN METHODS IN MATHEMATICS TEACHING (4)
Four hours lecture per week
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 562, EDM 565 or EDM 575 or consent of instructor
Applying techniques and materials to teaching mathematics in self-contained classrooms in K-6 school settings. Special attention is given to mathematical reasoning, problem solving skills, multiple representations and approaches including verbal, symbolic, graphic. Modern methods, including mathematical modeling, use of new technology and modern educational software will be stressed. Designing assessment tools and using assessment data to differentiate activities for English Language Learners and exceptional children are integrated.

EDM 527  HISTORY, SOCIAL STUDIES AND INTEGRATED ARTS (4)
Four hours of lecture/discussion per week
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 522 (1-2 units) or EDM 526
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.

EDM 529  SCIENCE, HEALTH AND PHYSICAL EDUCATION (4)
Four hours lecture/discussion per week
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 562 (1-2 units) or EDM 575
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.

EDM 562  FIELD EXPERIENCE MULTIPLE SUBJECT (PART-TIME PROGRAM) (2)
One full school day per week in local public schools
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 527, or EDM 529
Participatory observation in selected schools under the supervision of classroom teacher and university supervisor. Repeatable.
Graded Credit/No Credit

EDM 565  INITIAL STUDENT TEACHING MULTIPLE SUBJECT (7)
Equivalent of eight weeks of full-time student teaching
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 566
Participatory observation and teaching in selected schools under the supervision of classroom teacher and university supervisor, with a student teaching seminar.
Graded Credit/No Credit

EDM 566  INITIAL STUDENT TEACHING SEMINAR MULTIPLE SUBJECT (1)
Bi-weekly two hour discussion
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 565
Discussion and seminar with University Supervisor to discuss practical issues relevant to the student teaching experience.
Graded Credit/No Credit

EDM 575  ADVANCED STUDENT TEACHING MULTIPLE SUBJECT (7)
Equivalent of eight weeks of full-time student teaching
Prerequisites: Admission to the Multiple Subject Credential Program
Corequisites: EDM 576
Participatory observation and teaching in selected schools under the supervision of classroom teacher and university supervisor, with a student teaching seminar.
Graded Credit/No Credit
EDPL 620 INSTRUCTIONAL LEADERSHIP OF THE COLLABORATIVE INCLUSIVE SCHOOL (3)
Three hours lecture/discussion per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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)
Three three-hour seminars per semester
Field studies hours: 20 hours of field experience per unit
Prerequisites: 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 (1-2)
Six three-hour seminars per semester and 40 hours of field experience.
Prerequisites: 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 four 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.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 570, EDSS 580, EDSS 575 or EDSS 585.
Students learn and apply teaching strategies, assessment practices, lesson planning, and universal instructional design as appropriate for secondary classrooms. Includes an emphasis on teaching in multicultural, multilingual and inclusive classrooms. Places special emphasis on middle school teaching and the middle school concept. Students will be placed in middle schools for the field placement/student teaching.

EDSS 531  TEACHING MATHEMATICS IN MIDDLE SCHOOLS (3)
Three hours lecture per week.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 570, EDSS 580, EDSS 575 or EDSS 585.
A study of content, methodology, materials and current research in teaching 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.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: 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 533  TEACHING ENGLISH IN MIDDLE SCHOOLS (3)
Three hours lecture/discussion per week.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 570, EDSS 580, EDSS 575 or EDSS 585.
A study of essential content and methods in teaching expository and creative writing and literature, primarily at the middle school level. Focuses on the strategies for building reading comprehension and for teaching textual interpretations, questioning strategies, and scaffolding techniques. 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 534  TEACHING SOCIAL STUDIES IN MIDDLE SCHOOLS (3)
Three hours lecture per week.
Prerequisites: Admission to the Social Studies Credential Program.
Corequisites: 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 California’s multicultural social studies classrooms. Methods to reach and teach English language learners and students with special needs are also highlighted.

EDSS 540  LITERACY IN SECONDARY SCHOOLS (3)
Three hours lecture/discussion per week.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 570 (1-2 units) or EDSS 575.
Secondary students will learn methods and techniques for reading, writing, language and literacy across the secondary curriculum including students with varied language backgrounds. Emphasis on how language and literacy issues and processes are crucial to successful student learning and successful teaching across contexts and content areas. This course addresses the special needs of proficient readers and adolescents who struggle as readers. Includes approaches and methods that are consistent with a comprehensive, systematic program, and are aligned with the state adopted academic content standards for students in English language arts and the reading/language arts framework. Includes an emphasis on teaching in multicultural, multilingual and inclusive classrooms.
EDSS 541  Teaching Mathematics in High Schools (4)

Three hours lecture per week.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: 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, multilingual and inclusive classrooms.

EDSS 542  Teaching Science in High Schools (4)

Three hours lecture per week.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 570, EDSS 575, EDSS 580, or EDSS 585.

A study of the 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.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 570, EDSS 575, EDSS 580, 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.
Prerequisites: Admission to the Social Studies Credential Program.
Corequisites: EDSS 570, EDSS 575, EDSS 580, or EDSS 585.

A study of content and methods of teaching high school social studies courses. 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 545  Teaching Social Studies in Middle School (6)

Four hours per week in a middle school setting.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: One of the following: EDSS 530, 531, 532, 533, or 540.

A study of content, methodology, materials and current research in teaching social studies courses in grades 6-8. Focuses on methods, curriculum design, literacy and technology use specific to teaching 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 (2)

Two hours lecture/discussion per week.
Prerequisites: 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 555  Access to Learning: A Focus on Individual Differences (2)

Two hours lecture/discussion per week.
Prerequisites: Admission to the Single Subject Credential Program.

A study of the content, methodology, materials and current research in teaching high school special education courses. 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.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: 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 a maximum of four units.
Graded Credit/No Credit

EDSS 571  Student Teaching Seminar-Middle School (2)

Two hours seminar per week.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: EDSS 575; Concurrent enrollment in or completed 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.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: 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

EDSS 580  Field Experience High School (Part-Time Program) (1)

Four hours per week in a high school setting.
Prerequisites: Admission to the Single Subject Credential Program.
Corequisites: 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 three units.
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.

Corequisites: English majors must be concurrently enrolled in at least one upper division English class; other majors are recommended to be concurrently enrolled in a core course in their major.

Through this course students are introduced to secondary school concepts and issues. Topics include middle school and high school organization and structures, the roles of school personnel, and teaching in specific content areas.

Students will be placed in local middle and high school classrooms in their content major and have seminars with university educators and content specialists to discuss subject matter coverage and teaching at various grade levels. It is recommended that students be concurrently enrolled in a core content course in their major.

Field experience in secondary schools required.

GenEd: D, Interdisciplinary

EDUC 340  THE ZOO: CONSERVATION, EDUCATION AND RECREATION (3)

Three hours lecture per week.

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, ECON 342

GenEd: D, Interdisciplinary

EDUC 343  TEACHING DRAMA TO CHILDREN (3)

Three hours lecture per week.

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, Interdisciplinary

EDUC 344  THE LIBRARY: COLLECTIONS, SERVICES & INSTRUCTION (3)

Three hours lecture per week.

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. The course will include study of local libraries. The course will include field trips to local libraries.

Same as BUS 344, ECON 344, LIB 344

GenEd: D, Interdisciplinary

EDUC 345  MEDIA LITERACY AND YOUTH CULTURE (3)

Three hours lecture per week.

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 COMM 345

GenEd: A1, D, Interdisciplinary

EDUC 346  SCHOOL COMMUNICATION (3)

Three hours lecture per week.

Examines written, verbal and nonverbal communication in school settings between teachers and stakeholders. Emphasizes the importance of communication and successful personal interactions.

Same as COMM 346

GenEd: A1, Interdisciplinary
EDUC 347 THE UNIVERSITY (3)
Three hours lecture per week.
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. The course will include 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, Interdisciplinary

EDUC 404 POLICY LEADERSHIP (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: 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, Interdisciplinary

EDUC 434 THE MUSEUM: CULTURE, BUSINESS AND EDUCATION (3)
Three hours lecture per week.
This course is 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 9 units. 
Same as ART 434, BUS 434
GenEd: C1, D, Interdisciplinary

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, Interdisciplinary

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

EDUC 493 SERVICE LEARNING AT THE ZOO (1-3)
One to three hours activity per week.
Prerequisites: BIOL/BUS/ECON/EDUC 342 and consent of instructor
Working with a local zoo, individuals or teams of students will engage in service learning projects. Students will apply skills and competencies acquired in their academic programs to issues and challenges facing modern zoos. Repeatable up to 6 units.
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.
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
Corequisites: 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.
Corequisites: 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 538  K-12 LITERACY: MULTICULTURAL AND MULTILINGUAL (4)
Four hours lecture per week
Prerequisites: Admission to a Credential Program
Corequisites: SPED 562, SPED 570, SPED 580 or SPED 585
Topics include developmental theory and practice of the reading and writing process through the school years K-12; 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; literacy and language development needs of English learners and exceptional children, literacy in the content areas; technology for teaching and learning is integrated.

EDUC 561  TEACHING WITH TECHNOLOGY (3)
Three hours lecture per week
Prepares students to use technology in educational settings and to develop skills for a variety of technology applications.

EDUC 605  EDUCATION IN A DIVERSE SOCIETY (3)
Three hours lecture/discussion per week
Prerequisites: 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 615  PRINCIPLES OF EDUCATIONAL RESEARCH (3)
Three hours lecture/discussion per week
Prerequisites: 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)
Prerequisites: Admission to Masters of Education Program
Independent research on topic of choice with advisor approval. Repeatable.

EDUC 617  ACTION RESEARCH (3)
Three hours lecture per week
Prerequisites: 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)
One hour seminar per week
Corequisites: Admission to Masters of Arts in Education Programs
Consent of Instructor Required for Enrollment
Graduate students design and implement a project or study with supervision from a faculty member.

EDUC 661  ADVANCED TEACHING WITH TECHNOLOGY (3)
Three hours lecture per week
Focuses on ways teachers use technology to teach K-12 students.

EDUC 694  ADVANCED INDEPENDENT RESEARCH (1)
One to four hours independent study per week
Corequisites: Student must be enrolled in Graduate or Postbaccalaureate Program
Consent of Instructor Required for Enrollment
Provides a graduate student with credit for curricular activities conducted under the direction of a School of Education faculty member.

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 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 103  STRETCH COMPOSITION II (3)
Three hours lecture per week
Prerequisites: ENGL 102
Focuses not on finished products but rather on helping students to develop strategies for using writing to construct meaning, which in turn assists in generating thought-provoking discourse for the intended reader. Students/Writers
will become well-versed in a variety of approaches to constructing the types of genres required in their college courses and in the workplace. Completion of ENGL 103 fulfills the general education requirement for undergraduate writing and prepares students for success in their courses across the curriculum.

**ENGL 105**  **COMPOSITION AND RHETORIC I (3)**

Three hours lecture per week
Instruction and practice in writing university-level expository and persuasive prose. The subject matter of the course will be thematic and variable. The focus of the course is the development of proficiency in conceptualizing, analyzing and writing academic papers. Substantial writing is required. This course may be linked with another lower division course, in which case the student will enroll in both courses.

GenEd: A2

**ENGL 106**  **COMPOSITION AND RHETORIC II–SERVICE LEARNING (3)**

Two hours lecture and two hour activity per week
Instruction and practice in producing university-level expository and persuasive prose centered on exploring socioeconomic and sociopolitical issues in our local and global communities. Special attention is given to evidence discovery, claim support, argument response, and their applications to academic debate, public decision making, and rhetorical reading. Requires off-campus service with community partners. Experiential learning emphasized.

GenEd: A1, A2

**ENGL 107**  **ADVANCED COMPOSITION AND RHETORIC (3)**

Three hours lecture per week
Prerequisites: 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
Prerequisites: ENGL 103 or 105 or equivalent
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: C2

**ENGL 150**  **BRITISH AND EUROPEAN LITERATURE I (3)**

Three hours lecture/discussion per week
Prerequisites: 103 or 105 or equivalent
Survey of major authors in 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 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 212**  **INTRODUCTION TO CHILDREN’S LITERATURE (3)**

Three hours lecture/discussion per week
Prerequisites: ENGL 103 or 105 or equivalent
An inquiry into children’s literature. Students analyze works representative of several cultures and genres, including fiction, poetry, picture books, non-fiction, and traditional literature. Focus will be on critical reading of materials appropriate for grades K-6 as well as analysis of literary elements and structural features. The course will foster appreciation for and understanding of the author’s craft through analytical papers, investigatory projects, and creative responses to children’s literature. Formerly ENGL 312, changed in Fall 2007.

**ENGL 220**  **AMERICAN LITERATURE II (3)**

Three hours lecture/discussion per week
Prerequisites: 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 230**  **THE ART OF CREATING JOURNALISM (3)**

Three hours lecture per week
Prerequisites: ENGL 103 or ENGL 105
This course will integrate concepts from English/journalism, Education and Art. It is 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. No credit given toward the Art major.

Same as ART 230, IS 230
GenEd: A2
ENGL 230  BRITISH AND EUROPEAN LITERATURE II (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 150 or equivalent or consent of instructor
Study of major works of British and European literature from approximately 1650 to the present, with special attention to various literary movements.
GenEd: C2

ENGL 260  PERSPECTIVES IN CREATIVE WRITING (3)
Three hours lecture/discussion per week
An introduction to creative writing. Writing intensive with peer discussion and editing as well as reading and discussing what authors have written about the writing process. Formerly ENGL 460, in May 2006; formerly ENGL 360, changed Dec 2007

ENGL 310  RESEARCH METHODS (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 103 or ENGL 105 or equivalent
Comprehensive investigation of research modalities, including the various forms of electronic research. Writing intensive.

ENGL 311  BILINGUAL LITERARY STUDIES/ESTUDIOS LITERARIOS BILINGUES (3)
Three hours lecture per week
Prerequisites: ENGL 103 or ENGL 105 and SPAN 202 or SPAN 212 or consent of the instructor
This course explores the literatures of the Americas written in two languages: English and Spanish. Course texts will include works written by bilingual U.S. authors and Latin American authors writing primarily in Spanish; genres may include novels, with a special focus on Magical Realism/el realismo magico, short stories/cuentos, and poetry. Readings will be 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
Prerequisites: ENGL 103 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
Prerequisites: 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
Prerequisites: 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 6 units.

ENGL 326  MAJOR BRITISH AND EUROPEAN AUTHORS (3)
Three hours lecture/discussion per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
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, Interdisciplinary

ENGL 331  NARRATIVES OF THE WORKING CLASS (3)
Three hours lecture per week
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies.
Same as ECON 331, SOC 331, HIST 331, POLS 331
GenEd: C2, D, Interdisciplinary
ENGL 336  MULTICULTURAL LITERATURE AND COMMUNICATION (3)  
Three hours lecture per week.  
Examines issues of cross-cultural communication in interpersonal and intergroup settings. Works of literature which take cross-cultural communication as a theme will be examined.  
Same as COMM 336  
GenEd: A1, C2, Interdisciplinary

ENGL 337  LITERATURE OF THE ENVIRONMENT (3)  
Three hours lecture/discussion per week.  
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, Interdisciplinary

ENGL 338  SCIENCE AND CONSCIENCE (3)  
Three hours lecture/discussion per week.  
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 PHYS 338  
GenEd: B1, C2, Interdisciplinary

ENGL 339  PSYCHOLOGY AND LITERATURE (3)  
Three hours lecture per week.  
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, Interdisciplinary

ENGL 340  BUSINESS AND ECONOMICS IN AMERICAN LITERATURE (3)  
Three hours lecture/discussion per week.  
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, Interdisciplinary

ENGL 341  MODERN AMERICAN DRAMA AND THEATRE (3)  
Three hours lecture per week.  
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, Interdisciplinary

ENGL 342  MODERN BRITISH AND EUROPEAN DRAMA AND THEATRE (3)  
Three hours lecture per week.  
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, Interdisciplinary

ENGL 344  WORLD DRAMA AND THEATRE (3)  
Three hours lecture per week.  
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, Interdisciplinary
ENGL 349 PERSPECTIVES ON MULTICULTURAL LITERATURE (3)
Three hours lecture/discussion per week
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, Interdisciplinary

ENGL 354 STUDIES IN CULTURAL LITERATURES (3)
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 9 units.
GenEd: C2, C3B

ENGL 360 LITERARY THEORY (3)
Three hours lecture per week
Prerequisites: 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 foci 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
Prerequisites: 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
Prerequisites: 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
GenEd: C2, C3B

ENGL 412 DRAMA OF ANCIENT GREECE (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 103 or ENGL 105 or equivalent and one upper division literature course
A survey of ancient Greek drama and the culture/society that produced it. The course will examine a representative sample of the major plays. Among the topics considered will be: the tragic and comic festivals, tragedy’s relationship with Athenian democracy, the nature of Greek theaters and ancient theatrical production techniques, religion and drama, women and tragedy, tragic and comic heroism, myth and tragedy, and the legacy of Greek tragedy in the modern world.
Same as PATH 412

ENGL 430 TRADITION AND TRANSFORMATION: LITERATURE, HISTORY, AND CULTURAL CHANGE (3)
Three hours lecture per week
Prerequisites: ENGL 103 or ENGL 105 or HIST 280 or consent of the 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 9 units.
Same as HIST 430
GenEd: C3B, D, Interdisciplinary

ENGL 431 EUROPEAN RENAISSANCE LITERATURE AND ART (3)
Three hours lecture/discussion per week
Prerequisites: 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.
Same as ART 431
GenEd: C1, C2, Interdisciplinary

ENGL 432 ARTS OF THE HARLEM RENAISSANCE (3)
Three hours lecture per week
Prerequisites: 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 1920s. Historical genealogies and subsequent artistic legacies will also be explored.
Same as ART 432, PAMU 432
GenEd: C1, C2, Interdisciplinary

ENGL 433 GAY/LESBIAN/BISEXUAL/TRANSGENDER STUDIES (3)
Three hours lecture per week
Prerequisites: 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, Interdisciplinary
ENGL 444  ORIGINAL PRACTICE IN RENAISSANCE DRAMA (3)
Three hours lecture per week
In this class, students will learn about the theaters of the Renaissance, the playwrights whose plays were performed in them, and explore the differences that occur when the plays are performed in a venue resembling those of the original Rose, Blackfriars and Globe theaters.  
Same as PATH 444  
GenEd: C2, Interdisciplinary

ENGL 454  MULTICULTURAL LITERATURE PROJECT/SEMINAR (3)
Three hours seminar per week
Prerequisites: Completion of 9 units from the English Emphasis in Multicultural Literature and consent of instructor
As the culmination of the Multicultural Literature Emphasis, the purpose of this independent study course is to produce a significant work in the genre of the student's choice, chosen in consultation with his or her instructor.

ENGL 456  WOMEN'S FICTION (3)
Three hours lecture/discussion per week
Prerequisites: 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 461  FICTION WRITING (3)
Three hours lecture/discussion per week
Prerequisites: 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 462  POETRY WRITING (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 260 or consent of the instructor
The writing of poetry is the focus of this class. The seminar format allows students the opportunity to talk about their poetry 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
Prerequisites: 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
Prerequisites: ENGL 260 or consent of the 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
Prerequisites: Consent of the 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 CSUCI annual literary journal, thus gaining practical experience of a literary profession.

ENGL 466  SCREENWRITING (3)
Three hours lecture per week
Prerequisites: 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 477  ADOLESCENT LITERATURE (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 103 or 105 and one upper-division literature course
A survey of young adult literature in which students analyze young adult literature taught at the secondary level (grades 6-12). Works studied are selected for their diversity of subject matter, genre, cultural focus, and grade level. Students will engage in literary discussions of the works, analyze them in relation to the genre, and consider implications for adolescents in school and the larger society.

ENGL 478  WRITING AS REFLECTIVE PRACTICE (3)
Three hours lecture per week
Prerequisites: ENGL 103 or ENGL 105 and ENGL 330 or consent of the instructor
This course will develop awareness of the thinking and learning processes that occur during writing. The focus will be on identifying, planning, and monitoring the thinking processes that develop while writing. This knowledge of process will be used to select and develop strategies that will improve the writing product. Writing will be extensive and will include expository, creative, and reflective genres.
ENGL 482  TECHNICAL WRITING (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 330
This course is an overview of the field of technical writing. Research, interviewing, and the various forms of technical writing are addressed. Students will produce work in a variety of forms of technical writing.

ENGL 483  TECHNICAL VISUAL COMMUNICATION (3)
Three hours lecture/discussion per week
Prerequisites: 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
Prerequisites: 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 (3)
Three hours activity per week
Prerequisites: ENGL 310, ENGL 330, ENGL 482, ENGL 483, and ENGL 484, and a passing evaluation on the portfolio of work from the prerequisite courses
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 an advisor.

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 494  INDEPENDENT STUDY/SENIOR RESEARCH (3)
Three hours activity per week
Prerequisites: Senior standing and consent of the 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
Prerequisites: Senior standing, a passing evaluation of the cumulative portfolio, and consent of instructor or 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
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
Introduction to basic concepts in geography and related environmental issues. Examines environmental impact on human affairs and human impact on the environment. Spatial awareness including cartographic knowledge, skills with global positioning systems (GPS) as well as hands-on experience using Geographic Information Systems (GIS) is emphasized. This course is not open to ESRM majors.
Same as GEOG 105
GenEd: D

ESRM 200  PRINCIPLES OF RESOURCE MANAGEMENT, CONSERVATION AND STEWARDSHIP (3)
Two hours lecture and two hours activity per week
Prerequisites: ESRM 100 and BIOL 200
Students will work with the National Park Service, U.S. Geological Survey or other agencies on related resource projects.

ESRM 313  CONSERVATION BIOLOGY (4)
Three hours lecture and three hours laboratory per week
Prerequisites: 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 BIOL 313

ESRM 328  INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (3)
Two hours lecture and three hour laboratory per week
Prerequisites: ESRM 100 or consent of the instructor
Introduction to fundamental concepts and techniques of geographic information systems, including the collection, manipulation, analysis, interpretation, display, and communication of spatial information for environmental decision making. Lab fee required.
GenEd: B4
ESRM 329  ENVIRONMENTAL LAW AND POLICY (3)
Three hours lecture per week.
Prerequisites: ESRM 100 or consent of the 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.
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, Interdisciplinary

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

ESRM 341  THE NATIONAL PARK (3)
Three hours lecture per week.
Prerequisites: Upper division standing.
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, Interdisciplinary

ESRM 342  ENVIRONMENTAL HISTORY (3)
Three hours lecture per week.
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, Interdisciplinary

ESRM 350  ECOLOGICAL RESTORATION DESIGN AND CONSTRUCTION (4)
Two hours lecture and six hours laboratory per week.
Prerequisites: ESRM 352
Introduction to environmental engineering. Students will participate in the planning and construction of ecological restoration projects in Santa Barbara, Ventura, and/or Los Angeles Counties. Particular projects will expose students to construction 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.
Prerequisites: ESRM 313
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. Lab fee required.

ESRM 352  THEORY AND PRACTICE OF ECOLOGICAL RESTORATION (3)
Three hours lecture per week.
Introduces the theory and practice of modern ecological restoration. Conceptual similarities in the approach to wetland, riparian, forest, grassland, and subtidal restoration efforts will be explored. Special attention will be given to failed restoration efforts, articulating the conditions leading to such failures, and minimum performance standards for successful projects.

ESRM 400  ENVIRONMENTAL IMPACT ASSESSMENT (3)
Three hours lecture per week.
Prerequisites: 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 (3)
Two hours lecture per week.
Three hours laboratory per week.
Prerequisites: 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.
Prerequisites: 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, Interdisciplinary

ESRM 443  ENVIRONMENTAL COMMUNICATION (3)
Three hours lecture per week.
Prerequisites: 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 COMM 443
GenEd: D, Interdisciplinary

ESRM 450  ENVIRONMENTAL CONFLICT RESOLUTION (3)
Three hours lecture per week.
Prerequisites: 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 COMM 443
GenEd: D, Interdisciplinary

ESRM 462  COASTAL AND MARINE RESOURCE MANAGEMENT (4)
Three hours lecture and two hours activity per week.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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 491  CAPSTONE PREPARATION (1)
Two hours activity per week.
Prerequisites: Senior standing in the Environmental Science and Resource Management major
Research and develop a proposal for an ESRM project. Repeatable up to 3 units.

ESRM 492  SERVICE LEARNING/INTERNSHIP (3)
Six hours per week.
Prerequisites: 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.
Prerequisites: Consent of instructor
Individual research on topic selected by the student and faculty mentor. Repeatable.
Graded Credit/No Credit

ESRM 499  CAPSTONE (3)
Three hours lecture / discussion per week.
Prerequisites: Upper division required courses in ESRM major (may be completed concurrently)
This course consists of an interdisciplinary evaluation of the physical, biological, social, economic, and legal dimensions of environmental decision-making.
The instructor will select from Southern California ecosystems - and decisions with associated environmental impacts - for evaluation and analysis. Topics include decisions to reduce, control, or treat surface water run-off, establishing or changing the management of marine protected areas, dredging in harbors, and permits for coastal development. Students will provide results to appropriate national, state, or local agencies for consideration and deliberation in administrative decisions.

Finance

FIN 300  BUSINESS FINANCE (3)
Three hours lecture per week.
Prerequisites: ACCT 220, MATH 140 or MATH 150
Principles of planning, procuring, 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 343  CAPITAL THEORY (3)
Three hours lecture per week
Intertemporal choice and decision-making under uncertainty in our financial lives.
Topics include: multi-period consumption, multi-period production, capital budgeting, modern portfolio theory and financial management.
Same as ECON 343
GenEd: D, Interdisciplinary

FIN 410  FINANCIAL MARKETS AND INSTITUTIONS (3)
Three hours lecture per week
Prerequisites: FIN 300
Gives a broad knowledge of operations, mechanics, and structure of the U.S financial system. Provides an in-depth discussion of key topics critical to financial management.

FIN 411  CORPORATE FINANCE MANAGEMENT (3)
Three hours lecture per week
Prerequisites: FIN 300
Provide an in-depth knowledge 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
Prerequisites: 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
Prerequisites: FIN 300
Introduction to different investment strategies along with the securities available to the investor. Institutional features such as types of markets, market indicators, investment banking, types of orders and securities markets regulation are covered.

FIN 421  PUBLIC FINANCIAL MANAGEMENT (3)
Three hours lecture per week
Prerequisites: 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 422  SERVICE LEARNING/INTERNSHIP (3)
Six hours per week
Prerequisites: Consent of instructor
Individual internship through service learning. Repeatable.
Graded Credit/No Credit

FIN 490  SPECIAL TOPICS (3)
Three hours seminar per week
Prerequisites: Consent of instructor
In-depth analysis of current topics in finance. Topics vary each semester, repeatable.

FIN 492  DIRECTED STUDY (1-3)
Variable hours per week
Prerequisites: Consent of the instructor
Individual contracted study on topics or research selected by the student and faculty mentor. Repeatable.
Graded Credit/No Credit

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

Geography

GEOG 105  ENVIRONMENTAL ISSUES IN GEOGRAPHY (3)
Three hours lecture per week
Introduction to basic concepts in geography and related environmental issues. Examines environmental impact on human affairs and human impact on the environment. Spatial awareness including cartographic knowledge, skills with global positioning systems (GPS) as well as hands-on experience using Geographic Information Systems (GIS) is emphasized. This course is not open to ESRM majors.
Same as ESRM 105
GenEd: D

GEOG 201  CULTURE AND HISTORICAL GEOGRAPHY OF THE WORLD (3)
Three hour lecture per week
A geographic study of the world and the basic relationship between the Physical environment including topography, climate, natural vegetation, soils, and drainage patterns etc. and including the cultural aspects (political, social, economic, urban, and rural life etc.) within the major realms or regions of the world, with a detailed study of some selected regions.
GenEd: D

Gender Studies

GEND 433  GAY/LESBIAN/BISEXUAL/TRANSGENDER STUDIES (3)
Three hours lecture per week
Prerequisites: 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, Interdisciplinary

Geology

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
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 435**  
**GLOBAL CITIES (3)**
Three hours lecture per week  
Prerequisites: 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, Interdisciplinary

**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 275**  
**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 1600s 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 280    THE HISTORIAN’S CRAFT (3)
Three hours lecture per week.
Prerequisites: Sophomore Standing or consent of the 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 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 320    EUROPEAN HISTORY, 1945-PRESENT (3)
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.

HIST 330    THE HISTORY OF SCIENCE: NONWESTERN ORIGINS AND THE WESTERN REVOLUTION (3)
Three hours lecture per week.
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, Interdisciplinary

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

HIST 332    DANCE IN HISTORY (3)
Three hours lecture per week.
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 ballet, ceremonial, or folk dancing. Dance in history is contextualized within multicultural perspectives.
Same as PADA 332
GenEd: C1, Interdisciplinary

HIST 333    HISTORY OF SOUTHERN CALIFORNIA CHICANA/O ART (3)
Three hours lecture per week.
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, CHS 333
GenEd: C3B, D, Interdisciplinary

HIST 334    NARRATIVES OF SOUTHERN CALIFORNIA (3)
Three hours lecture/discussion per week.
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, Interdisciplinary

HIST 335    AMERICAN ETHNIC IMAGES IN NOVELS, FILM AND ART (3)
Three hours lecture/discussion per week.
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 cultural landscape of the United States as they relate to ethnic peoples.
Same as ART 335, ENGL 335
GenEd: C2, C3B, Interdisciplinary

HIST 337    MUSIC IN HISTORY (3)
Three hours lecture per week.
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: C2, C3B, Interdisciplinary

HIST 338    THEATRE IN HISTORY (3)
Three hours lecture per week.
PATH 338:
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.
Formerly known as PAMU 363, changed February 2009.
Same as PAMU 337
GenEd: C1, C3B, Interdisciplinary

HIST 339    BUSINESS IN CHINA: HERITAGE AND CHANGE (3)
Three hours lecture per week.
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, Interdisciplinary
HIST 340  HISTORY AND PSYCHOLOGY OF NAZI GERMANY (3)
Three hours lecture per week
Prerequisites: Upper Division standing
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.
Same as PSY 340
GenEd: D, E, Interdisciplinary

HIST 342  ENVIRONMENTAL HISTORY (3)
Three hours lecture per week
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, Interdisciplinary

HIST 349  HISTORY OF BUSINESS AND ECONOMICS IN NORTH AMERICA (3)
Three hours of lecture per week
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, Interdisciplinary

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 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 CHS 350
GenEd: C38

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
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.
Same as PSY 340
GenEd: D, E, Interdisciplinary

HIST 366  OCEANS OF WORLD HISTORY (3)
Three hours lecture per week
Examines the cultural and institutional development of California prior to the 18th century and since.

HIST 367  UNITED STATES COLONIAL HISTORY (3)
Three hours lecture per week
Examines the European colonization of the United States from the 1600s to the French and Indian War. The transformation of social, political, and cultural institutions of Europe in North America.

HIST 370  UNITED STATES COLONIAL HISTORY (3)
Three hours lecture per week
Examines the European colonization of the United States from the 1600s to the French and Indian War. The transformation of social, political, and cultural institutions of Europe in North America.

HIST 371  THE FOUNDING OF THE UNITED STATES (3)
Three hours lecture per week
Examines the Revolutionary era and its political and social impact 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 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 1990s. 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 CHS 402
GenEd: D

HIST 403 THE AMERICAN INTELLECTUAL TRADITION (3)
Three hours lecture per week
This course explores American thought from Puritanism, transcendentalism, and pragmatism to contemporary trends represented in thinkers from Richard Mather, Jonathan Edwards, Ralph Emerson, William James, and John Dewey to Reinhold Hiebuhr. It also addresses those dissenting voices resonantly expressed in American life from Ann Hutchinson, Roger Williams, Henry David Thoreau, Frederick Douglass, Susan B. Anthony, and W. E. B. Du Bois to Martin Luther King, Jr.

HIST 412 LAW AND SOCIETY (3)
Three hours lecture per week
This course investigates a wide range of issues including, but not limited to, the origins of the law in classical civilizations, the interplays between/moral, political, and religious law, and the evolution of modern legal systems. Emphasis is given to the profound political, economic, and other transformations taking place in these countries in the twentieth century.

HIST 413 WORLD RELIGIONS AND CLASSICAL PHILOSOPHIES (3)
Three hours lecture per week
Prerequisites: HIST 211 or equivalent
Studies and compares major religions and philosophical schools in the ancient world. Examines how different societies and peoples have formed their basic assumptions concerning the universe, faith, human nature and society, and how those fundamental assumptions have affected their chosen modes of thinking, ways of life, organizations of society, forms of government, and approaches to knowledge.
GenEd: D

HIST 414 WOMEN AND GENDER IN HISTORY (3)
Three hours lecture per week
This course examines 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 protest 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
Evaluates 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
Prerequisites: ENGL 103 or ENGL 105 or HIST 280 or consent of the 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 9 units.
Same as ENGL 430
GenEd: C3B, D, Interdisciplinary
HIST 436  PSYCHOLOGY AND HISTORY OF EAST ASIAN WARRIOR CULTURES (3)
Three hours lecture per week
Prerequisites: Upper division standing or consent of the 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 PSY 436
GenEd: D, E, Interdisciplinary

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.
Same as ANTH 442
GenEd: D, Interdisciplinary

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.
Same as EDUC 445, CHS 445
GenEd: C3B, D, Interdisciplinary

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.
GenEd: D

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.
GenEd: D

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 1600s to the early 1800s. 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
Prerequisites: HIST 280, Senior standing, or consent of the 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 494  INDEPENDENT RESEARCH (1-3)
Prerequisites: Junior Standing and consent of the 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)
Prerequisites: Junior Standing and consent of the instructor
Exploring an important historical topic under the direction of a faculty member.
Topics vary and repeatable.
Student Option: Graded or Credit/No Credit

HIST 499  CAPSTONE IN HISTORY (1-3)
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

Health

HLTH 322  HEALTH ISSUES IN EDUCATION (2)
Two hours lecture per week
Survey of school health programs with in-depth study of selected health education curricula and topic areas, including alcohol, tobacco, drugs, communicable diseases and nutrition. Development of strategies and methods for teaching controversial areas.
GenEd: E
INTRODUCTION TO BIOMEDICAL IMAGING (4)

Three hours lecture and two hours activity per week.
Prerequisites: 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, BIOL 434
GenEd: B1, E, Interdisciplinary

WEB PROGRAMMING (3)

Three hours lecture in the lab per week.
Prerequisites: IT 151 and MATH 300.
This course provides an overview of the many languages and techniques used in web programming. This includes Java, JavaScript, PHP, Python, Perl, JSP and ASP, as well as database query languages and XML. Sample applications are built for dynamic web pages and web sites. No credit given towards Computer Science degree.

OPERATING SYSTEMS FOR IT (3)

Three hours of lecture per week.
Prerequisites: IT 262.
Examination of the principal types of operating systems including batch, multi-programming, 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. Role and tasks of system administrator. System management tools. Case analysis of systems such as DOS/Windows, Linux/Unix, VMS. Projects will be implemented to reinforce the lectures.

WEB INTELLIGENCE (3)

Three hours of lecture in the lab per week.
Prerequisites: 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.

COMPUTER ORGANIZATION AND ARCHITECTURE FOR IT (3)

Three hours of lecture per week.
Prerequisites: COMP 162.

SECURITY FOR IT (3)

Three hours of lecture per week.
Prerequisites: IT 429.

COMPUTER NETWORK SECURITY FOR IT (3)

Three hours of lecture per week.
Prerequisites: IT 280.
This course presents an overview of security systems and firewalls. Covers the 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.

COMPANY SYSTEMS SECURITY FOR IT (3)

Three hours of lecture per week.
Prerequisites: IT 280.
This course provides an overview of the many languages and techniques used in web programming. This includes Java, JavaScript, PHP, Python, Perl, JSP and ASP, as well as database query languages and XML. Sample applications are built for dynamic web pages and web sites.
IT 464  COMPUTER GRAPHICS FOR IT (3)
Three hours of lecture in the lab per week
Prerequisites: IT 151 and MATH 300
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.

IT 469  ARTIFICIAL INTELLIGENCE/NEURAL NETWORKS FOR IT (3)
Three hours of lecture in the lab per week.
Prerequisites: IT 151 and MATH 300
An exploration of the use of computers to perform computations normally associated with intelligence, pattern formation and recognition using various computer algorithms and data structures. Including distributed processing models found in massively parallel systems such as the brain. 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.

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

IT 499  BSIT CAPSTONE (2)
Prerequisites: MGT 471 and Senior standing in the BSIT program
Implement a realistic Information Technology project. Identify project goals in consultation with an industry representative. Produce the project requirements, design and complete documentation. Implement the project design, test and debug the system. Present the project results to the class and the industry representative. Work in teams.

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
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. The course will include study of local libraries. The course will include field trips to local libraries.
Same as BUS 344, ECON 344, EDUC 344
GenEd: D, Interdisciplinary

LIB 490  SPECIAL TOPICS (1-3)
Topics include: finding, evaluating, and applying information within a specific discipline or related group of disciplines; use of online and print sources to find books, articles, web sites, government publications, and non-print sources relevant to a discipline(s); use of appropriate discipline style manual; use of appropriate applications. Repeatable.

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

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.
Prerequisites: 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.
Prerequisites: A passing score on the Entry Level Mathematics Examination
Topics 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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 202  BIOSTATISTICS (3)
Three hours lecture per week
Prerequisites: A passing score on the Entry Level Mathematics Exam (ELM) or 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 PSY 202
GenEd: B3

MATH 208  MODERN MATHEMATICS FOR ELEMENTARY TEACHING I-NUMBERS AND PROBLEM SOLVING (3)
Three hours lecture per week
Prerequisites: 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
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
Prerequisites: MATH 151
Topics include: matrices, linear systems of equations, determinants, vectors in 2 and 3 dimensions, eigenvalues, the vector space Rn, linear transformations, introduction to general vector spaces and applications.

MATH 250  CALCULUS III (3)
Three hours lecture per week
Prerequisites: 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
Prerequisites: MATH 230
Topics include: Sets, algebraic systems, axioms, definitions, propositions and proofs. Combinatorics, graph theory, moduli 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
Applications of sets, logic, algebraic systems, combinatorics, graph theory, moduli calculus in information technology. Basic coding, coding errors and Hamming codes and applications.

MATH 308  MODERN MATHEMATICS FOR ELEMENTARY SCHOOL TEACHING II-GEOMETRY, PROBABILITY AND STATISTICS (3)
Three hours lecture per week
Prerequisites: MATH 208 or consent of the 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.

GenEd: B3, D, Interdisciplinary

MATH 318  MATHEMATICS FOR SECONDARY SCHOOL TEACHERS (3)
Three hours lecture in the computer lab per week
Prerequisites: MATH 150
Current issues of modern secondary school math curriculum including abstract thinking, technology use and problem solving approaches to teaching. 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  STATISTICS FOR BUSINESS AND ECONOMICS (3)
Three hours lecture in the lab per week
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
Prerequisites: 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, Interdisciplinary

MATH 331  HISTORY OF MATHEMATICS (3)
Three hours lecture per week
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, Interdisciplinary
MATH 345  DIGITAL IMAGE PROCESSING (3)
Three hours lecture in the lab per week.
Prerequisites: Consent of the 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, Interdisciplinary

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

MATH 351  REAL ANALYSIS (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: MATH 151.
Topics 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.
Prerequisites: 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.
Prerequisites: MATH 240 or consent of instructor.
Groups, rings, and fields, the basic algebraic structures in contemporary mathematics.

MATH 399  MODERN TOOLS IN MATHEMATICS (1)
Three hours laboratory per week.
Modern tools and software based problem solving in mathematics.
Repeatable up to 4 units.
Graded Credit/No Credit

MATH 429  OPERATIONS RESEARCH (3)
Three hours lecture per week.
Prerequisites: 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.

MATH 437  MATHEMATICS FOR GAMES, SIMULATIONS, AND ROBOTS (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary

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, Interdisciplinary

MATH 445  IMAGE ANALYSIS AND PATTERN RECOGNITION (3)
Three hours lecture in the lab per week.
Prerequisites: PHYS/COMP/MATH 345 or consent of the 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, Interdisciplinary
MATH 448  SCIENTIFIC COMPUTING (3)  
Three hours lecture in the lab per week.  
Prerequisites: MATH 151 and MATH 350 or COMP 151.  
Topics include: techniques of applied mathematics, solution of equations, finite differences, and wavelets.  
GenEd: B3, B4, Interdisciplinary

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

MATH 451  COMPLEX ANALYSIS (3)  
Three hours lecture per week.  
Prerequisites: 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.  
Prerequisites: Programming experience and Statistics, or consent of the 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 484  ALGEBRAIC GEOMETRY AND CODING THEORY (3)  
Three hours lecture per week.  
Prerequisites: MATH 393.  
Study of algebraic varieties over algebraically closed fields. Modern application to coding theory.

MATH 490  TOPICS IN MODERN MATHEMATICS (3)  
Three hours lecture per week.  
Prerequisites: Upper-division standing.  
New developments in mathematics. Repeatable by topic.

MATH 492  INTERNSHIP (1-3)  
Prerequisites: Upper division standing.  
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.  
Prerequisites: MATH 393.  
Field extensions, Galois theory, rings and modules, and further topics on groups, rings, and fields.

MATH 497  DIRECTED STUDIES (3)  
Prerequisites: 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 (1)  
One hour of seminar per week.  
Prerequisites: Senior standing.  
Oral presentations of current advancement in the field, and reports on students’ projects. Repeatable.

MATH 510  PROBABILISTIC METHODS AND MEASURE THEORY (3)  
Three hours lecture per week.  
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program.  
Introduction to probabilistic methods.  
Topics 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.

MATH 511  FUNCTIONAL ANALYSIS (3)  
Three hours lecture per week.  
Prerequisites: 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 513  ADVANCED ALGEBRA (3)  
Three hours lecture per week.  
Prerequisites: 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 555  ACTUARIAL SCIENCES (3)  
Three hours lecture per week.  
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program
Same as COMP 581

MATH 582  NUMBER THEORY AND CRYPTOGRAPHY (3)
Three hours lecture per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: Graduate standing/ Undergraduate seniors
New developments in mathematics. Repeatable by topic up to 9 units.

MATH 597  MASTER THESIS (1-9)
Three hours lecture per week
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program
Supervised research in mathematical sciences or applications. Required to present research at Graduate Seminar. Repeatable up to 9 units.

MATH 598  MASTER PROJECT (1-9)
Three hours lecture per week
Prerequisites: 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 9 units.

MATH 599  GRADUATE SEMINAR (1)
Three hours lecture per week
Prerequisites: 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 307 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. Topics also include integrity of scientific research and literature and responsibilities of scientists to society, intellectual property, ethical practices in professional fields, ethical dilemmas in using animal or human subjects in experimentation, gene cloning, animal cloning, gene manipulation, genetic engineering, genetic counseling, and ethical issues of applying biotechnology in agricultural fields.
Same as BIOL 326
GenEd: D

MGT 410 MANAGEMENT OF INTERNATIONAL BUSINESS (3)
Three hours lecture per week
Prerequisites: 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 422 STRATEGIC PLANNING (3)
Three hours lecture per week
Prerequisites: MGT 307
Examines principles, methods and procedures for strategic planning for all types of organizations. Topics include developing missions, strategies, tactics, goals/objectives, strategic divisions, internal and external environmental analysis, strategic implementation and monitoring/control mechanisms. Strategic planning is explored for both non-profit and for-profit organizations. Special emphasis will be given to the development of realistic strategic plans that can be implemented, measured and controlled in a real world environment.

MGT 424 ORGANIZATIONAL BEHAVIOR (3)
Three hours lecture per week
Prerequisites: MGT 307 or by consent of instructor
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 PSY 424

MGT 426 MANAGEMENT OF HEALTHCARE ORGANIZATIONS (3)
Three hours lecture per week
Prerequisites: MGT 307
Explores the principles of management of organizations and applies them to the unique environment of healthcare organizations. Topics include volatile environment, escalating costs, identification of stakeholders, organizational design, use of technology, quality control, and special issues in healthcare management (bio-ethics, chemical dependency, stress, workforce diversity).

MGT 428 CONTRACT MANAGEMENT (3)
Three hours lecture per week
Prerequisites: MGT 307
Explores the study of procurement planning, negotiation, and contract administration, including the determination of need, basic contract law, methods of procurement and fundamentals of management techniques. Topics include procurement organizations, acquisition planning, source selection, pricing, types of contracts, negotiating techniques, structuring incentives, the terms and conditions of contracts, and managing contract progress.

MGT 429 PROGRAM MANAGEMENT (3)
Three hours lecture per week
Prerequisites: MGT 307
Examines principles, methods, and procedures in the management of programs in public organizations. Topics include government acquisition policies, strategies, plans, and procedures, risk management, program planning, scheduling, managing, and monitoring, cost and performance evaluation, and program policy development and implementation.

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

MGT 490 SPECIAL TOPICS (3)
Three hours seminar per week
Prerequisites: Consent of Instructor
In-depth analysis of current topics in management. Topics vary each semester. Repeatable by topic.

MGT 492 SERVICE LEARNING/INTERNSHIP (1-3)
Six hours per week
Prerequisites: Consent of the instructor
Individual internship through service learning. Repeatable.
Graded Credit/No Credit
Management
Information Systems

**MIS 310 MANAGEMENT INFORMATION SYSTEMS (3)**
Three hours lecture per week
Prerequisites: 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.

**MIS 492 SERVICE LEARNING/INTERNSHIP (3)**
Six hours per week
Prerequisites: Consent of the instructor
Enrollment in this course is with permission of faculty member in charge. Individual internship through service learning. Graded Credit/No Credit

**MIS 497 DIRECTED STUDY (1-3)**
Variable hours per week
Prerequisites: Consent of the instructor
Individual contracted study on topics or research selected by the student and faculty mentor. Repeatable for up to nine units. Graded Credit/No Credit

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**Marketing**

**MKT 310 PRINCIPLES OF MARKETING (3)**
Three hours lecture per week
Prerequisites: Consent of instructor
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
Prerequisites: MKT 310
A comprehensive study of behavioral models and concepts designed to help understand, evaluate, and predict consumer behavior. Deepens a student's knowledge about consumer psychology and applies the knowledge from the perspective of a marketing manager. 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
Prerequisites: MKT 310
Fundamentals of marketing research including design, implementation, analysis, interpretation, and reporting. Develops 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
Prerequisites: MKT 310
Develops a knowledge of culture, environment, and world market potential. The focus is 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
Prerequisites: 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. Managerial roles, team building, team facilitation will also be emphasized.

**MKT 490 SPECIAL TOPICS (3)**
Three hours seminar per week
Prerequisites: Consent of the instructor
In-depth analysis of current topics in marketing. Topics vary each semester. Repeatable by topic.

**MKT 492 SERVICE LEARNING/INTERNSHIP (3)**
Six hours per week
Prerequisites: Consent of the instructor
Individual internship through service learning. Repeatable. Graded Credit/No Credit

**MKT 497 DIRECTED STUDY (1-3)**
Variable hours per week
Prerequisites: Consent of the instructor
Individual contracted study on topics or research selected by the student and faculty mentor. Repeatable for up to nine units. Graded Credit/No Credit
Nursing

NRS 110  MOORPARK COLLABORATIVE I (8.5)
Four hours lecture per week
13.5 hours laboratory per week
Introduction of the nursing process as
the foundation for nursing practice, the
nursing skills and principles necessary
to implement the process, and the roles
of the nurse as care provider, manager
and contributor to the profession.
Nursing values of caring, integrity,
ethical practice, diversity, education,
service and quality are emphasized.
Based on the concepts of Orem’s Self
Care Model, the focus is on assessment,
identifying the client’s universal self-care
requirements: air, water, food, elimination,
temperature, musculoskeletal, respiratory,
gastrointestinal, genitourinary, and
neurological systems including sleep,
comfort and pain will be covered.
Nursing actions relate to health promotion
and deviations, endocrine, cardiac and
respiratory will be addressed.
Graded Credit/No Credit

NRS 120  MOORPARK COLLABORATIVE II (9.5)
Five hours lecture per week
13.5 hours laboratory per week
Prerequisites: NRS 110
Introduction of the nursing process
as it applies to the selected adult,
geriatric and pediatrial populations
with nursing actions related to health
promotion and deviations: pregnancy/
complications, fetal development, labor
and delivery, postpartum and newborn
periods, pediatrics, women's health,
gastrointestinal, fluid and electrolyte,peripheral vascular, musculoskeletal,
sensory, skin integrity and hematology.
Focus on universal self-care requisites:
related to the pediatric population
in air, water, food, elimination,
temperature, musculoskeletal, respiratory,
gastrointestinal, genitourinary, and
neurological systems including sleep,
comfort and pain will be covered.
Nursing interventions to the particular
populations will be covered.
Graded Credit/No Credit

NRS 130  MOORPARK COLLABORATIVE III (10)
Five hours lecture per week
15 hours laboratory per week
Prerequisites: NRS 120
Focuses on Orem’s Self Care Model
and critical thinking in the application
of the nursing process in selected adult,
geriatric, pediatric, family and group/
care-giver populations with nursing
actions related to health promotion
and deviations. Physio-social, mental
illness, neurological, genital urinary,
hepatic and endocrine disorders are
covered. Diagnostic measures, medical
therapeutic modalities, pharmacology
and medication administration, nutrition,
culture and biopsychosocial-spiritual
concepts with preventive, supportive and
rehabilitate nursing are incorporated.
The legal, ethical considerations, growth
and development as related to the
client’s therapeutic self-care demands are
addressed.
Graded Credit/No Credit

NRS 200  INTRODUCTION TO PROFESSIONAL NURSING
PRACTICE (2)
Two hours lecture per week
Prerequisites: Admission to clinical nursing
program
Corequisites: 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 201  INTRODUCTION TO PROFESSIONAL NURSING
PRACTICE LAB (2)
Six hours lab per week
Prerequisites: Admission to clinical nursing
program
Corequisites: 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.

NRS 203  THERAPEUTIC NURSING
COMMUNICATION LABORATORY (.5)
One and one half hours laboratory per week
Prerequisites: Admission to the clinical
nursing program or instructor consent
Corequisites: 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 (2.5)
Two hours lecture per week and .5 hours
laboratory per week
Prerequisites: Admission to the clinical
nursing program or instructor consent
Corequisites: NRS 200 and NRS 203
Basic principles of pharmacology
with a focus on pharmacokinetics,
pharmacodynamics, and related
therapeutic implications for major drug
categories.
NRS 220 NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS I (2)
Two hours lecture per week
Prerequisites: NRS 200, NRS 201, NRS 203, and NRS 204
Corequisites: NRS 221
Presents principles of nursing care delivery for adult individuals experiencing medical-surgical health care problems and mild to moderate disorders of the integumentary, sensory, musculoskeletal, gastrointestinal, cardiovascular, and immune systems. Uses the 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
Prerequisites: NRS 200, NRS 201, NRS 203 and NRS 204
Corequisites: 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. Emphasizes the professional role of the nurse in managing clients under stress. Lab fee required.

NRS 222 NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS II (4)
Two hours lecture per week
Prerequisites: NRS 220 and NRS 221
Corequisites: NRS 223
Continues the study of principles of nursing care delivery for individuals and families experiencing medical-surgical health care problems involving disorders of the endocrine, respiratory, hematological, renal and genitourinary, and neurological body systems and those with acute cardiac and oncological conditions. Uses the Neuman Systems Model and the nursing process as the foundation for standard therapeutic interventions for individuals in stress.

NRS 223 NURSING CARE OF ADULTS WITH ACUTE AND CHRONIC ILLNESS LAB II (4)
Twelve hours lab per week
Prerequisites: NRS 220 and NRS 221
Corequisites: NRS 222
Provides the opportunity to apply nursing theory and concepts to the delivery of health care to adult medical-surgical patients in an acute care clinical setting. Nursing care is provided through use of the nursing process and the Neuman Systems Model. Emphasizes the increasing complexity of the professional role of the nurse.

NRS 230 NURSING CARE OF MOTHERS, INFANTS, AND WOMEN (2)
Two hours lecture per week
Prerequisites: NRS 200, NRS 201, NRS 203 and PSY 213
Corequisites: 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 childbearing 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
Prerequisites: NRS 200, NRS 201 and PSY 213
Corequisites: NRS 230
Presents 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.

NRS 232 NURSING CARE OF CHILDREN AND FAMILIES (2)
Two hours lecture per week
Prerequisites: NRS 200, NRS 201, NRS 203 and PSY 213
Corequisites: 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
Prerequisites: NRS 200, NRS 201, NRS 203 and PSY 213
Corequisites: NRS 234
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.

NRS 240 PSYCHIATRIC AND MENTAL HEALTH NURSING (3)
Three hours lecture per week
Prerequisites: NRS 200, NRS 201, NRS 203, NRS 204
Corequisites: 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
Prerequisites: NRS 200, NRS 201, NRS 203, NRS 204 and admission to Clinical Nursing Program
Corequisites: 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.
NRS 260  NUTRITION FOR THERAPEUTICS AND HEALTH (3)
Three hours of lecture per week.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: Admission to the RN-to-BSN Nursing Major.
Corequisites: 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.
Corequisites: 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.
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, and sociocultural factors on patient education, public health policies, and patient teaching, health education, and health promotion.

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

NRS 348  HEALTHY AGING (3)
Three hours lecture per week.
Examines 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, Interdisciplinary

NRS 350  NURSING RESEARCH (3)
Three hours lecture per week.
Prerequisites: MATH/PSY 202 or equivalent. Admission to clinical nursing program.
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.
Prerequisites: 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 391  TRANSITION TO PROFESSIONAL PRACTICE LABORATORY (2)
Six hours clinical per week.
Prerequisites: NRS 222 and NRS 223.
Provides an opportunity for the generic nursing student to work in a clinical setting with an 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
Corequisites: 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
Prerequisites: NRS 222, NRS 223 and NRS 300
Corequisites: 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. Focuses 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
Prerequisites: NRS 222, NRS 223 and NRS 310 Admission to the clinical nursing program.
Corequisites: NRS 420 and NRS 401
Application of nursing theory, management skills, and concepts in the delivery of nursing care to acutely ill/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.

NRS 441  HEALTH COMMUNICATION (3)
Three hours lecture per week
Prerequisites: 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, Interdisciplinary

NRS 452  COMMUNITY HEALTH NURSING (3)
Three hours lecture per week
Prerequisites: ANTH 443, BIOL 432, NRS 240, NRS 241, Admission to Track 1B Clinical Nursing Program
Corequisites: NRS 453
Examines the 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
Prerequisites: ANTH 443, BIOL 432
Corequisites: 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 (4)
Four hours lecture per week
Prerequisites: NRS 350. Admission to the Clinical Nursing Program.
Corequisites: 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.

NRS 461  NURSING LEADERSHIP LABORATORY (3)
Nine hours laboratory per week
Prerequisites: NRS 350. Admission to the clinical nursing program
Corequisites: NRS 460
Clinical application of organizational theory and management practices in health care settings. Experience in working with health care informatics systems and data bases. Operationalizes 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.

NRS 488  PREPARATION FOR PROFESSIONAL NURSING LICENSURE (2)
Two hours lecture per week
Prerequisites: NRS 222 and NRS 223
Corequisites: NRS 420, NRS 421
Reviews the essentials of assessment nursing diagnosis, goal setting, implementation and evaluation in multiple health deviations and across the life span. Assessment of the student’s basic nursing knowledge will be performed using a standardized nursing examination. Clinical decision making in a variety of patient care situations and case scenarios with emphasis on utilization of the steps of the nursing care process.
Graded Credit/No Credit
NRS 493 SENIOR NURSING INTERNSHIP (2)  
Two hours activity per week  
Prerequisites: NRS 491 and consent of Program Director  
optional career preparation refinement course which provides the student with additional work experience. Local health care partners offer particular work settings where students can immerse themselves in the organizational culture, professional role and client population. Repeatable for a total of four (4) units. NRS 493 is a paid internship with credit and is an optional course.  
Graded Credit/No Credit

NRS 497 DIRECTED STUDY (1-3)  
Three to nine hours independent study per week  
Prerequisites: Consent of instructor  
Individual contracted study on topics or research selected by the student and faculty mentor.  
Graded Credit/No Credit

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**Performing Arts**

PA 101 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

PA 202 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

PA 292 INTERNSHIP FOR PERFORMING ARTS (1-3)  
Two to six hours of activity per week  
Prerequisites: 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

PA 294 INDEPENDENT STUDY (1)  
One to three hours independent study per week  
Prerequisites: 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.

PA 335 BUSINESS AND THE PERFORMING ARTS (3)  
Three hours lecture per week  
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, Interdisciplinary

PA 350 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

PA 360 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

PA 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 ART 383

PA 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. Lab fee required.  
Same as ART 384

PA 391 PRODUCTION (3)  
Six hours activity per week  
Prerequisites: Consent of instructor  
Performing, designing, implementing technical projects, or assisting in a CSUCI 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

PA 436 PHYSICS OF THE PERFORMING ARTS (3)  
Three hours lecture per week  
Prerequisites: 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, Interdisciplinary
PA 490 SPECIAL TOPICS (3)
Three hours lecture per week.
Prerequisites: 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.
Same as ART 491, BUS 491

PA 492 INTERNSHIP IN PERFORMING ARTS (1-3)
Two to six hours activity per week.
Prerequisites: 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.
Prerequisites: Consent of instructor.
Performing Arts faculty supervised, advanced, in-depth study of a subject area of interest to the student. Repeatable up to 6 units, 2 completions allowed.

PA 495 THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)
Two hours lecture per week.
Two hours activity per week.
Corequisites: 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, BUS 495

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

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 8 units.
Partially fulfills GE: E.
GenEd: E

PADA 233 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. Partially fulfills GE: E.
GenEd: E

PADA 234 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 4 units.
Partially fulfills GE: E.
GenEd: C1, E

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

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

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 6 units.

PADA 332 DANCE IN HISTORY (3)
Three hours lecture per week.
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 HIST 332
GenEd: C1, Interdisciplinary

PA 490 SPECIAL TOPICS (3)
Three hours lecture per week.
Prerequisites: 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.
Same as ART 491, BUS 491

PA 492 INTERNSHIP IN PERFORMING ARTS (1-3)
Two to six hours activity per week.
Prerequisites: 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.
Prerequisites: Consent of instructor.
Performing Arts faculty supervised, advanced, in-depth study of a subject area of interest to the student. Repeatable up to 6 units, 2 completions allowed.

PA 495 THE ENTERTAINMENT EVENT: PRODUCTION, MARKETING AND PERFORMANCE (3)
Two hours lecture per week.
Two hours activity per week.
Corequisites: 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, BUS 495

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

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 8 units.
Partially fulfills GE: E.
GenEd: E

PADA 233 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. Partially fulfills GE: E.
GenEd: E

PADA 234 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 4 units.
Partially fulfills GE: E.
GenEd: C1, E

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

PADA 254 MODERN DANCE II (3)
Six hours activity per week.
Prerequisites: PADA 254
Intermediate modern dance technique with continued development of improvisational skills and beginning dance composition forms.
PADA 455 ADVANCED TECHNIQUE OF CONTEMPORARY DANCE FORMS (3)
Six hours activity per week
Prerequisites: 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 6 units.

PADA 458 DANCE ENSEMBLE (3)
Six hours activity per week
Prerequisites: 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 6 units.

PADA 499 PERFORMING ARTS CAPSTONE IN DANCE (3)
Three hours seminar per week
Prerequisites: 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
Prerequisites: 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 6 units.

PAMU 200 HISTORY OF ROCK (3)
Three hours lecture per week
A survey of the evolution of rock music from the 1950s 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 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 rehearsal per week
Prerequisites: Consent of the 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 rehearsal per week
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
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, Interdisciplinary
PAMU 333  THE VARIETIES OF MUSICAL EXPERIENCE (3)
Three hours lecture per week
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, Interdisciplinary

PAMU 335  THE PHYSICS OF MUSIC (3)
Two hours lecture and two hours activity per week
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, Interdisciplinary

PAMU 336  ART AND MUSIC: DISSONANCE, DIVERSITY AND CONTINUITY (3)
Three hours lecture per week
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, Interdisciplinary

PAMU 337  MUSIC IN HISTORY (3)
Three hours lecture per week
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, Interdisciplinary

PAMU 432  ARTS OF THE HARLEM RENAISSANCE (3)
Three hours lecture per week
Prerequisites: 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 1920s. Historical geneses and subsequent artistic legacies will also be explored. Same as ENGL 432, ART 432
GenEd: C1, C2, Interdisciplinary

PAMU 499  PERFORMING ARTS CAPSTONE IN MUSIC (3)
Six hours seminar per week
Prerequisites: 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.

Path Descriptions

PATH 280  ACTING I (3)
Two hours lecture and two hours activity per week
Exercises and activities that emphasize voice, movement, and relaxation techniques. Includes improvisation, monologues, and two-character scenes. GenEd: A1, C1

PATH 332  TEACHING DRAMATIC LITERATURE (3)
Three hours lecture per week
Prerequisites: ENGL 102 or ENGL 105 or equivalent plus one upper division literature course
This course will explore methods and approaches to teaching dramatic literature in secondary schools and colleges. The focus will be 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, Interdisciplinary

PATH 333  MULTICULTURAL DRAMA IN PERFORMANCE/PRODUCTION (3)
Three hours lecture/discussion per week
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. We will also stage mini-productions of one or more of those plays. Same as ENGL 333
GenEd: C2, C3B, Interdisciplinary

PATH 334  SPANISH LANGUAGE DRAMA AND THEATRE (3)
Three hours lecture per week
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, Interdisciplinary

Performing Arts - Theatre
PATH 338  THEATRE IN HISTORY (3)
Three hours lecture per week
PATH 338: 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, Interdisciplinary

PATH 341  MODERN AMERICAN DRAMA AND THEATRE (3)
Three hours lecture per week
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 ENGL 341
GenEd: C2, Interdisciplinary

PATH 342  MODERN BRITISH AND EUROPEAN DRAMA AND THEATRE (3)
Three hours lecture per week
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, Interdisciplinary

PATH 343  TEACHING DRAMA TO CHILDREN (3)
Three hours lecture per week
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, Interdisciplinary

PATH 344  WORLD DRAMA AND THEATRE (3)
Three hours lecture per week
PATH 344: 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, Interdisciplinary

PATH 380  ACTING II (3)
Six hours activity per week
Prerequisites: PATH 280
PATH 380: Emphasizes character work and contemporary acting theories. Includes performance of scenes from contemporary multicultural plays. Repeatable up to 6 units.

PATH 382  DIRECTING (3)
Two hours lecture and two hours activity per week
Prerequisites: PA 101, PA 202, PATH 281
PATH 382: Introduction to techniques and practice of directing stage plays. Students direct scenes and one-acts.

PATH 410  SHAKESPEARE’S PLAYS (3)
Three hours lecture per week
Prerequisites: ENGL 103 or ENGL 105 or equivalent and one upper division literature course
PATH 410: A survey of ancient Greek drama and the culture/society that produced it. The course will examine a representative sample of the major plays. Among the topics considered will be: the tragic and comic festivals, tragedy’s relationship with Athenian democracy, the nature of Greek theaters and ancient theatrical production techniques, religion and drama, women and tragedy, tragic and comic heroism, myth and tragedy, and the legacy of Greek tragedy in the modern world.
Same as ENGL 410

PATH 412  DRAMA OF ANCIENT GREECE (3)
Three hours lecture/discussion per week
Prerequisites: ENGL 103 or ENGL 105 or equivalent and one upper division literature course
PATH 412: A survey of ancient Greek drama and the culture/society that produced it. The course will examine a representative sample of the major plays. Among the topics considered will be: the tragic and comic festivals, tragedy’s relationship with Athenian democracy, the nature of Greek theaters and ancient theatrical production techniques, religion and drama, women and tragedy, tragic and comic heroism, myth and tragedy, and the legacy of Greek tragedy in the modern world.
Same as ENGL 412

PATH 444  ORIGINAL PRACTICE IN RENAISSANCE DRAMA (3)
Three hours lecture per week
PATH 444: In this class, students will learn about the theaters of the Renaissance, the playwrights whose plays were performed in them, and explore the differences that occur when the plays are performed in a venue resembling those of the original Rose, Blackfriars and Globe theaters.
Same as ENGL 444
GenEd: C2, Interdisciplinary

PATH 463  WRITING FOR THE STAGE (3)
Three hours lecture/discussion per week
Prerequisites: Consent of instructor
PATH 463: 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

PATH 499  PERFORMING ARTS CAPSTONE IN THEATRE (3)
Three hours seminar per week
Prerequisites: PA 350, PA 360, Senior Status
PATH 499: 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 102  SEMINAR IN TRADITIONAL MARTIAL ARTS: TAIJI (1)
Two hours activity per week
This course provides instruction in the traditional Chinese art of Tai Ji. In addition to learning to perform the movements, students will learn about Daoist philosophy, and history of Chinese martial arts. Traditional Chinese health principles will also be covered. Repeatable.
GenEd: E

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 110  WELLNESS (2)
Two hours lecture per week
Examines the interrelationship of the mind and body as it relates to the concept of wellness. Covers physical fitness, sport selection, and differing types of exercise. This is not an activity/performance course.
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: E

PHED 302  MOTOR LEARNING, FITNESS, AND DEVELOPMENT IN CHILDREN (2)
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

Physical Science

PHSC 170  FOUNDATIONS IN PHYSICAL SCIENCE (4)
Three hours lecture and three hours laboratory per week
The areas covered include the physical properties of solids, liquids, and gases; physical and chemical changes in matter; atomic theory and the periodic table; the principles of motion and energy; forces and the motion of particles; sources and transformations of energy including heat, electricity, magnetism, light, and sound; renewable and non-renewable energy sources; and the conservation of energy resources.
GenEd: B1

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 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 101  INTRODUCTION TO PHYSICS II (4)
Three hours lecture and three hours laboratory per week
Prerequisites: PHYS 100
A non-calculus based introduction to the concepts and principles of physics. The
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
Prerequisites: 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
Prerequisites: 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
Prerequisites: PHYS 201, MATH 350A
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
Prerequisites: 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
Prerequisites: 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 model systems 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: PHYS 200
Corequisites: 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
PHYS 335  THE PHYSICS OF MUSIC (3)
Two hours lecture and two hours activity per week.
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, C3, Interdisciplinary

PHYS 338  SCIENCE AND CONSCIENCE (3)
Three hours lecture/discussion per week.
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, Interdisciplinary

PHYS 344  ENERGY AND SOCIETY (3)
Three hours lecture per week.
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 include 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, Interdisciplinary

PHYS 345  DIGITAL IMAGE PROCESSING (3)
Three hours lecture in the lab per week.
Prerequisites: Consent of the 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, Interdisciplinary

PHYS 401  QUANTUM MECHANICS (3)
3.5 hours lecture per week.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: BIOL 300, PHYS 201, BIOL/PHYS/HLTH 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.
Prerequisites: 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, HLTH 434
GenEd: B1, E, Interdisciplinary

PHYS 436  PHYSICS OF THE PERFORMING ARTS (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary
PHYS 445  IMAGE ANALYSIS AND PATTERN RECOGNITION (3)
Three hours lecture in the lab per week.  
Prerequisites: PHYS/COMP/MATH 345 or consent of the 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, Interdisciplinary.  

PHYS 448  TEAM BASED RESEARCH (3)
Three hours lecture per week.  
Prerequisites: 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, Interdisciplinary.  

PHYS 464  MEDICAL INSTRUMENTATION (4)
Three hours lecture and two hours lab activity per week.  
Prerequisites: PHYS/BIOL/HLTH 434.  
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 BIOL 464.  

PHYS 490  TOPICS IN PHYSICS (3)
Three hours seminar per week.  
Prerequisites: Upper division standing and consent of the instructor.  
In-depth analysis of topics in physics. Topics vary each semester. Repeatable.  

PHYS 492  INTERNSHIP (3)
Six hours activity per week.  
Prerequisites: Upper division standing and consent of the 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.  
Prerequisites: Senior standing and consent of the instructor.  
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.  
Prerequisites: 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.  
Prerequisites: 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.  
Prerequisites: Admission to the Computer Science or Mathematics Graduate 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.  

PHYS 546  PATTERN RECOGNITION (3)  
Three hours of lecture in the lab per week.  
Prerequisites: Admission to the Computer Science or Mathematics Graduate Program.  
New and emerging applications of pattern recognition - such as data mining, web searching, multimedia data retrieval, face recognition, and cursive handwriting recognition - require robust and efficient pattern recognition techniques. Statistical decision making and estimation are regarded as fundamental to the study of pattern recognition. The course addresses the issue of analyzing pattern content by 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 examples will be studied.
**Political Science**

**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 104**  **INTRODUCTION TO PEACE STUDIES (3)**
Three hours lecture per week
Introduction to issues and theories in the interdisciplinary field of peace and conflict studies. Topics include conceptualizing peace and war, causes of conflict and war, achieving negative peace, building positive peace, case studies in nonviolence.

**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 qualitative as well as quantitative 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
Prerequisites: MATH 105 or equivalent
Introduces quantitative methods as used in social science research and prepares students for statistical literacy. Students will be expected to demonstrate a clear understanding of statistical techniques and data analysis unique to the social sciences. Students will learn to use descriptive and inferential statistics to test hypotheses. Students will use SPSS to analyze data.
Same as SOC 303, PSY 303

**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 (5)**
Three hours lecture per week
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: POLS 150
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
Examinations of 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: POLS 150
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
Examinations of 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.

POLS 322  AMERICAN PUBLIC POLICY (3)
Three hours lecture per week
A study of how public policy is formulated and implemented, using several policy areas such as health, transportation, housing, energy, and welfare policy as areas for specific examination. The course will review several contemporary perspectives on policy making.

POLS 323  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 9 units.

POLS 325  AMERICAN PUBLIC POLICY (3)
Three hours lecture per week
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies.

POLS 326  GOVERNMENT AND POLITICS 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 327  UNITED STATES FOREIGN POLICY (3)
Three hours lecture per week
Examinations of the process of foreign policy making by the United States from several theoretical perspectives.

POLS 328  INTERNATIONAL RELATIONS OF SELECTED AREAS (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
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.

POLS 331  NARRATIVES OF THE WORKING CLASS (3)
Three hours lecture per week
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies.

GenEd: C2, D, Interdisciplinary
POL 333  **NONPROFIT ORGANIZATIONS (3)**  
Three hours lecture per week  
Issues unique to nonprofit organizations including financial, legal, and political.  
*Same as COMM 333, ECON 333, BUS 333*  
GenEd: D, Interdisciplinary

POL 335  **POLITICS AND FILM (3)**  
Two hours lecture and two hours activity per week.  
Explores the themes, issues and processes of politics through an in-depth study of selected films. Area of focus varies by semester.  
*Same as COMM 335*  
GenEd: D, Interdisciplinary

POL 340  **POLITICS AND THE ENVIRONMENT (3)**  
Three hours lecture per week  
Exploration of environmental politics in both the international and domestic contexts.  
*Same as ESRM 340*  
GenEd: D, Interdisciplinary

POL 341  **THE NATIONAL PARK (3)**  
Three hours lecture per week  
Prerequisites: Upper division standing.  
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, Interdisciplinary

POL 345  **SCIENCE AND PUBLIC POLICY (3)**  
Three hours lecture per week  
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, Interdisciplinary

POL 401  **CONSTITUTIONAL LAW (3)**  
Three hours lecture per week  
Explores how the U.S. Constitution creates and allocates power within the American structure of government. Examines the role of the U.S. Supreme Court in the political struggles over the distribution and uses of power in the American Constitutional system.

POL 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.

POL 403  **COMPARATIVE FOREIGN POLICY (3)**  
Three hours lecture per week  
Prerequisites: POLS 103  
Examination of how and why states develop distinct foreign policies 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.

POL 404  **POLICY LEADERSHIP (3)**  
Three hours lecture per week  
Prerequisites: 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 EDUC 404*  
GenEd: D, Interdisciplinary

POL 426  **POLITICS OF DEVELOPING COUNTRIES (3)**  
Three hours lecture per week  
Prerequisites: POLS 103  
Examines political, economic and social development in developing countries.

POL 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 U.S. and in other countries, elections, debates, political campaigning and advertising, new media and politics, political socialization, education, politics and popular culture.  
*Same as COMM 430*  
GenEd: D, Interdisciplinary

POL 431  **EDUCATION POLICY AND POLITICS (3)**  
Three hours lecture per week  
Prerequisites: 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, Interdisciplinary

POL 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*

POL 490  **SPECIAL TOPICS IN POLITICAL SCIENCE (3)**  
Three hours lecture per week  
In depth analysis of current topics in Political Science. Topics vary each semester. Repeatable by topic up to 9 units.
PSY 100  INTRODUCTION TO PSYCHOLOGY (3)
Three hours lecture per week
An introduction to the theories, research and applications that constitute the field of psychology. Emerging issues in the field of psychology, what different types of psychologists do, and how to critically evaluate psychological literature will be covered.
GenEd: D, E

PSY 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 ECS 150

PSY 202  BIOSTATISTICS (3)
Three hours lecture per week
Prerequisites: A passing score on the Entry Level Mathematics Exam (ELM) or 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 210  LEARNING, COGNITION AND DEVELOPMENT (3)
Three hours lecture per week
This course presents an overview of the theories of learning, cognition, and human development. Major theories of learning and of psychological, emotional, ethical and physical development will be covered with emphasis on the application of these theories in real life settings such as schools and other organizations.
GenEd: E

PSY 211  COGNITION AND LEARNING (3)
Three hours lecture per week
Examines psychological theories of cognition as they apply to learning. Theories introduced in this course will seek to explain learning phenomenon and provide a conceptual framework for understanding and discussing behavior and cognition. Practical applications and current research in the cognitive sciences will also be discussed.

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 301  PSYCHOLOGICAL RESEARCH AND STATISTICAL METHODS II (3)

Two hours lecture and two hours laboratory per week.
Prerequisites: PSY 300 with grade C or better
A continuation of PSY 300. Advanced research methodology within the empirical framework in the behavioral sciences. 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 300.

PSY 303  STATISTICAL APPLICATIONS IN THE SOCIAL SCIENCES (4)

Four hours lecture per week.
Prerequisites: MATH 105 or equivalent
Introduces quantitative methods as used in social science research and prepares students for statistical literacy. Students will be expected to demonstrate a clear understanding of statistical techniques and data analysis unique to the social sciences. Students will learn to use descriptive and inferential statistics to test hypotheses. Students will use SPSS to analyze data.
Same as SOC 303, POLS 303

PSY 305  FIELD RESEARCH METHODS (3)

Three hours lecture per week.
Prerequisites: 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 310  HISTORY AND SYSTEMS OF PSYCHOLOGY (3)

Three hours lecture per week.
Prerequisites: Upper Division standing or consent of the 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 311  SOCIAL PSYCHOLOGY (3)

Three hours lecture per week.
Prerequisites: Upper Division standing or consent of the 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.

PSY 312  PSYCHOLOGY OF LANGUAGE (3)

Three hours lecture per week.
Prerequisites: PSY 100
This course considers the major theoretical, application, research, and assessment issues in the study of normal and abnormal aspects of language. Emphasis will be placed on the theoretical aspects of language 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 313  BEHAVIORAL NEUROSCIENCE (4)

Three hours lecture and two hours laboratory per week.
Prerequisites: PSY 100, PSY 213
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.
Prerequisites: PSY 100, 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 315  CHILD PSYCHOPATHOLOGY (3)

Three hours lecture per week.
Prerequisites: 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  SENSATION AND PERCEPTION (3)

Three hours lecture per week.
Prerequisites: Upper division standing
This course will examine the psychological and physiological mechanisms underlying sensation and perception. Topics include the measurement of sensation and the physiological basis of sensation and perception.

PSY 317  THEORIES OF PERSONALITY (3)

Three hours lecture per week.
Prerequisites: PSY 100
This course examines theories of personality and the development of psychological thought, 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 333  MEASUREMENT AND TESTING OF GROUPS AND INDIVIDUALS (3)
Three hours lecture per week
Prerequisites: Upper Division standing
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, Interdisciplinary

PSY 337  PSYCHOLOGICAL ETHICS AND MORAL PHILOSOPHY (3)
Three hours lecture per week
Prerequisites: Upper Division standing
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, Interdisciplinary

PSY 338  PSYCHOLOGY OF ART AND ARTISTS (3)
Three hours lecture per week
An inquiry into the mind of the artist and the psychological dynamics that underlie 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 ART 338
GenEd: C1, E, Interdisciplinary

PSY 339  PSYCHOLOGY AND LITERATURE (3)
Three hours lecture per week
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 ENGL 339
GenEd: C2, D, Interdisciplinary

PSY 340  HISTORY AND PSYCHOLOGY OF NAZI GERMANY (3)
Three hours lecture per week
Prerequisites: Upper Division standing
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.
Same as HIST 340
GenEd: D, E, Interdisciplinary

PSY 342  COMPLEMENTARY AND ALTERNATIVE HEALTH (3)
Three hours lecture per week
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: C3B, E, Interdisciplinary

PSY 344  PSYCHOLOGY AND TRADITIONAL ASIAN THOUGHT (3)
Three hours lecture per week
Prerequisites: Upper Division 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: C3B, E, Interdisciplinary

PSY 345  INDIVIDUALS WITH DISABILITIES IN SOCIETY (3)
Three hours lecture per week
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, Interdisciplinary

PSY 346  HUMAN MOTIVATION (3)
Three hours lecture per week
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, Interdisciplinary

PSY 348  HEALTHY AGING (3)
Three hours lecture per week
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, Interdisciplinary

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
Prerequisites: 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 383  CHICANA/O LATINA/O IDENTITY AND EMPOWERMENT (3)
Three hours lecture per week
Prerequisites: 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
Prerequisites: PSY 313 or consent of the instructor
An advanced undergraduate course on the etiology, classification, and treatment of human psychopathology.

PSY 410  PSYCHOLOGICAL TESTING (3)
Three hours lecture per week
Prerequisites: PSY/MATH 202 or consent of the instructor
Surveys the administration and interpretation of objective and projective personality and educational assessment instruments. Basic assessment issues will be discussed as well as ethical and cultural issues related to testing.

PSY 415  ASSESSMENT OF CHILDREN (3)
Three hours lecture per week
Prerequisites: PSY 333 or PSY 410
An intensive study in the cognitive-intellectual, emotional, and developmental assessment of children. Topics include: testing instruments, concepts of intelligence, cognition, emotional development, and specific developmental disorders in children, issues of language and culture related to the assessment of children.

PSY 420  AFRICAN AMERICAN FAMILIES (3)
Three hours lecture per week
Prerequisites: PSY 100 and/or CHS 100 or equivalent
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.
Same as CHS 383

PSY 424  ORGANIZATIONAL BEHAVIOR (3)
Three hours lecture per week
Prerequisites: MGT 307 or consent of the instructor
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
Prerequisites: 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
Prerequisites: Consent of the 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, Interdisciplinary

PSY 436  PSYCHOLOGY AND HISTORY OF EAST ASIAN WARRIOR CULTURES (3)
Three hours lecture per week
Prerequisites: Upper division standing or consent of the 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, Interdisciplinary
PSY 450 ADVANCES IN NEURAL SCIENCE (3)
Three hours lecture per week.
Prerequisites: PSY 212 and PSY 314
Surveys current research on the nervous system, its development, and its control of behavior. The course also describes some neurological and behavioral disorders that are both instructive scientifically and important clinically. Includes inferences that can be made about human brain functions from the effects of neurological trauma and clinical tests.

PSY 457 CRIMINAL BEHAVIOR (3)
Three hours lecture per week.
Prerequisites: PSY 313 or consent of the 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.
Prerequisites: 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.
Prerequisites: PSY 213, PSY 445 or Consent of Instructor.
Represents an advanced study of human growth and development. Repeatable by topic up to 9 units.

PSY 470 SEMINAR IN FREUD AND OBJECT RELATIONS THEORY (3)
Three hours lecture per week.
Prerequisites: PSY 313 or consent of the 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.
Prerequisites: PSY 313 or consent of the 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 473 BIZARRE BEHAVIOR AND CULTURE BOUND SYNDROMES (3)
Three hours lecture per week.
Prerequisites: PSY 313 or consent of the instructor.
This course examines behaviors which seem to be at the extreme edge of the human repertoire. Nevertheless, such behaviors have at different times and cultures been considered normal. Students in this course will examine such behaviors with an open mind, while attempting to understand that so-called normal behaviors in our own culture could be construed as bizarre.

PSY 482 INTERMEDIATE STATISTICS (3)
Three hours lecture per week.
Prerequisites: 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 is 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.
Prerequisites: PSY 301 or consent of the instructor.
Provides an in-depth study of some aspect of psychology. Repeatable by topic.

PSY 492 INTERNSHIP OR SERVICE LEARNING (1-3)
Prerequisites: Upper Division standing and consent of the 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 494 INDEPENDENT RESEARCH IN PSYCHOLOGY (1-3)
Prerequisites: Upper Division standing and consent of the instructor.
An independent research project for undergraduate students supervised by a faculty member. A written report of the research is required. Repeatable.

PSY 497 DIRECTED STUDY IN PSYCHOLOGY (1-3)
Prerequisites: Upper Division standing in Psychology and consent of the instructor.
An intensive study of some aspect of psychology, usually via an in-depth review of the literature. Intended for undergraduate students supervised by members of the psychology faculty. A written report summarizing the study is required. Repeatable.

PSY 499 SENIOR CAPSTONE COURSE (1-3)
Prerequisites: Upper Division standing in Psychology and consent of the instructor.
This course is an interdisciplinary experience in which students work in teams, contributing their expertise to a community-based project group.
**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. 
Prerequisites: 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 303**  **STATISTICAL APPLICATIONS IN THE SOCIAL SCIENCES (4)**

Four hours lecture per week. 
Prerequisites: MATH 105 or equivalent 
Introduces quantitative methods as used in social science research and prepares students for statistical literacy. Students will be expected to demonstrate a clear understanding of statistical techniques and data analysis unique to the social sciences. Students will learn to use descriptive and inferential statistics to test hypotheses. Students will use SPSS to analyze data. 
Same as PSY 303, POLS 303

**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. 
Prerequisites: 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, interpreting techniques, scaling, sampling, data preparation and analysis of data. Research ethics and related topics are also addressed.

**SOC 322**  **SOCIOLOGY OF POPULAR CULTURE (3)**

Three hours lecture per week. 
Prerequisites: 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 ENGL 322, COMM 322

**SOC 330**  **POLITICAL SOCIOLOGY (3)**

Three hours lecture per week. 
Prerequisites: SOC 100 and 300 or equivalent
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, Interdisciplinary

**SOC 331**  **NARRATIVES OF THE WORKING CLASS (3)**

Three hours lecture per week. 
Examines the lives of working people using various thematic approaches and disciplinary methodologies. Materials include literature, film, and case studies. 
Same as ECON 331, ENGL 331, HIST 331, POLS 331 
GenEd: C2, D, Interdisciplinary

**SOC 336**  **SOCIAL ENTREPRENEURSHIP (3)**

Three hours lecture per week. 
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, Interdisciplinary

**SOC 348**  **HEALTHY AGING (3)**

Three hours lecture per week. 
Examines 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, Interdisciplinary

**SOC 350**  **SOCIAL STRATIFICATION: THEORIES OF SOCIAL CLASS (3)**

Three hours lecture per week. 
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: 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.
Prerequisites: SOC 100, SOC 201, SOC 202 and SOC 420.
Modern sociological paradigms from the 1960s forward to the present period including Marxism, neo-Marxist 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.
Prerequisites: 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.
Prerequisites: 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 490  POPULATION STUDIES (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary

SOC 448  GLOBALIZATION AND DEVELOPMENT (3)
Three hours lecture per week.
Prerequisites: 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, Interdisciplinary

SOC 499  CAPSTONE (3)
Three hours lecture per week.
Prerequisites: 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.
This course addresses the development of 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. Students who are native speakers or with two or more years of high school Spanish taken within the last three years or with credit in college level Spanish will be required to take a higher level Spanish course.
GenEd: C3A

SPAN 102  ELEMENTARY SPANISH II (4)
Four hours lecture per week.
Prerequisites: SPAN 101 or equivalent
Continued development of basic functional proficiency in Spanish. As students continue to develop their listening, speaking, reading and writing skills, they will acquire more basic knowledge about the cultural and civilization of the Hispanic 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.
Prerequisites: 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.

SPAN 201  INTERMEDIATE SPANISH I (4)
Four hours lecture per week.
Prerequisites: 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.
Prerequisites: SPAN 201 or equivalent
Through the study of the culture and civilization of the Hispanic world, students further develop their listening, speaking, reading and writing skills in Spanish.
GenEd: C3A, C3B

SPAN 201  SPANISH FOR HERITAGE SPEAKERS I (4)
Four hours lecture per week.
Prerequisites: Consent of the instructor
This course is designed for students accustomed to hearing Spanish and English 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 language skills, particularly in speaking, reading and writing. Course content will include the culture and civilization of the Hispanic world, with emphasis on the U.S.
GenEd: C3A, C3B

SPAN 211  SPANISH FOR HERITAGE SPEAKERS II (4)
Four hours lecture per week.
Prerequisites: SPAN 211 or equivalent or consent of the instructor
This course is designed for students accustomed to hearing Spanish and English 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 language skills, particularly in speaking, reading and writing. Course content will include the culture and civilization of the Hispanic world, with emphasis on the U.S.
GenEd: C3A, C3B
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>SPAN 301</td>
<td>ADVANCED SPANISH: PART ONE (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 202 or SPAN 212 or consent of the instructor. Enhancement of communicative abilities in listening, speaking, reading and writing through the examination of topics of interest in the Hispanic world. Several of the topics include: cultural perspectives, ancestry and roots, and work and leisure. Student projects to include presentations, service activities and cultural portfolio. GenEd: C3A</td>
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<tr>
<td>SPAN 302</td>
<td>ADVANCED SPANISH: PART TWO (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 202 OR SPAN 212 or consent of the instructor. Further enhancement of communicative abilities in listening, speaking, reading and writing through the examination of topics of interest in the Hispanic world. Several of the topics include: tradition and change, cultural and linguistic contrasts, and human rights and equality. Student projects to include presentations, service activities and cultural portfolio. GenEd: C3A</td>
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<tr>
<td>SPAN 304</td>
<td>SPANISH FOR CAREERS AND PROFESSIONS (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 301 or SPAN 302 (may be taken concurrently) or consent of the instructor. Interactive study of Spanish as applied to the fields of business, education, health professions and social services. Students will learn the basic vocabulary and expressions pertaining to these fields.</td>
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<tr>
<td>SPAN 310</td>
<td>INTRODUCTION TO PROSE, POETRY AND DRAMA (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 301 or SPAN 302 or consent of the instructor. This is an introductory literature course designed to develop students’ ability to read, discuss and write about literary texts. Selections of poetry, prose, and dramatic works from among Spanish, Latin American and U.S. Latino authors will be explored.</td>
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<tr>
<td>SPAN 311</td>
<td>BILINGUAL LITERARY STUDIES/ESTUDIOS LITERARIOS BILINGUES (3)</td>
<td>Three hours lecture per week. Prerequisites: ENGL 103 or ENGL 105 and SPAN 202 or SPAN 212 or consent of the instructor. This course explores the literatures of the Americas written in two languages: English and Spanish. Course texts will include works written by bilingual U.S. authors and Latin American authors writing primarily in Spanish; genres may include novels, with a special focus on Magical Realism/el realismo magico, short stories/cuentos, and poetry. Readings will be in the original language; class discussions will be bilingual. Same as ENGL 311</td>
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<tr>
<td>SPAN 315</td>
<td>INTRODUCTION TO SPANISH LINGUISTICS (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 301 or SPAN 302 or consent of the 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.</td>
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<tr>
<td>SPAN 320</td>
<td>INTRODUCTION TO SPANISH TRANSLATION (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 202 or SPAN 212 or consent of the instructor. This course is an introduction to the history, theory, and practice of translation from Spanish to English and from English to Spanish. In the process of translating texts, students will learn strategies, techniques and principles of translation and, at the same time, increase their proficiency in Spanish.</td>
</tr>
<tr>
<td>SPAN 330</td>
<td>SPANISH LINGUISTICS (3)</td>
<td>Three hours lecture per week. Prerequisites: SPAN 301 or SPAN 302 or consent of the instructor. This course is an 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.</td>
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SPO 334 SPANISH LANGUAGE DRAMA AND THEATRE (3) Three hours lecture per week. 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 PATH 334. GenEd: C2, C3B, Interdisciplinary.

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 410 CIVILIZATIONS AND CULTURES OF SPAIN (3) Three hours lecture per week. Prerequisites: SPAN 301 or SPAN 302 or consent of the instructor. Explores the history of Spain, from the formation of Hispania to the present. Major geographical, political, religious and literary aspects of Spain will be discussed. Oral presentations will be required.

SPAN 411 CIVILIZATIONS AND CULTURES OF LATIN AMERICA (3) Three hours lecture per week. Prerequisites: SPAN 301 or SPAN 302 or consent of the instructor. Explores the history of the Spanish-speaking regions of Latin America, from pre-Columbian civilizations to the Spanish conquest to the present. Major geographical, political, religious and literary aspects of Latin American culture will be discussed. Oral presentations will be required.
SPAN 415  SPANISH LANGUAGE VARIATION & DIVERSITY (3)
Three hours lecture per week.
Prerequisites: SPAN 315 or consent of the 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.
Prerequisites: SPAN 320 or consent of instructor.
Practice and critique of translations of a range of specialized material (legal, literary, business, social science, technical, and audiovisual) both from Spanish to English and from English to Spanish. Review of translation theory, methods, techniques, and problems.

SPAN 421  SPANISH FOR EDUCATORS I (3)
Three hours lecture per week.
Prerequisites: SPAN 301 or SPAN 302 or consent of the 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 422  SPANISH FOR EDUCATORS II (3)
Three hours lecture per week.
Prerequisites: SPAN 301 or SPAN 302 or consent of the 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.
Prerequisites: 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 440  INTRODUCTION TO LITERARY TRANSLATION (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: SPAN 310 or Consent of the instructor.
This is an advanced literature course designed to develop reading, writing, and literary analysis. The content of the course will focus 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. Student projects will include both individual as well as group oral presentations and reports.

SPAN 461  MASTERPIECES OF LATIN AMERICAN LITERATURE (3)
Three hours lecture per week.
Prerequisites: SPAN 301 or consent of the instructor.
This is an advanced literature course that explores major Latin American literary works. It will enhance students’ knowledge of Latin American Literature, history and culture. It will develop critical thinking and improve students’ reading and writing skills while it broadens their Spanish language vocabulary. Class will include lectures, discussions and both oral and written reports.

SPAN 462  MODERN MEXICAN LITERATURE (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: Consent of the instructor.
Selected topics on Spanish language, linguistics, Hispanic cultures, and literatures. Repeatable for up to 9 units.
Special Education

SPED 345 INDIVIDUALS WITH DISABILITIES IN SOCIETY (3)
Three hours lecture per week.
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, Interdisciplinary

SPED 490 SPECIAL TOPICS IN SPECIAL EDUCATION (1-3)
Prerequisites: Upper division standing and consent of the instructor
In-depth analysis of current topics in special education. Topics vary each semester. Repeatable by topic.
Student Option: Graded or Credit/No Credit

SPED 494 INDEPENDENT RESEARCH IN SPECIAL EDUCATION (1-3)
Prerequisites: Upper division standing and consent of the instructor
Students design and implement an independent research project in special education in conjunction with a faculty member. Repeatable up to 6 units, 3 completions.
Student Option: Graded or Credit/No Credit

SPED 497 DIRECTED STUDIES IN SPECIAL EDUCATION (1-3)
Prerequisites: Upper Division standing and consent of the instructor
An intensive directed study of some aspect of field of special education under the direction of a faculty member. Repeatable up to 6 units, max 3 completions.
Student Option: Graded or Credit/No Credit

SPED 499 SENIOR CAPSTONE PROJECT/SEMINAR IN SPECIAL EDUCATION (1-3)
Prerequisites: Upper division standing and consent of the instructor
Students work on research or community-based projects in the field of special education. A written report of the project is required. Repeatable.
Student Option: Graded or Credit/No Credit

SPED 530 TYPICAL AND ATYPICAL DEVELOPMENT (3)
Three hours lecture per week.
Focus on typical and atypical development from the prenatal stage to adulthood and the implications for learning. Emphasis on atypical development associated with various disabilities and risk conditions. Resilience and protective factors and their impact on learning. Theories of typical and atypical child development, including educational and home settings, schools, communities, and culture are integrated.

SPED 541 FOUNDATIONS OF SPECIAL EDUCATION (3)
Three hours lecture per week.
Prerequisites: 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.
Prerequisites: Admission to Education Specialist: Credential Program
Corequisites: 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.
Prerequisites: Admission to Education Specialist: Credential Program and EDUC 510, EDUC 512, ENGL 475 and SPED 345
Corequisites: 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. Develops 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.
Prerequisites: Admission to Education Specialist: Credential Program
Corequisites: 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  
Prerequisites: 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, ethnically, socio-economically and ability diverse in general education and special education settings to make educational decisions.

**SPED 546**  
**CONSULTATION AND COMMUNICATION WITH FAMILIES AND PROFESSIONALS (3)**  
Three hours of lecture/discussion per week  
Prerequisites: Admission to Education Specialist: Mild/Moderate Disabilities Credential Program  
Corequisites: SPED 562 or SPED 570  
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.

**SPED 560**  
**ACCESS TO LEARNING: A FOCUS ON INDIVIDUAL DIFFERENCES (2)**  
Two hours lecture/discussion per week  
Prerequisites: Admission to the Single Subject or Special Education Level 1 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 562**  
**FIELD EXPERIENCE (2)**  
A minimum of one school day in local public schools per week  
Prerequisites: Admission to Education Specialist: Mild/Moderate Disabilities Credential Program  
Corequisites: 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 570**  
**STUDENT TEACHING IN SPECIAL EDUCATION I (6)**  
Equivalent to 8 weeks of full time student teaching  
Prerequisites: Admission to Education Specialist Credential Program  
This 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 580**  
**STUDENT TEACHING IN SPECIAL EDUCATION II (6-8)**  
Equivalent to a minimum of 8 weeks of student teaching.  
Prerequisites: Admission to Education Specialist Credential Program  
Corequisites: SPED 581  
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 581**  
**STUDENT TEACHING SEMINAR (2)**  
Two hours seminar per week  
Prerequisites: Admission to the Education Specialist Credential Program  
Corequisites: SPED 570, SPED 580, SPED 585 or SPED 562  
Guided discussion of experience during student teaching, reflective feedback on student teaching experiences, preparation for securing a teaching position. Facilitation of final student assessments.  
Graded Credit/No Credit

**SPED 585**  
**INTERN FIELD SUPPORT AND SEMINAR (3)**  
One hour seminar and four hours activity per week  
Prerequisites: Students must be enrolled in the Education Specialist Level 1 Credential Program and be employed as a Special Education Intern at a local school  
Special education interns will participate in the Intern Field Support Seminar each semester they are enrolled in the credential program. Students will receive support at their school site and attend a seminar. Seminar will focus on guided discussion of experience during teaching, reflective feedback on teaching experiences and problem solving.  
Graded Credit/No Credit
SPED 640  INDUCTION PLANNING AND SUPPORT (1)
Two hours seminar per week
Prerequisites: Admission to Level II Education Specialist credential program
Corequisites: 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.
Graded Credit/No Credit

SPED 641  ADVANCED PERSPECTIVES IN SPECIAL EDUCATION (3)
Three hours lecture per week
Prerequisites: Admission to Level II Education Specialist credential program
Corequisites: 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
Prerequisites: Admission to Level II Education Specialist credential program
Corequisites: 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
Prerequisites: Admission to Level II Education Specialist credential program
Corequisites: 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, augmentative communication, data-based decision making, early intervention, outcomes assessments, technology, and other areas that effect special education practices for students with mild/moderate disabilities.
SPED 646  ADVANCED COLLABORATIVE PARTNERSHIPS AND EFFECTIVE COMMUNICATION IN SCHOOL SETTINGS (3)

Three hours lecture/discussion per week
Prerequisites: Admission to Level II Education Specialist credential program
Corequisites: 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 647  TRANSITION AND CAREER EDUCATION (1)

One hour seminar per week
Prerequisites: Admission to Level II Education Specialist credential program
Corequisites: 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. 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
Prerequisites: SPED 640, 641, 642, 643, 645, and 647
Corequisites: 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 690  ADVANCED TOPICS: SPECIAL EDUCATION (3)

Three hours seminar per week
Prerequisites: 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.

UNIV 101  UNIVERSITY LIFE AND COLLEGE SUCCESS (1)

One hour seminar per week
This course introduces transfer 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 101 is appropriate for transfer students. Student Option: Graded or Credit/No Credit

UNIV 110  CRITICAL THINKING AND THE UNIVERSITY MISSION (3)

Three hours lecture per week
This course teaches critical thinking skills, including forms of logic, by introducing students to the four components of our mission. Through special presentations, guest lectures, and small discussion sections. Students will apply various types of arguments and understand the relationship of language to logic in analyzing issues and opportunities specific to multiculturalism, internationalism, interdisciplinarity and community engagement.
GenEd: A3
UNIV 391  UNITED STATES TRAVEL STUDY EXPERIENCE (1-3)
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 491  MODEL UNITED NATIONS (1)
Two hours of activity per week.
Prerequisites: 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 493  SERVICE LEARNING AT THE ZOO (1-3)
One to three hours activity per week.
Prerequisites: BIOL/BUS/ECON/EDUC 342 and consent of instructor
Working with a local zoo, individuals or teams of students will engage in service learning projects. Students will apply skills and competencies acquired in their academic programs to issues and challenges facing modern zoos. Repeatable up to 6 units.
Student Option: Graded or Credit/No Credit
Same as BIOL 493, BUS 493, ECON 493, EDUC 493

UNIV 498  FACULTY-STUDENT COLLABORATIVE RESEARCH (3)
Six hours activity per week.
Prerequisites: 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