



# COURSE DESCRIPTIONS



C U Y A M A C A  
• C O L L E G E •

## EXPLANATION OF ABBREVIATIONS AND COURSE NOTES

Courses which meet the requirements for General Education for the Associate Degree, CSU GE and the Intersegmental General Education Transfer Curriculum (IGETC) are identified after each course description. The CSU and UC indicators are also included after the course description and mean that these courses transfer for at least elective credit to these two public systems of higher education in California.

If you would like more information on how courses meet your specific Associate Degree or transfer objectives, please see a counselor.

**AA/AS GE** = Meets general education for the Associate degree.

**CSU** = Transfers to the CSU for at least elective credit.

**CSU GE** = Meets general education requirements for the California State University system.

**IGETC** = Meets Intersegmental General Education Transfer Curriculum requirements.

**UC** = Transferable to the University of California campuses.

**UC credit limit** = Limits the total amount of credit awarded for a series or sequence of courses in the same discipline.

## AMERICAN SIGN LANGUAGE

### 120 AMERICAN SIGN LANGUAGE I 4 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

The first in a series of four American Sign Language (ASL) courses. Introduction to ASL as used within the Deaf culture. Instruction in the basic structure of the language and development of its use. Introduction to the Deaf culture and history of the language.

**AA/AS GE, CSU, CSU GE, IGETC, UC**

### 121 AMERICAN SIGN LANGUAGE II 4 UNITS

Prerequisite: ASL 120 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

The second in a series of four American Sign Language (ASL) courses. Students are provided an opportunity to progress and enhance their ability to communicate in ASL. Students will continue the study of cultural analysis and comparisons, receptive skill comprehension, expressive skill production and ASL linguistics.

**CSU, CSU GE, IGETC, UC**

### 198 SUPERVISED TUTORING 0 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content.* **No fee/no credit course.**

### 199 SPECIAL STUDIES OR PROJECTS IN AMERICAN SIGN LANGUAGE 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in American Sign Language under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 220 AMERICAN SIGN LANGUAGE III 4 UNITS

Prerequisite: ASL 121 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

The third in a series of four American Sign Language (ASL) courses. Students are provided an opportunity to increase their receptive skill comprehension and expressive skill production. Cultural analysis and comparisons will focus on American Deaf cultural processes, practices, and products of Deaf culture.

**CSU, CSU GE, IGETC, UC**

### 221 AMERICAN SIGN LANGUAGE IV 4 UNITS

Prerequisite: ASL 220 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

The fourth in a series of four American Sign Language (ASL) courses. The course is taught using ASL and is designed to increase receptive and expressive skills, increase literal and inferential comprehension as well as critical analysis of ASL communication. Cross-cultural issues are examined and discussed.

**CSU, CSU GE, IGETC, UC**

### 298 SELECTED TOPICS IN AMERICAN SIGN LANGUAGE 1-4 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in American Sign Language not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN AMERICAN SIGN LANGUAGE 1-4 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in American Sign Language not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**CSU**

## ANTHROPOLOGY

### 120 CULTURAL ANTHROPOLOGY 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

The nature of culture; cultural growth and history; survey of the range of cultural phenomena including material culture, social organization, kinship systems, religion, language and other topics; systematic study of similarities and

differences among cultures through investigation of selected societies.

**AA/AS GE, CSU, CSU GE, IGETC, UC**

### 130 INTRODUCTION TO PHYSICAL ANTHROPOLOGY 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

People's place in nature; physical and behavioral characteristics of primates; principles of evolution and basic outline of human genetics; description of the record of early humans and explanation of fossils; present day variability among human populations.

**AA/AS GE, CSU, CSU GE, IGETC, UC**

### 199 SPECIAL STUDIES OR PROJECTS IN ANTHROPOLOGY 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Anthropology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN ANTHROPOLOGY 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Anthropology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN ANTHROPOLOGY 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Anthropology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**CSU**

## ARABIC

### 120 ARABIC I 5 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
5 hours lecture

Introduction to the Arabic language and the culture of its speakers. Facilitates the practical application of the language in everyday oral and written communication at the beginning novice level. Since the focus is on basic communication skills, the class will be conducted in modern standard Arabic as much as possible. While becoming familiar with the Arabic speaking world, students will learn structures that will enable them to function in Arabic in everyday contexts.

**AA/AS GE, CSU, CSU GE, IGETC, UC**

**121 ARABIC II 5 UNITS**

Prerequisite: ARBC 120 or equivalent with a grade of "C" or better or "Pass" or two years of high school Arabic

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of Arabic I. Continues to develop oral and written skills based on practical everyday needs. Students with three years of high school Arabic should enroll in ARBC 220.

AA/AS GE, CSU, CSU GE, IGETC, UC

**145 ARABIC CIVILIZATIONS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduction to the major characteristics of Arabic civilization as reflected in literature, philosophy, architecture, and the arts of Arabic countries. This course may have an emphasis on a selected Arabic country or countries.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN ARABIC 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Arabic under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**220 ARABIC III 5 UNITS**

Prerequisite: ARBC 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school Arabic

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of Arabic II. Continues to develop oral, listening, reading and writing skills in order to acquire proficiency in Arabic. Students with four years of high school Arabic should enroll in ARBC 221.

AA/AS GE, CSU, CSU GE, IGETC, UC

**221 ARABIC IV 5 UNITS**

Prerequisite: ARBC 220 or equivalent with a grade of "C" or better or "Pass" or four years of high school Arabic

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of Arabic III. Continues to develop oral, reading, writing and listening skills in order to improve proficiency in Arabic.

AA/AS GE, CSU, CSU GE, IGETC, UC

**250 CONVERSATIONAL ARABIC I 3 UNITS**

Prerequisite: ARBC 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school Arabic

Corequisite: None

Recommended Preparation: None

3 hours lecture

Continues to develop oral, reading, writing and listening skills, but with an emphasis in oral proficiency.

AA/AS GE, CSU, CSU GE, UC

**251 CONVERSATIONAL ARABIC II 3 UNITS**

Prerequisite: ARBC 250 or equivalent with a grade of "C" or better or "Pass" or four years of high school Arabic

Corequisite: None

Recommended Preparation: None

3 hours lecture

Continues to develop oral, reading, writing and listening skills, but with an emphasis in oral proficiency.

AA/AS GE, CSU, CSU GE, UC

**298 SELECTED TOPICS IN ARABIC 1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Arabic not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ARABIC 1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Arabic not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## ARAMAIC

**120 ARAMAIC I 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours lecture

Acquaints students with the classical-modern Aramaic alphabet, essentials of grammar and pronunciation, and the Chaldean-Assyrian culture and civilization. The origin of the Semitic languages will be surveyed through selected readings and discussions.

AA/AS GE, CSU, CSU GE, UC

**121 ARAMAIC II 5 UNITS**

Prerequisite: ARAM 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

5 hours lecture

Helps students to further their knowledge of classical-modern Aramaic grammar. Students will study nouns, pronouns, adjectives and basic verb forms.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN ARAMAIC 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Aramaic under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**220 ARAMAIC III 5 UNITS**

Prerequisite: ARAM 121 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

5 hours lecture

Helps students to further their knowledge of classical-modern Aramaic grammar. Primary emphasis is on the conjugation of verbs, introduction to Aramaic literature, and the translation of ancient and modern text materials. Students will also learn how to compose and write essays in modern Aramaic (Chaldean).

AA/AS GE, CSU, CSU GE, IGETC, UC

**298 SELECTED TOPICS IN ARAMAIC 1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Aramaic not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ARAMAIC 1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Aramaic not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## ART

**100 ART APPRECIATION 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

In this introductory course, students will learn how to examine, compare, analyze, evaluate, interpret, and discuss works of visual art within their cultural contexts. Art media for study will include drawing, painting, printmaking, photography, sculpture, ceramics, textiles, film, architecture, etc. Works for examination will encompass representative artistic styles from western and other major world cultures, and will also include the artistic contributions of women and minority cultures.

AA/AS GE, CSU, CSU GE, IGETC, UC

**120 TWO-DIMENSIONAL DESIGN 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Introduction to the two-dimensional arts. Students will study the great works of the human imagination while focusing on those of historical, theoretical and cultural relevance. Students will examine form and content through the application of art elements and principles of design to elicit unity in visual communication.

AA/AS GE, CSU, CSU GE, UC

**121 PAINTING I 3 UNITS**

Prerequisite: ART 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Emphasizes painting tools, materials, techniques and color principles. Students will develop skill in handling form, space, and plastic aspects of acrylic and/or oil paints.

CSU, UC

**124 DRAWING I 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Introduction to drawing theory and practice. Students will study major works of the human imagination in relation to drawing technique, illusion of space and composition. A variety of media will be explored while developing analytical skills and expression.

AA/AS GE, CSU, UC

**125 DRAWING II 3 UNITS**

Prerequisite: ART 124 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Builds on the drawing techniques and composition concepts covered in ART 124. Introduces brush, pen and ink into the drawing process with an emphasis on line quality and modeling using washes, hatching and stippling. Colored pencil and pastel mediums are explored using a variety of linear and tonal techniques. Scientific perspective is extended from ART 124 to include measuring, inclining planes, circles, shadows and reflections. This course is important for anyone wanting to learn new mediums to address creative problem solving and to refine drawing skills.

CSU, UC

**129 THREE-DIMENSIONAL DESIGN 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Introduction to the fundamental principles of three-dimensional composition emphasizing the formal elements and language of design. Basic visual, tactile and conceptual methods of defining space are examined in a series of compositional exercises. A variety of materials are used to explore the elements of line, shape, mass, texture and volume through the application of design principles such as balance, emphasis, rhythm, harmony, contrast, repetition, proportion, scale and unity. The historical development of design and aesthetics is studied along with how social, political and cultural beliefs have influenced artists and design professionals. Assignments are non-technical and do not require prior knowledge of tools and equipment. This is a comprehensive introductory course that could lead to future study in a diverse range of art and design professions.

AA/AS GE, CSU, UC

**135 WATERCOLOR I 3 UNITS**

Prerequisite: ART 124 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Introduction to basic watercolor tools, materials and techniques. Emphasizes color principles and skill development in handling form, space and the plastic aspects of paint.

CSU, UC

**140 HISTORY OF WESTERN ART I: PREHISTORIC TO 1250 A.D. 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Historical survey of the major art forms (primarily architecture, sculpture, ceramics, painting) of the western world from prehistory to circa 1250 A.D.

AA/AS GE, CSU, CSU GE, IGETC, UC

**141 HISTORY OF WESTERN ART II: 1250 A.D. TO PRESENT TIME 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Historical survey of the major art forms (primarily architecture, sculpture, ceramics, painting, printmaking, photography) of the western world from the late Gothic era to the present.

AA/AS GE, CSU, CSU GE, IGETC, UC

**144 ARCHITECTURE OF THE 20TH CENTURY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Meet the 20th century masters of the giant movements in architecture and environment. Global politics and social economics as the influential factors for the concepts, styles, philosophy and artistic expressions will be studied. Experience the landmark sites around the world via film, independent studies and field trips.

AA/AS GE, CSU, CSU GE, IGETC, UC

**145 CONTEMPORARY ART HISTORY: 1945-PRESENT 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of the major artists and art movements from 1945 to the present. Includes such major topics as the analysis and summary of Modernism, the transition from Modern to Post-Modern art, the emergence of non-traditional art media, and the analysis of the influence of global multiculturalism in art. Specific art practices such as painting, sculpture, earthworks, photography, performance, installation, printmaking and architecture will be discussed in relation to the cultural dialogue they establish or to which they respond.

AA/AS GE, CSU, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN ART 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Art under instructor guidance. Written reports and periodic conferences are required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**220 PAINTING II 3 UNITS**

Prerequisite: ART 121 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Continuation of Painting I with an emphasis on creative problem-solving skills. Students will develop a personal style of expression.

CSU, UC

**221 PAINTING III 3 UNITS**

Prerequisite: ART 220 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Offers a wider selection of painting mediums to include acrylic, oil, egg tempera, casein and encaustic. Students will continue developing a personal style of expression.

CSU, UC

**222 PAINTING IV 3 UNITS**

Prerequisite: ART 221 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Focuses on a series of paintings that develop a personal theme or statement. Advanced painting techniques will be combined with advanced compositional devices.

CSU

**224 DRAWING III 3 UNITS**

Prerequisite: ART 125 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

The drawing mediums, skills, techniques and composition concepts used in ART 124 and 125 will be applied to a variety of subject matters. Students will draw different subject matters including but not limited to animals, plants, still life, landscapes, seascapes, cityscapes, etc. Emphasis is on making effective compositions with good craft.

CSU, UC

**225 DRAWING IV 3 UNITS**

Prerequisite: ART 224 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Focuses on drawing-based artwork that results in artwork that has a personal theme or statement. Students will explore several advanced compositional devices while pursuing their themes. This class also emphasizes portfolio preparation.

CSU, UC

**230 FIGURE DRAWING I 3 UNITS**

Prerequisite: ART 124 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Utilizes the skills and concepts developed in ART 124 to address the drawing of the nude human figure. Students will learn how articulation, standard proportion, bones and muscles influence the rendering of the human form. Drawing will be done from live models with studio lighting. Emphasis is on representational drawing with line and value. This course is important for anyone dealing with the human figure, i.e., drawing, painting, sculpture, photography, illustration, graphic design, fashion design, etc.

CSU, UC

**231 FIGURE DRAWING II 3 UNITS**

Prerequisite: ART 230 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Builds on the concepts and skills developed in ART 230. Surface anatomy related to the bone and muscle structure of the human form is studied along with the proportions and anatomy of the human head. Students will work with achromatic and chromatic drawing mediums.

CSU, UC

**232 FIGURE DRAWING III 3 UNITS**

Prerequisite: ART 231 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Concentrates on integrating the human figure into a compositional environment. Figure drawing techniques from ART 230 and 231 will be integrated into the design process.

CSU, UC

**233 FIGURE DRAWING IV 3 UNITS**

Prerequisite: ART 232 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Focuses on figurative artwork that develops a personal theme or statement. Students will be asked to explore several advanced

compositional devices while pursuing their themes. This class emphasizes portfolio preparation.

CSU

**235 WATERCOLOR II 3 UNITS**

Prerequisite: ART 135 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Continuation of Watercolor I techniques with an emphasis on creative problem solving and aesthetic compositions.

CSU, UC

**236 WATERCOLOR III 3 UNITS**

Prerequisite: ART 235 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Continuation of Watercolor II skill and composition techniques. Students will develop a personal style of expression.

CSU, UC

**298 SELECTED TOPICS IN ART 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Art not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ART 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Art not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## ASTRONOMY

**110 DESCRIPTIVE ASTRONOMY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Covers the development of modern astronomy and its techniques. Emphasis is on the vocabulary of astronomy and the current understanding of our solar system, stellar evolution, our galaxy, and the structure of the universe.

AA/AS GE, CSU, CSU GE, IGETC, UC

**112 GENERAL ASTRONOMY LABORATORY 1 UNIT**

Prerequisite: ASTR 110 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment

Corequisite: None

Recommended Preparation: None

3 hours laboratory

Planet, stellar and lunar studies; acquaintance with constellations and astronomical coordinates; and use of astronomical instruments.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN ASTRONOMY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Astronomy under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN ASTRONOMY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Astronomy not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ASTRONOMY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Astronomy not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## AUTOMOTIVE TECHNOLOGY

**099 INTRODUCTION TO AUTOMOTIVE TECHNOLOGY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed to present basic information about automotive systems. Taught with the consumer in mind, but also serves as an excellent introductory course for those interested in the automotive technology major.

CSU

**100 INTRODUCTION TO AUTOMOTIVE TECHNOLOGY LAB 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours laboratory

Basic laboratory environment designed to prepare students for entry into the Automotive Technology major. Covers repairing, servicing and basic diagnostic procedures of a typical passenger car or light truck.

CSU

**111 INTRODUCTORY TOW TRUCK OPERATOR 2 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 3 hours laboratory

Detailed study of tow truck operations including: vehicle and equipment operation and terminology, clearing accident scenes, working with law enforcement, reports and documentation, public safety and law enforcement calls, laws pertaining to towing, radio communication, hazardous materials and vehicle recovery operations.

**114 ADVANCED TOW TRUCK OPERATOR 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Advanced refresher study of tow truck operations including: vehicle and equipment operation and terminology, clearing accident scenes, working with law enforcement, reports and documentation, public safety and law enforcement calls, laws pertaining to towing, radio communication, hazardous materials and vehicle recovery operations. Designed to meet CHP (TSA) certification standards effective July 1, 2003.

**120 ENGINE PERFORMANCE I - MECHANICAL AND IGNITION SYSTEMS 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

First in a three course series dealing with engine performance. Begins with a review of basic engine mechanical systems and an introduction to vehicle emissions and computer scanners, followed by a detailed study of current ignition systems. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Initial preparation for ASE Engine Performance (A-8) Certification.

CSU

**121 EMISSION CONTROL LICENSE 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Theory of operation, repair and maintenance of emission control devices with strong emphasis on laws and regulations required for licensing. Additional training covers: loaded mode dyno testing, NOx failure analysis and diagnostics, OBD II, catalytic converter testing and Oxygen sensor diagnosis with a digital storage oscilloscope (DSO). This course is approved by the State of California Bureau of Automotive Repair (BAR) and includes the Basic and Advanced clean air car courses. Designed to prepare students to take the BAR Advanced Emission Specialist Technician (EA) License test.

CSU

**122 AUTOMOTIVE ELECTRICAL SYSTEMS 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Basic principles of electricity as applied to automobiles. Comprehensive investigation of automotive electrical systems including periodic maintenance, diagnosis, component servicing and adjustment. Students will be expected to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-6 Certification.

CSU

**123 ENGINE PERFORMANCE II - FUEL SYSTEMS 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: AUTO 120 or equivalent with a grade of "C" or better or "Pass"

3 hours lecture, 6 hours laboratory

Second in a three course series dealing with engine performance. Emphasizes the use of computers for the control of fuel and air delivery

to the engine. Topics include: input and output devices, basic computer operation, closed loop fuel control, computer-assisted carburetion, computer-controlled fuel injection, turbochargers and superchargers, scan tool diagnostics, digital lab scope diagnostics, and OBD II diagnostic. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Final preparation for ASE Engine Performance (A-8) Certification.

*CSU*

### **124 ENGINE PERFORMANCE III - DRIVABILITY 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: AUTO 123 or equivalent with a grade of "C" or better or "Pass" 3 hours lecture, 6 hours laboratory

The capstone course in a three course engine performance series. Students will utilize skills developed in the first two courses to perform drivability diagnostics on all related engine systems. Emphasis on advanced application of scan tools and digital storage oscilloscopes (DSO) in the diagnosis of hard to find system problems, especially intermittent concerns. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE Advanced Engine Performance (L-1) Certification.

*CSU*

### **127 ADVANCED AUTOMOTIVE ELECTRICAL SYSTEMS 5 UNITS**

Prerequisite: AUTO 122 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Advanced course in electrical systems designed to develop greater student performance under simulated industry conditions. Students will be expected to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-6 Certification.

*CSU*

### **129 INTRODUCTION TO ALTERNATIVE FUELS 3.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1.5 hours laboratory

Introductory course in the study of alternative fuels and their delivery systems for automotive and light truck application. The main focus will be centered around Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG) systems. Additionally, electric, hybrid and fuel cell technologies will be discussed. Topics include: environmental concerns, pros and cons of various alternative fuel options, properties and chemical structure of various alternative fuels, safety aspects of each fuel, fuel storage, fuel metering control, retrofitting, installation, and diagnosis and troubleshooting. Recommended that students have a working knowledge of automotive electricity, automotive tune-up and diagnosis, and automotive computer systems.

*CSU*

### **130 AUTOMOTIVE BRAKES AND BRAKE LICENSE 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Detailed study of automotive brake system service procedures. Laboratory experience covers drum and disc brake system inspection,

adjustment and repair procedures, and antilock brake systems. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for State of California Official Brake Adjusters License and ASE A-5 Certification.

*CSU*

### **135 ADVANCED BRAKES 5 UNITS**

Prerequisite: AUTO 130 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Advanced course in automotive brake systems emphasizing diagnosis. Designed to develop greater student performance under simulated industry conditions. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for State of California Official Brake Adjusters License and ASE A-5 Certification.

*CSU*

### **140 FOUR WHEEL ALIGNMENT 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Four wheel alignment principles as applied to checking and correcting alignment settings. Repair and replacement of suspension components, computerized steering and ride controls. Additional training in wheel balancing. Emphasis on practical experience on "live" automobiles. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-4 Certification.

*CSU*

### **145 ADVANCED FOUR WHEEL ALIGNMENT 5 UNITS**

Prerequisite: AUTO 140 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Advanced course in four wheel alignment emphasizing diagnosis and complete suspension system repair. Designed to develop greater student performance under simulated industry conditions. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-4 Certification.

*CSU*

### **152 DRIVE TRAIN SYSTEMS 4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 4.5 hours laboratory

In-depth study of hydraulic power transmission and control systems used in automatic transmissions including diagnosis and overhaul of actual transmissions to precise industry standards. Plus, theory of operation, diagnosis, repair and overhaul of manual transmissions, clutches, drivelines and differentials including four wheel drive and front wheel drive. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-2 and A-3 Certification.

*CSU*

### **155 ADVANCED DRIVE TRAIN SYSTEMS 4 UNITS**

Prerequisite: AUTO 152 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 4.5 hours laboratory

Advanced course in power drive systems emphasizing advanced diagnosis and repair of drive train systems and components. Designed to develop greater student performance under simulated industry conditions. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-2 and A-3 Certification.

*CSU*

### **160 AIR CONDITIONING AND HEATING SYSTEMS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Study of refrigeration principles with emphasis on servicing, diagnosing, testing and repair or replacement of components. Emphasis on practical experience performing actual repairs. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-7 Certification and EPA-approved CFC Technician Certification.

*CSU*

### **165 ADVANCED AIR CONDITIONING AND HEATING SYSTEMS 3 UNITS**

Prerequisite: AUTO 160 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Advanced course in automotive environmental control systems emphasizing advanced diagnosis and repair. Designed to develop greater student performance under simulated industry conditions. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-7 Certification.

*CSU*

### **170 ENGINE OVERHAUL 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Diagnosis of engine failures, engine removal and disassembly techniques, engine cleaning and measuring practices, machining principles and assembly procedures. Emphasis is on practical experience through actual shop training. Students are required to provide an auto engine for overhaul. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-1 Certification.

*CSU*

### **175 ADVANCED ENGINE OVERHAUL 5 UNITS**

Prerequisite: AUTO 170 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Advanced course in engine overhaul designed to develop greater student performance under simulated industry conditions. Students will be required to complete associated tasks in the shop as specified by NATEF (National Automotive Training Educational Foundation). Preparation for ASE A-1 Certification.

*CSU*

**176 ENGINE MACHINING 5 UNITS**

Prerequisite: AUTO 175 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Third course in the engine repair sequence. Students must have credit in engine overhaul and advanced engine overhaul prior to enrolling in this course. Topics include cylinder boring and honing, rod resizing, replacing valve guides and seats, thread repair, king-pin fitting, replacing wheel studs, pressing bearings, etc. Designed to prepare students for employment in the automotive machine shop field. Preparation for ASE Engine Machinist exams.

CSU

**180 AUTOMOTIVE SERVICE ADVISOR 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Prepares students for working as service advisors for large independent garages or dealerships. Covers service procedures, customer relations, repair orders and warranty policies.

CSU

**182 AUTOMOTIVE WORK EXPERIENCE 1-3 UNITS**

Prerequisite: Completion of a minimum of 10 units in Automotive Program. Must meet state guidelines for work experience.

Corequisite: None

Recommended Preparation: None

5 hours paid or 4 hours unpaid work experience per week per unit

Students who are employed in the automotive trade full-time or part-time (paid or unpaid) and able to work the minimum required hours during the semester are eligible to enroll in this course. Assessment of student will be performed by instructor in discussion with appropriate supervisor at place of employment. Students will further develop skills attained in the classroom setting. *May be repeated up to 5 times for a maximum of 15 units.*

CSU

**190 ASSET-ORIENTATION, PDI AND LUBRICATION 2 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 3 hours laboratory

Introduction to the Ford sponsored ASSET program. Students will become familiar with dealership operations, vehicle pre-delivery inspection, and proper lubrication of the various systems of the modern automobile. Complemented by required work experience in the dealership.

CSU

**191 ASSET-BRAKES AND ALIGNMENT 7 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours lecture, 6 hours laboratory

Ford ASSET course to include a detailed study of modern automotive braking systems and service procedures. The laboratory will cover drum and disc brake systems inspection, adjustment and repair procedures. Also covers four wheel alignment principles as applied to checking and correcting alignment settings. Repair and replacement of suspension components. Additional training in wheel balancing. Emphasis on practical experience on "live" automobiles. Preparation for ASE Certification. Complemented by required work experience in the dealership.

CSU

**192 ASSET-DRIVE TRAIN 8 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5.5 hours lecture, 7.5 hours laboratory

Ford ASSET course encompassing the study of modern drive train systems. Includes theory of operation, diagnosis, repair and overhaul of manual transmissions, clutches, drivelines and differentials including four wheel drive and front wheel drive. The course also includes the theory of operation, diagnosis, repair and overhaul of automatic transmissions and transaxles. Current computerized control system operation and diagnosis of the drive train will be emphasized. Includes Ford Motor Company certification and preparation for ASE Certification. Complemented by work experience in the dealership.

CSU

**193 ASSET-ENGINE REPAIR 4.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 4.5 hours laboratory

Ford ASSET course to include diagnosis of engine failures, engine removal and disassembly techniques, engine cleaning and measuring practices, machining principles, assembly procedures and in-car repairs. Engine design theory will be discussed. Preparation for ASE Certification. Complemented by required work experience in the dealership.

CSU

**195 ASSET-ELECTRONIC ENGINE CONTROLS 7 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours lecture, 6 hours laboratory

Ford ASSET course to include an in-depth study of engine drivability and electronic engine controls on modern automobiles and trucks. Includes the study of basic and electronic ignition systems, early and modern fuel systems, and the repair and diagnosis of these systems. Emphasis is on electronic engine control system theory of operation and repair to include discussion of sensors, processors and actuators, and system diagnosis and repair. On-board computer logic and strategies will also be presented. Preparation for ASE Certification. Students who successfully complete this course will receive Ford Motor Company certification in Electronic Engine Control and Diesel Engine Performance Diagnosis.

CSU

**196 ASSET-ELECTRICAL, ACCESSORIES AND AIR CONDITIONING 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

4 hours lecture, 3 hours laboratory

Ford ASSET course to include electrical systems, theory, diagnosis and repair procedures utilizing state of the art equipment. Systems covered will be storage, generating and starting. Coverage of accessory systems such as lighting, power seats, power door locks, cruise controls, electric windows, electronic dashboards, radios, windshield wipers, etc. Also covered are all major topics dealing with automotive air conditioning including refrigeration theory, system evacuation and recovery, leak repair, compressor repair, component replacement, and manual and automatic temperature control. Preparation for ASE Certification. Complemented by required work experience in the dealership.

CSU

**197 ASSET-WORK EXPERIENCE 1-3 UNITS**

Prerequisite: Admission to the ASSET program

Corequisite: None

Recommended Preparation: None

75 hours paid work experience per unit

Ford ASSET work experience. Students will be placed with a sponsoring dealer at the start of the training program. This course is based on paid work experience at the sponsoring dealership. Assessment of student will be performed by ASSET coordinator in discussion with appropriate dealership personnel. Student is expected to work in the area of emphasis that is concurrent with area of training most recently completed at the college. Students will further develop skills attained in the classroom setting. *Must be repeated 5 times for a total of 13 units.*

CSU

**199 SPECIAL STUDIES OR PROJECTS IN AUTOMOTIVE TECHNOLOGY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Automotive Technology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**200 ASEP-ORIENTATION 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Introduction to the General Motors sponsored ASEP program. Students will become familiar with dealer operations. Complemented by required work experience in a dealership.

CSU

**201 ASEP-ELECTRICAL 6 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

4 hours lecture, 6 hours laboratory

General Motors ASEP course to include electrical systems, theory, diagnosis and repair procedures utilizing state of the art equipment. Major topics include electrical laws, batteries, starting and charging systems, wiring diagrams, and introduction to computer controls. Accessory systems such as lighting, power seats, power door locks, cruise controls, electric windows, electronic dashboards, radios, windshield wipers, etc., are also covered. Preparation for ASE and GM certification.

CSU

**202 ASEP-BRAKES AND ALIGNMENT 7 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours lecture, 6 hours laboratory

General Motors ASEP course to include a detailed study of modern automotive braking systems and service procedures including two and four wheel electronic anti-lock brake system operation and repair. Laboratory experience will cover drum and disc brake system inspection, adjustment and repair procedures. Also covers modern suspension and steering systems including electronic ride control, steering, and four wheel alignment principles as applied to checking and correcting alignment settings. Repair and replacement of suspension components. Additional training in wheel balancing. Emphasis on practical experience on "live" automobiles. Preparation for ASE and GM certification.

CSU

**203 ASEP—ENGINE REPAIR 4.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 4.5 hours laboratory  
 General Motors ASEP course to include diagnosis of engine failures, engine removal and disassembly techniques, engine cleaning and measuring practices, machining principles and assembly procedures in car repairs. Engine design theory will be discussed. Preparation for ASE and GM certification.

CSU

**204 ASEP—POWER TRAIN 7 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours lecture, 6 hours laboratory  
 General Motors ASEP course to include an in-depth study of hydraulic power transmission and control systems used in automatic transmissions, including diagnosis and overhaul of actual transmissions to precise industry standards. Plus, theory of operation, diagnosis, repair and overhaul of manual transmissions, clutches, drivelines and differentials including four wheel drive and front wheel drive. Preparation for ASE and GM certification.

CSU

**205 ASEP—ENGINE PERFORMANCE AND AIR CONDITIONING 7 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours lecture, 6 hours laboratory  
 General Motors ASEP course to include a detailed study of electronic engine controls on modern automobiles. Emphasis is on electronic engine control system theory of operation and repair to include discussion of sensors, processors and actuators, and system diagnosis and repair. On-board computer logic and strategies will be presented. Also covers all major topics dealing with automotive air conditioning including refrigeration theory, system evacuation and recovery, leak repair, compressor repair, component replacement, and manual and automatic temperature control. Preparation for ASE and GM certification.

CSU

**206 ASEP—WORK EXPERIENCE 1-4 UNITS**

Prerequisite: AUTO 200 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 75 hours paid work experience per unit  
 General Motors ASEP work experience. Students will be placed with a sponsoring dealer at the start of the training program. This course is based on paid work experience at the sponsoring dealership. Assessment of student will be performed by ASEP coordinator in discussion with appropriate dealership personnel. Student is expected to work in the area of emphasis that is concurrent with area of training most recently completed at the college. Students will further develop skills attained in the classroom setting. *Must be repeated for a total of 15 units.*

CSU

**298 SELECTED TOPICS IN AUTOMOTIVE TECHNOLOGY 1-8 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-24 hours  
 Selected topics in Automotive Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered

in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN AUTOMOTIVE TECHNOLOGY 1-8 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-24 hours  
 Selected topics in Automotive Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## BIOLOGICAL SCIENCES

**112 CONTEMPORARY ISSUES IN ENVIRONMENTAL RESOURCES 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Through the scientific study of basic concepts in ecology, students apply their knowledge and scientific reasoning to the study of contemporary problems dealing with renewable and nonrenewable resources. Environmental resource problems involving air, water, energy, human population growth, and plant and animal diversity are examined in context of their scientific, political, economic and social implications. Alternatives for resolving existing problems and preventing future ones will be examined.

AA/AS GE, CSU, CSU GE, IGETC, UC

**115 BIOLOGY OF ALCOHOL AND OTHER DRUGS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of the biological principles underlying the effects of the major legal and illegal drugs on the human body. Survey of the commonly abused drugs with regard to their chemical nature, where and how they act and the factors that modify their effects.

AA/AS GE, CSU, CSU GE

**122 PLANT STRUCTURES AND FUNCTIONS 4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Structural and functional aspects of plants with an emphasis on seed producers and applications to horticulture. Includes fundamentals of plant biology, primary and secondary body plan, photosynthesis and respiration, growth and development, water relations and phloem transport, cellular and organismic reproduction, plant heredity and evolution.

AA/AS GE, CSU, CSU GE

**126 INTRODUCTION TO BIOTECHNOLOGY 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Comprehensive look at how the use of living organisms or their products can enhance our lives and impact society. Fundamentals of molecular biology and immunology, historical review of the developments leading to modern biotechnology, studies of the development and manufacturing of biotechnology products based

on the isolation, analysis and manipulation of genes, and applications of the technological developments will be evaluated in their social, legal and ethical contexts

AA/AS GE, CSU, UC

**128 PRINCIPLES OF BIOLOGY FOR FUTURE EDUCATORS 4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 This course addresses the major principles underlying all of biology with an emphasis on evolution, inheritance, cellular life, biodiversity, ecology, and behavior of living organisms. Designed to prepare prospective educators to evaluate their own learning strategies while gaining biological content knowledge, and to explore ways to incorporate biology content into K-12 curricula. Incorporates some of the National Science Education Standards (NSES) for undergraduate professional preparation of teachers. *Not open to students with credit in BIO 130 and 131 or BIO 210, 220 and 221.*

AA/AS GE, CSU, CSU GE, IGETC, UC, UC credit limit

**130 GENERAL BIOLOGY I 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Survey of basic biological principles with particular emphasis on the molecular and cellular aspects of the organism. The unifying concepts of biology such as organization, metabolism, genetics and evolution are discussed. *Meets transfer requirements for non-majors.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**131 GENERAL BIOLOGY I LABORATORY 1 UNIT**

Prerequisite: BIO 130 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours laboratory  
 Laboratory experiments on the basic biological principles with particular emphasis on the molecular and cellular aspects of the organism. *Meets transfer requirements for non-majors.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**140 HUMAN ANATOMY 5 UNITS**

Prerequisite: BIO 130, 131 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 6 hours laboratory  
 Students will embark on a study of the systems of the human body. This is accomplished through a study of the organization of the body's systems from a microscopic level of organization to the gross anatomy level. The relationship between structure and function will be examined through the study of histological slides, photomicrographs, anatomical models and charts, and mammalian (cat) dissection.

AA/AS GE, CSU, CSU GE, IGETC, UC

**141 HUMAN PHYSIOLOGY 3 UNITS**

Prerequisite: BIO 130, 131 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of the function and interrelationships of the nervous, endocrine, muscular, circulatory, respiratory, digestive, and reproductive systems of the human body. Relates these systems to the maintenance of homeostasis and the effects of exercise, behavior and disease on human physiology.

CSU, CSU GE, IGETC, UC



**141L LABORATORY IN HUMAN PHYSIOLOGY****1 UNIT**

Prerequisite: BIO 130, 131 or equivalent with a grade of "C" or better or "Pass"; BIO 141 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment

Corequisite: None

Recommended Preparation: None

3 hours laboratory

Laboratory course designed to illustrate the physiological principles studied in BIO 141. Emphasis is on lab-based investigations of human physiological processes.

CSU, CSU GE, IGETC, UC

**152 PARAMEDICAL MICROBIOLOGY****5 UNITS**

Prerequisite: BIO 130, 131 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: CHEM 115 or equivalent with a grade of "C" or better or "Pass"

3 hours lecture, 6 hours laboratory

Introduction to the major groups of microorganisms and the diseases they cause. Emphasizes concepts and techniques relevant to the student entering paramedical professions: identifying and handling bacteria, basic principles of immunology, medical microbiology and epidemiology. Principles of microbial physiology, genetics, growth and microbial control are discussed. This course also satisfies the introductory microbiology requirement needed by students majoring in nursing and other paramedical fields leading to a B.S. or B.A. degree.

CSU

**198 SUPERVISED TUTORING****0 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN BIOLOGY****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Biology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**210 BIOLOGY II****4 UNITS**

Prerequisite: MATH 103 or 110 or an equivalent intermediate algebra course with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

Study of the origin and nature of the different forms of life utilizing evolution as a unifying theme and presenting organismal diversity within a phylogenetic framework. The relationships of environment and lifestyles to form and function will be explored through examination of comparative structure and the physiology, nutrition, circulation, gas exchange, reproduction and development of organisms found in the three domains of life.

AA/AS GE, CSU, CSU GE, IGETC, UC

**215 STATISTICS FOR LIFE SCIENCES****3 UNITS**

Prerequisite: BIO 130, MATH 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Methods and experience in defining and solving quantitative problems in the life sciences. Emphasis on the design of experiments and the application of a variety of parametric and nonparametric techniques to the analysis of data.

CSU, CSU GE, IGETC, UC, UC credit limit

**220 PRINCIPLES OF MOLECULAR, CELLULAR AND EVOLUTIONARY BIOLOGY****3 UNITS**

Prerequisite: CHEM 141 or equivalent with a grade of "C" or better or "Pass"

Corequisite: BIO 221

Recommended Preparation: None

3 hours lecture

Study of the unifying principles of life manifested by cellular structures, functions and evolutionary history. Emphasis on the following topics: cellular processes including energy metabolism, membrane transport and cell division; classical and molecular genetics including recombinant DNA; communication between cells; population genetics and the mechanism of evolution; and the evolutionary basis of species classification. This course, along with BIO 210, is the recommended two-semester sequence for biology majors.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**221 PRINCIPLES OF MOLECULAR, CELLULAR AND EVOLUTIONARY BIOLOGY LABORATORY****1 UNIT**

Prerequisite: CHEM 141 or equivalent with a grade of "C" or better or "Pass"

Corequisite: BIO 220

Recommended Preparation: None

3 hours laboratory

Investigates some of the general principles of biology presented in BIO 220, allowing students to observe examples of the phenomena using live materials where possible and providing the opportunity to apply concepts learned in BIO 220. Students will conduct laboratory exercises which involve observations, demonstrations, experiments, data analyses, computer laboratory simulations and written reports.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**298 SELECTED TOPICS IN BIOLOGY****1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Biology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN BIOLOGY****1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Biology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

**BUSINESS****109 ELEMENTARY ACCOUNTING 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduction to elementary accounting principles. Includes journals, ledgers, worksheets and financial statements for the single proprietorship. Designed for the clerical employee or for those who do not intend further study of accounting. *Not open to students with credit in BUS 120.*

CSU

**110 INTRODUCTION TO BUSINESS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Provides a comprehensive view of today's dynamic American business and the global economy. Topics include: starting a small business, satisfying customers, managing operations, motivating employees and building self-managed teams, developing and implementing customer-oriented marketing plans, managing information, managing financial resources, and exploring ethical and social responsibilities of American business.

CSU, UC

**111 ENTREPRENEURSHIP: STARTING AND DEVELOPING A BUSINESS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed to provide the prospective small business manager with the most up-to-date skills necessary in the planning function of opening one's own business. Emphasis is on sources of financing, site locations, legal problems, marketing surveys, organizational structure, and self-analysis to determine one's personal readiness for entrepreneurship.

CSU

**112 ENTREPRENEURSHIP: SUCCESSFUL MARKETING 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed to provide the small business owner with the necessary skills to market a product or service. Examines the essential elements of a marketing strategy, the four P's: Product, Place (Distribution), Price and Promotion. The relationship between sales and marketing and how they function together in the small business environment are also examined.

CSU

**114 EFFECTIVE JOB SEARCH 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Provides comprehensive and valuable skills that are needed to successfully secure employment. Designed to examine the continuous process of career/life planning through effective, well-planned and efficiently organized job search procedures.

CSU

**115 HUMAN RELATIONS IN BUSINESS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Covers the human aspects of the organization and the role of the individual within the organization. Emphasis is on the role of the individual in the formal and informal structure of the organization, leadership and group dynamics, motivation, job enrichment, organizational change, and communications—both verbal and nonverbal—within the organization.

*CSU***119 ENTREPRENEURSHIP: FINANCING AND WRITING A BUSINESS PLAN****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Designed to provide prospective small business owners or managers with the knowledge required to write a business plan and to understand and control the cash management function of their business. Emphasis is on the types of financing, understanding debt vs. equity financing, cash flow analysis, borrowing and investment, forecasting and budgeting.

*CSU***120 FINANCIAL ACCOUNTING****4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture

Introduces students to the accounting function and how it is used within our economic society. Accounting is viewed as an information-generating system that communicates financial data to support end users in their economic decision-making. The course covers the accounting information system and the recording and reporting of business transactions with a focus on the accounting cycle, the application of generally accepted accounting principles, the classified financial statements, and statement analysis. It also covers issues related to asset, liability, and equity valuation, revenue and expense recognition, cash flow, internal controls and ethics. This course is designed for students who have an understanding of computer applications in word processing and spreadsheets, basic math skills, and the ability to write in a business-like manner.

*CSU, UC***121 MANAGERIAL ACCOUNTING****4 UNITS**

Prerequisite: BUS 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture

Introduces students to the concepts, methods, and procedures for the development and use of accounting information to support and assist management in their internal cost accounting processes and financial decision making. The following areas are examined: cost terms and concepts, cost behavior, cost structure, product costing in a manufacturing environment (including activity based costing), cost-volume-profit analysis, budgeting, standard costing, differential analysis, capital budgeting, variable and absorption costing, and responsibility accounting.

*CSU, UC***122 INTERMEDIATE ACCOUNTING****4 UNITS**

Prerequisite: BUS 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture

In-depth study of accounting theories and principles underlying financial statements and the determination of net income. Survey of basic accounting principles. Study of corporate balance sheet items and the analytical processes of statement preparation which include funds-flow and cash-flow reporting.

*CSU***124 AUDITING****3 UNITS**

Prerequisite: BUS 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Study of the role of the auditor in the American economy including the general principles and concepts of auditing duties, ethics, liability and responsibilities of the auditor, and procedures for verification of financial statements including EDP statements.

*CSU***125 BUSINESS LAW: LEGAL ENVIRONMENT OF BUSINESS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Legal environment of business, sources of law, constitutional bases of regulation, social and ethical influences, corporate responsibility, judicial and administrative systems, contracts, torts, agency, business organizations, bankruptcy, securities regulation, regulation of property and protection of intellectual property interests, consumer protection, regulation of businesses to prevent market failures.

*CSU, UC***128 BUSINESS COMMUNICATION****3 UNITS**

Prerequisite: ENGL 110 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Development of the ability to analyze, organize, and compose various types of written and oral business communications with an emphasis on the writing of clear, concise and persuasive letters, memos and reports.

*CSU***129 PAYROLL ACCOUNTING AND BUSINESS TAXES****2 UNITS**

Prerequisite: BUS 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture

Provides students with an in-depth understanding of payroll accounting. Includes calculations of gross to net pay, coverage of federal and state withholdings and deductions, recording of payroll transactions into the accounting records, and filing of federal and state payroll tax forms. Also includes consideration of factors which determine employee versus independent contractor status, and coverage of business taxes such as sales and property taxes and their filing requirements.

*CSU***141 ENTREPRENEURSHIP: MANAGING A NEW BUSINESS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Designed to help students apply theories of marketing, management, personnel, finance and production to problems encountered daily in managing a business. Focuses on practical solutions to common business management problems.

*CSU***146 MARKETING****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Focuses on the function of marketing in an organization by examining the essential elements of a marketing strategy: product, promotion, distribution, price, the effect of the business environment on marketing decisions, consumer behavior, identification of markets, and current issues in marketing.

*CSU***150 INDIVIDUAL INCOME TAX ACCOUNTING****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Introduces students to federal taxation and focuses on tax preparation as applied to the individual taxpayer. Includes an overview of the income tax environment. Topics include filing status, personal and dependency exemption, itemized and standard deductions, and solving specific problems related to the filing of the Federal Form 1040.

*CSU***152 BUSINESS MATHEMATICS****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture

Introduction to arithmetic applications used in business transactions including fractions, percentages, interest, discounts, depreciation, payrolls, merchandising markups, and taxes.

*CSU***154 DIVERSITY IN THE WORKPLACE****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Teaches students about the historical perspective of diversity in the workplace; motivates them in defining and developing a manager's responsibilities as it relates to diversity in the workplace; explores and sensitizes students to the unique problems of diversity in the workplace; and assists them in developing effective solutions to problems.

*CSU***155 HUMAN RESOURCES MANAGEMENT****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Introduction to the management of human resources and an understanding of the impact and accountability to the organization of human resource activities. Global human resource strategies; social and organizational realities; legal implications affecting people at work; union/non-union practices; employee compensation and benefits; employee rights; safety issues.

*CSU*

**156 PRINCIPLES OF MANAGEMENT 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Planning, organizing, directing and controlling for management. Interaction of the functions includes setting objectives, MBO, decision-making tools, alternative organization structures, leadership, motivation, communication, group dynamics, management of stress and change, time management, and women in management. Survey of the quantitative tools available to the manager.

CSU

**157 PRINCIPLES OF LEADERSHIP 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Develops insight into the multiplicity of roles and responsibilities which the leader must fulfill, focusing on personal, work and social environments. Deals with leadership as a function of selecting, motivating and directing others toward an agreed upon goal.

CSU

**159ABCD MANAGEMENT INTERNSHIP 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 225 hours paid or 180 hours unpaid work experience

Field work in management. Students will be required to maintain a diary of their weekly activities and submit a comprehensive report of their observations upon completion. Students will meet at least once during the semester to compare field experiences and submit paperwork.

CSU

**162 ANALYSIS OF FINANCIAL STATEMENTS 3 UNITS**

Prerequisite: BUS 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Designed to explore the characteristics of financial statements, to analyze the reported results, and to place the findings from such an analysis in proper perspective. Students will learn how to apply ratios to financial statements, and to interpret their outcomes in order to draw various inferences and/or conclusions from their results.

CSU

**176 COMPUTERIZED ACCOUNTING APPLICATIONS 2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 3 hours laboratory

Beginning course in small business accounting using QuickBooks software. Especially beneficial to students, teachers and professionals who are using, or plan to use, personal computers to create a chart of accounts, record customer and vendor transactions, process payroll, and print reports.

CSU

**195 PERSONAL FINANCE 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Explores the theories and techniques of managing personal income. Provides students with the tools and knowledge they need for their short- and long-term financial success. Topics

include financial planning, budgeting, managing checking and savings accounts, building and maintaining good credit, retirement and estate planning, and creating an investment portfolio

CSU

**199 SPECIAL STUDIES OR PROJECTS IN BUSINESS 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Business under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**240 SQL FOR BUSINESS APPLICATIONS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 140 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory  
 Structured Query Language (SQL) provides a unified language to query, manipulate or control data in a business applications environment. This hands-on course provides basic knowledge of how to extract data from databases including Oracle and Microsoft SQL Server using SQL, Transact-SQL, SQL\*Plus, and PL/SQL. It also covers topics necessary to query data for use in typical business applications analysis from an Oracle9i/10g or Microsoft SQL Server database.

CSU

**242 DATA MINING 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 140 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory  
 Introduction to the fundamental concepts of data mining. Explores motivation for and applications of data mining and survey current techniques and models used in data mining. Data mining development cycle and potential pitfalls of machine learning will also be covered.

CSU

**298 SELECTED TOPICS IN BUSINESS 1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Business not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN BUSINESS 1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Business not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## BUSINESS OFFICE TECHNOLOGY

**095 KEYBOARDING SKILL REINFORCEMENT 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours laboratory

Designed for students who have completed BOT 100 and want to reinforce their skills before advancing to the next level of keyboarding. Begins with a keyboard review, then progresses to practice and timings designed to improve keyboarding speed and accuracy. **Pass/No Pass only. Non-degree applicable.**

**096 COMPUTER BASICS FOR THE OFFICE 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: BOT 100 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level

.5 hour lecture, 1.5 hours laboratory  
 Designed to give students with little or no computer experience the basic information and skills needed to operate a computer efficiently in an office environment. Includes overview of the components of a computer system hardware and software, proficiency in using a mouse, storing information, using the Internet, and purchasing and maintaining a computer. Recommended that students complete a basic keyboarding course prior to enrolling in this course. **Pass/No Pass only. Non-degree applicable.**

**097 WINDOWS BASICS FOR THE OFFICE 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: BOT 100 or equivalent with a grade of "C" or better or "Pass", BOT 096 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment, ENGL 098R or ESL 105 or equivalent reading level

.5 hour lecture, 1.5 hours laboratory  
 Designed for students with little or no computer experience. Students will learn to use the Windows operating system efficiently to create and manage files and folders. **Pass/No Pass only. Non-degree applicable.**

**100 BASIC KEYBOARDING 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ENGL 098R or ESL 105 or equivalent reading level  
 3 hours laboratory

Beginning keyboarding techniques for students who wish to use keyboarding skills for inputting information on computers. This course is taught on computers using appropriate software. Emphasis on the development of speed and accuracy by use of touch keyboarding methods, development of touch skills on the 10-key pad, understanding of basic vocabulary and concepts used in keyboarding operations for inputting and retrieving information, and composition at the keyboard. For students with physical disabilities that may impair proficiency, emphasis will be on quality of output instead of speed, and on the use of alternative input devices.

CSU

**101A KEYBOARDING/DOCUMENT PROCESSING****1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 100 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
1 hour lecture, 1.5 hours laboratory

Equivalent to the first half of BOT 101. Focuses on learning or reviewing the alphabetic and numeric keyboard including the 10-key pad for numeric data entry. Students will learn basic features of Microsoft Word to produce simple memos, letters and reports. Keyboarding software will be used to build speed and accuracy. Students wishing to progress to BOT 102AB should also complete BOT 101B. *Not open to students with credit in BOT 101.*  
**CSU**

**101B KEYBOARDING/DOCUMENT PROCESSING****1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 101A or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 3 hours laboratory

Equivalent to the second half of BOT 101. Students will use Microsoft Word to produce correctly formatted and accurate business documents including letters, reports and tables. Students will also use keyboarding software to build speed and accuracy. *Not open to students with credit in BOT 101.*  
**CSU**

**102A INTERMEDIATE KEYBOARDING/ DOCUMENT PROCESSING I****1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 101 or 101AB or equivalent with a grade of "C" or better or "Pass"  
1 hour lecture, 1.5 hours laboratory, 1.5 units

Equivalent to the first half of BOT 102. Students will review and create business documents to apply formatting skills taught in BOT 101 or 101AB and are then introduced to new formatting and report styles options including agendas, formal reports and multipage tables. This course begins with intermediate Microsoft Word functions; entering students should be proficient in using basic Word features and should key a minimum of 30 net words per minute on a 5-minute timed writing. *Not open to students with credit in BOT 102.*  
**CSU**

**102B INTERMEDIATE KEYBOARDING/ DOCUMENT PROCESSING II****1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 102A or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 3 hours laboratory

Equivalent to the second half of BOT 102. Students continue to create business documents, applying new formatting skills including using templates, designing letterheads and office forms, and learning specialized applications such as medical and legal forms. This course begins with intermediate Microsoft Word functions; entering students should be proficient in using basic Word features and should key a minimum of 35 net words per minute on a 5-minute timed writing. *Not open to students with credit in BOT 102.*  
**CSU**

**103A BUILDING KEYBOARDING SKILL I****.5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 100 or equivalent with a grade of "C" or better or "Pass"  
1.5 hours laboratory

Designed for students who have completed a keyboarding course but wish to work further on developing speed and accuracy. Students should know the alphabetic keyboard by touch and key at a minimum rate of 20 net words per minute on a 5-minute timed writing. Those keying at a lower rate should enroll in BOT 095.  
**CSU**

**103B BUILDING KEYBOARDING SKILL II****.5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 103A or equivalent with a grade of "C" or better or "Pass"  
1.5 hours laboratory

Continuation in building keyboarding speed and accuracy. Students should be keying by touch at a minimum rate of 30 net words per minute on a 5-minute timed writing. Those keying at a lower rate should enroll in BOT 103A.  
**CSU**

**103C BUILDING KEYBOARDING SKILL III****.5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 103B or equivalent with a grade of "C" or better or "Pass"  
1.5 hours laboratory

Continuation in building keyboarding speed and accuracy. Entering students should be keying by touch at a minimum rate of 40 net words per minute on a 5-minute timed writing. Those keying at a lower rate should enroll in BOT 103B.  
**CSU**

**104 FILING AND RECORDS MANAGEMENT****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 098R or ESL 105 or equivalent reading level

.5 hour lecture, 1.5 hours laboratory  
Instruction in the Association of Records Managers and Administrators (ARMA) filing rules and techniques which are widely used in business to create and maintain files. Alphabetic, numeric, geographic and subject filing rules are included. Also includes instruction in records management including rules for retention, transfer and disposition of records. Students use a software package to learn basic filing rules.  
**CSU**

**105 DATA ENTRY SKILLS****1 UNIT**

Prerequisite: BOT 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: BOT 096 or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 1.5 hours laboratory

Designed for students who wish to prepare for employment in the data entry field. Emphasis on development of speed and accuracy in the use of the microcomputer alphabetic keyboard and numeric keypad to reach employable levels of skill. Students will complete assignments, drills, and timed speed and accuracy tests.  
**CSU**

**107 OFFICE SYSTEMS AND PROCEDURES****2 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 096, 097, 101AB or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment, ENGL 098R or ESL 105 or equivalent reading level  
2 hours lecture

Includes office ethics and professionalism; prioritizing and productivity; human relations; working in teams; customer service skills; telephone skills; scheduling appointments; using email, copiers, fax machines and scanners; handling office mail; and using the Internet for common office functions such as travel reservations and ordering supplies.  
**CSU**

**108 USING CALCULATORS TO SOLVE BUSINESS PROBLEMS****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

Introduces the 10-key, digital display electronic calculator. Students will build skill in performing fundamental arithmetic operations using a calculator. Topics include use of decimals, fractions, constants, discounts, percentages and memory keys.  
**CSU**

**114 ESSENTIAL WORD****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 096, 097, 101AB or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

Designed for students who want to learn the most commonly used features of a current popular word processing software package. Upon completion, students will be proficient in using text editing and formatting commands to produce typical business documents, and in using the mail merge feature to produce form letters, labels and envelopes. Students who desire more in-depth coverage of these and additional topics should consider enrolling in BOT 120, 121, 122. *Not open to students with credit in BOT 121 or 122.*  
**CSU**

**115 ESSENTIAL EXCEL****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 096, 097, 100 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

Designed for students who want to become proficient in the most commonly used features of Microsoft Excel. Basic spreadsheet concepts and terms will be introduced. Students will learn how to create, format and revise spreadsheets and charts, and to create basic formulas and templates. The use of simple macros will be introduced. Students who desire more in-depth coverage of these and additional topics should consider enrolling in BOT 123, 124, 125. *Not open to students with credit in BOT 124 or 125.*  
**CSU**

**116 ESSENTIAL ACCESS****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 096, 097, 100 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

Designed for students who want to become proficient in the most commonly used features of Microsoft Access. Basic database concepts

and terms will be introduced. Students will learn how to create, format, edit and revise simple databases, to sort and filter records, to use queries, and to create forms, reports and labels. Students who desire more in-depth coverage of these and additional topics should consider enrolling in CIS 140 or BOT 126, 127, 128. *Not open to students with credit in BOT 127 or 128.*  
*CSU*

**117 ESSENTIAL POWERPOINT 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 096, 097, 114 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

Designed for students who want to become proficient in the most commonly used features of Microsoft PowerPoint. Basic concepts and terms will be introduced. Students will learn how to create, format and revise PowerPoint presentations, including animation effects. Students who desire more in-depth coverage of these and additional topics should consider enrolling in BOT 129, 130, 131. *Not open to students with credit in BOT 130 or 131.*  
*CSU*

**118 INTEGRATED OFFICE PROJECTS 1 UNIT**

Prerequisite: BOT 102AB, 107, 114, 115, 116, 117 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: ENGL 098R or ESL 105 or equivalent reading level  
3 hours laboratory

Capstone course designed for BOT majors who have completed prerequisite courses in all applications of the Microsoft Office suite (Word, Excel, Access, PowerPoint) and have keyboarding skills of a minimum 40 net words per minute. Students will apply their skills to complete projects that integrate these applications. They will also use the Internet to complete projects.

*CSU***120 COMPREHENSIVE WORD, LEVEL I 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 096, 097, 101AB or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

First in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Word. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students who desire less comprehensive coverage of Word should consider enrolling in BOT 114.

*CSU***121 COMPREHENSIVE WORD, LEVEL II 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 120 or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 1.5 hours laboratory

Second in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Word. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations.

*CSU***122 COMPREHENSIVE WORD, LEVEL III 1 UNIT**

Prerequisite: BOT 121 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: None  
.5 hour lecture, 1.5 hours laboratory  
Third in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Word. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students should consider enrolling in BOT 280 prior to taking the examination.

*CSU***123 COMPREHENSIVE EXCEL, LEVEL I 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 096, 097, 100 or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 1.5 hours laboratory

First in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Excel. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students who desire less comprehensive coverage of Excel should consider enrolling in BOT 115.

*CSU***124 COMPREHENSIVE EXCEL, LEVEL II 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 123 or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 1.5 hours laboratory

Second in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Excel. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations.

*CSU***125 COMPREHENSIVE EXCEL, LEVEL III 1 UNIT**

Prerequisite: BOT 124 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: None  
.5 hour lecture, 1.5 hours laboratory  
Third in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Excel. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students should consider enrolling in BOT 281 prior to taking the examination.

*CSU***126 COMPREHENSIVE ACCESS, LEVEL I 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 096, 097, 100, 116 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

First in a three-level course sequence designed to give students thorough coverage of most features of Microsoft Access. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students who desire less comprehensive coverage of Access should consider enrolling in BOT 116.

*CSU***127 COMPREHENSIVE ACCESS, LEVEL II 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 126 or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 1.5 hours laboratory

Second in a three-level course sequence designed to give students thorough knowledge of most features of Microsoft Access. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations.

*CSU***128 COMPREHENSIVE ACCESS, LEVEL III 1 UNIT**

Prerequisite: BOT 127 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: None  
.5 hour lecture, 1.5 hours laboratory  
Third in a three-level course sequence designed to give students thorough knowledge of most features of Microsoft Access. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students should consider enrolling in BOT 282 prior to taking the examination.

*CSU***129 COMPREHENSIVE POWERPOINT, LEVEL I 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 101AB, 114, 120 or equivalent with a grade of "C" or better or "Pass", ENGL 098R or ESL 105 or equivalent reading level  
.5 hour lecture, 1.5 hours laboratory

First in a three-level course sequence designed to give students thorough coverage of most features of Microsoft PowerPoint. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students who desire less comprehensive coverage of PowerPoint should consider enrolling in BOT 117.

*CSU***130 COMPREHENSIVE POWERPOINT, LEVEL II 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: BOT 129 or equivalent with a grade of "C" or better or "Pass"  
.5 hour lecture, 1.5 hours laboratory

Second in a three-level course sequence designed to give students thorough coverage of most features in Microsoft PowerPoint. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations.

*CSU***131 COMPREHENSIVE POWERPOINT, LEVEL III 1 UNIT**

Prerequisite: BOT 130 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
.5 hour lecture, 1.5 hours laboratory

Third in a three-level course sequence designed to give students thorough coverage of most features in Microsoft PowerPoint. Students who complete all three levels will be prepared to take the Microsoft Office User Specialist (MOUS) certification examination or similar examinations. Students should consider enrolling in BOT 283 prior to taking the examination.

*CSU*

**150 USING MICROSOFT PUBLISHER 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 101AB or 121 or equivalent with a grade of "C" or better or "Pass"

.5 hour lecture, 1.5 hours laboratory

Introductory course in Microsoft Publisher for students who wish to acquire a basic understanding of concepts and terminology for the production and design of professional quality publications. Emphasis on graphics, word processing and page layout.

CSU

**151 USING MICROSOFT OUTLOOK 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 096, 097, 101AB, 114 or 120 or equivalent with a grade of "C" or better or "Pass"

.5 hour lecture, 1.5 hours laboratory

Designed to offer students proficiency in the use of Microsoft Outlook to create email messages, maintain personal calendars and schedules, plan work, maintain contact lists, and organize information.

CSU

**198 SUPERVISED TUTORING 0 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN BUSINESS OFFICE TECHNOLOGY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Business Office Technology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**201 ADVANCED KEYBOARDING/ DOCUMENT PROCESSING 3 UNITS**

Prerequisite: BOT 102AB or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

1.5 hours lecture, 4.5 hours laboratory

Advanced keyboarding for further development of keyboarding skills to meet professional placement requirements. Students will apply intermediate and advanced features of Microsoft Word to create complex business documents with minimum instruction. Students will use computer software for building speed and accuracy on 5-minute timed writings to attain the speed and accuracy required for professional office positions.

CSU

**203 OFFICE PROJECT COORDINATION 1 UNIT**

Prerequisite: BOT 122, 125, 128, 131, 151 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours laboratory

This capstone course provides students who have comprehensive knowledge of Microsoft Word, Excel, Access, PowerPoint and Outlook the opportunity to integrate those skills by

assuming responsibility for completing a given project from inception to completion.

CSU

**223\* OFFICE WORK EXPERIENCE 1 UNIT**

Prerequisite: Limited to BOT majors who have completed at least 12 units in the major

Corequisite: None

Recommended Preparation: Keyboarding and computer skills as well as training in a variety of office procedures as required by most worksites  
5 hours work experience

Work experience in an office setting. Trainee spends 60-75 hours per semester in on-the-job training.

CSU

**224\* OFFICE WORK EXPERIENCE 2 UNITS**

Prerequisite: Limited to BOT majors who have completed at least 12 units in the major

Corequisite: None

Recommended Preparation: Keyboarding and computer skills as well as training in a variety of office procedures as required by most worksites  
10 hours work experience

Work experience in an office setting. Trainee spends 120-150 hours per semester in on-the-job training.

CSU

**225\* OFFICE WORK EXPERIENCE 3 UNITS**

Prerequisite: Limited to BOT majors who have completed at least 12 units in the major

Corequisite: None

Recommended Preparation: Keyboarding and computer skills as well as training in a variety of office procedures as required by most worksites  
15 hours work experience

Work experience in an office setting. Trainee spends 180-225 hours per semester in on-the-job training.

CSU

**280ABC PREPARING FOR PERFORMANCE EXAMINATIONS IN MICROSOFT WORD .5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 122 or equivalent with a grade of "C" or better or "Pass"

1.5 hours laboratory

Designed for students who have completed BOT 122 or the equivalent. Students will use testing software to prepare for the Microsoft Office User Specialist (MOUS) certification examination, to prepare for employment examinations, or to receive a BOT certificate of proficiency in MS Word with detailed competencies. *May be repeated up to 3 times. Pass/No Pass only.*

**281ABC PREPARING FOR PERFORMANCE EXAMINATIONS IN MICROSOFT EXCEL .5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 125 or equivalent with a grade of "C" or better or "Pass"

1.5 hours laboratory

Designed for students who have completed BOT 125 or the equivalent. Students will use testing software to prepare for the Microsoft Office User Specialist (MOUS) certification examination, to prepare for employment examinations, or to receive a BOT certificate of proficiency in MS Excel with detailed competencies. *May be repeated up to 3 times. Pass/No Pass only.*

**282ABC PREPARING FOR PERFORMANCE EXAMINATIONS IN MICROSOFT ACCESS .5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 128 or equivalent with a grade of "C" or better or "Pass"

1.5 hours laboratory

Designed for students who have completed BOT 128 or the equivalent. Students will use testing software to prepare for the Microsoft Office User

Specialist (MOUS) certification examination, to prepare for employment examinations, or to receive a BOT certificate of proficiency in MS Access with detailed competencies. *May be repeated up to 3 times. Pass/No Pass only.*

**283ABC PREPARING FOR PERFORMANCE EXAMINATIONS IN MICROSOFT POWERPOINT .5 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: BOT 131 or equivalent with a grade of "C" or better or "Pass"

1.5 hours laboratory

Designed for students who have completed BOT 131 or the equivalent. Students will use testing software to prepare for the Microsoft Office User Specialist (MOUS) certification examination, to prepare for employment examinations, or to receive a BOT certificate of proficiency in MS PowerPoint with detailed competencies. *May be repeated up to 3 times. Pass/No Pass only.*

**298 SELECTED TOPICS IN BUSINESS OFFICE TECHNOLOGY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Business Office Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN BUSINESS OFFICE TECHNOLOGY 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Business Office Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

\*For additional information, see "Work Experience Requirements" under Academic Policies and Procedures.

**CADD TECHNOLOGY****115 ENGINEERING GRAPHICS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Introductory course in engineering drafting which covers the fundamentals of drafting using both mechanical instruments and the computer as drafting tools. Students will learn the fundamentals of engineering graphics as a universal language of communication in all engineering fields. Includes organization and drawing layouts, text, dimensions, scales, multiview projections, and pictorial drawings to visualize, represent and document basic engineering problems. *Not open to students with credit in ENGR 115, 124.*

CSU, UC, UC credit limit

**120 INTRODUCTION TO COMPUTER-AIDED DRAFTING AND DESIGN 3 UNITS**

Prerequisite: CADD 115 or ENGR 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: Working knowledge of basic computer operations and file administration  
2 hours lecture, 4 hours laboratory

Concepts, techniques and procedures of Computer-Aided Drafting and Design (CADD).

Introduces AutoCAD software as a drafting tool. Students will develop a basic functional understanding of computer-aided drafting. *Not open to students with credit in CADD 120ABCD, ENGR 119.*

CSU, UC, UC credit limit

### 125 3D SOLID MODELING 3 UNITS

Prerequisite: CADD 115 or ENGR 100 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None

Recommended Preparation: Working knowledge of basic computer operations and file administration  
2 hours lecture, 4 hours laboratory

Advanced graphic communication course using 3D parametric modeling techniques. Topics include 3D modeling using appropriate software (SolidWorks), feature based part construction using extrudes, cuts and revolves, advanced surface shaping using lofts and sweeps, assembly construction and constraining in an engineering design environment. Students will continue to develop 2D drafting skills including proper organization and layout of component drawing views, dimensioning and tolerancing, sectioning and detailing, detail descriptive geometry and manufacturing processes. *Also listed as ENGR 125. Not open to students with credit in ENGR 125.*

CSU, UC, UC credit limit

### 126 ELECTRONIC DRAFTING 3 UNITS

Prerequisite: CADD 120 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Application of electronic graphics to create all aspects of engineering support documentation. Includes all types: block diagrams, flow charts, wiring, and mechanical enclosures. Also covers Schematic Capture and Printed Circuit Board (PCB) layout and design using AutoCAD. Other software may be incorporated. ASME, ANSI, Military and NASA standards for engineering are discussed.

CSU

### 127 SURVEY DRAFTING TECHNOLOGY 3 UNITS

Prerequisite: CADD 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Professional Civil Engineering/Surveyor's office method drafting course that applies the basic skills and techniques acquired in CADD 115. Land surveying, land development procedures, legal descriptions, topographical analysis, earthworks, geographic control and subdivision processes will be covered.

CSU

### 128 DIMENSIONING AND TOLERANCING 3 UNITS

Prerequisite: CADD 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: CADD/ENGR 125 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Basic study in dimensioning and tolerancing of engineering drawings using ASME/ANSI Y14.5M-1994 specification.

CSU

### 131 ARCHITECTURAL COMPUTER-AIDED DRAFTING AND DESIGN 3 UNITS

Prerequisite: CADD 120 or ENGR 119 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Application of architectural graphics, symbols, patterns, layouts, text, dimensions and scales to

develop design drawings for small architecture, interior design, and space planning projects. Uses the parametric CADD program Revit and associated commands, techniques, and processes required for the creation of contract documents for residential projects using professional standards.

CSU

### 132 ADVANCED COMPUTER-AIDED DRAFTING AND DESIGN 3 UNITS

Prerequisite: CADD 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: Working knowledge of basic computer operations and file administration  
2 hours lecture, 4 hours laboratory

Focuses on advanced Computer-Aided Drafting and Design (CADD) topics such as concepts and application of three-dimensional constructions, editing and viewing capabilities of AutoCAD, 3D modeling, and AutoCAD customization. Techniques for creating lights, scenes, surface texture (bit-mapped/raster) materials, rendering and animation will also be covered.

CSU

### 133 ADVANCED ARCHITECTURAL COMPUTER-AIDED DRAFTING AND DESIGN 3 UNITS

Prerequisite: CADD 131 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 4 hours laboratory

Advanced application of architectural graphics, symbols, patterns, layouts, text, dimensions and scales to develop design drawings for small architecture, interior design and space planning projects. Uses the parametric CADD program Revit and associated commands, techniques and processes required for the creation of contract documents for residential projects using professional standards.

CSU

### 199 SPECIAL STUDIES OR PROJECTS IN CADD TECHNOLOGY 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in CADD Technology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN CADD TECHNOLOGY 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in CADD Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN CADD TECHNOLOGY 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in CADD Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## CHEMISTRY

### 102 INTRODUCTION TO GENERAL, ORGANIC AND BIOLOGICAL CHEMISTRY 5 UNITS

Prerequisite: Grade of "Pass" in MATH 090 or equivalent

Corequisite: None

Recommended Preparation: None

4 hours lecture, 3 hours laboratory

A one-semester course covering the basic principles of general, organic and biochemistry as needed to understand the biochemistry, physiology and pharmacology of the human body. Intended for students planning to transfer to a California State University nursing program. *Students with a grade of "C" or better in CHEM 115 and 116 are not eligible for this class.*

CSU, CSU GE, IGETC, UC, UC credit limit

### 105 CHEMISTRY AND CRIME 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Elementary principles of chemistry and their application to the field of forensic chemistry. Students will learn basic chemical principles and apply them to the chemical analysis of evidence.

AA/AS GE, CSU

### 113 FORENSIC CHEMISTRY 4 UNITS

Prerequisite: Grade of "Pass" in MATH 090 or equivalent

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

Elementary principles of chemistry with application to the field of forensic science. Students will learn basic chemical terminology and problem-solving techniques with a forensic science application. Chemical techniques for analyzing evidence will be studied in lecture and practiced in lab. *Students will not receive credit toward graduation for more than one of the following courses: CHEM 113, 115, 120.*

AA/AS GE, CSU, CSU GE, IGETC, UC, UC credit limit

### 115 FUNDAMENTALS OF CHEMISTRY 4 UNITS

Prerequisite: Grade of "Pass" in MATH 090 or equivalent

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

Elementary principles of inorganic and general chemistry with a brief introduction to organic and biochemistry. Previous chemistry background is not required. Recommended for students who need only a one-semester general chemistry course and for students entering paramedical and allied health fields. *Students will not receive credit toward graduation for more than one of the following courses: CHEM 115 and 120.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

### 116 INTRODUCTORY ORGANIC AND BIOCHEMISTRY 4 UNITS

Prerequisite: CHEM 115 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

The study of carbon compounds with emphasis on their structure, properties and reactivity. Introduction to the structure of the major classes of biomolecules—carbohydrates, lipids and proteins—and their relationship to the major classes of organic compounds.

AA/AS GE, CSU, CSU GE, IGETC, UC, UC credit limit

**120 PREPARATION FOR GENERAL CHEMISTRY****4 UNITS**

Prerequisite: MATH 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

Elementary principles of chemistry approached from a problem-solving perspective necessary to succeed in CHEM 141. Intensive study in the areas of problem solving, stoichiometry, chemical nomenclature, basic atomic theory and bonding, solutions, acid-base chemistry, redox reactions and gas laws. The laboratory will be an introduction to quantitative techniques, descriptive chemistry, gas laws, error analysis and data treatment. *Students will not receive credit toward graduation for more than one of the following courses: CHEM 115 and 120.*

AA/AS GE, CSU, CSU GE, IGETC, UC, UC credit limit

**141 GENERAL CHEMISTRY I****5 UNITS**

Prerequisite: CHEM 120 or equivalent with a grade of "C" or better or "Pass" or the Chemistry 141 assessment and MATH 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Basic principles and concepts of chemistry with emphasis in the areas of stoichiometry, thermochemistry, atomic structure, chemical bonding and gas laws. The laboratory is an introduction to quantitative analysis and the principles of atomic and molecular structures.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**142 GENERAL CHEMISTRY II****5 UNITS**

Prerequisite: CHEM 141 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 6 hours laboratory

Basic principles and calculations of chemistry with emphasis in the areas of equilibrium, thermodynamics, descriptive chemistry of the periodic table, intermolecular forces, properties of liquids, solids and solutions, kinetics, electrochemistry, coordination compounds and nuclear chemistry. The laboratory will continue on the same basis as CHEM 141 but will also include qualitative analysis.

CSU, CSU GE, IGETC, UC

**198 SUPERVISED TUTORING****0 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN CHEMISTRY****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Chemistry under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**231 ORGANIC CHEMISTRY I****5 UNITS**

Prerequisite: CHEM 142 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

4 hours lecture, 3 hours laboratory

Synthesis and reactions of carbon compounds, primarily aliphatic compounds. The relationship of structure to properties, reactivity and mechanism of reaction will be emphasized. This course, which is equivalent to the first semester of a two-semester sequence offered at four-year institutions, is intended for biology, chemistry and pre-medical majors needing either one or two semesters of organic chemistry.

CSU, CSU GE, IGETC, UC

**298 SELECTED TOPICS IN CHEMISTRY****1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Chemistry not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN CHEMISTRY****1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Chemistry not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

**CHILD DEVELOPMENT****101 PARENT EDUCATION****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Primarily designed for parents of children enrolled in the Cuyamaca College Child Development Center. Includes an overview of child development principles and an exploration of the role of parents in supporting the development of their children. Provides guidance in effective parenting strategies reflecting family and cultural beliefs.

CSU

**106 PRESCHOOL OBSERVATION AND EXPERIENCE****1 UNIT**

Prerequisite: None

Corequisite: CD 123 or 125 or previous completion of either course with a grade of "C" or better

Recommended Preparation: None

3 hours laboratory

A laboratory experience at the Cuyamaca College Child Development Center which includes observing and recording the behavior of toddlers and preschool children and working in the classroom with children. This course is designed to reinforce and augment understanding of principles and techniques for observing, assessing, planning and working with young children through direct experience.

CSU

**110 PARENT PARTICIPATION****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours laboratory

A laboratory of planned experiences and activities for parents of children enrolled in the Cuyamaca College Child Development Center. Designed to reinforce and augment understanding of principles of parent-child interaction covered in CD 101. **Pass/No Pass only.**

CSU

**115 CHANGING AMERICAN FAMILY****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of the contemporary American family with emphasis on changes in form, functions and expectations. The history of the family, both public and private, will be considered and examined in relation to the effects of class, ethnicity and social policy. The effects on the family of common life events experienced by individuals and family members will be covered including sexuality, mate selection, marriage, childbearing, the working family, divorce, domestic violence, and aging. The future of the family including implications for the individual and society will be discussed.

AA/AS GE, CSU, CSU GE, UC

**116 PARENT EDUCATION II****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Primarily designed for parents of children enrolled in the Child Development Center. Builds on the basic foundation of child development principles and explores the role of parents in supporting the development of their children. Guidance techniques and effective parenting skills will be emphasized.

CSU

**123 INTRODUCTION TO PROGRAMS AND CURRICULUM FOR YOUNG CHILDREN****3 UNITS**

Prerequisite: None

Corequisite: CD 106 or concurrent enrollment in a licensed child care program

Recommended Preparation: None

3 hours lecture

Provides an overview of child development including developmentally appropriate curriculum practices, regulations, classroom environment, and management techniques for a variety of early childhood programs. Students will explore career options and their aptitude for this profession. Students are required to observe and report on different types of programs in the community.

CSU

**124 INFANT AND TODDLER DEVELOPMENT****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Study of the process of human development from conception to 36 months as determined by heredity, society and human interaction with implications for child guidance. Prenatal development and the birth process are emphasized. Observations of a neonate, infant and toddler are required.

CSU



**125 CHILD GROWTH AND DEVELOPMENT****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Covers the process of human development from conception through adolescence as determined by heredity, society, and personal human interaction with implications for child guidance. Observation of children of various ages is an integral part of the course.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**126 ART FOR CHILD DEVELOPMENT****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Exploration of the importance and value of creative art activities for young children. Experiences with a variety of art media; evaluation and selection of materials appropriate for toddlers, preschool children and children with special needs.

*CSU*

**127 SCIENCE AND MATHEMATICS FOR CHILD DEVELOPMENT****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 125 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Exploration of the importance and value of science and mathematics in programs for young children. Understanding and devising ways of teaching basic concepts, evaluating activities and constructing appropriate materials for young children and children with special needs. Use of computers with children is included.

*CSU*

**128 MUSIC AND MOVEMENT FOR CHILD DEVELOPMENT****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Exploration of the importance and meaning of music and movement for toddlers, preschool children and children with special needs. Areas emphasized will be listening skills, singing, movement education and creating instruments.

*CSU*

**129 LANGUAGE AND LITERATURE FOR CHILD DEVELOPMENT****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 125 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Designed to help teachers build language opportunities into every curriculum area, and to explore methods of fostering language and emerging literacy skills for young children and children with special needs. Includes the study of children's literature, standards for evaluating books and computer software, techniques of storytelling and puppetry.

*CSU*

**130 CURRICULUM: DEVELOPMENTALLY APPROPRIATE PRACTICES****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 123, 125, 126, 127, 128, 129, 131 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Advanced course in developmentally appropriate curriculum practices for early childhood programs. Looks at contemporary

philosophies and current best practices in curriculum activities, methods and materials appropriate for planning a program for young children.

*CSU*

**131 CHILD, FAMILY AND COMMUNITY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 123, 125 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Study of the influence of different variables impacting the child and family dynamic. Emphasis on establishing effective teacher, caregiver and family relationships. Community resources and agencies that strengthen families will be examined. Students will have the opportunity to develop strategies to support the wide range of families in a multicultural society. Required by the California State Department of Social Services for teachers and directors.

*CSU*

**132 FIELD EXPERIENCE SEMINAR****3 UNITS**

Prerequisite: CD 123, 125, 126, 127, 128, 129, 131 and 130 or 143 or equivalent with a grade of "C" or better or "Pass"

Corequisite: CD 133 or 150 or 170

Recommended Preparation: None

3 hours lecture

This seminar is for the student participating in field experience as a student teacher in early childhood development programs. Covers positive guidance skills for use with infants, toddlers, and preschool and school-age children in group care settings. Students will develop skills in authentic assessment and portfolio development for children, positive communication skills for working with families, and professional responsibilities and involvement in the field. Students will explore strategies for job search including resumes, professional portfolios and interviewing.

*CSU*

**133 FIELD EXPERIENCE FOR CHILD DEVELOPMENT****2 UNITS**

Prerequisite: CD 123, 125, 126, 127, 128, 129, 130, 131 or equivalent with a grade of "C" or better or "Pass"

Corequisite: CD 132 or previous enrollment

Recommended Preparation: None

10 hours paid or 8 hours unpaid work experience per week

Under supervision at an approved field placement site, students will participate in all classroom activities. Students will develop and supervise learning experiences, conduct group-times, handle routines and respond to individual and group needs of young children.

*CSU*

**134 HEALTH, SAFETY AND NUTRITION FOR TEACHERS OF YOUNG CHILDREN****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Emphasizes strategies for applying holistic health, safety and nutrition in schools and child care settings. Designed for teachers, parents or others who desire current information on concepts of health, safety and nutrition as it applies to children from infancy through school age. Covers laws, practices and curriculum regarding accident prevention, childhood illness, and nutritional guidelines that will help adults to assist children to develop good habits, attitudes and responses that lead to healthy and safe lifestyles.

*CSU*

**135 PARENT-CHILD INTERACTION****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

For teachers, parent educators and parents which offers skills and resources that promote more effective parent-child interaction. The parent-child relationship throughout the life cycle will be emphasized. Issues include sex education, divorce, single parenting, aging and death.

*CSU*

**136 ADULT SUPERVISION: THE MASTER TEACHER'S ROLE****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: 12 units of CD as defined by Title 22 licensing regulations: 3 units in Child Growth and Development (CD 125), 3 units in Child, Family and Community (CD 131), 6 units in Program Curriculum (CD 123 or 126 or 127 or 128 or 129 or 130), and currently teaching in a preschool or child care setting in the role of lead teacher or head teacher or other supervisory capacity.  
 3 hours lecture

Principles and practical techniques for working with and fostering the professional development of co-teachers, aides, parents, student teachers and volunteers in preschool and child care programs. Emphasis on the role of the classroom teacher or director who functions as master teacher, lead teacher and/or mentor to adults while simultaneously addressing the needs of children, families and the program. Students will have opportunities to develop skills in delegation as well as adult problem solving and communication.

*CSU*

**137 ADMINISTRATION OF CHILD DEVELOPMENT PROGRAMS I****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: 12 units in Child Development as required by Title 22 licensing regulations: 3 units of Child Development (CD 125), 3 units of Child, Family and Community (CD 131), and 6 units of Program Curriculum (CD 123 and 126 or 127 or 128 or 129 or 130)  
 3 hours lecture

Designed for the beginning director of child care and preschool programs. Includes administrative tools, knowledge and techniques needed to organize, open and operate a child development facility. Also includes budget, management, regulatory laws, and development of school policies and procedures. This course is required by the California Department of Social Services and California Department of Education for child care and preschool program directors and site supervisors.

*CSU*

**138 ADMINISTRATION OF CHILD DEVELOPMENT PROGRAMS II****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 137 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Designed for the experienced director of child care and preschool programs. The focus is on human relationships in the professional setting with an emphasis on political, fiscal, and working conditions and how they affect turnover and staff morale, support for families in the program, and managing personal growth and development.

*CSU*

**139 INFANT/PARENT DEVELOPMENT****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1.5 hours lecture, 1.5 hours laboratory  
 Lecture and discussion group to support parents as growing adults while helping them to understand and appreciate principles of infant and toddler development. Enrolled parents will bring their infants to each three-hour class meeting for interaction and observation by child development students.

CSU

**141 WORKING WITH CHILDREN WITH SPECIAL NEEDS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Focuses on strategies for working with children with special needs, including physical challenges, learning difficulties, prenatal exposure to drugs, limited English skills, giftedness and behavior disorders. With an emphasis on inclusion in the regular classroom and child care settings, the class will include compliance with legislation, referral processes, working with families, and modification of environment and curriculum.

CSU

**143 INFANT/TODDLER CURRICULUM****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 124 or 125 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture  
 Prepares students to develop an infant and/or toddler curriculum including design of a developmentally appropriate learning environment. Examination of the philosophies and methods currently in practice. Teacher competencies necessary for work with children in these stages will be emphasized.

CSU

**145 CHILD ABUSE AND FAMILY VIOLENCE IN OUR SOCIETY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Examines child abuse and neglect, domestic violence, elder abuse and community violence. Safety and self protection will be studied with an emphasis on how the classroom teacher, foster parents and members of the general public can recognize, prevent, report and intervene in cases of child abuse and domestic violence.

CSU

**148 CURRICULUM FOR SCHOOL AGE CHILD CARE****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 125 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Developmental needs, appropriate curriculum and guidance techniques for children ages 6 to 12 in a child care setting. Meets Title 22 curriculum requirements for teachers and directors in extended day care programs. Also useful for recreation and youth group activities.

CSU

**149 SCHOOL AGE CHILD CARE PROGRAM PLANNING****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 148 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture  
 Continuation and expansion of principles introduced in CD 148 with a focus on overall program design for school age child care. Special emphasis on working with children labeled "at risk" and parent communication.

CSU

**150 FIELD EXPERIENCE FOR SCHOOL AGE CHILD CARE****2 UNITS**

Prerequisite: CD 125, 131, 134, 148, 149 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: CD 132 or previous enrollment  
 Recommended Preparation: None  
 10 hours paid or 8 hours unpaid work experience per week  
 Under supervision at an approved field placement site in a school age child care program, students will participate in all activities. Students will develop and supervise learning experiences, conduct activities, handle daily routines and respond to individual and group needs.

CSU

**153 DIVERSITY ISSUES IN EARLY CHILDHOOD EDUCATION****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 An analysis of the many contexts and variables related to an individual's socialization process and how these factors impact on one's work with children and families. Using an anti-bias approach, the class will examine and discuss topics related to ethnicity, religion, race, sex, disability and lifestyles as represented in schools and society at large. Students will gain greater understanding of their own attitudes toward groups other than their own and apply this knowledge to their work with young children, including creating spaces and curriculum for children and families that are free from bias. Applicable to the Child Development Permit Master Teacher multicultural specialization. Relevant for teachers, parents and others who work with families and children.

CSU

**157 FOOD AND NUTRITION FOR CHILDREN****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Designed to provide students with information and resources related to the nutritional needs of children from birth until approximately 12 years of age. Topics include menu planning and nutrition education, food safety, storage and preparation appropriate for a wide variety of indoor and outdoor settings.

CSU

**170 FIELD EXPERIENCE WITH INFANTS AND TODDLERS****2 UNITS**

Prerequisite: CD 123, 124, 125, 126, 127, 128, 129, 143 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: CD 132 or previous enrollment  
 Recommended Preparation: None  
 10 hours paid or 8 hours unpaid work experience per week  
 Under supervision at an approved field placement site, students will participate in all classroom activities. Students will design and modify the environment, develop and supervise

learning experiences, handle routines and respond to individual and group needs under two years of age.

CSU

**199 SPECIAL STUDIES OR PROJECTS IN CHILD DEVELOPMENT****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Child Development under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**200 INTRODUCTION TO OUTDOOR EDUCATION PROGRAMS****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 125 or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture  
 An introduction and exploration of outdoor education programs for students considering employment in camp settings. Students will be introduced to a variety of program philosophies and special interest camps. Outdoor safety, environmental awareness, and designing meaningful activities that are engaging and appropriate for children are the main emphasis of the course. The class will have a practical application component. Students will be expected to participate in a field trip to a local outdoor outfitter. Provides an overview of classes required in the Outdoor Leadership certificate of proficiency and may assist students in determining future educational goals.

CSU

**201 CREATIVE ACTIVITIES FOR OUTDOOR PROGRAMS****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CD 125 or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture  
 Designed for students planning to work in outdoor education or environmental education programs. Focuses on the planning and development of craft projects appropriate for outdoor education settings. Projects will incorporate environmental and science-related concepts. Emphasis on practical application including arts and crafts materials and using craft activities and projects as instructional tools. Students will present projects and compile a resource of the ideas presented in class for future reference.

CSU

**202 FIELD EXPERIENCE FOR RECREATIONAL LEADERSHIP****1 UNIT**

Prerequisite: CD 125, 200, 201 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 75 hours paid or 60 hours unpaid work experience  
 Under supervision at an approved field placement site, students will participate in recreational program activities in an outdoor education or camp facility. Students will take part in planned recreational activities, develop and implement learning adventures, supervise groups of multi-aged children using positive group management techniques, respond to individual needs, participate in all aspects of camp life including meal preparation and service, setting up, taking down and maintaining outdoor equipment, and assuring the health,

safety and enjoyment of camp participants.  
*Note: Fingerprinting will be required for field experience site and some sites may require CPR certification.*

CSU

### 203 COOKING EXPERIENCES WITH YOUNG CHILDREN 1 UNIT

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Designed for child development students and teachers currently working in the field and introduces students to educational, cross-curricular, and multicultural benefits of cooking experiences with young children. Areas of emphasis include benefits of cooking activities, nutrition, health and safety issues, and the connections to language, science and math learning. **Pass/No Pass only.**

CSU

### 210 WORKING WITH YOUNG CHILDREN WITH CHALLENGING BEHAVIORS 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Provides students with a practical foundation for working with children with challenging behaviors in early childhood programs. Key components are developmentally appropriate guidance and proactive management techniques, preventative and intervention strategies, and adaptations of environment and settings. The importance of a child's developmental age, family involvement and community resources will be included.

CSU

### 211 FIELD EXPERIENCE IN EARLY CHILDHOOD INTERVENTION 2 UNITS

Prerequisite: CD 125, 141, 145, 210 and two of the following: CD 126, 127, 128, 129 or equivalent with a grade of "C" or better or "Pass"

Corequisite: CD 132 or previous enrollment

Recommended Preparation: CD 131, 134 or equivalent with a grade of "C" or better or "Pass" 10 hours paid or 8 hours unpaid work experience per week

Provides supervised field experience as an assistant in an inclusive group early childhood or special education program or an individual early intervention setting. Under supervision, students will participate in routines and procedures and will develop and implement appropriate activities as required.

CSU

### 298 SELECTED TOPICS IN CHILD DEVELOPMENT 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Child Development not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN CHILD DEVELOPMENT 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Child Development not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## COMMUNICATION

### 110 INTRODUCTION TO MASS COMMUNICATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed to provide students with a basic understanding of mass media practices and influences in the United States (and globally). Topics of discussion include current media practices, problems, issues and significant trends with special emphasis on the ways media and society influence and change each other. Students will explore the history of mass media theories, ethics, roles and responsibilities, contributions of diverse groups, gender issues, and legal rights and restrictions. Mass media contexts will include news advertising, public relations, photojournalism, newspapers, radio, television, film, recording industry, book publishing, network/cable and online communication.

CSU, CSU GE, IGETC, UC

### 120 INTERPERSONAL COMMUNICATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Provides an opportunity for students to learn and apply in daily life practical principles of interpersonal communication. The emphasis is on personal, situational and cultural influences and interaction. It is designed to assist students in improving their own interpersonal communication skills. Attention is given to human perception, interpersonal dynamics, listening, conflict management, verbal and nonverbal symbol systems.

AA/AS GE, CSU, CSU GE

### 122 PUBLIC SPEAKING 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Provides an opportunity for general improvement in the basic process of public speaking with emphasis on individual to audience contexts. Introduction to rhetorical theory is included. Attention is given to the basic elements of topic selection, analysis of diverse audiences, research, organization, argumentation and delivery of speeches and presentations.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 123 ADVANCED PUBLIC SPEAKING 3 UNITS

Prerequisite: COMM 122 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Advanced training in the preparation and delivery of common types of public speaking. Emphasis on new theoretical approaches to the process of oral communication.

CSU, UC

### 124 INTERCULTURAL COMMUNICATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

To experience and learn about intercultural communication: the study of face-to-face communication between persons with significantly different beliefs, values, expectations and assumptions. Theoretical overview is presented; however, the course

emphasis relies on its unique composition of students from a variety of cultural backgrounds (national origin, ethnicity, age, gender, etc.) who are encouraged to enroll. The resulting student-to-student dynamic offers a unique opportunity to experience and learn about practical similarities and differences between people of different cultural backgrounds.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 135 ORAL INTERPRETATION OF LITERATURE 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Provides an opportunity for students to develop skills in oral interpretation of various types of literature. Draws on the traditions of oral interpretation and literary analysis. Students will explore works of poetry, prose, and dramatic literature. Emphasis on the insight to be gained from analyzing fine literature and sharing it with others.

CSU, UC

### 136 READERS THEATRE 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed to teach the theory, concepts and history of Readers Theatre. Provides an opportunity for students to learn the principles of literary analysis and oral interpretation, and to study methodologies and techniques in the development of written material from text into a medium of group communication.

CSU, UC

### 137 CRITICAL THINKING IN GROUP COMMUNICATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed to assist students in the development of critical thinking and decision making skills in the small group communication context. There is an emphasis on the basic elements of critical thinking such as evidence, reasoning and language. In addition to examining these basic elements, students become familiar with leadership strategies, discussion techniques, and conflict management used in groups.

AA/AS GE, CSU, CSU GE, UC

### 145 ARGUMENTATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Emphasizes the construction and analysis of public argument. Covers the theory of argument, the processes and development of arguments, and the application of argument to decision making.

AA/AS GE, CSU, CSU GE, UC

### 199 SPECIAL STUDIES OR PROJECTS IN COMMUNICATION 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Communication under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**240ABCD INTERCOLLEGIATE FORENSICS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Designed to give students an opportunity to improve their public speaking skills through intercollegiate forensic competition and other realistic speaking situations outside the classroom. Class and individual instruction is provided in the following speaking categories: public address, oral interpretation, impromptu, debate, and readers theatre. *May be taken for 4 semesters.*

CSU

**298 SELECTED TOPICS IN COMMUNICATION****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Communication not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN COMMUNICATION****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Communication not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## COMMUNICATION • COMPUTER AND INFORMATION SCIENCE

*See Business Office Technology for specific Microsoft application courses (e.g., Word, PowerPoint, Excel, Access).*

**105 INTRODUCTION TO COMPUTING****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Introductory small computing course for those desiring beginning computer knowledge and skills. Includes an overview of a typical personal computer system including input and output devices, the processor, and storage devices. Also includes hands-on experience with a computer and popular application software. Emphasis on those skills and knowledge needed to use and maintain a home or small business computer.

CSU

**110 PRINCIPLES OF INFORMATION SYSTEMS****4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Applications of computerized systems in business organizations. Basic concepts of computer organization, data processing systems, decision support systems and systems analysis. The lab portion consists of hands-on problem solving using software applications including spreadsheets and databases.

CSU, UC

**120 COMPUTER MAINTENANCE AND A+ CERTIFICATION****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 110 or equivalent with a grade of "C" or better or "Pass", basic computer skills (basic knowledge of computer hardware, operating systems, applications software)  
 2 hours lecture, 3 hours laboratory  
 Prepares students for the A+ Certification exam, an industry-sponsored test that establishes a benchmark level of knowledge and competence expected of computer service technicians in entry-level positions. A+ Certification also serves as the foundation for computer service professionals who are pursuing other valuable industry certifications such as the Cisco Certified Networking Associate (CCNA), Network+, and Microsoft Certified Professional (MCP). Students will gain a comprehensive knowledge base in computer hardware, DOS and Windows operating systems, networking basics, printers, and customer service. Hands-on labs using the latest computer components and operating systems provide an opportunity for students to enhance their skills in assembling, disassembling, servicing, troubleshooting, and upgrading advanced computer and networking systems.

CSU

**121 NETWORK CABLING SYSTEMS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Introduces students to the basic concepts of network cabling systems. Focuses on network cabling design, installation, testing, certification and troubleshooting. Descriptions of industry trends and standards, types of copper and optical fiber cabling and connectors, and comparisons between physical and logical network topologies are covered. Students will develop knowledge and skills in installing and testing voice and data cable connectors and jacks, horizontal links and channels, pulling and terminating cables, cable system certification, telecommunications room design, and patch panel installation. The lab portion allows students to verify concepts introduced in class and to develop the knowledge and skills required to build, test, operate and maintain the physical aspects of voice, video and data networks.

CSU

**125 NETWORK+ CERTIFICATION****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Basic computer skills (basic knowledge of computer hardware, operating systems and applications software)  
 2 hours lecture, 3 hours laboratory  
 This practical course is intended for anyone interested in learning computer networking with an emphasis on earning the Computing Technology Industry Association's certification Network+. The Network+ certification is a foundation-level, vendor-neutral international industry credential that validates the knowledge of networking professionals. Earning a Network+ certification demonstrates that a candidate can describe the features and functions of networking components, and possesses the knowledge and skills needed to install, configure and troubleshoot basic networking hardware, protocols and services. The certification indicates technical ability in the areas of media and topologies, protocols and standards, network implementation, and network support. Throughout the course, theory will be demonstrated and practiced in laboratory exercises. Lectures, laboratories and practical

assignments will emphasize skills needed to work effectively in the networking environment and to earn the Network+ certification.

CSU

**140 DATABASES****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 110 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Beginning course in database software to provide students with a solid background in database applications and operation. Students will create, update and retrieve information using a computer and database software. Beneficial for those who wish to use the computer to file, organize, retrieve and create reports from data.

CSU

**161 FUNDAMENTALS OF TELECOMMUNICATIONS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 120, 121 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Introduces students to the basic concepts of telecommunications, beginning with how communication signals are generated, encoded, transmitted and received over telecommunications channels. Theory of analog and digital signals, frequency spectra, bandwidth, modulation, and multiplexing techniques are introduced and demonstrated. Covers the history of telecommunications technologies, industry and governmental policy, and how this history has led to the modern public telecommunications networks. Networking systems and equipment are explored including transmission and reception technology, switching systems, and transmission media such as optical fiber, copper and wireless. Finally, students are introduced to the technological advances in broadband and convergence technologies and the merging of voice, data and video applications on a single network. The lab portion allows students to verify concepts introduced in class and develop the knowledge and skills required to build, test, operate and maintain telecommunications networks.

CSU

**162 TECHNICAL DIAGRAMMING USING MICROSOFT VISIO****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Basic computer skills  
 3 hours laboratory  
 Networking and telecommunications professionals must know how to create technical diagrams and drawings and to use computer tools to manage Information Technology (IT) projects. Using Microsoft Visio, students will learn how to create basic and advanced networking and telecommunications diagrams and drawings, building plans, project schedules and flow charts. Students will also learn how to visualize and create presentations of complex technical and business information systems. Challenging case studies will be used to provide real-world technical and business experiences.

CSU

**170ABCD COMPUTER GRAPHICS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 110 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Beginning course in producing computer graphics utilizing a personal computer. Lectures, demonstrations and hands-on experience operating a computer and laser printer using

page composition and graphics software. Utilizes a popular graphics software package to produce graphical presentations.

CSU

### 190 WINDOWS OPERATING SYSTEM 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 110, 120 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

Provides comprehensive, hands-on application, use and training on a Windows client computer operating system for both beginning-and intermediate-level students. Instruction will include: operating system installation and configuration, graphical user interface and command-line commands, hardware installation and configuration, file system management, user and group management, security configuration, network configuration and management, troubleshooting and disaster recovery.

CSU

### 191 LINUX OPERATING SYSTEMS 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 110, 120 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

Provides comprehensive, hands-on application, use and training on a Linux client computer operating system for both beginning- and intermediate-level students. Instruction will include: operating system installation and configuration, graphical user interface and command-line commands, hardware installation and configuration, file system management, user and group management, security configuration, network configuration and management, troubleshooting and disaster recovery.

CSU

### 198 SUPERVISED TUTORING 0 UNIT

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

### 199 SPECIAL STUDIES OR PROJECTS IN COMPUTER AND INFORMATION SCIENCE 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Computer and Information Science under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 201 CISCO NETWORKING ACADEMY I EXPLORATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 299 (CCNA1 Discovery) or CIS 120 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

First of four courses designed to provide classroom and laboratory experience in current and emerging networking technologies, and to help prepare for certification as a Cisco Certified Network Associate (CCNA). Introduces the architecture, structure, functions, components,

and models of the Internet and other computer networks. Uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced. Labs use a "virtual Internet environment" consisting of servers, routers, and switches to allow students to analyze real data within a controlled network environment. Packet Tracer (PT) simulation software activities help students analyze protocol and network operation along with practicing network design and configuration. At the end of the course, students build simple LAN topologies by applying basic principles of cabling; perform basic configurations of network devices including routers and switches; and implement IP addressing schemes.

CSU

### 202 CISCO NETWORKING ACADEMY II 3 UNITS

Prerequisite: CIS 201 or completion of CCNA1 at another Cisco Networking Academy

Corequisite: None

Recommended Preparation: CIS 120 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

Second of four courses designed to provide classroom and laboratory experience in current and emerging networking technology, and to help prepare for certification as a Cisco Certified Network Associate (CCNA). Covers the architecture, components and operation of routers, and explains the principles of routing and routed protocols. Students analyze, configure, verify and troubleshoot the primary routing protocols RIPv1, RIPv2, OSPF and EIGRP. By the end of the course, students will be able to recognize and correct common routing issues and problems.

CSU

### 203 CISCO NETWORKING ACADEMY III 3 UNITS

Prerequisite: CIS 202 or successful completion of CCNA2 at another Cisco Networking Academy

Corequisite: None

Recommended Preparation: CIS 120 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

Third of four courses designed to provide classroom and laboratory experience in current and emerging networking technology, and to help prepare for certification as a Cisco Certified Network Associate (CCNA). Covers the architecture, components, and operation of switches and wireless routers. Explains the principles of LAN switching topologies, switching protocols, wireless topologies, and wireless security. Students analyze, configure, verify, and troubleshoot switches; switching protocols such as VLANs, VTP, STP and VLAN tagging; and wireless routers. By the end of the course, students will be able to recognize and correct common switching issues and problems.

CSU

### 204 CISCO NETWORKING ACADEMY IV 3 UNITS

Prerequisite: CIS 203 or successful completion of CCNA3 at another Cisco Networking Academy

Corequisite: None

Recommended Preparation: CIS 120 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

Fourth of four courses designed to provide classroom and laboratory experience in current and emerging networking technology, and to help prepare for certification as a Cisco Certified Network Associate (CCNA). The primary focus is on accessing wide area networks (WAN). The

goal is to develop an understanding of various WAN technologies to connect small to medium-sized business networks. Topics include: WAN converged applications; Quality of Service (QoS); WAN connectivity using Point-to-Point Protocol (PPP), Frame Relay protocol, and Broadband Links (Cable, DSL, VPN); WAN security concepts including types of threats, how to analyze network vulnerabilities, general methods for mitigating common security threats, and types of security appliances and applications; principles of traffic control and access control lists (ACLs); configuring Network Address Translation (NAT) and Dynamic Host Control Protocol (DHCP); IPv6 addressing concepts; and using Cisco Router and Security Device Manager (SDM) Graphical User Interface to configure router security and implement IP addressing services. Students learn how to detect, troubleshoot and correct common Enterprise network implementation issues.

CSU

### 205 CISCO NETWORKING ACADEMY V 3 UNITS

Prerequisite: CIS 204 or successful completion of CCNA4 at another Cisco Networking Academy, or possess a current CCNA certification

Corequisite: None

Recommended Preparation: CIS 120, 190 or equivalent with a grade of "C" or better or "Pass"  
2 hours lecture, 3 hours laboratory

CCNP1 Advanced Routing is the fifth level of Cisco Networking Academy courses and one of four courses leading to the Cisco Certified Networking Professional designation. Advanced Routing enhances students' skills necessary for implementing and supporting enterprise-class routing networks. Cisco Networking Academy students continue increasing their experience with scalable network design, routing protocols, and route optimization. The course covers implementing the EIGRP (Enhanced Interior Gateway Routing Protocol, Multi-area OSPF [Open Shortest Path First]), IS-IS (Intermediate System to Intermediate System) and BGP (Border Gateway Protocol) routing protocols; an explanation of applications that utilize multicast technology and the benefit multicasting provides to the user of the applications; and an introduction to IPv6, IPv6 addressing and routing, OSPFv3, IPv6 tunneling, and IPv4 to IPv6 translation. This lab-intensive course provides students with hands-on experience by performing labs and case studies using Cisco networking devices. The course content maps directly to the Building Scalable Cisco Internetworks (BSCI 642-901) qualifying exam for the Cisco Certified Network Professional.

CSU

### 211 WEB MARKUP LANGUAGES 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: Basic computer skills (ability to use Internet, word process documents, manage electronic files)

2 hours lecture, 3 hours laboratory

Hands-on training in web publishing using a markup language such as HTML, XHTML or XML and a stylesheet language such as CSS (Cascading Style Sheets) or XSL (eXtensible Stylesheet Language). Students will create a simple website and upload it to a web server. Techniques for creating web presentations compliant with current World Wide Web Consortium (W3C) standards and viewable by most web browsers will be stressed. Topics include formatting text, organizing a website, integrating images, linking to external files, linking to email and FTP sites, principles of good web design, lists, tables, frames, imagemaps, forms, stylesheets, and the cascade mechanism.

CSU

**212 INTRODUCTION TO WEB DEVELOPMENT****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: Basic computer skills (ability to use Internet, word process documents, manage electronic files)

2 hours lecture, 3 hours laboratory

Introductory web development course emphasizing production and design using web authoring software. Includes screen design, navigation design and color design. Students will apply skills and concepts to plan, develop and publish a small website.

CSU

**213 ADVANCED WEB DEVELOPMENT****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: Experience with web and database design and development which can be learned in CIS 140 and 212. Students must have experience with the authoring tool designated in the schedule. CIS 140 can be taken at the same time as 213.

2 hours lecture, 3 hours laboratory

Students will use a WYSIWYG authoring tool to create dynamic websites useful for e-commerce. Production topics include database integration, forms, cascading style sheets, script editing, searches. Design focus is on usability and accessibility. Students will complete a series of short assignments as well as a final project.

CSU

**214 WEB SERVER MANAGEMENT****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 190, 290 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

Focuses on installing, configuring, maintaining and managing Internet and intranet web servers containing multiple websites using both Microsoft Internet Information Server and Apache. Students will install and configure a web server and related services. Security and maintenance techniques will be used.

CSU

**215 JAVASCRIPT PROGRAMMING****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 211, CS 119 or equivalent with a grade of "C" or better or "Pass" or programming experience

2 hours lecture, 3 hours laboratory

Introductory course in JavaScript programming focusing on creating interactive web pages. Topics include integrating JavaScript with HTML (Hypertext Markup Language), event-handling, array, and writing and calling JavaScript functions. Students will use JavaScript to perform real-world tasks and create a variety of effects including form validations, image rollovers, pull-down menus, pop-up windows, form calculations, and more.

CSU

**216 ACTIVE SERVER PAGES****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 211 or HTML experience, 212 or experience developing a website, 213; CS 180ABCD or 182 or experience with Visual Basic or Java

2 hours lecture, 3 hours laboratory

Covers the development of programs used in websites using Active Server Pages (ASP) to deliver dynamic web content. Topics include database connectivity, security and e-commerce applications in website operations. Emphasis on programming in ASP to create dynamic web content.

CSU

**219 PHP/MYSQL DYNAMIC WEB-BASED APPLICATIONS****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 140 (or some experience with database development), 211 (or proficiency with HTML or XHTML)

2 hours lecture, 3 hours laboratory

Provides students with the knowledge and skills necessary to use the PHP scripting language to develop dynamic web-based applications. Topics include the fundamentals of scripting, using PHP with HTML forms, creating functions, and integrating with the MySQL database.

CSU

**221 DIGITAL VIDEO EDITING AND DVD PRODUCTION****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 110 or equivalent with a grade of "C" or better or "Pass" or basic computer skills

2 hours lecture, 3 hours laboratory

Using video editing software, students will produce video in a variety of formats including web video and DVDs with menus. Video editing techniques will be emphasized. Students will also learn how to shoot video with a digital camera and import video captured from a variety of sources.

CSU

**240 ADVANCED DATABASES****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 140 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

Continuation of the study of database software. Students will create, update and retrieve information using applications based on the database programming language or Structured Query Language (SQL). Beneficial for students who wish to create very efficient customized applications.

CSU

**242 DATABASE DESIGN****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 140, 240 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

Design and implement a Structured Query Language (SQL) Server database. Create and maintain database objects and implement database integrity. Use Transact-SQL to query a SQL Server database and manage and manipulate data stored in that database. Manage a SQL Server database by setting appropriate security settings. Perform maintenance and optimization of a SQL Server database.

CSU

**261 TELECOMMUNICATIONS AND CONVERGENCE TECHNOLOGIES****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 161, 201 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

This unique course combines topics such as basic telecommunications engineering and preparation for the Convergence Technologies Professional (CTP) Certification with comprehensive hands-on labs. Students learn signal analysis, modulation, multiplexing, access techniques and antenna design. Emerging technologies such as 10 Gigabit Ethernet, Voice over IP (VOIP), wireless networks and broadband access, digital IP-based network video cameras, free-space optics, and convergence technologies are explored and

demonstrated. Prepares students to take the CTP Certification exam sponsored by the Telecommunications Industry Association (TIA), an industry-recognized certification often required for employment in the field of telecommunications. The laboratory component allows students to verify concepts introduced in class and develop the prerequisite knowledge and skills required to design, build, test, operate and maintain modern telecommunications networks.

CSU

**262 FUNDAMENTALS OF WIRELESS LANS****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 202 or semester II of the Cisco Networking Academy at any accredited institution, 120 or A+ equivalent, 121 or equivalent

2 hours lecture, 3 hours laboratory

Introductory course in wireless LANs (Local Area Networks) focusing on the design, planning, implementation, operation and troubleshooting of wireless LANs. Covers material included in the Cisco Wireless LAN Support Specialist designation (WLANFE 9E0-581) and the Certified Wireless Network Administrator (CWNA) exam, the first of four exams for CWNE. A valid CCNA (Certified Cisco Network Administrator) is required to be eligible for the above WLANFE 9E0-581 exam. Includes a comprehensive overview of technologies, security and design "best practices" with particular emphasis on hands-on skills in the following areas: wireless LAN setup and troubleshooting; 802.1x and 802.1x technologies, products and solutions; site surveys; resilient WLAN (Wireless Local Area Network) design, installation and configuration; WLAN security - 802.1x, EAP, LEAP, WEP, SSID; and vendor interoperability strategies.

CSU

**263 FUNDAMENTALS OF NETWORK SECURITY****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: CIS 120, 190, 202 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

Entry-level course in network security that addresses the various aspects of designing and implementing a secure network. This course is intended to serve the needs of individuals interested in understanding the field of network security and how it relates to other areas of Information Technology (IT). Covers materials included in the CompTia (Computing Technology Industry Association) Security+ exam.

CSU

**267 DIRECTED WORK EXPERIENCE IN CIS****1-4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours paid or 4 hours unpaid work experience per week per unit

Work experience in a computer and information science occupation category for students seeking experience in computer science or information systems. *May be repeated for a maximum of 12 units.*

CSU

**290 WINDOWS SYSTEM  
ADMINISTRATION****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 120, 190 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Comprehensive, hands-on application and introduction to multi-user, multi-tasking operating systems and networked operating systems. Topics include: operating system installation and configuration, server/domain promotion, group policy implementation and management, network trusts, storage configuration and management, server security configuration, user and group management, server roles (DNS, DHCP, Print), troubleshooting and disaster recovery.

CSU

**291 LINUX SYSTEM  
ADMINISTRATION****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 120, 191 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Comprehensive, hands-on application and instruction in multi-user, multi-tasking operating systems and networked operating systems. Topics include: operating system installation and configuration, storage configuration and management, server security configuration, user and group management, configuration and management of various server roles (such as LDAP, DNS, DHCP, Print, Mail, Samba, Apache), troubleshooting and disaster recovery.

CSU

**292 UNIX SHELL PROGRAMMING****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 120, 191 or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 3 hours laboratory  
 Introduction to programming with utilities and shell scripting languages in a UNIX environment. Covers the essential aspects of shell programming including similarities and differences among the three most popular shells: the Bourne shell, the C shell, and the Korn shell. Students will learn features including command line argument processing, debugging techniques, the use of sed to edit files, and the use of awk to format output.

CSU

**298 SELECTED TOPICS IN COMPUTER  
AND INFORMATION SCIENCE****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Computer and Information Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN COMPUTER  
AND INFORMATION SCIENCE****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Computer and Information Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

**COMPUTER SCIENCE****119 PROGRAM DESIGN AND  
DEVELOPMENT****3 UNITS**

Prerequisite: None  
 Corequisite: CS 119L  
 Recommended Preparation: CIS 110 or equivalent with a grade of "C" or better or "Pass", intermediate algebra  
 3 hours lecture  
 Introductory course in program design and development using Java or other object-oriented programming language to serve as a foundation for more advanced programming, computer science or networking courses. Emphasizes the development of problem-solving skills as it introduces students to computer science through the use of a modern object-oriented programming language. Devotes attention to the development of effective software engineering practices emphasizing such principles as design decomposition, encapsulation, procedural abstraction, testing and software reuse. Students will learn and apply standard programming constructs, problem-solving strategies, the concept of an algorithm, fundamental data structures, the machine representation of data, introductory graphics and networking. *Student must also be enrolled in CS 119L.*

CSU, UC

**119L PROGRAM DESIGN AND  
DEVELOPMENT LAB****1 UNIT**

Prerequisite: None  
 Corequisite: CS 119  
 Recommended Preparation: CIS 110 or equivalent with a grade of "C" or better or "Pass", intermediate algebra  
 3 hours laboratory  
 Laboratory tutorials, drills and programming problems designed to help students master the concepts and programming projects presented/assigned in CS 119. *Student must also be enrolled in CS 119. Pass/No Pass only.*

CSU, UC

**180ABCD INTRODUCTION TO VISUAL  
BASIC PROGRAMMING****4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CS 119 or equivalent with a grade of "C" or better or "Pass" or previous programming experience, intermediate algebra  
 3 hours lecture, 3 hours laboratory  
 Introduction to computer programming using Visual Basic. Emphasis on practical applications of programming for today's technology. Laboratory instruction will include program development and execution.

CSU, UC

**181 INTRODUCTION TO C++  
PROGRAMMING****4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CS 119 or equivalent with a grade of "C" or better or "Pass", intermediate algebra  
 3 hours lecture, 3 hours laboratory  
 Introduction to computer programming using C++. Students with no previous programming experience in C++ learn how to plan and create well-structured programs. Students will learn how to write programs using sequence, selection and repetition structures, as well as how to create and manipulate sequential access files, structs, classes, pointers and arrays.

CSU, UC

**182 INTRODUCTION TO JAVA  
PROGRAMMING****4 UNITS**

Prerequisite: MATH 110 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: CS 119 or equivalent with a grade of "C" or better or "Pass" or experience programming in C++ or Java  
 3 hours lecture, 3 hours laboratory  
 Introductory course in the basics of the Java programming language focusing on object-oriented methodology. Topics include classes, methods, parameters, arrays, modularity, abstraction, exception handling, and stream and file I/O. In addition to writing and using new classes, students will utilize the AWT and/or Swing libraries of classes. Basic inheritance is introduced, although this is covered in more depth in the intermediate Java programming class (CS 282).

CSU, UC

**199 SPECIAL STUDIES OR PROJECTS  
IN COMPUTER SCIENCE****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Computer Science under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**280ABCD INTERMEDIATE VISUAL  
BASIC PROGRAMMING****4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CS 180ABCD or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture, 3 hours laboratory  
 Continuation of CS 180ABCD. Provides the programmer with professional training with an emphasis on documentation, structured programming, and programming to professional standards using Visual Basic.

CSU, UC

**281 INTERMEDIATE C++ PROGRAMMING  
AND FUNDAMENTAL DATA  
STRUCTURES****4 UNITS**

Prerequisite: CS 181 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Continuation of CS 181. Provides the programmer with professional training in memory management, documentation, structured programming, and programming to professional standards using C++. Explores some of the more advanced concepts of preprocessing, low-level data objects, recursion, and dynamic data structures including linked lists, stacks, queues and trees. Laboratory instruction includes program development and execution.

CSU, UC

**282 INTERMEDIATE JAVA PROGRAMMING  
AND FUNDAMENTAL DATA  
STRUCTURES****4 UNITS**

Prerequisite: CS 182, MATH 175 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Continuation of CS 182. Students will implement and analyze a variety of data structures and the algorithms used with those data structures. Students will learn to create their own abstract data types and how and when to utilize them. Fundamental data structures include multidimensional arrays, linked lists, stacks,

queues, heaps, trees, and hash tables. Students will learn when to use which of the available dynamic memory data structures. Tools for analyzing and predicting run time and memory usage are introduced, as is "big-oh" notation. A variety of sort algorithms are reviewed, analyzed for best, worst and average case performance, and compared with tree traversal algorithms. Students will develop increased sophistication in object-oriented basics such as inheritance, encapsulation, design of abstract data types, and polymorphism. Students will gain experience working on larger programs and managing large, multi-programmer projects. Laboratory instruction includes program development and execution.

CSU, UC

### 289 COMPUTER ORGANIZATION AND SYSTEMS PROGRAMMING 4 UNITS

Prerequisite: CS 282 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

Introduction to the organization of modern digital computers, beginning with the standard von Neumann model and then moving forward to more recent architectural concepts. A specific architecture/machine will be utilized to study computer architecture at the assembly language and C interface level. Differences in the internal structure and organization of a computer lead to significant differences in performance and functionality; this course addresses some of the various options involved in designing a computer system, and the range of design considerations and trade-offs involved in the design process. Focuses on understanding the components of a computer and their inter-relationships. Programming assignments using C and assembly language will be used to reinforce these concepts including data representation, flow control, addressing techniques, subroutine linkage, macros, interrupts, and traps.

CSU, UC

### 298 SELECTED TOPICS IN COMPUTER SCIENCE 1-4 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Computer Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN COMPUTER SCIENCE 1-4 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Computer Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## ECONOMICS

### 110 ECONOMIC ISSUES AND POLICIES 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

One-semester economics course designed to give students a general elementary knowledge of basic economic concepts and to serve as an introduction to more advanced economics courses. Surveys current economic subjects including consumer economics, inflation, recession, competition, monopoly, world trade and competing economic systems. *May not be taken if ECON 120 or 121 has been taken.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

### 120 PRINCIPLES OF MACROECONOMICS 3 UNITS

Prerequisite: MATH 103 or 110 or equivalent with a grade of "C" or better or "Pass" (MATH 110 is recommended for Business majors)

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introductory course focusing on aggregate economic analysis. Topics include market systems; economic cycles including recession, unemployment and inflation; national income accounts; macroeconomic equilibrium; money and financial institutions; monetary and fiscal policy; international trade and finance. Includes some use of graphs and elementary algebra.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 121 PRINCIPLES OF MICROECONOMICS 3 UNITS

Prerequisite: MATH 103 or 110 or equivalent with a grade of "C" or better or "Pass" (MATH 110 is recommended for Business majors)

Corequisite: None

Recommended Preparation: None

3 hours lecture

Principles of economic analysis and decision-making from the viewpoint of the individual consumer, worker, and firm. Emphasis on the price system allocation of resources and income, supply and demand analysis, the structure of American industry, and applications to current economic policy and problems. Includes some use of graphs and elementary algebra.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 124 PRINCIPLES OF ECONOMICS COMPUTER LAB .5 UNIT

Prerequisite: None

Corequisite: ECON 120 or 121

Recommended Preparation: None

1.5 hours laboratory

Complements ECON 120 and 121 by providing computer-based tutorials to introduce the principles of economic analysis, economic institutions and issues of public policy. *May be repeated for a maximum of 1 unit. Pass/No Pass only.*

### 199 SPECIAL STUDIES OR PROJECTS IN ECONOMICS 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Economics under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN ECONOMICS 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Economics not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN ECONOMICS 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Economics not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## EDUCATION

### 110 INTRODUCTION TO AMERICAN EDUCATION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Elective course for students interested in exploring career opportunities as a teacher and in strengthening their skills as an instructional aide. In-depth look at teaching methodologies which can be applied by instructional aides and reapplied as a teacher.

CSU

### 199 SPECIAL STUDIES OR PROJECTS IN EDUCATION 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Education under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 200 TEACHING AS A PROFESSION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Designed for students considering teaching as a profession and for classroom paraprofessionals working in the public school system. Career exploration, foundations of education, critical issues, and an introduction to literacy acquisition are addressed. Standards for the teaching profession and conditions for effective learning are discussed. Guided observations of public school classrooms in a variety of subject areas are required. *Limitation on enrollment: students must meet health and safety requirements for public school field experience placement.*

CSU

### 214 DEVELOPING AN ONLINE COURSE 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

In this introduction to successful online course design and instruction, participants will



experience components of an online course from both student and teacher perspectives. Participants will learn to use technologies to support online instruction and will develop sample content and online course components within course management systems such as Blackboard or WebCT. Appropriate pedagogy will be emphasized. *It is recommended that students have basic computer skills (word processing, PowerPoint, email, web browsing).*  
CSU

### 298 SELECTED TOPICS IN EDUCATION 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Education not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN EDUCATION 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Education not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## ELECTRONICS TECHNOLOGY

### 110 INTRODUCTION TO BASIC ELECTRONICS 4 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture, 3 hours laboratory

Exploratory course of study in the laws of physics as they relate to electricity and electronics. Topics include: the history of electrical science, atomic structure, basic electrical laws, DC and AC circuits, semiconductors, integrated circuits, amplifiers, wave forms, electrical test equipment, circuit construction and electrical safety. Background in basic algebra and use of scientific calculators is highly desirable.

AA/AS GE, CSU, CSU GE

### 199 SPECIAL STUDIES OR PROJECTS IN ELECTRONICS TECHNOLOGY 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Electronics Technology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN ELECTRONICS TECHNOLOGY 1-4 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in Electronics Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the

Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN ELECTRONICS TECHNOLOGY 1-4 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in Electronics Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## ENGINEERING

### 100 INTRODUCTION TO ENGINEERING AND DESIGN 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introduction to engineering as a way of perceiving the world, including an overview of design and analytical techniques, problem solving and strategic thinking, disciplines, history, and ethics. Fundamentals of engineering graphics as a universal language and application to the visualization, representation, and documentation of designed artifacts. Focuses on the design process and on spatial reasoning and visualization.

AA/AS GE, CSU, UC

### 119 BASIC ENGINEERING CAD 3 UNITS

Prerequisite: CADD 115 or ENGR 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: Working knowledge of basic computer operations and file administration  
2 hours lecture, 4 hours laboratory  
CAD (Computer-Aided Drafting) fundamentals for engineers. Basic drawing techniques and commands in AutoCAD. Includes geometric construction, multiview and singleview projections, section views, dimensions, and text.

*Not open to students with credit in CADD 120, 120ABCD.*

CSU, UC, UC credit limit

### 120 ENGINEERING COMPUTER APPLICATIONS 3 UNITS

Prerequisite: MATH 180 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None

Recommended Preparation: None  
2 hours lecture, 3 hours laboratory  
Use of computerized mathematical analysis, computer programming and computer graphics as tools for solving engineering problems.

CSU, UC

### 125 SOLID MODELING 3 UNITS

Prerequisite: CADD 115 or ENGR 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended preparation: Working knowledge of basic computer operations and file administration  
2 hours lecture, 4 hours laboratory  
Advanced graphic communication using solid modeling techniques and software (e.g., SolidWorks). Techniques include feature based part construction using extrudes, cuts and revolves, advanced surface shaping using lofts and sweeps, assembly construction and constraining in an engineering design environment. Students will continue to develop 2D drafting skills including proper organization and layout of component drawing views, dimensioning and tolerancing, sectioning and detailing, detail descriptive geometry and

manufacturing processes. *Also listed as CADD 125. Not open to students with credit in CADD 125.*

CSU, UC, UC credit limit

### 170 MECHATRONICS: INTRODUCTION TO MICROCONTROLLERS 2 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
1 hour lecture, 3 hours laboratory

Mechatronics is the combination of mechanical, electronic and computer engineering to create automatic "intelligent" devices. Microcontrollers offer an easy and flexible way to do this. This course introduces the use of microcontrollers to operate motors, lights and other electromechanical devices in response to input from mechanical, optical and electrical sensors. Students will learn about microcontrollers through a series of projects of increasing sophistication, culminating in a final project of the student's own design.

CSU

### 171 MECHATRONICS: INTRODUCTION TO ROBOTICS 2 UNITS

Prerequisite: ENGR 170 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: None  
1 hour lecture, 3 hours laboratory

Introduces fundamental concepts in robotics to allow students to develop autonomous robots that interact with their surroundings. Students will build a basic robot, then use it as a test platform to experiment with these ideas. The objective is to develop robust behavior that achieves a desired goal while promoting robot survival in an uncertain environment.

CSU

### 172 MECHATRONICS: INTERMEDIATE MICROCONTROLLERS 2 UNITS

Prerequisite: ENGR 170 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: None  
1 hour lecture, 3 hours laboratory

Development of custom microcontroller circuits, including manufacture of printed circuits, with a focus on minimizing cost. Detailed control of the microcontroller including memory-mapped I/O (input/output) direct access to registers, and fine control of timing. Control of 120 VAC circuits.

CSU

### 173 MECHATRONICS: INTERMEDIATE ROBOTICS 2 UNITS

Prerequisite: ENGR 171 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None  
Recommended Preparation: None  
1 hour lecture, 3 hours laboratory

Examines various forms of robot locomotion (e.g., walking, DC motors, stepper motions), alternate sources of energy (e.g., solar cells), and alternate theories of robotics such as BEAM (Biology, Electronics, Aesthetics Mechanics) robotics and industrial robotics.

CSU

### 198 SUPERVISED TUTORING 0 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN ENGINEERING 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Engineering under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**200 ENGINEERING MECHANICS—STATICS 3 UNITS**

Prerequisite: PHYC 190 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: MATH 280  
 Recommended Preparation: None  
 3 hours lecture  
 Engineering applications of the principles of static equilibrium of force systems acting on particles and rigid bodies; structural analysis of trusses, frames, and machines; forces in beams; dry friction; centroids and moments of inertia.  
**CSU, UC**

**210 ELECTRIC CIRCUITS 3 UNITS**

Prerequisite: MATH 280, PHYC 200 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Theory course dealing with the concepts of circuit analysis by reduction methods, source transformation, loop and nodal analysis, alternating current circuits, impedance, power and phasor diagrams.  
**CSU, UC**

**218 PLANE SURVEYING 4 UNITS**

Prerequisite: MATH 170 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 6 hours laboratory  
 Use, care and adjustment of surveying instruments. Fundamental surveying methods, traverse measurements and area computations. Introduction to horizontal and vertical curves, stadia, construction layout. Introduction to topographic mapping. Earth work computations.  
*Also listed as SURV 218.*  
**CSU, UC**

**220 ENGINEERING MECHANICS—DYNAMICS 3 UNITS**

Prerequisite: ENGR 200 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Kinematics and kinetics of particles and rigid bodies. Newtonian laws of motion, work and energy; linear and angular momentum. Application to engineering problems. Vector notation will be used.  
**CSU, UC**

**260 ENGINEERING MATERIALS 3 UNITS**

Prerequisite: CHEM 141, PHYC 190 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Atomic and molecular structure of materials used in engineering. Analysis of the relationships between structure of materials and their mechanical, thermal, electrical, corrosion and radiation properties, together with examples of specific application to engineering problems.  
**CSU, UC**

**270 DIGITAL SYSTEMS 4 UNITS**

Prerequisite: MATH 180 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Analysis, simulation and construction of combinational and sequential digital logic systems.  
**CSU, UC**

**298 SELECTED TOPICS IN ENGINEERING 1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours  
 Selected topics in Engineering not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ENGINEERING 1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours  
 Selected topics in Engineering not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**CSU**

## ENGLISH

**049A BASIC SPELLING AND PHONICS 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture  
 Learn to hear and use the sounds of the English phonetic system to improve reading and spelling skills. Focuses on those parts of the English sound system that are consistent and regular. Learn common spelling rules. *Not open to students with credit in ENGL 049.* **Pass/No Pass only. Non-degree applicable.**

**049B INTERMEDIATE SPELLING AND PHONICS 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture  
 In this second spelling and phonics course, students will continue their study of the English spelling system by focusing on the way words look. Students will learn common spelling rules as well as exceptions to the rules. Introduction to common spelling demons. Learn strategies for committing words to memory. **Pass/No Pass only. Non-degree applicable.**

**053 BEYOND BASIC WRITING 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture  
 Individualized and group instruction focusing on writing skills essential for effective expression in all college classrooms. Workshop approach allows for directed practice in areas of need as determined by the instructor and student. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**071 UPGRADE YOUR SENTENCES .5 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 .5 hour lecture  
 Mini-course which focuses on writing complete, error-free sentences using effective punctuation and transitional devices. Learn to identify and correct sentence boundary problems and to structure simple and complex sentences with clarity and precision. *May be repeated for a maximum of 2 units.* **Pass/No Pass only. Non-degree applicable.**

**079 HOW WRITERS GET STARTED WITH COMPUTERS .5 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 .5 hour lecture  
 Hands-on mini-course in which students learn how to use the computer as a study assistant and communication tool for writing classes. The basics made simple: sending email, saving files, word processing, formatting, printing, searching the Web for research assignments, and much more. New writing technologies for self-empowerment in the digital age. *May be repeated for a maximum of 2 units.* **Pass/No Pass only. Non-degree applicable.**

**090 BASIC ENGLISH SKILLS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Placement based on assessment  
 3 hours lecture, 1 hour laboratory  
 Designed to teach basic English skills through lecture, small group and individualized instruction. Promotes knowledge of spelling, vocabulary and grammar. Students will also demonstrate their knowledge by writing sentences and short paragraphs. **Pass/No Pass only. Non-degree applicable.**

**090R READING SKILLS DEVELOPMENT 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Placement based on assessment; recommend concurrent enrollment in ENGL 090  
 3 hours lecture, 1 hour laboratory  
 A developmental course for all students needing to improve basic reading skills. Focuses on building vocabulary, improving comprehension of short reading selections, increasing reading speed and introducing basic study skills. **Pass/No Pass only. Non-degree applicable.**

**098 ENGLISH FUNDAMENTALS 4 UNITS**

Prerequisite: Grade of "Pass" in ENGL 090, 090R or equivalent or assessment  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture  
 A course in basic English skills. Students will study grammar, punctuation and standard written English usage. With an introduction to the writing process, students will learn basic sentence patterns to compose paragraphs and one multi-paragraph essay. *It is recommended that students also enroll in ENGL 098R.* **Non-degree applicable.**

**098R READING FUNDAMENTALS 3 UNITS**

Prerequisite: Grade of "Pass" in ENGL 090, 090R or equivalent or assessment  
 Corequisite: None  
 Recommended Preparation: Strongly recommend concurrent enrollment in ENGL 098  
 3 hours lecture, 1 hour laboratory  
 Introduction to effective reading skills and strategies. Focuses on expanding vocabulary, improving reading comprehension and increasing reading speed. Students will learn

basic strategies for critical thinking. **Non-degree applicable.**

**110 COLLEGE COMPOSITION 3 UNITS**

Prerequisite: ENGL 098 or ESL 106 or equivalent with a grade of "C" or better or "Pass" or assessment  
Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Prepares students for entry into ENGL 120 (English 1A, traditional freshman composition for transfer). Students will practice the writing process by composing sentences, paragraphs and essays with emphasis on correct and effective expression through the study of appropriate language skills. Readings will be studied to stimulate clarity of thought and written expression. By the end of the course, students will be able to write a basic position paper by using and acknowledging at least one source.

AA/AS GE, CSU

**110R PRINCIPLES OF COLLEGE READING 3 UNITS**

Prerequisite: ENGL 098R or equivalent with a grade of "C" or better or "Pass" or assessment  
Corequisite: None

Recommended Preparation: Concurrent enrollment in ENGL 110

3 hours lecture, 1 hour laboratory

Provides effective reading skills and strategies necessary for the reading of college level material. Focuses on developing vocabulary geared toward college textbooks and learning strategies for efficient reading comprehension and retention. Students will learn college level inferential and critical reading skills.

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**120 COLLEGE COMPOSITION AND READING 3 UNITS**

Prerequisite: ENGL 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Traditional freshman composition course. Students will study the elements and principles of composition through the practice of writing narrative and expository essays and a research paper. Utilizing word processing in the computer lab, revision is stressed as a means of achieving effective skills in writing. Assigned readings stimulate critical thinking and effective writing. Emphasis on using outside sources and documenting them according to MLA format.

AA/AS GE, CSU, CSU GE, IGETC, UC

**120R ADVANCED READING AND CRITICAL THINKING SKILLS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 110R or equivalent with a grade of "C" or better or "Pass"; recommend concurrent enrollment in ENGL 120

3 hours lecture

Focuses on critical thinking and analytical interpretation of college reading selections in the sciences and liberal arts. Students will learn strategies to improve their vocabulary and reading comprehension, as well as increase reading speed and fluency.

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**122 INTRODUCTION TO LITERATURE 3 UNITS**

Prerequisite: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduces literature through the reading, analysis and discussion of various genres such as myths, folktales, essays, short stories, poems, plays and novels. Literature encompasses different time periods and a variety of male and

female authors from around the world. Students will use the literature to write critical and appreciative essays.

AA/AS GE, CSU, CSU GE, IGETC, UC

**124 ADVANCED COMPOSITION: CRITICAL REASONING AND WRITING 3 UNITS**

Prerequisite: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Designed to develop critical thinking, reading and writing skills beyond the level achieved in ENGL 120. Focuses on the development of logical reasoning and analytical and argumentative writing skills.

CSU, CSU GE, IGETC, UC

**126 CREATIVE WRITING 3 UNITS**

Prerequisite: ENGL 110 or equivalent with a grade of "C" or better or "Pass" or assessment for ENGL 120

Corequisite: None

Recommended Preparation: None

3 hours lecture

This course affords students the opportunity to write short prose, poetry and drama. In a positive atmosphere, students will explore, study and analyze techniques in the works of professional writers and in the works of students. Ample opportunity will be directed toward publication of students' work.

CSU, UC

**135-138 NEWSPAPER PRODUCTION 4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 3 hours laboratory

Provides practice in producing tabloids and newsletters, particularly the campus newspaper. Instruction in the basic principles of journalism including how to gather, evaluate and write basic types of news stories, and to implement them in the production of the campus newspaper. Additional hours per week outside of class required.

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**150 LIBRARY RESEARCH METHODS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Designed to give students confidence in doing research and to provide skills for compiling a term paper. Introduces students to the role of information and libraries, time management skills in research, use of computerized and standard library sources, and a brief introduction to the Internet. Emphasis on using information as a basis for effective decision-making to improve personal and professional endeavors. Students will design a research project, implement an efficient research strategy, and complete a written research project.

CSU, UC

**171 HOW WRITERS GET MOTIVATED TO WRITE 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Mini-course emphasizing effective strategies for thinking and writing creatively. How to get motivated and focused when faced with writing assignments and exams. Methods for effective thinking out loud and on paper. Strategies for success in college writing and test-taking for any level of student. **Pass/No Pass only.**

**198 SUPERVISED TUTORING 0 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN ENGLISH 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in English under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**201 INTRODUCTION TO IMAGES OF WOMEN IN LITERATURE 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

3 hours lecture

Focuses on women and their roles in society as portrayed in various forms of literature, past and present. Students may read poetry, short stories, novels, plays, and view films which will provide them with a broad base for understanding the changing role of women throughout history. Works by significant male and female authors will be used reflecting a broad spectrum of political, cultural and historical views. Authors sampled may include Jane Austen, George Eliot, Virginia Woolf, William Shakespeare, Amy Tan, Alice Walker, Sandra Cisneros, Norman Mailer, Thomas Hardy, Ernest Hemingway, Sylvia Plath and others.

AA/AS GE, CSU, CSU GE, IGETC, UC

**202 INTRODUCTION TO FILM AS LITERATURE 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

3 hours lecture

Survey course to study film as a 20th century form of literature. Students will view a variety of films spanning the 100 years of film history, from the silent era to the present, to develop an understanding of the different types of films, the film-making process itself, and the historical, political and sociological context of cinema. Key figures in film history such as Buster Keaton, John Ford, Orson Welles, Alfred Hitchcock, Spike Lee, Woody Allen, Akira Kurosawa and others will be studied.

AA/AS GE, CSU, CSU GE, IGETC, UC

**207 ROMANTIC FICTION 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Literature survey course that focuses on the reading and analysis of romance novels. Beginning with the female gothic, the class will cover the development of the popular romance novel. Covers the classic novels of Radcliffe, Burney, Bronte and Austen as well as more modern American and English romance novelists. Oral and written discussion of readings and their relevance to current trends will be emphasized. Analytical or original creative writings will be included.

AA/AS GE, CSU, CSU GE, IGETC, UC

**214 MASTERPIECES OF DRAMA 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Surveys masterpieces in drama beginning with works from ancient Greece and concluding with plays from the 20th century. Although other types of drama may be discussed, the primary texts will be comedies and tragedies. Representative playwrights include Sophocles, William Shakespeare, Moliere, Henrik Ibsen, Susan Glaspell, Eugene O'Neill, Arthur Miller, Samuel Beckett, Lorraine Hansberry, August Wilson and others. Texts will be read, analyzed, discussed, and written about in essay format.

AA/AS GE, CSU, CSU GE, IGETC, UC

**217 FANTASY AND SCIENCE FICTION 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Survey course designed as a reading course of fantasy and science fiction, a unique literary genre with an unparalleled and still growing popularity. Readings selected cover a diverse spectrum of fantasy and science fiction. Oral and written discussion of such readings and their relevance to current trends will be emphasized. Analytical or original creative writings will be included.

AA/AS GE, CSU, CSU GE, UC

**221 BRITISH LITERATURE I 3 UNITS**

Prerequisite: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: ENGL 122 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Surveys British literature from the Old English Period to the Romantic Period. Students will read and interpret literature from historical, social and philosophical viewpoints. Authors sampled may include Geoffrey Chaucer, William Langland, Edmund Spenser, William Shakespeare, Ben Johnson, John Milton, Lady Mary Wroth, Aphra Behn, and Jonathan Swift.

AA/AS GE, CSU, CSU GE, IGETC, UC

**222 BRITISH LITERATURE II 3 UNITS**

Prerequisite: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: ENGL 122 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Surveys British literature from the Romantic Period to the present. Students will read and interpret literature against a background of the historical, social and philosophical developments of the time. Authors sampled may include William Blake, Mary Wollstonecraft, William Wordsworth, Samuel Coleridge, Lord Byron, Percy Shelley, John Keats, Elizabeth Browning, Lord Tennyson, Robert Browning, Emily Bronte, Matthew Arnold, Christina Rossetti, Oscar Wilde, Jane Austen, Thomas Hardy, William Yeats, Virginia Woolf, James Joyce, Doris Lessing and Derek Walcott.

AA/AS GE, CSU, CSU GE, IGETC, UC

**231 AMERICAN LITERATURE I 3 UNITS**

Prerequisite: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: ENGL 122 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

First course in the study of American literature which explores literary works and their political,

religious, economic and aesthetic context from pre-colonial America until 1860. Reading selections may consist of poetry, short stories, novels and nonfiction prose, including essays and autobiographies. Authors studied include various anonymous Native Americans, Pedro de Castañeda, William Bradford, Anne Bradstreet, Benjamin Franklin, Thomas Jefferson, Judith Sargent Murray, Washington Irving, Catherine Sedgwick, James Fennimore Cooper, Henry David Thoreau, Walt Whitman and many others. Selections from the major writers will be read, analyzed, discussed and written about in essay format.

AA/AS GE, CSU, CSU GE, IGETC, UC

**232 AMERICAN LITERATURE II 3 UNITS**

Prerequisite: ENGL 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: ENGL 122 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Second course in the study of American literature which explores literary works and their political, religious, economic and aesthetic context from 1860 to the present. Reading selections may consist of poetry, short stories, novels, plays and nonfiction prose, including essays. Authors to be studied include Abraham Lincoln, Frederick Douglass, Mark Twain, Edgar Allan Poe, Walt Whitman, Emily Dickinson, Eugene O'Neill, Gertrude Stein, Langston Hughes, Ernest Hemingway, John Steinbeck, Toni Morrison and others. Selections from the major writers will be read, analyzed, discussed and written about in essay format.

AA/AS GE, CSU, CSU GE, IGETC, UC

**270 WORLD LITERATURE I 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Surveys major works from various continents and cultures prior to 1500 A.D. Focuses on the historical, social, philosophical and cultural aspects of literature and studies the roles of women and men. Minority perspectives will be included. Students will read works from the ancient Mediterranean world, South and East Asia, Europe, Middle East, Africa, and the early Americas.

AA/AS GE, CSU, CSU GE, IGETC, UC

**271 WORLD LITERATURE II 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Surveys major works from various continents and cultures from 1500 A.D. to the present. Focuses on the historical, social, philosophical and cultural aspects of literature and studies the roles of women and men. Minority perspectives will be included. Students will read works from Asia, the Middle East, Africa, Europe, the Americas, Australia and New Zealand.

AA/AS GE, CSU, CSU GE, IGETC, UC

**275 LITERARY PERIOD 3 UNITS****276 MAJOR AUTHOR 3 UNITS****277 LITERARY THEME 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ENGL 120 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

These courses are designed to provide an in-depth study of a literary period (275), a major author (276), or a theme in literature (277). The readings selected will cover a diverse spectrum

of literature drawn from one literary period (e.g., ENGL 275 Literary Period: American Romantic Poets), one major author (e.g., The Short Stories of Flannery O'Connor), or a theme in literature (e.g., Chicano Literature), in addition to at least one secondary work focusing on the literature. Oral and written discussion of such readings and their relevance to the period, author or theme will be emphasized. May be repeated as the subject matter changes as indicated in the subtitle (e.g., Short Stories of Flannery O'Connor or Poetry of Emily Dickinson).

AA/AS GE, CSU, UC

**298 SELECTED TOPICS IN ENGLISH 1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in English not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN ENGLISH 1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in English not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

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## ENGLISH AS A SECOND LANGUAGE

English as a Second Language classes are designed to improve English reading, writing, grammar, listening and speaking skills. Learning English will help students attain employment or pursue degree and certificate programs that use the English language for instruction. Classes at the 100 level and above can be used as elective credit for the Associate Degree. ESL 103 and 106 transfer as elective credit to CSU/UC. The ESL program of study is divided into four levels. Students should see a counselor to select additional courses in other areas for which their language skills will be acceptable.

**Level I:** Basic college ESL focuses on reading short passages, writing sentences, connecting them into basic paragraphs, and having discussions using the present, past and future verb tenses.

ESL 096	English as a Second Language I	5
ESL 097	Listening and Speaking I	3
ESL 098	ESL Reading and Vocabulary Development I	3
ESL 099A	ESL for the Workplace I	3

**Level II:** Low-intermediate college ESL focuses on reading short academic passages, writing complete paragraphs, discussing topics and giving short presentations using the simple, progressive, and present and past perfect verb tenses.

ESL 099AorB	ESL for the Workplace I or II	3
ESL 100	English as a Second Language II	5
ESL 101	Listening and Speaking II	3
ESL 102	ESL Reading and Vocabulary Development II	3

**Level III:** High-intermediate college ESL focuses on reading more complex academic passages, connecting paragraphs into short essays, note-taking and study skills, and orally presenting academic work using all verb tenses.

ESL 099B	ESL for the Workplace II	3
ESL 103	English as a Second Language III	5
ESL 104	Listening and Speaking III	3
ESL 105	ESL Reading and Vocabulary Development III	3

**Level IV:** Advanced college ESL focuses on reading college level texts, writing more complex essays, increasing note-taking and study skills, and presenting oral reports using all verb tenses.

ENGL 098R	Reading Fundamentals	3
ESL 106*	English as a Second Language IV	5

\*Students will receive an "ESL Certificate of Completion" when they complete ESL 106 with a grade of "C" or better or "Pass."

#### 010 AMERICAN CULTURE I 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

First course in American culture which allows students to practice applied reading, writing, listening and speaking skills gained in the first two levels of the ESL program. Study various aspects of American culture such as lifestyles, institutions, values and issues. **Pass/No Pass only. Non-degree applicable.**

#### 020 AMERICAN CULTURE II 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Second course in American culture which allows students to practice applied reading, writing, listening and speaking skills gained in the third and fourth levels of the ESL program. Study various aspects of American culture such as lifestyles, attitudes, government, customs and traditions. **Pass/No Pass only. Non-degree applicable.**

#### 025 ESL WORKPLACE SKILLS LAB 1 UNIT

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours laboratory

ESL instruction in preparation for a vocational program. Students will work independently to complete computer modules in a vocational area in order to increase knowledge of vocabulary and subject matter. Provides complementary instruction in language and academic skills necessary for students to succeed in a vocational program. Vocational areas offered will be listed in class schedule. **Pass/No Pass only. Non-degree applicable.**

#### 096 ENGLISH AS A SECOND LANGUAGE I 5 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: Placement based on assessment

5 hours lecture, 1 hour laboratory

First core course in the study of English reading, writing and grammar designed for students whose first language is other than English. Includes the study of basic reading, paragraph organization and format, grammar, and sentence structure. One hour a week will be spent using the computer lab software designed to reinforce reading, writing and grammar skills introduced in class. **Pass/No Pass only. Non-degree applicable.**

#### 097 LISTENING AND SPEAKING I 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: Placement based on assessment

3 hours lecture

First course in the study of English listening and speaking skills designed for students whose first language is other than English. Designed to improve listening comprehension as well as increase fluency and accuracy in spoken English in both academic and vocational environments. Practice skills learned in ESL 096, learn and use new vocabulary, and acquire academic skills such as selective listening, note-taking, and problem solving. **Pass/No Pass only. Non-degree applicable.**

#### 098 ESL READING AND VOCABULARY DEVELOPMENT I 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: Placement based on assessment

3 hours lecture

Beginning-level course designed to extend ESL students' vocabulary and reading ability. Emphasis on improving reading skills and strategies as well as techniques and exercises for developing vocabulary. Students are encouraged to take this class concurrently with ESL 096. **Pass/No Pass only. Non-degree applicable.**

#### 099A ESL FOR THE WORKPLACE I 3 UNITS

Prerequisite: Placement based on assessment

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

First course in the study of English for the workplace for students whose first language is other than English. Supplements language skills taught in ESL 096 and focuses on using English in business situations. Learn simple business vocabulary, basic writing and oral communication skills, and word processing skills. **Pass/No Pass only. Non-degree applicable.**

#### 099B ESL FOR THE WORKPLACE II 3 UNITS

Prerequisite: Grade of "Pass" in ESL 099A or equivalent or assessment

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Second course in the study of English for the workplace for students whose first language is other than English. Supplements language skills taught in ESL 100 and develops and adds to business English skills taught in ESL 099A. Learn business vocabulary, intermediate writing and oral communication skills, and computer skills. **Pass/No Pass only. Non-degree applicable.**

#### 100 ENGLISH AS A SECOND LANGUAGE II 5 UNITS

Prerequisite: Grade of "Pass" in ESL 096 or assessment

Corequisite: None

Recommended Preparation: None

5 hours lecture, 1 hour laboratory

Second core course in the study of English reading, writing and grammar designed for students whose first language is other than English. Further develops and adds to the basic skills taught in ESL 096. Includes intermediate reading, paragraph writing, grammar and sentence structure. One hour a week will be spent using the computer lab software designed to reinforce reading, writing and grammar skills introduced in class.

#### 101 LISTENING AND SPEAKING II 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: Grade of "Pass" in ESL 097 or equivalent or assessment

3 hours lecture

Second course in the study of English listening and speaking skills designed for students whose first language is other than English. Further develops and adds to skills learned in ESL 097. Includes intermediate listening comprehension practice as well as discussion and presentation skills in spoken English in both academic and vocational environments. Practice skills learned in ESL 100, learn and use new vocabulary, and practice academic skills such as selective reading and listening, note-taking, using outside resources and problem solving.

#### 102 ESL READING AND VOCABULARY DEVELOPMENT II 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: Grade of "Pass" in ESL 098 or equivalent or assessment

3 hours lecture

Intermediate level course designed to extend the range of ESL students' vocabulary and reading ability. Focuses on improving reading skills and strategies as well as understanding and use of academic vocabulary. Academic vocabulary development is also an emphasis. Students will gain both a passive and active command of word form and word choice for the intermediate level, and learn a variety of words and how to use them. Students are encouraged to take this class concurrently with ESL 100.

#### 103 ENGLISH AS A SECOND LANGUAGE III 5 UNITS

Prerequisite: ESL 100 or equivalent with a grade of "C" or better or "Pass" or assessment

Corequisite: None

Recommended Preparation: None

5 hours lecture, 1 hour laboratory

Third core course in the study of English reading, writing and grammar designed for students whose first language is other than English. Further develops and adds to skills taught in ESL 100. Includes high-intermediate reading, paragraph and short essay writing, grammar and sentence structure. One hour a week will be spent using the computer lab software designed to reinforce reading, writing and grammar skills introduced in class.

*CSU, UC credit limit*

#### 104 LISTENING AND SPEAKING III 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: ESL 101 or equivalent with a grade of "C" or better or "Pass" or assessment

3 hours lecture

Third course in the study of English listening and speaking skills designed for students whose first language is other than English. Further develops and adds to skills learned in ESL 101. Includes high-intermediate listening comprehension practice as well as discussion and presentation skills in spoken English in both academic and vocational environments. Practice skills learned in ESL 103, learn and use new vocabulary, and practice academic skills such as close reading and listening, note-taking, analyzing and classifying, using outside resources and problem solving.

**105 ESL READING AND VOCABULARY DEVELOPMENT III 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ESL 102 or equivalent with a grade of "C" or better or "Pass" or assessment 3 hours lecture  
 Third and final course designed to extend ESL students' academic vocabulary and ability to read college-level texts at the advanced level. Focuses on improving reading skills and strategies as well as understanding and use of academic vocabulary. Students learn a variety of words and how to use them. Students are encouraged to take this class concurrently with ESL 103.

**106 ENGLISH AS A SECOND LANGUAGE IV 5 UNITS**

Prerequisite: ESL 103 or equivalent with a grade of "C" or better or "Pass" or assessment  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours lecture, 1 hour laboratory  
 Fourth core course in the study of English reading, writing and grammar for students whose first language is other than English. Further develops and adds to skills taught in ESL 103. Includes advanced reading, paragraph and essay writing, grammar and sentence structure. One hour a week will be spent using the computer lab software designed to reinforce reading, writing and grammar skills introduced in class.

*CSU, UC credit limit*

**107 ORAL COMMUNICATION SKILLS 2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture  
 Intensive, short-term intermediate level course in the study of English. Focuses on developing the students' accuracy and fluency in oral communication skills. Activities are designed to integrate listening, speaking, and pronunciation practice. Students will be required to complete a variety of listening and speaking tasks and exercises in small groups and independently. Content will focus on high-interest professional and academic themes as well as current events.  
**Pass/No Pass only. Non-degree applicable.**

**199 SPECIAL STUDIES OR PROJECTS IN ENGLISH AS A SECOND LANGUAGE 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in English as a Second Language under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN ENGLISH AS A SECOND LANGUAGE 1-5 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-15 hours  
 Selected topics in English as a Second Language not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ENGLISH AS A SECOND LANGUAGE 1-5 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-15 hours  
 Selected topics in English as a Second Language not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

## ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT

**100 INTRODUCTION TO ENVIRONMENTAL AND OCCUPATIONAL SAFETY AND HEALTH (OSH) TECHNOLOGY 4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture  
 Provides a general overview of the environmental health and safety management (EHSM) field with emphasis on hazardous materials, hazardous waste management, and their effect upon the environment and worker health and safety. Discussion of the history of pollution and workplace hazards leading to current legislation, and current best practices of handling hazardous substances to minimize the harmful impact on society and the environment will be stressed.

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**110 POLLUTION PREVENTION 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of various raw materials and chemicals used in industry, examining the changes that occur as they move through the industrial process and understanding the material balance concept of inventory. Discussion of applicable regulations will be included. Topics include the importance of waste minimization/pollution prevention concepts, storm water management, and residential waste generation, reduction and prevention. Students will develop a waste source reduction plan.

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**130 ENVIRONMENTAL/OCCUPATIONAL HEALTH EFFECTS OF HAZARDOUS MATERIALS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Covers the acute and chronic health effects produced by exposure to chemical, physical and biological agents. Emphasis on hazardous materials commonly associated with industrial operations, waste disposal, and remediation sites. Topics include routes of entry, toxic effects, risk evaluation, permissible exposure limits, medical surveillance, control methods for reducing exposure, and using Material Safety Data Sheets (MSDS) to develop strategies to reduce worker exposure.

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**135 GENERAL INDUSTRY SAFETY STANDARDS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Designed to provide an overview of elements which are incorporated in a comprehensive general industrial safety program (Cal/OSHA). Emphasizes methods used to reduce accidents/injuries through application of workplace health protection and safety fundamentals. Topics include protocols, safety audits, data collection and analysis techniques, interpretation of safety data, safety inspections, development and implementation of safety programs, worker education, and essential Personal Protection Equipment (PPE).

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**145 CONSTRUCTION SAFETY STANDARDS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: EHSM 100 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture  
 Introduces students to the California and Federal (Cal/OSHA and Fed/OSHA) construction safety standards and regulations. Topics include an integrated study of hazard recognition and abatement principles related to the construction worksite, and study of compliance issues and challenges facing safety professionals including mishap and case study analysis, California and Federal construction safety standards, worksite inspection, interfacing with compliance officials, vertical and horizontal standards, and common construction industry compliance issues.

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**150 HAZARDOUS WASTE MANAGEMENT APPLICATIONS 4 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture  
 Overview of hazardous waste regulations with emphasis on generator compliance, site investigation and remediation, permitting, enforcement and liability. Explains the hazardous waste regulatory framework, introduces students to the wide variety and types of environmental resources available, and develops research skills in the hazardous waste area. The laboratory complements the lectures by providing hands-on application of the regulations at the technician level. Proper methods of preparing a hazardous waste manifest, labeling of storage containers, sampling and analysis, preparing a Phase I Environmental Audit, and selecting environmental consultants are among the many skills developed in the laboratory.

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**199 SPECIAL STUDIES OR PROJECTS IN ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Environmental Health and Safety Management under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**200 HAZARDOUS MATERIALS  
MANAGEMENT (HMM)  
APPLICATIONS****4 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

Requirements and applications of federal, state and local hazardous material laws and regulations. Emphasizes program compliance with the OSHA Hazard Communication Plan, EPA Community Right-To-Know, Department of Transportation, Proposition 65, and Emergency Response Plan. Provides an understanding of the legal framework of hazardous materials laws and requirements. Step-by-step program developments: written plan, obtaining/interpreting MSDSs, labeling, emergency responders site map, shipping, handling and training. Students will develop plans related to hazardous materials management through hands-on program development: DEH/HMD Hazardous Material Business Plan, OSHA Hazardous Communication Plan, and components of a CalARP and RMP as well as planning and reporting functions.

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**201 INTRODUCTION TO INDUSTRIAL  
HYGIENE AND OCCUPATIONAL  
HEALTH****4 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
3 hours lecture, 3 hours laboratory

Anticipation, recognition, reevaluation and control of biological, chemical and physical hazards in the workplace. Introduction to the development of industrial hygiene, occupational health and safety as a professional discipline. Provides an understanding of basic physiological processes and the effects caused by occupational exposure to hazards. Students will survey various occupational health and safety programs and government regulations. Familiarizes students with industrial hygiene monitoring and sampling techniques for airborne contaminants, noise, heat, radiation and illumination.

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**205 SAFETY AND RISK****MANAGEMENT ADMINISTRATION****4 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

Hands-on instruction on how accidents and incidents occur in the occupational health and safety environment. Instruction in the establishment and maintenance of safety programs and comprehensive analysis of occupational health programs with emphasis on safety program management. Topics include: planning approaches to safety and health management used by international, national and local regulatory agencies, insurance companies and professional societies; risk management; worker compensation; employee accommodations and the workplace. Students will develop plans related to safety and risk management.

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**210 INDUSTRIAL WASTEWATER AND  
STORMWATER MANAGEMENT****4 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
4 hours lecture

Overview of water/wastewater regulations with emphasis on federal, state and local regulatory standards. Integrated study of the principles of wastewater and stormwater management including hydrology, water distribution, wastewater collection, stormwater management and overall safe drinking water issues.

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**215 AIR QUALITY MANAGEMENT****3 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Overview of air quality regulations with an emphasis on federal, state and local requirements. Integrated study of the principles of air permits and permit compliance including source testing, emission reduction, inspections, monitoring, stationary and mobile sources, air toxics, new equipment shutdown, and overall global air quality issues.

CSU

**230 SAFETY AND EMERGENCY  
RESPONSE****4 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: EHSM 130 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture, 3 hours laboratory

Designed to provide students with hands-on instruction in safety and emergency response to chemical and physical exposures in industrial and field settings. Topics include: hazard analysis; contingency planning; housekeeping and safety practices including proper use and selection of PPE, site control and evaluation; handling drums and containers; field sampling and monitoring; proper use of instruments; incident response planning; emergency response including field exercises in the use of PAPR and SCBA; and an understanding of the ICS system. Satisfies requirements for generalized employee training under OSHA [29 CFR 1910.120 and Title 8, California Code of Regulations 5192(e) (3) (A)].

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**240 COOPERATIVE WORK  
EXPERIENCE****1-4 UNITS**

Prerequisite: EHSM 100 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
75 hours paid or 60 hours unpaid work experience per unit

Practical application of principles and procedures learned in the classroom to various phases of environmental technology. Work experience will be paid or volunteer positions at local environmental technology industries or governmental agencies that regulate environmental industries. Placement assistance will be provided, but students are required to select and secure a placement site. Minimum of one unit of cooperative work experience is required to complete the EHSM certificate/degree. *May be repeated for a maximum of 8 units.*

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**298 SELECTED TOPICS IN  
ENVIRONMENTAL HEALTH AND  
SAFETY MANAGEMENT****1-4 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in Environmental Health and Safety Management not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN  
ENVIRONMENTAL HEALTH AND  
SAFETY MANAGEMENT****1-4 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in Environmental Health and Safety Management not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

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**EXERCISE SCIENCE**

Courses which meet the activity requirement for graduation have an asterisk (\*). Intercollegiate sports do not meet the activity requirement. Exercise Science **activity** and **intercollegiate sports** classes which are indicated by a number **ONLY** (ES 001) may be taken **FOUR** times. An activity class indicated by a number **AND** a letter (ES 014A) may be repeated **ONCE**, provided that the **TOTAL** enrollment in that type of activity (e.g., body building) not exceed **FOUR**. Students must progress from beginning through intermediate and advanced levels. The following may not be repeated: ES 080ABCD, ES 084ABCD, ES 088ABCD. A physical examination is recommended for all classes if the student has medical problems or is over the age of 30.

**001\* ADAPTED PHYSICAL EXERCISE****1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
1 hour lecture, 1 hour laboratory

Assessment of physical performance status and postural evaluation. Individually prescribed exercise program and individually prescribed programs for the physically handicapped. Recreational games and individual sports adapted to students' capabilities.

CSU, UC credit limit

**009\* AEROBIC DANCE EXERCISE****1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
1 hour lecture, 1 hour laboratory

Participation in aerobic dance exercise emphasizing conditioning of the musculoskeletal system, improvement of the cardiovascular system, increasing the efficiency of the respiratory system and increasing flexibility. Principles of physical fitness, conditioning and other relevant health-related topics will be covered.

CSU, UC credit limit

**010\* CARDIOVASCULAR FITNESS AND NUTRITION****.5-1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1.5 - 3 hours laboratory  
 Fitness Center course designed to teach the benefits of cardiovascular exercise, heart-healthy nutrition guidelines, and provide opportunities for students to analyze their eating habits. Format is open entry/exit, computer log-in. Attendance of 24 class periods is required for .5 unit. Attendance of 48 class periods is required for 1.0 unit. Workouts and consultation with an instructor, as well as written and computer assignments. Each student will be assessed in the areas of fitness and diet.

**Pass/No Pass only.***CSU, UC credit limit***011\* CIRCUIT TRAINING****.5-1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1.5- 3 hours laboratory  
 Fitness Center course designed to develop and encourage positive attitudes and habits with regard to exercise. Format is open entry/exit, computer log-in. Attendance of 24 class periods is required for .5 unit. Attendance of 48 class periods is required for 1.0 unit. Each student will be assessed in the areas of body composition, cardiovascular efficiency, muscular strength and endurance, and flexibility. An individual fitness profile will then be established. From this profile an individual fitness prescription will be developed. Fitness activity will primarily utilize exercise equipment organized into a super circuit. **Pass/No Pass only.**

*CSU, UC credit limit***012\* INDIVIDUALIZED SPORTS CONDITIONING****.5-1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1.5 - 3 hours laboratory  
 Fitness Center course designed to provide advanced exercisers with the opportunity to increase their fitness levels with an emphasis on strength training and muscle flexibility. Format is open entry/exit, computer log-in. Attendance of 24 class periods is required for .5 unit. Attendance of 48 class periods is required for 1.0 unit. Each student will set desired fitness outcomes in consultation with an instructor. An individualized fitness program will then be prescribed utilizing the student's personal fitness goals. **Pass/No Pass only.**

*CSU, UC credit limit***013\* FLEXIBILITY FITNESS****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Flexibility program which provides students with knowledge of their optimal range of motion. Emphasizes participation that suits the needs of all age and ability levels including dancers, athletes, seniors and fitness enthusiasts.

*CSU, UC credit limit***014A\* BEGINNING BODY BUILDING****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Instruction and practice in conditioning, running and resistance exercises, with emphasis on total fitness of the individual.

*CSU, UC credit limit***014B\* INTERMEDIATE BODY BUILDING****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 014A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 2 hours laboratory  
 Instruction and practice in weight lifting and weight training with emphasis on techniques of lifting. Individual program adaptation is stressed.

*CSU, UC credit limit***014C\* ADVANCED BODY BUILDING****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 014B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 2 hours laboratory  
 Advanced skills and techniques of body building.

*CSU, UC credit limit***015\* STRENGTH AND STRETCH****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Exercise class for all exercisers providing a progression toward increased flexibility while adding the element of weight training, including injury rehabilitation with a guest trainer. Addresses strengthening specific problem areas of muscle weakness. Students will tone areas not strengthened with dancing or other exercise activities. By focusing on each specific area of the body, students will increase their knowledge of injury prevention. Students will also learn the fundamental principles of physical fitness and its impact on lifelong health and wellness. Emphasizes participation that suits the needs of all age and ability levels including dancers, athletes, seniors and fitness enthusiasts.

*CSU, UC credit limit***018\* CARDIO STRETCH****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Exercise class for all exercisers, including injury rehabilitation with a guest trainer. Students will tone areas not strengthened with dancing or other exercise activities. By focusing on each specific area of the body, students will increase their knowledge of total fitness. Students will learn the fundamental principles of physical fitness and its impact on lifelong health and wellness. Emphasizes participation that suits the needs of all age and ability levels including dancers, athletes, seniors and fitness enthusiasts.

*CSU, UC credit limit***019A\* BEGINNING PHYSICAL FITNESS****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Instruction in physical conditioning, nutrition and weight control. Open to any student wishing to fulfill one semester of the exercise science activity requirement.

*CSU, UC credit limit***019B\* INTERMEDIATE PHYSICAL FITNESS****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 019A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 2 hours laboratory  
 Further emphasis on individual physical conditioning, nutrition and weight control. Open to any student wishing to fulfill one semester of the exercise science activity requirement.

*CSU, UC credit limit***019C\* ADVANCED PHYSICAL FITNESS****1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 019B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 2 hours laboratory  
 Advanced skills and techniques of physical fitness. Emphasis on new concepts and techniques. Open to any student wishing to fulfill one semester of the exercise science activity requirement.

*CSU, UC credit limit***020\* ADAPTED WEIGHT TRAINING****1-1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory (1 unit)  
 1 hour lecture, 2 hours laboratory (1.5 units)  
 Weight training class designed to meet the needs of those who are either temporarily or permanently physically unable to participate in the regular physical education program. Emphasis on an individual program based on the student's limitations and needs. Exercises for general strengthening, body maintenance, relaxation, joint mobility, cardiovascular training, coordination, balance, and personal health care planning may be included. **Pass/No Pass only.**

*CSU, UC credit limit***035\* ADAPTED SWIMMING FOR THE PHYSICALLY LIMITED****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Instruction and practice in basic swimming skills structured to fit each student's individual needs. *May be repeated for a maximum of three units.*

**Pass/No Pass only.***CSU, UC credit limit***060A\* BEGINNING BADMINTON****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Presentation of the official singles and doubles games including the six basic strokes, footwork, strategy and etiquette.

*CSU, UC credit limit***060B\* INTERMEDIATE BADMINTON****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 060A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Continuation of ES 060A with emphasis on playing strategy and match play in singles and doubles.

*CSU, UC credit limit*



**060C\* ADVANCED BADMINTON 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 060B or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 1 hour laboratory

Advanced playing techniques, strategy, knowledge and attitudes for students who wish to excel in badminton and increase aerobic capacity.

*CSU, UC credit limit***076A\* BEGINNING TENNIS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 1 hour laboratory

Presentation of the official singles and doubles games including basic strokes, rules, strategy and etiquette.

*CSU, UC credit limit***076B\* INTERMEDIATE TENNIS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 076A or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 1 hour laboratory

Continuation of ES 076A with emphasis on individual stroke analysis, playing strategy and match play, singles and doubles.

*CSU, UC credit limit***076C\* ADVANCED TENNIS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 076B or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 1 hour laboratory

Continuation of ES 076B with emphasis on advanced techniques, strategy and match play for singles, doubles and mixed doubles.

*CSU, UC credit limit***080A\* MODERN DANCE I 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 2 hours laboratory

Dance as an artistic expression. Beginning modern dance technique using an eclectic approach. Movement fundamentals including torso, legs and other parts of the body. Floor exercises, fall and recovery sequences, locomotion progressing from basic to variations. Short dance sequences using pure movement. Basic knowledge of the history of modern dance and its place in the world of dance. Beginning vocabulary of modern dance.

*CSU, UC***080B\* MODERN DANCE II 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 080A or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Continuation of ES 080A. Modern dance technique using an eclectic approach. Center exercises of the torso using various movement qualities: stretches, contractions and releases; movements of the feet, legs and combinations; floor exercises; fall and recoveries; locomotor movement patterns. Dances using various themes. Review of the history of modern dance. The leading exponents of modern dance in the United States.

*CSU, UC***080C\* MODERN DANCE III 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 080B or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Dance as an art form. More advanced dance skills using the torso in combination with stretches, swings, contractions and releases. Longer combinations at center involving the feet and legs. Floor and recovery sequences combined with floor work and balances. Movement patterns based on spatial design and rhythms. Dances based on different ideas and set to music. Knowledge of the work of leading modern dance companies, choreographers and dancers, locally and nationally.

*CSU, UC***080D\* MODERN DANCE IV 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 080C or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Dance as an art form. Advanced dance skills using the theories of Doris Humphrey, Jose Limon, Martha Graham and others well-known in the modern dance field. Dance technique using an eclectic approach. Choreographed dances based on set themes and using different forms of accompaniment. Knowledge of the work of leading modern dance companies and their choreographers.

*CSU, UC***084A\* JAZZ DANCE I 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary to prepare the body as an instrument of expression in the jazz dance style with both historical and current dance trends. Emphasizes enjoyment of dance as a form of exercise. Instruction at the beginning level.

*CSU, UC***084B\* JAZZ DANCE II 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 084A or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary to prepare the body as an instrument of expression in the jazz dance style with both historical and current dance trends. Emphasizes enjoyment of dance as a form of exercise. Instruction at the intermediate level.

*CSU, UC***084C\* JAZZ DANCE III 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 084B or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary to prepare the body as an instrument of expression in the jazz dance style with both historical and current dance trends. Emphasizes enjoyment of dance as a form of exercise. Instruction at the intermediate/advanced level.

*CSU, UC***084D\* JAZZ DANCE IV 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 084C or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary to prepare the body as an instrument of expression in the jazz dance style with both historical and current dance trends. Emphasizes enjoyment of dance as a form of exercise. Instruction at the advanced level.

*CSU, UC***088A\* BALLET I 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary for the study of classical ballet. Includes ballet terminology, use of "turnout" position of feet and legs, alignment of spine, and placement of weight at the barre, in center floor and traveling patterns. Emphasizes enjoyment of dance as a form of exercise. Instruction at the beginning level.

*CSU, UC***088B\* BALLET II 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 088A or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary for the study of classical ballet. Includes ballet terminology, use of "turnout" position of feet and legs, alignment of spine, and placement of weight at the barre, in center floor and traveling patterns. Emphasizes enjoyment of dance as a form of exercise. Instruction at the intermediate level.

*CSU, UC***088C\* BALLET III 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 088B or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary for the study of classical ballet. Includes ballet terminology, use of "turnout" position of feet and legs, alignment of spine, and placement of weight at the barre, in center floor and traveling patterns. Emphasizes enjoyment of dance as a form of exercise. Instruction at the intermediate/advanced level.

*CSU, UC***088D\* BALLET IV 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: ES 088C or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 2 hours laboratory

Designed to introduce and develop movement principles and skills necessary for the study of classical ballet. Includes ballet terminology, use of "turnout" position of feet and legs, alignment of spine, and placement of weight at the barre, in center floor and traveling patterns. Emphasizes enjoyment of dance as a form of exercise. Instruction at the advanced level.

*CSU, UC*

**125A\* BEGINNING GOLF 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Instruction and practice in basic golf skills. Instruction in course conduct, rules and self-evaluation of skills is emphasized. Practice limited to development of swing, stance and grip.  
*CSU, UC credit limit*

**125B\* INTERMEDIATE GOLF 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 125A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Instruction and practice in golf requiring skills to play small executive course. Students must furnish their own equipment.  
*CSU, UC credit limit*

**125C\* ADVANCED GOLF 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 125B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Continuation of ES 125B with emphasis on advanced techniques, strategies and tournament play in the game of golf. Students must furnish their own equipment.  
*CSU, UC credit limit*

**150\* ADAPTED SPORTS EDUCATION 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 For physically challenged individuals in various sports and physical activities including track and field, basketball, football, weight training and golf. Students will learn the fundamental principles of physical fitness and its impact on lifelong health and wellness.  
*CSU, UC credit limit*

**155A\* BEGINNING BASKETBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Instruction and practice in the basic skills of basketball with emphasis on individual skill development and team play. Students will also learn the fundamental principles of physical fitness and its impact on lifelong health and wellness.  
*CSU, UC credit limit*

**155B\* INTERMEDIATE BASKETBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 155A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Continuation of ES 155A with emphasis on intermediate level individual skill development, team play, defensive/offensive tactics and team strategies. Students will also learn the fundamental principles of physical fitness and its impact on lifelong health and wellness.  
*CSU, UC credit limit*

**155C\* ADVANCED BASKETBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 155B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Continuation of ES 155B with emphasis on advanced level individual skill development, team play, defensive/offensive tactics and team strategies. Students will also learn the

fundamental principles of physical fitness and its impact on lifelong health and wellness.

*CSU, UC credit limit*

**170A\* BEGINNING SOCCER 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Basic skills and strategy of soccer with emphasis on team play and individual skills.  
*CSU, UC credit limit*

**170B\* INTERMEDIATE SOCCER 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 170A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Intermediate soccer skills and team play. Emphasizes techniques, team strategy, language and lore of the game of soccer.  
*CSU, UC credit limit*

**170C\* ADVANCED SOCCER 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 170B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Emphasis on advanced individual soccer skills and team play.  
*CSU, UC credit limit*

**171A\* BEGINNING SOFTBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Designed to acquaint students with the basic fundamentals of the game of softball. For individuals of all ages and fitness levels. Lifelong health and vigor through exercise and activities will be emphasized. Enjoyment of the game of softball, physical activity, safety and injury prevention will be promoted. Individual position skill will also be emphasized, as well as offense and defense strategies.  
*CSU, UC credit limit*

**171B\* INTERMEDIATE SOFTBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 171A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Designed to acquaint students with the basic fundamentals of the game of softball. For individuals of all ages and fitness levels. Lifelong health and vigor through exercise and activities will be emphasized. Enjoyment of the game of softball, physical activity, safety and injury prevention will be promoted. Individual position skill will also be emphasized, as well as offense and defense strategies.  
*CSU, UC credit limit*

**171C\* ADVANCED SOFTBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 171B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Designed to acquaint students with the basic fundamentals of the game of softball. For individuals of all ages and fitness levels. Lifelong health and vigor through exercise and activities will be emphasized. Enjoyment of the game of softball, physical activity, safety and injury prevention will be promoted. Individual position skill will also be emphasized, as well as offense and defense strategies.  
*CSU, UC credit limit*

*CSU, UC credit limit*

**175A\* BEGINNING VOLLEYBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Competency development in the team sport of volleyball. Emphasizes individual techniques and team strategy.  
*CSU, UC credit limit*

**175B\* INTERMEDIATE VOLLEYBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 175A or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Continuation of ES 175A with emphasis on intermediate level play and strategy and four-person teams.  
*CSU, UC credit limit*

**175C\* ADVANCED VOLLEYBALL 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ES 175B or equivalent with a grade of "C" or better or "Pass"  
 1 hour lecture, 1 hour laboratory  
 Continuation of ES 175B with emphasis on advanced play and strategy and four-person teams.  
*CSU, UC credit limit*

**180\* SELF DEFENSE FOR WOMEN 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory  
 Basic principles of practical personal protection for women, with emphasis on awareness and prevention of situations that may leave a person vulnerable to crime, especially rape. Physical, mental and verbal responses will be taught and practiced so students may develop the confidence to stand up and defend themselves, if needed. Students will also learn the fundamental principles of physical fitness and their impact on lifelong health and wellness.  
*CSU, UC credit limit*

**181A\* KARATE I 1.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Introduction and practice in the basic skills and philosophy of Shotokan Karate. This course will introduce the basic stances, blocks, and kicks.  
*CSU, UC credit limit*

**181B\* KARATE II 1.5 UNITS**

Prerequisite: ES 181A or equivalent with a grade of "C" or better or "Pass" or possession of equivalent proficiency (8th kyu ranking in Shotokan Karate from ASKA, JKA, AJKA)  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 Introduction and practice in the intermediate skills and philosophy of Shotokan Karate. Introduces intermediate level blocks, strikes, punches and kicks, which will be taught individually and then linked and practiced in two and three movement combinations. Also covers timing and distancing for three-step sparring without a count and the proper performance and timing of kata Heian Nidan.  
*CSU, UC credit limit*

**181C\* KARATE III 1.5 UNITS**

Prerequisite: ES 181B or equivalent with a grade of "C" or better or "Pass" or possession of equivalent proficiency (7th kyu ranking in Shotokan Karate from ASKA, JKA, AJKA)  
Corequisite: None

Recommended Preparation: None  
1 hour lecture, 2 hours laboratory

Introduction and practice in the high intermediate skills and philosophy of Shotokan Karate. Introduces Intermediate II level strikes and blocks, three-move combinations, one step sparring—attacking and defending against face, stomach and front kick—and kata Heian Sandan.  
*CSU, UC credit limit*

**181D\* KARATE IV 1.5 UNITS**

Prerequisite: ES 181C or equivalent with a grade of "C" or better or "Pass" or possession of equivalent proficiency (6th kyu ranking in Shotokan Karate from ASKA, JKA, AJKA)  
Corequisite: None

Recommended Preparation: None  
1 hour lecture, 2 hours laboratory

Introduction and practice in the advanced skills and philosophy of Shotokan Karate. Introduces advanced level blocks and strikes, four-move combinations, one-step sparring without a count for five techniques, and kata Heian Yondan.  
*CSU, UC credit limit*

**199 SPECIAL STUDIES OR PROJECTS IN EXERCISE SCIENCE 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Exercise Science under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**200\* CONDITIONING AND INJURY PREVENTION FOR ATHLETICS 1.5 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

1 hour lecture, 2 hours laboratory  
Emphasis on physical conditioning and mastery of the basic fundamentals of movement and skills necessary to reduce the risk of injury associated with athletic activity. Conditioning activities, running games and resistance exercises will be emphasized.

*CSU, UC credit limit*

**206 INTERCOLLEGIATE BASKETBALL 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Intercollegiate competition in the sport of basketball. Instruction in specific skills, performance techniques and strategies, as well as daily practice, development of physical fitness, team travel and competition against other collegiate institutions. Open to all students who wish to compete at the intercollegiate level.

*CSU, UC credit limit*

**207 ADVANCED TECHNIQUES AND STRATEGIES OF INTERCOLLEGIATE BASKETBALL 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

1 hour lecture, 1 hour laboratory  
Instruction and practice in advanced techniques and strategies of basketball. By incorporating game experience, students will formulate an understanding of the different styles of play. Also

serves as the off-season preparation course for the intercollegiate team.

*CSU, UC credit limit*

**209 INTERCOLLEGIATE CROSS-COUNTRY 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Open to students with advanced cross-country skills who wish to compete at the intercollegiate level.

*CSU, UC credit limit*

**213 INTERCOLLEGIATE GOLF 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Instruction in team play and strategy. Competition in practice and league play.

*CSU, UC credit limit*

**218 INTERCOLLEGIATE SOCCER 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Open to students with advanced soccer skills who wish to compete at the intercollegiate level.

*CSU, UC credit limit*

**219 ADVANCED TECHNIQUES AND STRATEGIES OF INTERCOLLEGIATE SOCCER 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

1 hour lecture, 1 hour laboratory  
Designed for students with advanced soccer skills. Instruction and practice in the advanced techniques and strategies of soccer. By incorporating game experience, students will formulate an understanding of the different styles of play. Also serves as the off-season preparation course for the intercollegiate team.

*CSU, UC credit limit*

**224 INTERCOLLEGIATE TENNIS 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Intercollegiate competition in the sport of tennis. Instruction in specific skills, performance techniques and strategies, as well as daily practice, development of physical fitness, team travel and competition against other collegiate institutions. Open to all students who wish to compete at the intercollegiate level.

*CSU, UC credit limit*

**225 ADVANCED TECHNIQUES AND STRATEGIES OF INTERCOLLEGIATE TENNIS 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

1 hour lecture, 1 hour laboratory  
Designed for advanced tennis players who are proficient in the fundamental skills and have knowledge of the basic rules of the game. Instruction is geared toward advanced techniques, strategies and team play. Also serves as the off-season preparation course for the intercollegiate team.

*CSU, UC credit limit*

**227 INTERCOLLEGIATE TRACK 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Emphasis on advanced track skills for those who wish to compete at the intercollegiate level.

*CSU, UC credit limit*

**230 INTERCOLLEGIATE VOLLEYBALL 2 UNITS**

Prerequisite: Tryout  
Corequisite: None  
Recommended Preparation: None

5 hours lecture, 5 hours laboratory  
Intercollegiate competition in the sport of volleyball. Instruction in specific skills, performance techniques and strategies, as well as daily practice, development of physical fitness, team travel and competition against other collegiate institutions. Open to all students who wish to compete at the intercollegiate level.

*CSU, UC credit limit*

**231 ADVANCED TECHNIQUES AND STRATEGIES OF INTERCOLLEGIATE VOLLEYBALL 1 UNIT**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

1 hour lecture, 1 hour laboratory  
Designed for advanced volleyball players who are proficient in the fundamental skills and have knowledge of the basic rules of the game. Instruction is geared toward advanced techniques, strategies and team play. Also serves as the off-season preparation course for the intercollegiate team.

*CSU, UC credit limit*

**250 INTRODUCTION TO PHYSICAL EDUCATION 2 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

2 hours lecture  
History, philosophy and principles of physical education and exercise science. Study of the aims and objectives of modern physical education with emphasis on the development of basic philosophy and background for professional education.

*CSU, UC*

**253 PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

2.5 hours lecture, 1.5 hours laboratory  
The statewide program in physical education for elementary schools forms the basis for this course. Includes the study of child development, personality development, analysis and practice of fundamental skills, selection of activities, organizational materials and evaluation of teaching ability.

*CSU*

**254 PRINCIPLES OF PERSONAL TRAINING 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

3 hours lecture  
Identification and study of the techniques, responsibilities and skills necessary to perform the duties of a personal trainer. Emphasizes current knowledge of health principles as it pertains to fitness and wellness. Provides the necessary information to pass the Personal Trainer Certification Exams for national certifying organizations (ACE, NSCA, etc.). Hands-on lab training in the use of fitness equipment.

*CSU*

**254L FIELD EXPERIENCE FOR PERSONAL TRAINERS****1 UNIT**

Prerequisite: ES 254 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

4 hours unpaid work experience per week

Provides volunteer work experience in the field of personal training in selected fitness facilities. Students will work under the direct supervision of a certified Exercise Science instructor or commercially certified personal trainer.

*CSU***255 CARE AND PREVENTION OF ATHLETIC INJURIES****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Designed to (1) provide a background for individuals interested in an athletic training career, (2) develop an understanding of athletic injuries in terms of prevention, recognition, evaluation, treatment, first aid and emergency care for coaches and/or teachers in athletic settings, and (3) provide athletes with an understanding of how to manage their own injuries and methods of prevention.

*CSU, UC credit limit***270 COOPERATIVE GAMES****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Focuses on planning and implementing cooperative games for physical education/activities involving pre-school and elementary school-aged children in a variety of settings. The philosophy behind the need for cooperative games will be explored, as well as the importance of incorporating movement into daily life.

*CSU, UC credit limit***271 FITNESS WALKING WITH CHILDREN****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Focuses on planning and implementing a walking program for children in a variety of settings. Lifelong fitness activities and walking as a form of appropriate and challenging exercise will be emphasized.

*CSU***272 ISSUES IN CHILDHOOD OBESITY****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Provides an opportunity for review of current knowledge relating to the cause and prevention of childhood obesity. Content will include suggested physical activity planning and nutrition guidelines, as well as historically relevant trends in regards to childhood obesity, diet and physical activity.

*CSU***273 FIELD EXPERIENCE IN SCHOOL-BASED RECREATIONAL LEADERSHIP****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours paid or 4 hours unpaid work experience per week

Under supervision at approved field placement sites, students will participate in all outdoor recreational activities. Students will develop and supervise fitness and recreational experiences,

conduct group activities, handle routines, and respond to individual and group needs of school-aged children in a school-based, day care or school day environment.

*CSU***298 SELECTED TOPICS IN EXERCISE SCIENCE****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Exercise Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN EXERCISE SCIENCE****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Exercise Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

*CSU***FRENCH****120 FRENCH I****5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours lecture

Introductory course to the French language and the cultures of its speakers. Designed for students with very little or no knowledge of French. Facilitates the practical application of the language in everyday oral and written communication at the beginning level. Since the focus will be on basic communication skills, the class will be conducted in French as much as possible. Students will learn structures that will enable them to function in French in everyday contexts while becoming familiar with the French speaking world.

*AA/AS GE, CSU, CSU GE, IGETC, UC***121 FRENCH II****5 UNITS**

Prerequisite: FREN 120 or equivalent with a grade of "C" or better or "Pass" or two years of high school French

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of FREN 120. The course will continue to develop oral and written skills based on practical everyday needs.

*AA/AS GE, CSU, CSU GE, IGETC, UC***199 SPECIAL STUDIES OR PROJECTS IN FRENCH****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in French under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**220 FRENCH III****5 UNITS**

Prerequisite: FREN 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school French

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of FREN 121. The course will continue to develop oral, listening, reading and writing skills in order to improve proficiency in French.

*AA/AS GE, CSU, CSU GE, IGETC, UC***221 FRENCH IV****5 UNITS**

Prerequisite: FREN 220 or equivalent with a grade of "C" or better or "Pass" or four years of high school French

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of FREN 220. The course will continue to develop oral, listening, reading and writing skills in order to improve proficiency in French.

*AA/AS GE, CSU, CSU GE, IGETC, UC***250 CONVERSATIONAL FRENCH I****3 UNITS**

Prerequisite: FREN 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school French

Corequisite: None

Recommended Preparation: None

3 hours lecture

Develop oral, reading, writing and listening skills with an emphasis on oral proficiency.

*AA/AS GE, CSU, CSU GE, IGETC, UC***251 CONVERSATIONAL FRENCH II****3 UNITS**

Prerequisite: FREN 250 or equivalent with a grade of "C" or better or "Pass" or four years of high school French

Corequisite: None

Recommended Preparation: None

3 hours lecture

Continues to develop oral, reading, writing and listening skills with an emphasis on oral proficiency.

*AA/AS GE, CSU, CSU GE, IGETC, UC***298 SELECTED TOPICS IN FRENCH****1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in French not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN FRENCH****1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in French not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

*CSU*

## GEOGRAPHY

### 106 WORLD REGIONAL GEOGRAPHY

3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

World regional geography studies the overarching principles of human geography as applied to the major geographic regions of the world including Africa, the Middle East, South and East Asia, Australia, Europe and the Americas. Regional analysis will include: language, religion and ethnicity; population, land use and settlement patterns; economic, social and political systems; urban and environmental relationships; and the effects of technology and globalization in a rapidly changing world.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 120 ELEMENTS OF PHYSICAL GEOGRAPHY

3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Physical geography is the study of the patterns and processes that underlie the fundamental nature and dynamics of the physical world. Topics will be investigated from a systems perspective, with particular attention to the spatial relationships among the atmosphere, hydrosphere, lithosphere and biosphere. Global, regional and local environmental concerns will be discussed as relevant to course topics.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 121 PHYSICAL GEOGRAPHY LABORATORY

1 UNIT

Prerequisite: GEOG 120 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
3 hours laboratory

Augments the physical geography lecture course through practical applications of materials covered in GEOG 120. Laboratory exercises include practical applications of the following: map analysis and interpretation; Earth-Sun relations; weather and climate; basic rock and mineral identification; plate tectonics; erosional and depositional environments; landform identification and genesis; soil and vegetation distributions. Special attention given to the unique local setting of San Diego County. Field experience incorporated into laboratory exercises on a regular basis.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 122 REGIONAL FIELD STUDIES IN PHYSICAL GEOGRAPHY

1 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: GEOG 120 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
1 hour lecture, 1 hour laboratory

Designed to provide focused experience in geographical field studies of a selected region in western North America. Emphasizes observation and interpretation of physical geography phenomena through direct experience in a field setting. Requires a multi-day field trip as well as on-campus meetings prior to and immediately following the field trip. Students must supply their own camping gear including food, cooking gear, stove, eating utensils, sleeping bag and tent. *May be repeated with different content for a maximum of 4 units.*

CSU

### 130 HUMAN AND CULTURAL GEOGRAPHY

3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introduction to the study of the dynamics and complex relationships between the Earth's people and the ever-changing world in which they live. Special attention given to the historical role of the human-environment relationship, as well as the influences of language, religion, and other cultural factors in shaping the world's many cultures. Topics investigated on a global, regional and local scale include: origin and diffusion of the world's major languages and religions; population and settlement patterns; political and economic systems; methods of livelihood; the role of technology in our rapidly changing world. Emphasis on human-environment relations and understanding and appreciation of our diverse multicultural world. Local field trips link course materials to real-world phenomena.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 132 CULTURAL ETHNOBOTANY

3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Cultural ethnobotany is the study of the relationship between indigenous cultures and the plants of their ancestral homeland. This course will focus on the ethnobotany of the Kumeyaay/Diegueno people of southern California and northern Baja California, with particular attention to how plants were used to sustain, heal, and protect the Kumeyaay Nation. Both traditional and scientific methods will be used to classify plants and identify their historical and modern uses, and local field trips will provide opportunities for working directly with plant materials in their natural habitats.

AA/AS GE, CSU, UC

### 198 SUPERVISED TUTORING

0 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

### 199 SPECIAL STUDIES OR PROJECTS IN GEOGRAPHY

1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Geography under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN GEOGRAPHY

1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Geography not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a

seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN GEOGRAPHY

1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Geography not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## GEOLOGY

### 104 EARTH SCIENCE

3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

This physical science course studies the patterns and processes that define Earth's major physical systems, the basic energy and material flows by which these systems operate, and the comparative place of our planet within the larger solar system. Topics will be investigated at global, regional and local scales and will provide a general synthesis of the disciplines of astronomy, geology, physical geography, meteorology and oceanography. Environmental disturbance and climate change will be addressed within the context of the topics described above.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 110 PLANET EARTH

3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introductory physical science course investigating the composition of the earth and the geologic processes by which it formed. Emphasis is placed on the unifying theory of plate tectonics and the associated activities of volcanism, earthquakes, and mountain building. Topics include crystals, minerals and rocks, their distribution within the planet, and the evolution of the earth across deep time. The sculpturing of the surface of the planet by wind, waves, streams, glaciers and landslides will also be considered.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 111 PLANET EARTH LABORATORY

1 UNIT

Prerequisite: GEOL 110 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
3 hours laboratory

Physical science laboratory course designed to accompany and augment GEOL 110. Includes laboratory and field investigations of the Earth, emphasizing hands-on experience with minerals, rocks and landforms, as well as topographic and geologic maps.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 198 SUPERVISED TUTORING

0 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN GEOLOGY 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Geology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN GEOLOGY 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Geology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN GEOLOGY 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Geology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
 CSU

**GRAPHIC DESIGN****105 FUNDAMENTALS OF DIGITAL MEDIA 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Basic computer skills (can be learned in introductory BOT or CIS classes)  
 2 hours lecture, 3 hours laboratory  
 Explores the digital hardware and software used in graphic design with an emphasis on print graphics production skills. Students will learn how to operate the computer and use software applications common in graphic design (Adobe Illustrator, Photoshop, InDesign). Design principles will be introduced as students explore the creative potential and practical aspects of graphic design with realistic project assignments.  
 CSU, UC

**110 GRAPHIC DESIGN PRINCIPLES 3 UNITS**

Prerequisite: GD 105 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: ART 124 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Explores the fundamental concepts of graphic design and visual communication. Basic concepts, principles and elements of design are reinforced through creative problem solving. Text and visual elements such as photos and illustrations are integrated to create appropriate and aesthetic solutions to print graphics problems. Students will investigate career options and begin portfolio development.  
 CSU

**125 TYPOGRAPHY 3 UNITS**

Prerequisite: GD 105 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: GD 110 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Explores the fundamental nature of typography as a reflection of society. Characters are examined as art forms and as carriers of language and ideas. Technical aspects of typography will be considered including function and production. Design letter forms using both traditional and digital processes with an emphasis on developing a professional portfolio.  
 CSU

**126ABCD PHOTOSHOP DIGITAL IMAGING 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Basic computer skills (creating, editing, copying, deleting, organizing files)  
 2 hours lecture, 3 hours laboratory  
 Explores capturing, digitizing and editing images. Students will learn to use scanners and digital cameras to capture or digitize images and Adobe Photoshop to edit, manipulate, retouch, enhance and composite digital images. Explores digital workflows, color management, monitor calibration, and output methods used to achieve the best possible output from digital files. Emphasis on meeting aesthetic and technical requirements of the commercial arts industry.  
 CSU

**129 PAGE LAYOUT 3 UNITS**

Prerequisite: GD 110 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: GD 125 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Emphasizes the aesthetic and functional organization of text, charts, graphs, line art, illustrations and photos in multiple page documents. Use of traditional and digital processes to develop creative thumbnails, roughs and comprehensive layouts. Emphasis on preparing text and images for electronic pre-press and for selecting printing options. Students will develop work for a professional portfolio.  
 CSU

**130 PROFESSIONAL BUSINESS PRACTICES 3 UNITS**

Prerequisite: GD 129 or CIS 212 or equivalent with a grade of "C" or better or "Pass". Student must have a substantial body of completed design or web projects prior to enrollment in this class.  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Emphasizes professional business practices used in the graphic design industry including design studios, agencies and self-employment. Learn how to create a resume, market a portfolio, acquire clients and set fees. Students will refine their design capabilities using text and images while learning how to perform as business professionals.  
 CSU

**198 SUPERVISED TUTORING 0 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 TBA hours  
 Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently

enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN GRAPHIC DESIGN 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Graphic Design under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**210 PROFESSIONAL DIGITAL PHOTOGRAPHY I 3 UNITS**

Prerequisite: GD 126ABCD or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 This practical course is intended for anyone interested in traditional photographic methods as they apply to digital photography. Students will learn to properly light, compose, expose, adjust, manipulate and print digital photographs. Explores advanced camera settings and file editing with Adobe Photoshop. Assignments will emphasize skills needed to produce high quality images for print and web display.  
 CSU

**211 PROFESSIONAL DIGITAL PHOTOGRAPHY II 3 UNITS**

Prerequisite: GD 210 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Emphasizes advanced photographic and digital imaging techniques, expanding on knowledge and skills acquired in GD 126ABCD and 210. Focuses on various applications of commercial photography including portraiture, tabletop, still life and photo-illustration. Unlike most fine art oriented photography classes, this course will present aesthetic and technical aspects of photography as they pertain to graphic communication and commercial art.  
 CSU

**217 WEB GRAPHICS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 212 or equivalent with a grade of "C" or better or "Pass" or basic computer and Internet skills and ability to create and upload a simple website; GD 126ABCD or ability to use Adobe Photoshop to create digital images  
 2 hours lecture, 3 hours laboratory  
 Focuses on the creation of attractive, usable web interfaces and graphic elements. Students will use Photoshop to design and develop common web design elements as they explore information design, screen design and navigation design.  
 CSU, UC

**222 FLASH WEB ANIMATION 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: CIS 212 or equivalent with a grade of "C" or better or "Pass" or basic computer and Internet skills and ability to create and upload a simple website  
 2 hours lecture, 3 hours laboratory  
 Covers design, development and implementation of web-based animation using Macromedia Flash. Students will create common web animation projects such as advertisements and web interfaces.  
 CSU

**223 ADVANCED FLASH WEB ANIMATION****3 UNITS**

Prerequisite: GD 222 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: CIS 212 or equivalent with a grade of "C" or better or "Pass" or ability to create and upload a simple website

2 hours lecture, 3 hours laboratory

Develop interactive, rich media Flash web applications. Includes principles of interaction and content design, ActionScript programming, and techniques to effectively incorporate animation, sound and graphics.

*CSU***225 DIGITAL ILLUSTRATION****3 UNITS**

Prerequisite: GD 105 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: ART 124, GD 110 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

Uses vector and raster image software to create digital illustrations. Applies design principles and computer technology to create exciting and aesthetic graphic images. Students will produce artwork based on contemporary illustration styles. Applicable for fine art, graphic design, and interactive design.

*CSU, UC***230 GRAPHIC DESIGN INTERNSHIP****1-4 UNITS**

Prerequisite: GD 129 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

75 hours paid or 60 hours unpaid work experience per unit

Provides field experience in design, business procedures, client relationships, and supervision of work executed for practicing professionals and design-related firms. Student is responsible for finding an employer. Assessment of student to be performed by instructor based on recommendations of supervisor at place of employment. Work experience must be started and completed during the semester that units are earned. **Pass/No Pass only.****298 SELECTED TOPICS IN GRAPHIC DESIGN****1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Graphic Design not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN GRAPHIC DESIGN****1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Graphic Design not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

*CSU***HEALTH EDUCATION****105 HEALTH EDUCATION FOR TEACHERS****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Designed for multiple or single subject teacher candidates, providing introductory knowledge of broad health-related issues relevant to K-12 curriculum. Topics include primary and secondary school health education curriculum design, basic legal issues of health education in California, discussion of community resources, behavior modification techniques, stress management, benefits of regular exercise, nutrition and eating disorders, disease prevention, childhood obesity, sexually transmitted diseases, contraception, substance abuse including alcohol and tobacco, safety in the home and school, and violence including gang and domestic violence. This course is designed to meet the state of California health education requirement for the K-12 teaching credential.

*CSU***120 PERSONAL HEALTH AND LIFESTYLES****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Identification and study of the major health problems in today's society. Emphasizes individual responsibility for personal health and the promotion of informed, positive health behaviors. Content areas include nutrition and weight control, substance abuse, environmental hazards, diseases and safety.

*AA/AS GE, CSU, CSU GE, UC, UC credit limit***122 ENVIRONMENTAL AND COMMUNITY HEALTH****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduction to the environmental, biological and socio-cultural determinants of health quality. Areas of emphasis include: environmental health, health and community behavior, infectious disease, chronic disease, methods of public health investigation, health promotion, implementation and regulation. Within these topic areas examination of the matrix of physiological, socio-cultural and psychological determinants of health will be addressed including: health impacts of chemical and physical agents in domestic and work surroundings; water treatment and quality, environmental pollution and occupational health and safety; substance abuse, stress management and mental illness; infectious diseases; growing health trends in the American population such as obesity, diabetes mellitus and Alzheimer's; investigation of health agencies involved, governmental health policies, and their roles in shaping community health.

*AA/AS GE, CSU, CSU GE, UC, UC credit limit***155 REALITIES OF NUTRITION****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduction to the basic principles of nutrition and its relationship to good health. Evaluation of current nutritional information (and misinformation) with emphasis on critical thinking to determine optimal dietary choices. Study of the major dietary goals and guidelines. Examination of weight maintenance techniques,

eating disorders, food labeling, food safety, and special needs at various stages in the life cycle. *CSU, CSU GE, UC***158 NUTRITION FOR ATHLETES****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Investigates the effects of nutrition and various dietary regimens on athletic performance, physical fitness and general health. Students will compare the physiological effects of optimal nutrition vs. inadequate nutrition for the general population as well as athletes. Cultural, sociological and psychological influences will be examined. Discussion of "fads" and dietary supplements will be included.

*CSU, CSU GE***199 SPECIAL STUDIES OR PROJECTS IN HEALTH EDUCATION****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Health Education under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.***201 INTRODUCTION TO PUBLIC HEALTH****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduction to the discipline of public health. Areas of emphasis include the definition of "public health," the history and accomplishments of public health officials and agencies, an overview of various public health professions and institutions, and an in-depth examination of the core public health disciplines. These include epidemiology of infectious and chronic disease, environmental health, health promotion, global health (including health disparities and cultural competence), and health policy and management (including disaster preparedness).

*AA/AS GE, CSU, CSU GE, UC***251\* HEALTHY LIFESTYLES: THEORY AND APPLICATION****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Combination of physical activity and lecture provides regular exercise to develop physical fitness and information about basic, sound nutrition as it pertains to weight control. Guidelines that promote lifetime exercise and a healthy lifestyle will be emphasized.

*CSU, CSU GE***255 SCIENCE OF NUTRITION****3 UNITS**

Prerequisite: BIO 130, 131 and CHEM 115 or 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Establishes the relationship between foods and science through the study and integration of chemistry, biology and nutrition science. The metabolism and functions and sources of nutrients will be covered in detail to correlate the role they have in promotion of health and disease prevention. The challenges that occur during the human life cycle and how nutrient needs change will be studied. Includes evaluation from a scientific perspective of current concepts, controversies, and dietary recommendations.

Nutritional issues as they relate to weight maintenance, eating disorders, food labeling, food safety and special needs at various stages in the life cycle will be thoroughly examined.

*CSU, CSU GE, UC*

**298 SELECTED TOPICS IN HEALTH EDUCATION 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Health Education not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN HEALTH EDUCATION 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Health Education not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

*CSU*

\*Meets the activity requirement for graduation.

## HISTORY

**100 EARLY WORLD HISTORY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Early World History examines ancient to early-modern civilizations and the interconnections between diverse world societies to 1500. Included are Mesopotamia, Egypt, China, India, the classical West, early Islamic civilization, civilizations of Africa, and civilizations of the Americas and Oceania.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**101 MODERN WORLD HISTORY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Modern World History examines the civilizations, societies and global interrelationships of the peoples of Africa, the Americas, Asia, Europe, and Oceania since 1500.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**105 EARLY WESTERN CIVILIZATION 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of Mediterranean and European cultures, thought and institutions from ancient times to 1650. Includes Greece, Rome, Medieval Europe, the Renaissance, and the Reformation.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**106 MODERN WESTERN CIVILIZATION 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of European cultures, thought and institutions from 1650 to the present. Includes Absolutism, Scientific Revolution, the Enlightenment, age of the French Revolution, nineteenth-century ideologies, imperialism, the world wars, the Cold War, and contemporary Europe.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**108\* EARLY AMERICAN HISTORY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of the early political, social and cultural development of the entire geographic area that is now the United States, with emphasis on the origins of basic American institutions and ideals.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**109\* MODERN AMERICAN HISTORY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of the political, social and cultural development of modern United States with emphasis on the economic, social and technological changes and the rise of the United States as a world power.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**114\* COMPARATIVE HISTORY OF THE EARLY AMERICAS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

The Americas from ancient times to independence. Emphasis on ancient American civilizations, conquest and interactions among Native, European and African cultures. Colonial institutions and the development of new nations and their political systems.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**115\* COMPARATIVE HISTORY OF THE MODERN AMERICAS 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of the political, social, economic and cultural development of the modern Americas. Emphasis on interaction among Native, European and African cultures and the social, political and economic transformations of the modern United States, Latin America and Canada.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**118\* U.S. HISTORY: CHICANO/CHICANA PERSPECTIVES I 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Historical survey of the Chicano people in the United States in which attention is given to social, political and economic background. Particular emphasis on the development of the Spanish-speaking peoples' economic, social and political experience in the United States, especially in the Southwest from the Indo-Hispanic period to the Mexican-American War.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**119\* U.S. HISTORY: CHICANO/CHICANA PERSPECTIVES II 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Historical survey of the Chicano people in the United States in which attention is given to social, political and economic background. Particular emphasis on the development of the Spanish-speaking peoples' economic, social and political experience in the United States, especially in the Southwest from the Mexican-American War to the present.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**122\* WOMEN IN EARLY AMERICAN HISTORY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Covers the social, political, cultural, economic and intellectual development of women in America from pre-contact to 1877 in the entire geographic area that is now the United States. Women's experiences are placed in the context of the origins of American institutions and ideals.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**123\* WOMEN IN MODERN AMERICAN HISTORY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Covers the social, political, cultural, economic and intellectual development of women in America from 1877 to the present in the entire area that is now the United States. Women's experiences are examined in the context of evolving American institutions.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**124 HISTORY OF CALIFORNIA 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of political, social and economic development of the State of California from the earliest Spanish explorations and settlements to the present. Unit of study in California state and local government included.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**130\* U.S. HISTORY AND CULTURES: NATIVE AMERICAN PERSPECTIVES I 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Historical survey of the indigenous people throughout the North American continent from the earliest recorded knowledge to 1850. Attention is given to Indian perspectives of native and non-native cultures. The influence of American Indians on the federal constitution and the political philosophies of early Americans will be studied. Indian political organization and its parallels and differences in early American political organizations and philosophies are studied. Particular attention is given to legislation and its impact on Indian culture and society.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**131\* U.S. HISTORY AND CULTURES: NATIVE AMERICAN PERSPECTIVES II 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Historical survey of the indigenous peoples of the North American continent from the period of 1850 to the present. Attention will be given to contemporary, historical, political, and socio-economic issues affecting the American Indian nationwide, statewide and locally. Indian perspectives of native and nonnative cultures will be included. The federal and state constitutions are studied with special emphasis given to the effects on and influence of the Indian culture and society. Particular attention is given to political philosophies and the impact of legislation on Indian culture and society.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*



**132 KUMEYAAY HISTORY I: PRECONTACT - 1900** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Historical survey of the Kumeyaay Nation from prehistoric times to 1900. Attention is given to Kumeyaay perspectives of Kumeyaay and non-Kumeyaay cultures. Kumeyaay oral history will be incorporated with discussions of the Creation Story, bird songs, ceremonies, religion and peon games. Also includes an overview of tribal sovereignty and Kumeyaay independence, laws pertaining to Native Americans in the United States, and early assimilation policies of the United States and Mexico.

AA/AS GE, CSU, CSU GE, IGETC, UC

**133 KUMEYAAY HISTORY II: 1900 - PRESENT** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Historical survey of the Kumeyaay Nation from 1900 to the present. Attention is given to Kumeyaay perspectives of Kumeyaay and non-Kumeyaay cultures. Specific segments include: The Mission Indian Federation, The Indian Relocation Act, The Termination Era and PL 280, Indian Activism, Indian Self-Determination, and the Indian Gaming Regulatory Act and contemporary Tribal Governments. The modern history of the Kumeyaay Nation including participation in the Mission Indian Federation, impact of Public Law 280, and the growth leading to the creation of current Indian Gaming in San Diego County will be examined. An overview of contemporary tribal sovereignty and Kumeyaay independence, laws pertaining to Native Americans in the United States, and the termination policies of the United States will also be included.

AA/AS GE, CSU, CSU GE, IGETC, UC

**180\* U.S. HISTORY: BLACK PERSPECTIVES I** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 United States history with emphasis on social, economic, political and cultural experiences of Black people. Traces the development of African-American history from African origins through the period of Reconstruction.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**181\* U.S. HISTORY: BLACK PERSPECTIVES II** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Examination of significant aspects of United States history from the aftermath of the Civil War to the present. Emphasis on the socio-economic, political and cultural experience of African-Americans in the United States from Reconstruction to the present.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**199 SPECIAL STUDIES OR PROJECTS IN HISTORY** 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in History under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**210 WOMEN IN WESTERN CIVILIZATION** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Social, cultural, economic, political and ideological aspects of women in western society from ancient times to the present.

AA/AS GE, CSU, CSU GE, IGETC, UC

**275 HISTORICAL PERIOD** 3 UNITS

**276 GEOGRAPHICAL AREA** 3 UNITS

**277 HISTORICAL THEME** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

In-depth study of an historical period (275), geographical area (276), or historical theme (277). Reading, discussion, lecture and instructional media focused on the forces contributing to the creation of the material studied and on the place of that material in relation to other disciplines in the humanities.

CSU, CSU GE, IGETC, UC

**298 SELECTED TOPICS IN HISTORY** 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in History not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN HISTORY** 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in History not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

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\*Meets part of the American Institutions requirement. See "CSU General Education Breadth" under Transfer Information and Degree Requirements for complete requirements and different options, or visit [www.assist.org](http://www.assist.org).

**HUMANITIES****110 PRINCIPLES OF THE HUMANITIES** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 In this basic interdisciplinary humanities course, students will learn how to examine, compare, analyze, evaluate, interpret and discuss creative works within their cultural contexts. Examples for study will be selected from the world's great works of literature, drama, painting, sculpture, architecture, music, etc.

AA/AS GE, CSU, CSU GE, IGETC, UC

**120 EUROPEAN HUMANITIES** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Integrated approach to European cultural values as expressed in representative masterpieces of literature, philosophy, drama, music, visual art and architecture.

AA/AS GE, CSU, CSU GE, IGETC, UC

**140 AMERICAN HUMANITIES** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Integrated study of American forms of art and thought including popular forms such as film, jazz and popular music. Various periods in American history will be examined from a cultural viewpoint, and selections will be chosen which are most representative of the forms of consciousness during those periods.

AA/AS GE, CSU, CSU GE, IGETC, UC

**155 MYTHOLOGY** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Exploration of myths, legends, folklore and fairy tales as a means of understanding the way different people throughout the world have viewed themselves, their heroes, gods and supernatural beings and the world they live in. Emphasis on the symbolic meaning of the stories covered and the light they shed on our common human nature.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN HUMANITIES** 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Humanities under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN HUMANITIES** 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Humanities not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN HUMANITIES** 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Humanities not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## INTERDISCIPLINARY STUDIES

### 198 SUPERVISED TUTORING 0 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

### 199 SPECIAL STUDIES OR PROJECTS IN INTERDISCIPLINARY STUDIES 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Interdisciplinary Studies under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Interdisciplinary Studies not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Interdisciplinary Studies not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

## ITALIAN

### 120 ITALIAN I 5 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
5 hours lecture

Introductory course to the Italian language and culture. Designed for students with very little or no knowledge of Italian. This course facilitates the practical application of the language in everyday oral and written communication at the beginning level. Since the focus will be on basic communication skills, the class will be conducted in Italian as much as possible. Students will learn structures that will enable them to function in Italian in everyday contexts while becoming familiar with the Italian speaking world.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 121 ITALIAN II 5 UNITS

Prerequisite: ITAL 120 or equivalent with a grade of "C" or better or "Pass" or two years of high school Italian

Corequisite: None  
Recommended Preparation: None  
5 hours lecture

Continuation of Italian 120. This course will continue to develop oral and written skills based on practical everyday needs.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 199 SPECIAL STUDIES OR PROJECTS IN ITALIAN 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Italian under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 220 ITALIAN III 5 UNITS

Prerequisite: ITAL 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school Italian

Corequisite: None  
Recommended Preparation: None  
5 hours lecture

Continuation of Italian 121. This course will continue to develop oral, listening, reading and writing skills in order to acquire proficiency in Italian.

AA/AS GE, CSU, CSU GE, IGETC, UC

### 298 SELECTED TOPICS IN ITALIAN 1-5 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-15 hours

Selected topics in Italian not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN ITALIAN 1-5 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-15 hours

Selected topics in Italian not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## LIBRARY INFORMATION RESOURCES

### 110 RESEARCH METHODS IN AN ONLINE WORLD 1 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
1 hour lecture

Designed for those who would like to become effective online researchers. Students will learn how to select and effectively use appropriate research tools such as search engines, online directories, meta-search engines, subscription databases and online catalogs. They will develop search strategies and focus on expressing their research questions in relevant search terms. In addition, students will learn how

to evaluate information for quality, authority, accuracy, and other criteria. Ethical issues about information will also be introduced. *Familiarity with basic microcomputer operation is strongly recommended.*

CSU

### 199 SPECIAL STUDIES OR PROJECTS IN LIBRARY INFORMATION RESOURCES 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Library Information Resources under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 298 SELECTED TOPICS IN LIBRARY INFORMATION RESOURCES 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Library Information Resources not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN LIBRARY INFORMATION RESOURCES 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Library Information Resources not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## MATHEMATICS

### 080 BASIC MATHEMATICS 2 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

2 hours lecture, 1 hour laboratory  
Fundamentals of arithmetic including addition, subtraction, multiplication and division with emphasis on mental arithmetic involving whole numbers up to 12. Operations with fractions, decimals and percents are stressed. Area and volume formula for fundamental shapes will be discussed. **Pass/No Pass only. Non-degree applicable.**

### 088 PRE-ALGEBRA 4 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: Grade of "Pass" in MATH 080 or equivalent

4 hours lecture, 1 hour laboratory  
Operations with signed numbers are emphasized. The derivation and use of selected measurement concepts and the development of pre-algebra ideas such as variable and equations are included. Measurement, area and volume formulas for fundamental shapes are stressed. These topics are explored in the context of problem solving and appropriate calculator use. **Pass/No Pass only. Non-degree applicable.**

**090 ELEMENTARY ALGEBRA 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: Grade of "Pass" in MATH 088 or equivalent

5 hours lecture, 1 hour laboratory

Emphasizes mathematical reasoning, problem solving, and real-world applications using numerical, algebraic and graphical models. Topics include problem-solving techniques, algebraic expressions, polynomials, linear and quadratic equations, linear inequalities, linear and nonlinear graphs, systems of linear equations in two variables, integer exponents, proportions, and radicals. Selection and application of appropriate graphing utility and/or computer program to interpret, model and analyze a collection of data or application problems. Computational techniques developed in pre-algebra are prerequisite skills for this course. Recommended for students with little or no recent knowledge of algebra. **Pass/No Pass only. Non-degree applicable.**

**097 PLANE GEOMETRY 3 UNITS**

Prerequisite: Grade of "Pass" in MATH 090 or equivalent

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduces essential vocabulary, properties and characteristics of geometric objects and geometric constructions. The concepts of plane geometry are developed inductively and then deductively. Computer-facilitated instruction offers a dynamic presentation of geometric concepts. **Pass/No Pass only. Non-degree applicable.**

**098 INTRODUCTION TO GRAPHING CALCULATORS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: Grade of "Pass" in MATH 090 or equivalent

1 hour lecture

For students who wish to acquire skills in using graphing calculators. Calculator uses will include, but are not limited to: arithmetic operations, equations, inequalities, graphing and basic statistics. Hands-on approach will be employed. **Pass/No Pass only. Non-degree applicable.**

**103 INTERMEDIATE ALGEBRA 3 UNITS**

Prerequisite: Grade of "Pass" in MATH 090 or equivalent

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Graphic, numeric, analytic and applied problems on topics including linear, quadratic, exponential and logarithmic functions, exponents and radicals. Selection and application of appropriate graphing utility and/or computer program to interpret, model and analyze data, graphs and/or application problems. Additional topics include systems of equations, algebraic fractions, radicals, equations involving inequalities and absolute value, and complex numbers. *Maximum of 5 units can be earned for taking MATH 103 and 110.*

AA/AS GE

**110 INTERMEDIATE ALGEBRA FOR BUSINESS, MATHEMATICS, SCIENCE AND ENGINEERING 5 UNITS**

Prerequisite: Grade of "Pass" in MATH 090 or equivalent

Corequisite: None

Recommended Preparation: None

5 hours lecture, 1 hour laboratory

Application of graphic, numeric and analytic methods to model, interpret and solve real-world

problems involving: linear, quadratic, rational, radical, exponential and logarithmic functions; systems of linear and quadratic equations or inequalities; and absolute value equations or inequalities. Selection and application of appropriate graphing utility and/or computer program to interpret, model and analyze a collection of data and/or application problems. Additional topics include conic sections and an introduction to matrices and determinants. Computational techniques developed in beginning algebra are prerequisite skills for this course. Appropriate for students with knowledge of beginning algebra or who have had at least two years of high school algebra but have not used it for several years. *Maximum of five 5 units can be earned for taking MATH 103 and 110.*

AA/AS GE

**120 MATHEMATICS FOR GENERAL EDUCATION 3 UNITS**

Prerequisite: MATH 103 or 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Topics from logic, modern algebra, set theory, probability, statistics and computer math designed to give students a very brief introduction to the structure of mathematical theories and their application. General education course in mathematics.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**125 STRUCTURE AND CONCEPTS OF ELEMENTARY MATHEMATICS I 3 UNITS**

Prerequisite: MATH 103 or 110, 097 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

In blending the mathematical topics of sets, whole numbers, numeration, number theory, integers, rational and irrational numbers, measurement, relations, functions and logic, the course will investigate the interrelationships of these topics using a problem-solving approach and appropriate use of technology.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**126 STRUCTURE AND CONCEPTS OF ELEMENTARY MATHEMATICS II 3 UNITS**

Prerequisite: MATH 125 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

In blending the mathematical topics of statistics, probability, measurement, coordinate geometry, plane geometry, solid geometry, logic, relations and functions, the course will investigate the interrelationships of these topics using a problem-solving approach and appropriate use of technology.

CSU, CSU GE, IGETC, UC credit limit

**128 CHILDREN'S MATHEMATICAL THINKING 1.5 UNITS**

Prerequisite: None

Corequisite: MATH 125

Recommended Preparation: None

1.5 hours lecture

Children's mathematical thinking and in-depth analyses of children's understanding of operations (addition, subtraction, multiplication, division) and place value. Students will observe individual children solving mathematics problems.

CSU

**150 INTRODUCTION TO COMPUTER PROGRAMMING APPLICATIONS IN MATHEMATICS 3 UNITS**

Prerequisite: MATH 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Use of computers to analyze mathematical application problems and solutions from statistics, engineering and the physical sciences. Fundamentals of structured technical programming including language commands and computational algorithms.

CSU, UC

**160 ELEMENTARY STATISTICS 3 UNITS**

Prerequisite: MATH 103 or 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture, 1 hour laboratory

Study and application of the concepts and procedures of descriptive statistics, probability theory and inferential statistics. In descriptive statistics: organize, summarize and display data including frequency tables and histograms; exploratory data analysis; measures of central tendency, variation and position. In probability theory: fundamental rules and definitions of probability; counting; central limit theorem; probability distributions including the binomial, normal, Student T, chi-square, and F. In inferential statistics: estimation and hypothesis testing for means, proportions and variances; contingency tables; ANOVA models; linear regression and correlation; nonparametric methods. Applications may be included from various fields such as biology, business, economics, education, engineering, demography and psychology.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**170 ANALYTIC TRIGONOMETRY 3 UNITS**

Prerequisite: MATH 097, 110 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Theoretical approach to the study of the trigonometric functions with emphasis on circular functions, trigonometric identities, trigonometric equations, graphical methods, vectors and applications, complex numbers and solving triangles with applications.

AA/AS GE, CSU, CSU GE

**175 COLLEGE ALGEBRA 4 UNITS**

Prerequisite: MATH 110 or equivalent with a grade of "C" or better or "Pass" (MATH 103 does not meet the prerequisite)

Corequisite: None

Recommended Preparation: None

4 hours lecture

Graphic, numeric and analytic approaches to the study of precalculus concepts from college algebra. Application of appropriate technology including but not limited to graphing utilities to model, analyze and interpret a collection of data or to solve real-world application problems from a variety of disciplines. Topics include: the real number system; algebraic, exponential and logarithmic functions and their inverses; graphing techniques for polynomial and rational functions; complex numbers; theory of equations; partial fractions; mathematical induction; sequences and series; matrices; and the binomial theorem. *Maximum of 7 units can be earned for successfully completing any combination of MATH 170, 175 and 176.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**176 PRECALCULUS: FUNCTIONS AND GRAPHS****6 UNITS**

Prerequisite: MATH 097, 110 or equivalent with a grade of "C" or better or "Pass" (MATH 103 does not meet the prerequisite)

Corequisite: None

Recommended Preparation: None

6 hours lecture

Graphic, numeric and analytic approaches to the study of precalculus concepts from college algebra and analytic trigonometry. Application of appropriate technology including but not limited to graphing utilities to model, analyze and interpret a collection of data or to solve real-world application problems from a variety of disciplines. Topics include the real number system; algebraic, exponential and logarithmic functions and their inverses; graphing techniques for polynomial, rational and trigonometric functions; complex numbers; theory of equations; trigonometric functions and their inverses with emphasis on the circular functions; trigonometric equations and identities; vectors; right and oblique triangles; partial fractions; polar coordinates; mathematical induction; sequences and series; matrices; the binomial theorem. *Maximum of 7 units can be earned for successfully completing any combination of MATH 170, 175 and 176.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**178 CALCULUS FOR BUSINESS, SOCIAL AND BEHAVIORAL SCIENCES****4 UNITS**

Prerequisite: MATH 110 or equivalent with a grade of "C" or better or "Pass" (MATH 103 does not meet the prerequisite)

Corequisite: None

Recommended Preparation: None

4 hours lecture

Concepts and applications of algebra and polynomial calculus. Designed for students in business, social sciences and behavioral sciences. *Not open to students with credit in MATH 180.*

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**180 ANALYTIC GEOMETRY AND CALCULUS I****5 UNITS**

Prerequisite: MATH 170, 175 or 176 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

5 hours lecture

Graphic, numeric and analytic approaches to the study of analytic geometry, limits and continuity of functions, and introductory differential and integral calculus. Applications involving analysis of algebraic, exponential, logarithmic, trigonometric and hyperbolic functions from a variety of disciplines including science, business and engineering. First of three courses designed to provide serious science students with a solid introduction to the theory and techniques of analysis.

AA/AS GE, CSU, CSU GE, IGETC, UC credit limit

**198 SUPERVISED TUTORING****0 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN MATHEMATICS****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Mathematics under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**245 DISCRETE MATHEMATICS****3 UNITS**

Prerequisite: MATH 280 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Introduction to discrete mathematics. Includes basic logic, methods of proof, sequences, elementary number theory, basic set theory, elementary counting techniques, relations, and recurrence relations.

AA/AS GE, CSU, CSU GE, IGETC, UC

**280 ANALYTIC GEOMETRY AND CALCULUS II****4 UNITS**

Prerequisite: MATH 180 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

4 hours lecture

Continuation of MATH 180. Includes parametric equations, polar coordinates, hyperbolic functions, techniques of integration, indeterminate forms, infinite series and conics.

AA/AS GE, CSU, CSU GE, IGETC, UC

**281 INTERMEDIATE CALCULUS****4 UNITS**

Prerequisite: MATH 280 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

4 hours lecture

Sequel to MATH 280. Includes vectors in two and three dimensions, partial differentiation, iterated integration, line and surface integrals, application of Green's and Stokes' theorems, work with cylindrical and spherical coordinates, and an introduction to linear algebra.

AA/AS GE, CSU, CSU GE, IGETC, UC

**284 LINEAR ALGEBRA****3 UNITS**

Prerequisite: MATH 280 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Topics include matrix algebra, Gaussian Elimination, systems of equations, determinants, Euclidean and general vector spaces, linear transformations, orthogonality and inner product spaces, bases of vector spaces, the change of basis theorem, eigenvalues and eigenvectors, the rank and nullity of matrices and linear transformations. This course is intended for the transfer student planning to major in mathematics, physics, engineering, computer science, operational research, economics or other sciences.

AA/AS GE, CSU, CSU GE, IGETC, UC

**285 DIFFERENTIAL EQUATIONS****3 UNITS**

Prerequisite: MATH 280 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Includes first order differential equations, initial boundary value problems, the Cauchy-Euler equation, series solutions, Laplace transformations, Fourier Series, and separation of variables for elementary partial differential

equations. Applications of these topics will be explored.

CSU, CSU GE, IGETC, UC

**298 SELECTED TOPICS IN MATHEMATICS****1-6 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-18 hours

Selected topics in Mathematics not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN MATHEMATICS****1-6 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-18 hours

Selected topics in Mathematics not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

**MUSIC****001 MUSIC FUNDAMENTALS****4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

4 hours lecture

Basic elements of music. Notation, major and minor keys, intervals, triads and 7th chords with inversions. Musical terms and analysis of chord structures. Keyboard application.

CSU

**090-091 PREPARATORY PERFORMANCE STUDIES****1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

This course is designed to prepare students for audition into MUS 190. It will enhance the musical progress of students who are currently receiving the equivalent of fifteen one-half hour lessons per semester of individual vocal or instrumental instruction. **Pass/No Pass only. Non-degree applicable.**

**104 INTRODUCTION TO THE MUSIC INDUSTRY****3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Survey of the music industry with emphasis on individual career options, roles and responsibilities. Includes interaction with industry components and relationships between business personnel and the music artist.

CSU

**105 MUSIC THEORY AND PRACTICE I****4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

4 hours lecture, 2 hours laboratory

Introduction to music theory and ear-training. Study of harmonic concepts of the 18th and 19th centuries. Rhythmic and melodic ear-training. Keyboard application and sight singing.

CSU, UC

**106 MUSIC THEORY AND PRACTICE II****4 UNITS**

Prerequisite: MUS 105 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture, 2 hours laboratory  
 Continuation of MUS 105. Four-part writing, 7th chords, cadences and non-chord tones. Rhythmic and melodic dictation and harmonic ear-training. Sight singing. Analysis of Bach chorales and binary and ternary forms.  
*CSU, UC*

**107A AREA STUDIES IN AFRICAN MUSIC****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 The study of rudimentary playing technique and the broad cultural context of African music.  
*CSU*

**107B AREA STUDIES IN SUNDANESE GAMELAN MUSIC****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 The study of rudimentary playing technique and the broad cultural context of Sundanese Gamelan music.  
*CSU*

**107C AREA STUDIES IN LATIN AMERICAN MUSIC****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 2 hours laboratory  
 The study of rudimentary playing technique and the broad cultural context of Latin American music.  
*CSU*

**108-109 ROCK, POP AND SOUL ENSEMBLE****1 UNIT**

Prerequisite: Audition  
 Corequisite: None  
 Recommended Preparation: None  
 2.5 hours lecture, 2.5 hours laboratory  
 The study and performance of representative popular music compositions from the second half of the 20th century, with emphasis on rock, rhythm and blues, and pop music. Open to instrumentalists and singers.  
*CSU, UC*

**110 GREAT MUSIC LISTENING****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Listening and reading survey course to acquaint students with fundamental elements of musical style. Covers repertoire from a variety of cultures and periods with primary emphasis on the Western concert tradition.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**111 HISTORY OF JAZZ****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Listening and reading survey course covering the history of jazz from its origins to the present. Includes style periods, significant artists, the broad cultural context of jazz, and the development of critical listening skills.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**114 MUSIC IN THE UNITED STATES****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Music in the United States from pre-Colonial times to the present. Coverage includes the music of Native Americans, the Colonies, the 1800s, distinctive regions and subcultures, jazz, art music, popular music styles, and nonwestern influences.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**115 HISTORY OF ROCK MUSIC****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Presents an overview of rock and rock-related musical styles from the early 1950s to the present. Coverage includes related social and cultural trends, outstanding artists, the influence of technology on popular music, and relevant trends in the music industry. In addition, basic musical concepts such as pitch, rhythm and form will be introduced and applied to the music under consideration.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**116 INTRODUCTION TO WORLD MUSIC****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Designed to expand the student's perspective about the nature of music around the world and demonstrate the relationship between music in different cultures. Highlights elements common to all music. May include music of the cultures of India, China, Japan, Indonesia, Africa, Pacific Islands, the Middle East, Europe and the Americas.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**117 INTRODUCTION TO MUSIC HISTORY AND LITERATURE****3 UNITS**

Prerequisite: MUS 001 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Survey of art music in Western civilization from the ancient period to the present. Musical styles will be studied within the context of concurrent developments in society, politics and other arts.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**118 INTRODUCTION TO MUSIC****4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture  
 A one-semester study of basic music theory including notation, rhythms, scales, intervals, triads and sight-singing. Introduction to basic rhythm instruments and development of keyboard facility and vocal skill. Designed for preschool/elementary education majors and non-music majors.  
*CSU, UC*

**119 COOPERATIVE WORK EXPERIENCE IN MUSIC EDUCATION****1-4 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours paid or 4 hours unpaid work experience per week per unit  
 Practical application of principles and procedures learned in the classroom to the various phases of music education. Work experience will be paid or unpaid at local middle or high school music programs. Placement assistance will be provided. Two on-campus

sessions will be scheduled. *May be repeated for a maximum of 12 units.*

*CSU***120 INTRODUCTION TO MUSIC TECHNOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: MUS 001 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Introduction to the basic concepts and processes for editing digital audio and using the digital synthesizer and personal computer to perform, notate and record music. Students should have basic computer skills, basic piano or keyboard skills, and be able to read music.  
*CSU*

**121-122 MUSIC INDUSTRY SEMINAR****1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture  
 In this project-based class, students will develop and create a set of promotional materials for a local musical artist or group. The course content combines work in recording, print and electronic media.  
*CSU*

**126 CLASS GUITAR I****2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture  
 Beginning course in guitar for non-music majors. Fundamentals of music as related to the guitar including scales, chords, and reading staff notation.  
*CSU, UC*

**127 CLASS GUITAR II****2 UNITS**

Prerequisite: MUS 126 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture  
 Guitar for non-music majors. Continuation of MUS 126 with emphasis on reading staff notation in closed positions, playing scales and chords in major and minor keys, and developing both left and right hand technique.  
*CSU, UC*

**130A-131A-230A-231A WORLD MUSIC ENSEMBLE: AFRICAN PERCUSSION****1 UNIT**

Prerequisite: MUS 107A or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2.5 hours lecture, 2.5 hours laboratory  
 The study of different African percussion traditions at regular rehearsals and public performances.  
*CSU*

**130B-131B-230B-231B1 WORLD MUSIC ENSEMBLE: SUNDANESE GAMELAN****1 UNIT**

Prerequisite: MUS 107B or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2.5 hours lecture, 2.5 hours laboratory  
 The study of Sundanese Gamelan compositions at regular rehearsals and public performances.  
*CSU*

**130C-131C-230C-231C WORLD MUSIC****ENSEMBLE: LATIN AMERICAN MUSIC 1 UNIT**

Prerequisite: MUS 107C or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study of different Latin American music genres at regular rehearsals and public performances.

CSU

**132 CLASS PIANO I 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Note reading in treble and bass clefs. Major and minor key signatures. Scales, arpeggios and primary triads in major and minor keys. Transposition, improvisation and harmonization. Development of sight reading ability, two-handed coordination, correct fingering techniques and proper use of weight and relaxation in production of tone.

CSU, UC

**133 CLASS PIANO II 3 UNITS**

Prerequisite: MUS 132 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Continuation of MUS 132. Scales in minor keys. Scales with hands together. Music literature performed in major and minor keys. Harmonization and sight reading in major and minor keys. Piano pieces in binary form with mixed texture including parallel, contrary and oblique motion.

CSU, UC

**136-137 CHAMBER SINGERS 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study of standard and contemporary choral literature (classics to jazz) for small choral ensemble. Performances on campus and in local schools and communities. Open to all singers in the community and students of the college.

CSU, UC

**152-153 CONCERT BAND 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study of representative concert band compositions in a wide variety of styles at regular rehearsals and public performances.

CSU, UC

**156-157 JAZZ ENSEMBLE 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study of representative jazz ensemble compositions in a wide variety of styles at regular rehearsals and public performances.

CSU, UC

**158-159 CHORUS 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study and performance of standard and contemporary choral literature for choral ensemble. Open to all singers in the community and students of the college.

CSU, UC

**161 COOPERATIVE WORK EXPERIENCE IN MUSIC INDUSTRY 1-4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours paid or 4 hours unpaid work experience per week per unit

Practical application of principles and procedures learned in the classroom to the various phases of the music industry. Work experience will be paid or unpaid at local businesses that are part of the music industry such as recording studios, booking agencies, and music equipment manufacturers/retailers. Placement assistance will be provided. Two on-campus sessions will be scheduled. *May be repeated for a maximum of 12 units.*

CSU

**170-171 CLASS VOICE 2 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: Ability to read music

2 hours lecture

Designed to help the student learn to use the voice correctly. Principles of vocal placement, posture, balance, breath control and vocal tone are emphasized through individual performances.

CSU, UC

**184 DIGITAL AUDIO RECORDING AND PRODUCTION 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: MUS 120 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture, 3 hours laboratory

An in-depth presentation of digital audio recording, editing and processing. Students will learn techniques for in-studio and live recording and will record and edit new musical recordings. Students should have a basic understanding of digital audio vocabulary and basic experience with using a computer to make/record music.

CSU

**190-191 PERFORMANCE STUDIES 1 UNIT**

Prerequisite: Membership by audition

Corequisite: None

Recommended Preparation: None

1 hour lecture

Primarily for music majors. Designed to enhance the musical progress of students who are currently receiving the equivalent of fifteen one-half hour lessons per semester of individual vocal or instrumental instruction. In-depth study of performances and techniques. Participation in class performances and student recitals is required.

CSU

**199 SPECIAL STUDIES OR PROJECTS IN MUSIC 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Music under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**205 MUSIC THEORY AND PRACTICE III 4 UNITS**

Prerequisite: MUS 106 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

4 hours lecture, 2 hours laboratory

Continuation of MUS 106. Chromatic harmony of the 18th and 19th centuries including secondary

dominants, borrowed chords and altered chords. Rhythmic, melodic and harmonic dictation. Sight singing. Analysis of Bach chorales. Form analysis of Sonata-form, Minuet/Scherzo, Rondo, and Theme and Variations.

CSU, UC

**206 MUSIC THEORY AND PRACTICE IV 4 UNITS**

Prerequisite: MUS 205 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

4 hours lecture, 2 hours laboratory

Continuation of MUS 205. Harmony of the Post-Romantic and 20th century styles. Expanded tonality. Use of church modes, pentatonic, synthetic and dodecaphonic scales. Parallelism, pandiatonicism, twelve-tone technique, aleatory music and electronic music. Study of the 18th century two-part counterpoint. Ear-training and sight singing.

CSU, UC

**208-209 ROCK, POP AND SOUL ENSEMBLE 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study and performance of representative popular music compositions from the second half of the 20th century, with emphasis on rock, rhythm and blues, and pop music. Open to instrumentalists and singers.

CSU, UC

**221-222 MUSIC INDUSTRY SEMINAR 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

In this project-based class, students will develop and create a set of promotional materials for a local musical artist or group. The course content combines work in recording, print and electronic media.

CSU

**226 CLASS GUITAR III 2 UNITS**

Prerequisite: MUS 127 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture

Guitar for non-music majors. Continuation of MUS 127 with emphasis on high position reading, introductory chord and scale alterations, and technical development.

CSU, UC

**227 CLASS GUITAR IV 2 UNITS**

Prerequisite: MUS 226 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture

Guitar for non-music majors. Continuation of MUS 226 with emphasis on playing solos and accompaniments in various styles and idioms.

CSU, UC

**232 CLASS PIANO III 3 UNITS**

Prerequisite: MUS 133 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Continuation of MUS 133. Multiple octave performance of major and minor scales. Authentic and plagal cadences. Reading of four-part chorales. Ensemble playing and accompaniment. Intermediate piano pieces in ternary form.

CSU, UC

**233 CLASS PIANO IV 3 UNITS**

Prerequisite: MUS 232 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Continuation of MUS 232. Keyboard harmony and deceptive cadence. Reading an open score. Ensemble playing and accompaniment. Piano literature from the 18th through the 20th centuries.

CSU, UC

**236-237 CHAMBER SINGERS 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study of standard and contemporary choral literature (classics to jazz) for small choral ensemble. Performances on campus and in local schools and communities. Open to all singers in the community and students of the college.

CSU, UC

**252-253 CONCERT BAND 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

The study of representative concert band compositions in a wide variety of styles at regular rehearsals and public performances.

CSU, UC

**256-257 JAZZ ENSEMBLE 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

Study of representative jazz ensemble compositions in a wide variety of styles at regular rehearsals and public performances.

CSU, UC

**258-259 CHORUS 1 UNIT**

Prerequisite: Audition

Corequisite: None

Recommended Preparation: None

2.5 hours lecture, 2.5 hours laboratory

Study and performance of standard and contemporary choral literature for choral ensemble.

CSU, UC

**270-271 CLASS VOICE 2 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: Ability to read music

2 hours lecture

Designed to help the student learn to use the voice correctly. Principles of vocal placement, posture, balance, breath control and vocal tone are emphasized through individual performances.

CSU, UC

**290-291 PERFORMANCE STUDIES 1 UNIT**

Prerequisite: Membership by audition

Corequisite: None

Recommended Preparation: None

1 hour lecture

Primarily for music majors. Designed to enhance the musical progress of students who are currently receiving the equivalent of fifteen one-half hour lessons per semester of individual vocal or instrumental instruction. In-depth study of performances and techniques. Participation in class performances and student recitals is required.

CSU

**298 SELECTED TOPICS IN MUSIC 1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Music not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN MUSIC 1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Music not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## NATIVE AMERICAN LANGUAGES

**120 KUMEYAAY I 5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours lecture

Introductory course to the Kumeyaay language and the culture of its speakers. Facilitates the practical application of the language in everyday oral and written communication at the beginning novice level. Since the focus will be on basic communication skills, the class will be conducted in Kumeyaay as much as possible. While becoming familiar with the Kumeyaay speaking world, students will learn structures that will enable them to function in Kumeyaay in everyday contexts.

AA/AS GE, CSU, CSU GE, IGETC, UC

**121 KUMEYAAY II 5 UNITS**

Prerequisite: NAKY 120 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of NAKY 120. Students will continue to develop oral and written skills based on practical everyday needs.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN NATIVE AMERICAN LANGUAGES 1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Native American Languages under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**220 KUMEYAAY III 5 UNITS**

Prerequisite: NAKY 121 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of NAKY 121. Students will develop increasingly advanced oral, listening, reading and writing skills in the Kumeyaay language.

AA/AS GE, CSU, CSU GE, IGETC, UC

**221 KUMEYAAY IV 5 UNITS**

Prerequisite: NAKY 220 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of NAKY 220. Students develop advanced oral, listening, reading and writing skills and proficiency in Kumeyaay.

AA/AS GE, CSU, CSU GE, IGETC, UC

**298 SELECTED TOPICS IN NATIVE AMERICAN LANGUAGES 1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Native American Languages not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN NATIVE AMERICAN LANGUAGES 1-5 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-15 hours

Selected topics in Native American Languages not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## OCEANOGRAPHY

**112 INTRODUCTION TO OCEANOGRAPHY 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

A physical science course which examines major aspects of the marine environment. Topics include the origin of the oceans, plate tectonics, seafloor features, seawater properties, ocean climate, currents, waves, tides, coastal landforms, marine ecology, pollution and resources. The history and development of oceanography and the present and future importance of the oceans are also discussed.

AA/AS GE, CSU, CSU GE, IGETC, UC

**113 OCEANOGRAPHY LABORATORY 1 UNIT**

Prerequisite: OCEA 112 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment

Corequisite: None

Recommended Preparation: None

3 hours laboratory

Hands-on oceanographic laboratory experience to accompany and augment OCEA 112. Includes laboratory and field investigations of the marine environment emphasizing the geological, chemical, physical and biological aspects of the ocean.

AA/AS GE, CSU, CSU GE, IGETC, UC

**198 SUPERVISED TUTORING 0 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content. No fee/no credit course.*

**199 SPECIAL STUDIES OR PROJECTS IN OCEANOGRAPHY 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Oceanography under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN OCEANOGRAPHY 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Oceanography not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN OCEANOGRAPHY 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Oceanography not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**CSU**

**ORNAMENTAL HORTICULTURE****102 XERISCAPE: WATER CONSERVATION IN THE LANDSCAPE 2 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture  
 Water management principles and practices as they apply to the landscape. Topics include plant selection, landscape design principles for water conservation, irrigation system selection and management, soil preparation and management, and current topics and issues of California and United States water conservation efforts.  
**CSU**

**114 FLORAL DESIGN I 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Theory and practice of basic geometric floral design, identification of flowers and foliage, and practical skills necessary for employment in the floral industry. Fresh, silk and dried flowers will be used.  
**CSU**

**116 FLORAL DESIGN II 3 UNITS**

Prerequisite: OH 114 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Theory and practice of parallel, vegetative, new wave and contemporary line designs for parties, holidays and special occasions primarily using fresh flowers. Silks, dried flowers, foliage and unique props for creating floral designs will also be covered.  
**CSU**

**117 WEDDING DESIGN I 3 UNITS**

Prerequisite: OH 114 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Numerous styles of wedding bouquets and corsages including church and reception floral designs, with emphasis on skills, mechanics and speed necessary for use in the floral industry.  
**CSU**

**118 SPECIAL OCCASION FLORAL DESIGN 3 UNITS**

Prerequisite: OH 114 or equivalent with a grade of "C" or better or "Pass" or one year high school floral design or trade experience  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Learn to create unique floral arrangements used for parties, weddings, funerals and gala events. Arrangements will focus on the use of unusual and exotic flowers, containers and special mechanical props.  
**CSU**

**119 WEDDING DESIGN II 3 UNITS**

Prerequisite: OH 117 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Theory and practice of designs used for weddings including bouquets for brides and attendants, corsages, church decorations, and reception decorations primarily using fresh flowers.  
**CSU**

**120 FUNDAMENTALS OF ORNAMENTAL HORTICULTURE 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Study of plant structure and function. Topics include basic principles of soil science and fertilizer requirements, and the growth of plants in regard to the environmental factors of water, light and temperature. The lab provides an overview of various skills needed in all fields of ornamental horticulture including pruning, basic equipment operation, fertilizer application and general nursery skills.  
**CSU**

**121 PLANT PROPAGATION 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Principles of plant propagation from seed, cutting, budding, grafting, layering, division and tissue culture. Greenhouses, cold frames, mist chambers and other propagating structures will be discussed along with stock selection, use of rooting hormones, proper sanitation procedures and protection of young seedlings from disease. Lab exercises include propagation of plant material by various methods as well as working with various structures, tools and equipment common to plant propagation.  
**CSU**

**130 PLANT PEST CONTROL 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Identification and control of insects, mites, spiders, snails, weeds and diseases that affect ornamental plants. Emphasizes their morphological and phylogenetic relationships, habits, habitats and important characteristics

affecting the health of ornamental plants. Control methods will stress integrated pest management.

**CSU****140 SOILS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Study of soil formation, characteristics and classification. Emphasis on the management of various soil types with regard to pH, salinity, texture, organic matter control and other variables. The lab will include investigation of soil conditions, problems and management solutions common to soils in Southern California.  
**CSU, UC**

**170 PLANT MATERIALS: TREES AND SHRUBS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Identification, cultural requirements and landscape uses of ornamental trees and shrubs common to the California landscape.  
**CSU, UC**

**171 LANDSCAPE DRAFTING 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 .5 hour lecture, 1.5 hours laboratory  
 This course introduces basic drafting practices used in landscape design. Types of drawing include topography drawings, concept plans, construction drawings, details, and drawings. Upon completion, students should be able to complete a set of working drawings for a residential landscape.  
**CSU, UC**

**172 INTRODUCTION TO LANDSCAPE DESIGN 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: OH 171 or equivalent with a grade of "C" or better or "Pass"  
 2 hours lecture, 3 hours laboratory  
 Principles of landscape design for residential projects. Emphasis on residential landscape design and the creation of usable, pleasant outdoor spaces. Focuses on size and placement of plants, walks, patios and other structures in the residential landscape. The lab emphasizes practice in the design and drafting of actual landscape projects.  
**CSU, UC**

**173 INTERMEDIATE LANDSCAPE DESIGN 3 UNITS**

Prerequisite: OH 172 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Landscape design course covering advanced site analysis, use relationships, outside furniture and structures, color presentations and client/designer relationships as they relate to estate, greenbelt and advanced planting designs.  
**CSU, UC**

**174 TURF AND GROUND COVER MANAGEMENT 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Building, care and maintenance of turf grasses and ground covers in parks and landscaping. Soil preparation, planting, fertilizing and maintenance of common and special turf



grasses and ground covers. Particular pest and disease problems and their control.

CSU

### 175 ADVANCED LANDSCAPE DESIGN 3 UNITS

Prerequisite: OH 173 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Advanced development, design and presentation of residential landscape projects incorporating slope analysis, codes and ordinances, client or institutional requirements, detail sheets, sections and cost estimates. Client presentation of concept, lighting and planting plans will utilize sketches, demonstration boards and digital presentation techniques.

CSU

### 180 PLANT MATERIALS: ANNUALS AND PERENNIALS 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Identification, cultural requirements and landscape value of common annuals and perennials used as bedding plants, annual color and in the commercial floral industry.

CSU

### 199 SPECIAL STUDIES OR PROJECTS IN ORNAMENTAL HORTICULTURE 1-3 UNITS

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Ornamental Horticulture under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 200 INTRODUCTION TO COMPUTER AIDED LANDSCAPE DESIGN 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Introduction to computer aided landscape design using AutoCAD software. Creation of site plans, landscape plans, sprinkler plans, contour maps and landscape estimates. Elevation and perspective drawings are also created.

CSU

### 201 ADVANCED COMPUTER AIDED LANDSCAPE DESIGN 3 UNITS

Prerequisite: OH 200 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Use of computer aided design software for the application of graphics, symbols, patterns, layouts, text and scales for development of design drawings, concept plans, construction documents and cost estimates for residential landscape projects.

CSU

### 220 LANDSCAPE CONSTRUCTION: CONCRETE AND MASONRY 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Study of landscape construction methods and materials. Topics include landscape contract law, concrete flat work including stamped concrete, brick, block, stone masonry, and

proper design and construction of retaining and free standing walls. Grading and installation of plant material will also be covered.

CSU

### 221 LANDSCAPE CONSTRUCTION: IRRIGATION AND CARPENTRY 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Study of landscape construction methods and materials. Topics include irrigation and drainage plan reading, materials and components, installation and construction. Installation and troubleshooting of control valves and control clocks will also be covered. Includes basic materials and methods for construction of decks, overhead structures, wooden fences and gates. Also covers code and design requirements for irrigation, drainage and landscape structures.

CSU

### 222 JAPANESE GARDEN CONSTRUCTION AND MAINTENANCE 1 UNIT

Prerequisite: None

Corequisite: None

Recommended Preparation: None

.5 hour lecture, 1.5 hours laboratory

Introduction to Japanese garden concepts and techniques. Includes the professional practices required for construction and sustainable maintenance. Concepts and techniques of Japanese gardens will cover Sakuteiki, the oldest garden design book written in the 11th century. Koi pond and waterfall construction, Zen stone garden (dry landscape garden), bamboo fences, water-basin, traditional pruning, and other basic construction and maintenance techniques will also be covered.

### 225 LANDSCAPE CONTRACTING 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Covers the practices in applying standard techniques in landscape construction and estimating for landscape trades. Reviews the rules, regulations and licensing laws governing landscape contractors set forth by the State of California. Includes an exploration of the field of landscape contracting and business practices associated with the landscape industry.

CSU

### 235 PRINCIPLES OF LANDSCAPE IRRIGATION 4 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

4 hours lecture

Principles of hydraulics as applied to landscape irrigation systems including static and dynamic pressures, pipe flows and velocities, pipe sizing, water hammer, pump selection and use. Includes an introduction to system components including valves, backflow prevention devices, controllers and pumps and pipe.

CSU

### 238 IRRIGATION SYSTEM DESIGN 3 UNITS

Prerequisite: OH 235 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Introduces students to the basic design and technical skills required to produce professional irrigation system designs. Building on the knowledge acquired in OH 235, students will design complete spray and low-volume systems, calculate hydraulic parameters and schedules, prepare details and specifications, practice presentation skills, analyze working designs,

learn head spacing and pipeline layout, and specify equipment using manufacturers' catalogs. A design studio environment is used (including team building and mentoring exercises) to prepare students for entry-level employment in the irrigation design field.

CSU

### 240 GREENHOUSE PLANT PRODUCTION 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Study of greenhouse plant production. Emphasis on the scheduling of greenhouse crops common to Southern California. Topics include equipment, structures, environmental control, estimation of crop production requirements, and production and sales of common greenhouse crops.

CSU

### 250 LANDSCAPE WATER MANAGEMENT 2 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, 3 hours laboratory

Water management principles and practices for urban landscapes including water audit methods and certification, irrigation scheduling, water budgets, water use monitoring, and laws and regulations pertaining to urban landscape irrigation and runoff.

CSU

### 255 SUSTAINABLE URBAN LANDSCAPE PRINCIPLES AND PRACTICES 2 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: OH 120 or equivalent with a grade of "C" or better or "Pass"

2 hours lecture

Principles and practices of sustainable landscape design, construction and maintenance. Students will study ways in which urban landscapes in Southern California can become more sustainable by incorporating water conservation, storm water runoff, landscapes for fire prone areas, material reuse, recycling and repurchase, along with other principles of sustainability. Students will learn the use of technology, materials and methods that enhance the urban landscape with minimal input of labor and materials while reducing negative environmental impacts.

CSU

### 260 ARBORICULTURE 3 UNITS

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Intensive course in the preservation and care of woody plants from seedling to removal. Theory of tree growth, form, fertilization, irrigation, pruning and integrated pest management. Practical application of safety equipment, rope and saddle, climbing spurs, cabling, bracing, pruning and removal of trees.

CSU

### 261 TREE SURGERY AND SPECIALIZED PRUNING TECHNIQUES 1 UNIT

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, .5 hour laboratory

Explores the concepts and procedures of specific pruning techniques for various ornamental and fruit trees to influence flowers, fruit and growth. Response to pruning is predictable and can be a management tool.

Cabling, bracing, cavity repair, injury from failure treatments, crown cleaning versus crown thinning, and topping alternatives like crown reduction and restoration. Students will learn practical application of pruning theories and principles.

CSU

**262 ARBORICULTURE: PALMS AND RELATED PLANTS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, .5 hour laboratory

Provides opportunities to learn the physiology of palms and other monocots, identification traits, and appropriate uses of common species. Understanding requirements for proper growing conditions and pruning of these plants will improve cultural management and assist with the diagnosis and treatment of common biotic and abiotic disorders.

CSU

**263 URBAN FORESTRY 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture, .5 hour laboratory

Introduces students to the theory and practice of conducting detailed tree inventories, management of public trees, tree evaluation for hazard assessment and risk reduction programs, legal aspects of trees and appraisal of value methods for trees. Students will also learn site evaluation, benefits of tree volunteer organizations, priority action plans and emergency response plans.

CSU

**265 GOLF COURSE AND SPORTS TURF MANAGEMENT 3 UNITS**

Prerequisite: OH 174 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

Designed to give students advanced study in the specialization of both golf course and athletic field management. Includes specialized turf management techniques, specialized equipment, budget development, scheduling requirements and administrative considerations.

CSU

**275 DIAGNOSING HORTICULTURAL PROBLEMS 1.5 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: OH 120, 130 or equivalent with a grade of "C" or better or "Pass"

1 hour lecture, 1.5 hours laboratory

Provides methods for positive identification and understanding of symptoms for accurate diagnosis of plant problems in the landscape and nursery. Biotic and abiotic causal agents including cultural influences, nutrient deficiencies and toxicities, pest and disease problems, soil salinity, aeration, drainage and irrigation problems will be discussed. Control and correction of disorders will be determined through an understanding of the organism or function involved.

CSU

**276 HORTICULTURAL EQUIPMENT REPAIR AND MAINTENANCE 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

2 hours lecture, 3 hours laboratory

General maintenance and specific repair procedures for common horticultural equipment including troubleshooting, tune-up and proper preventive maintenance programs for small and

medium two- and four-cycle engines. The lab includes work on mowers, trenchers, trimmers, tractors, spray rigs and other equipment.

CSU

**278 BUSINESS MANAGEMENT FOR ORNAMENTAL HORTICULTURE 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

Principles and practices for the small business owner in the landscape, nursery, floral design, arboriculture or irrigation industries. The course will focus on the aspects of business management that are unique to the green industry. Topics will include marketing, bidding, taxes and regulations, personnel and customer relations.

CSU

**283 CROSS CONNECTION CONTROL SHUTDOWN TEST PROCEDURES 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Designed to train students in the legal and practical aspects of performing a cross connection shutdown test for sites using recycled water. Helps prepare students for certification for work with recycled water on landscape sites.

**290 COOPERATIVE WORK EXPERIENCE EDUCATION 1-4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours paid or 4 hours unpaid work experience per week per unit

Practical application of principles and procedures learned in the classroom to the various phases of horticulture. Work experience will be paid or unpaid at local nurseries and landscape-related companies. Placement assistance will be given. Two on-campus sessions will be scheduled. *May be repeated for a maximum of 12 units.*

CSU

**298 SELECTED TOPICS IN ORNAMENTAL HORTICULTURE 1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Ornamental Horticulture not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN ORNAMENTAL HORTICULTURE 1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Ornamental Horticulture not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## PARALEGAL STUDIES

**100 INTRODUCTION TO PARALEGAL STUDIES 3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

3 hours lecture

This course provides students with an historical perspective of the law and the profession of paralegal. The main focus is the role of the paralegal in the law office including client contact, ethical responsibilities, investigative fact finding, law office management, and legal restrictions. Students will be introduced to legal research and writing, substantive and procedural law, the court systems, and legal terminology.

CSU

**110 CIVIL LITIGATION PRACTICE AND PROCEDURES 3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

The initial phase of an action, the issues of jurisdiction, the complaint and the discovery process will be examined. Court procedures, "Fast Track" and alternatives to litigation such as arbitration and mediation will be discussed. The basic elements of a tort claim will be reviewed as well as the Federal and State Rules of Evidence. Emphasis is placed on the paralegal's role and ethical and professional responsibilities in discovery procedures and trial practice.

CSU

**120 ADMINISTRATIVE LAW 3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: None

3 hours lecture

Statutory law, case law and administrative rules will be utilized to develop an understanding of the role and authority of administrative agencies. Particular attention will be paid to social security and worker's compensation claims.

CSU

**125 BUSINESS ORGANIZATIONS 1 UNIT**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

1 hour lecture

Fundamentals of the formation of business entities such as sole proprietorships, partnerships, limited liability companies and corporations are included. Emphasis will be on formation, maintenance, taxation, and termination of business entities, and the ethical constraints on paralegals.

CSU

**130 LEGAL RESEARCH AND WRITING 3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"

Corequisite: None

Recommended Preparation: ENGL 110 or equivalent with a grade of "C" or better or "Pass"

3 hours lecture

Includes in-depth legal research, writing research reports and subject matter reports on legal issues, case briefings and citations utilizing the uniform system of citation ("Blue Book") and other citators.

CSU

**132 COMPUTER ASSISTED LEGAL RESEARCH (CALR)****3 UNITS**

Prerequisite: PARA 100, 130 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment in 130  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Study of personal computer software and programs designed specifically for use in law offices and legal environments, including but not limited to specific applications such as estate planning, probate accounting, bankruptcy filings, calendaring, legal project management, deposition summaries, computer assisted research (including CD ROM applications), and time and billing programs.

CSU

**135 BANKRUPTCY LAW****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

The United States Federal Bankruptcy Code (as amended) will be the foundation of this examination of bankruptcy law and practice. Students will be exposed to the jurisdictional and filing requirements for bankruptcy cases under Chapters 7, 11 and 13 of the Bankruptcy Code, and will learn pertinent rules of federal procedure associated with bankruptcy case filings. The focus will be on "consumer" Chapters 7 and 13.

CSU

**140 CRIMINAL LAW AND PROCEDURES****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

The California Criminal Code and Rules of Criminal Procedure will be the foundation of this examination of the pre-trial and post-trial procedures in a criminal case. Students will be exposed to the criminal justice system from the elements of offenses through post-conviction remedies. The drafting of motions and other documents associated with criminal matters will be included.

CSU

**145 ESTATE PLANNING****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Overview of the subject of planning an owner's estate including a review of the customary means of accomplishing estate planning objectives including wills, trusts, taxation, asset protection and gift-giving programs.

CSU

**150 FAMILY LAW****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Domestic relations matters such as marriage, divorce, dissolution, child custody and support, visitation and adoptions are included. The law regulating such matters and the drafting of appropriate documents will be emphasized.

CSU

**155 INSURANCE LAW****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Includes principles of indemnity, interests protected, the transfer of risk, claims made versus occurrence policies, subrogation, review of insurance forms and alternative dispute resolution.

CSU

**160 PERSONAL INJURY****1 UNIT**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Study of the essentials of tort actions with emphasis on personal injury and other forms of negligence. Special attention will be given to the elements of a cause of action in negligence. Theories of recovery, defenses, case handling, witness interviewing, working with insurance carriers and evidence requirements under current California law will be reviewed. Students will review the particular ethical constraints on personal injury paralegals.

CSU

**165 PROBATE LAW****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

The law of wills, estates and estate administration including testate and intestate estates, and law of descent and distribution will be discussed.

CSU

**170 WORKER'S COMPENSATION****1 UNIT**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Overview of California's Worker's Compensation statutes, including the concept of no-fault insurance and the administration of contested compensation claims for death, disability and vocational rehabilitation. Students will compute awards based upon current benefit formulae.

CSU

**180 GOVERNMENT AND PUBLIC CONTRACTS****3 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Study of government and public contracting rules and regulations including but not limited to Federal Acquisition Regulations (FAR) and Circulars, types of government contracts, Requests for Proposals (RFP), the Competition in Contracting Act (1984), and miscellaneous concepts in contracting with governmental agencies.

CSU

**199 SPECIAL STUDIES OR PROJECTS IN PARALEGAL STUDIES****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Paralegal Studies under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences

and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**250 INTERNSHIP****1-4 UNITS**

Prerequisite: PARA 100 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours paid or 4 hours unpaid work experience per week per unit

Practical work experience in a cooperating law office or corporate legal department. *May be repeated for a maximum of 9 units.*

CSU

**298 SELECTED TOPICS IN PARALEGAL STUDIES****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Paralegal Studies not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN PARALEGAL STUDIES****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Paralegal Studies not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## PERSONAL DEVELOPMENT—COUNSELING

**101 INTRODUCTION TO COLLEGE .5-1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 .5 - 1 hour lecture

Designed to acquaint students with the college, its facilities, services, academic regulations and degree and transfer programs. Students will receive guidance in educational planning.

**Pass/No Pass only. Non-degree applicable.****124 LIFELONG SUCCESS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Apply physiological, social and psychological principles to success in college, the world of work and life. Explore personality, interests and values to increase self-understanding and select an appropriate major and career. Learn about careers of the future. Discover strategies for lifelong learning by identifying your learning style and applying psychological principles of learning and memory to academic study strategies. Apply life management techniques such as time and money management to accomplish personal goals. Examine adult stages of development and develop a plan for wellness and living a long and healthy life. Learn strategies for motivation and stress management. Practice creative and critical thinking techniques.

CSU, CSU GE, UC

**130 STUDY SKILLS AND TIME MANAGEMENT 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Designed to prepare students to adjust to the academic community by learning to plan and study effectively within given time limitations. Strategies include: time management, goal setting, textbook mastery, library research skills, note-taking, exam preparation, stress reduction and educational planning. **Pass/No Pass only, CSU**

**140 LIFE SKILLS AND PERSONAL ADJUSTMENT 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Students will learn life skills that are conducive to achieving a satisfying and healthy relationship with oneself and the outside environment. The course provides students with the necessary personal skills to be able to deal with personal and interpersonal issues that may impinge upon their academic success and retention. Students will have the opportunity to learn and apply personal achievement techniques, basic principles of healthy functioning, and effective coping strategies that would facilitate the process of change and adaptation. The development of a healthy and strong identity and an empowered sense of self will be explored. Specific emphasis will be placed on the process of integrating thoughts and emotions into the development of identity.  
 CSU, CSU GE

**199 SPECIAL STUDIES OR PROJECTS IN PERSONAL DEVELOPMENT–COUNSELING 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Personal Development–Counseling under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN PERSONAL DEVELOPMENT–COUNSELING 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Personal Development–Counseling not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN PERSONAL DEVELOPMENT–COUNSELING 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Personal Development–Counseling not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
 CSU

## PERSONAL DEVELOPMENT–SPECIAL SERVICES

**080 EDUCATIONAL ASSESSMENT AND PRESCRIPTIVE PLANNING .5 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 .5 hour lecture

A course to assess, identify and interpret learning strengths and weaknesses for the purpose of determining eligibility for learning disability services according to the guidelines established by the California Community Colleges Chancellor's Office. An orientation to the Learning Disabilities Program will be provided as well as prescriptive planning. A pre- and post-conference will be held with a Disabled Students Programs and Services (DSPS) Specialist. **Pass/No Pass only. Non-degree applicable.**

**081 SELF-ADVOCACY FOR STUDENTS WITH DISABILITIES 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Designed for students who want to learn more about self advocacy. Involves prescriptive instruction emphasizing personal empowerment, support systems, understanding one's strengths, and legal and ethical issues including awareness of disabilities. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**085 ADAPTED COMPUTER BASICS 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: ENGL 098R or equivalent with a grade of "C" or better or "Pass"  
 .5 hour lecture, 1.5 hours laboratory

Individualized course of study for students with verifiable disabilities. Designed to acquaint students with basic assistive technology and techniques that may improve their ability to succeed in mainstream college-level courses and vocational programs. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**087 ADAPTED COMPUTER STUDIES 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture, 1 hour laboratory

Individualized course of study for students with verifiable disabilities. Provides the student with in depth, individualized instruction in assistive technology and techniques to maximize independent use of assistive and mainstream computer hardware and software to improve the student's ability to succeed in mainstream college-level courses and vocational programs. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**090ABCD LEARNING STRATEGIES PRACTICUM 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Designed for students who want to learn more about their specialized learning needs. Development and implementation of specific learning strategies in a developmental learning environment utilizing specialized software programs to assist students' academic

performance. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**096 COGNITIVE COMMUNICATION SKILLS AND STRATEGIES 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Students with cognitive communication deficits will receive specialized instruction in attention/concentration, thought organization, memory strategies, social pragmatics skills, organization and time management skills, and maximizing related communication skills. The course emphasizes the development of skills and functional compensatory strategies to enhance disabled students' opportunities for academic success. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**098 DEVELOPMENTAL SPELLING, LEVEL I 1 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 1 hour lecture

Structured, sequential approach to spelling in a developmental learning environment designed to strengthen skill in spelling for students with specialized learning needs. *May be repeated for a maximum of 4 units.* **Pass/No Pass only. Non-degree applicable.**

**198 SUPERVISED TUTORING 0 UNIT**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 TBA hours

Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. *May be repeated with different content.* **No fee/no credit course.**

**199 SPECIAL STUDIES OR PROJECTS IN PERSONAL DEVELOPMENT–SPECIAL SERVICES 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Personal Development–Special Services under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN PERSONAL DEVELOPMENT–SPECIAL SERVICES 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Personal Development–Special Services not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN PERSONAL DEVELOPMENT-SPECIAL SERVICES 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Personal Development-Special Services not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

## PHILOSOPHY

**110 A GENERAL INTRODUCTION TO PHILOSOPHY 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

In this basic orientation the student explores, compares, analyzes, evaluates and discusses a variety of the principle questions addressed in philosophy. Typical questions examined are: What is the purpose of my existence? Can I know anything with certainty? Do I really have a free will? Can we prove that God exists? Why should I be moral? Whose self-interest counts?, etc. Issues covered will encompass relevant philosophical perspectives from Western and other major world cultures, and include contributions of women and minority cultures to the realm of philosophy.

AA/AS GE, CSU, CSU GE, IGETC, UC

**115 HISTORY OF PHILOSOPHY I: ANCIENT AND MEDIEVAL 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Survey of ancient philosophy with emphasis on the development of philosophy from the Pre-Socratics through Aristotle, Hellenistic, Roman and medieval thinkers.

AA/AS GE, CSU, CSU GE, IGETC, UC

**117 HISTORY OF PHILOSOPHY II: MODERN AND CONTEMPORARY 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Survey of philosophy from the Renaissance to the 20th century including the development of modern scientific processes as well as empiricism, rationalism, idealism, etc.

AA/AS GE, CSU, CSU GE, IGETC, UC

**125 CRITICAL THINKING 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introduction to critical thinking with emphasis on analyzing and constructing both inductive and deductive arguments. Critical reasoning will be applied to a variety of situations such as making sound decisions, evaluating claims and assertions, avoiding fallacious reasoning, etc.

AA/AS GE, CSU, CSU GE, UC

**130 LOGIC 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of correct thinking comprising both deductive and inductive inference and principles of scientific method. Application of

fundamental principles of logic to practical problems.

AA/AS GE, CSU, CSU GE, UC

**140 PROBLEMS IN ETHICS 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of values as they affect the individual and society. Conduct as expressed by ethical standards and natural law, problems and theories of beauty and value.

AA/AS GE, CSU, CSU GE, IGETC, UC

**160 AMERICAN PHILOSOPHY 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of the main traditions of American philosophical thought with emphasis on the philosophers, their works and systems of philosophy peculiar to the United States. Includes American philosophy from the earliest time to the present.

AA/AS GE, CSU, CSU GE, IGETC, UC

**170 PHILOSOPHY OF RELIGION: A CROSS-CULTURAL INTRODUCTION 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

In this introductory course, students will explore cross-cultural perspectives on topics such as the nature and grounds of religious belief, the relation between religion and ethics, the nature and existence of God/ultimate reality, the problem of evil, the validity of religious experience, and religious pluralism versus religious exclusivism. The examination of issues will take into account the diversity of religious thought evident in the world today.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN PHILOSOPHY 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Philosophy under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN PHILOSOPHY 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Philosophy not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN PHILOSOPHY 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Philosophy not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## PHYSICAL SCIENCE

**110 INTRODUCTION TO THE PHYSICAL SCIENCES 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Broad approach to the physical sciences designed primarily for students not majoring in science. Main concepts of astronomy, physics, chemistry and earth sciences will be developed and discussed. Emphasis is on the understanding of certain fundamental principles and their relationships and not on mathematical problem solving. The applicability of some of these concepts to contemporary problems (e.g., nuclear energy, environmental problems) will be covered. Within this context, the methods and limitations of science will be demonstrated and the implications of science for society in the past, present and future will be discussed.

CSU, CSU GE, IGETC, UC credit limit

**111 INTRODUCTION TO PHYSICAL SCIENCES LABORATORY 1 UNIT**

Prerequisite: PSC 110 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
Corequisite: None  
Recommended Preparation: None  
3 hours laboratory

Laboratory exercises concerning physics, chemistry, geology and astronomy. Emphasis is on discovery, measurement and observation.

CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS IN PHYSICAL SCIENCE 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Physical Science under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN PHYSICAL SCIENCE 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Physical Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN PHYSICAL SCIENCE 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Physical Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## PHYSICS

### 110 INTRODUCTORY PHYSICS 4 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Simple treatment of basic physics principles and phenomena with emphasis on relating them to events and processes of everyday living. Study of the description and cause of various kinds of motion, conservation laws, hot and cold bodies with heat exchange, sound in music and hearing, light and color perception, electricity and some of its practical uses, observation of atomic particles from radiation sources, and other subjects. There is no math prerequisite; the main emphasis is on understanding the concepts rather than doing many mathematical manipulations.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 120 GENERAL PHYSICS 4 UNITS

Prerequisite: MATH 170 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Problem solving as well as a philosophical approach to physical phenomena such as force, linear and rotational motion and energy, simple harmonic motion and wave behavior, heat and thermodynamics. Laboratory experience is an integral part of this course. *Not appropriate for students whose majors require PHYC 190.*

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 121 GENERAL PHYSICS 4 UNITS

Prerequisite: PHYC 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Continuation of general physics involving the study of electricity, magnetism, light and optical instruments, quantum behavior, atomic and nuclear physics, and radioactivity.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 130 FUNDAMENTALS OF PHYSICS 4 UNITS

Prerequisite: MATH 178 or 180 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Calculus-based problem solving as well as a philosophical approach to physical phenomena such as force, linear and rotational motion and energy, simple harmonic motion and wave behavior, heat and thermodynamics. Laboratory experience is an integral part of the course.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 131 FUNDAMENTALS OF PHYSICS 4 UNITS

Prerequisite: PHYC 130 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory  
 Calculus-based problem solving as well as a philosophical approach to physical phenomena such as electricity, magnetism, optics and modern physics. Laboratory experience is an integral part of the course.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 190 MECHANICS AND HEAT 5 UNITS

Prerequisite: MATH 180 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture, 3 hours laboratory  
 Deals with linear and rotational kinematics and dynamics, equilibrium, work, energy, momentum, gravitation, simple harmonic motion, thermal properties of matter and thermodynamics.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 198 SUPERVISED TUTORING 0 UNIT

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 TBA hours  
 Uses a variety of educational tools to assist students with various learning needs. Can be used to strengthen prerequisite skills prior to enrolling in a specific course or to receive supplemental assistance while concurrently enrolled in another course. May be repeated with different content. **No fee/no credit course.**

### 199 SPECIAL STUDIES OR PROJECTS IN PHYSICS 1-3 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Physics under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

### 200 ELECTRICITY AND MAGNETISM 5 UNITS

Prerequisite: PHYC 190 or equivalent with a grade of "C" or better or "Pass" and credit for or concurrent enrollment in MATH 280  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture, 3 hours laboratory  
 Deals with the electric and magnetic behavior of matter. Primary emphasis on Maxwell's Equations and their applications.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 210 WAVE MOTION AND MODERN PHYSICS 5 UNITS

Prerequisite: PHYC 190 or equivalent with a grade of "C" or better or "Pass" and credit for or concurrent enrollment in MATH 281  
 Corequisite: None  
 Recommended Preparation: None  
 4 hours lecture, 3 hours laboratory  
 Deals with hydrostatics, hydrodynamics, wave behavior, geometric and physical optics, relativity, light as a particle, matter as a wave, the hydrogen atom and the Schrodinger Equation, electrical conductivity of solids, lasers and nuclear physics.

*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

### 298 SELECTED TOPICS IN PHYSICS 1-5 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-15 hours  
 Selected topics in Physics not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

### 299 SELECTED TOPICS IN PHYSICS 1-5 UNITS

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-15 hours  
 Selected topics in Physics not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
*CSU*

## POLITICAL SCIENCE

### 120 INTRODUCTION TO POLITICS AND POLITICAL ANALYSIS 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 The primary aim of this course is to assist the student/citizen in the development of a set of skills which can be helpful in analyzing political situations in the world today. In order to accomplish this objective, students will be introduced to the basic approaches, perspectives, techniques and models of the political scientist. Accordingly, this course covers some universal aspects of political stability and change, ideologies, conflicts, institutions, political economy and issues.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

### 121\* INTRODUCTION TO U.S. GOVERNMENT AND POLITICS 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 This course analyzes the evolution of the structures and functions of the U.S. and California political systems from the time of the nation's founding to the current day in what is now the United States. Emphasis on the continuity and uniqueness of the American political experience and how that experience has derived from other political cultures. This will be examined in the context of the larger cultural, economic, and sociological forces shaping the U.S. political system. Attention will also be given to significant events affecting the evolution of the U.S. political system since its founding. The development and evolution of the U.S. Constitution and policy making role of traditional political institutions such as the presidency, the Congress, and the judiciary will be explored. The impact of other political forces such as mass movements, the media, the bureaucracy, interest groups, and ethnic and social groups will also be examined. Topics will be illustrated through reference to actual political events occurring as the course progresses.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

### 124 INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Analyze the political systems of selected developed, transitional and developing countries of the world in order to understand the importance of political development, political institutions, political culture, political actors, political processes, and political change for the dynamics of today's global society.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**130 INTRODUCTION TO INTERNATIONAL RELATIONS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Survey of the field of international relations. Students will be introduced to the major theories of international relations and will learn to apply them to contemporary problems in world politics. Issues examined include global peace and security, international political economy, international law and organization, sustainable development, and human rights.  
*CSU, CSU GE, IGETC, UC*

**140\* INTRODUCTION TO CALIFORNIA GOVERNMENTS AND POLITICS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 This course examines the structure and functions of California state and local governments and politics. Attention will be given to the evolution of the principal features, organization, and operation of state and local governments within the framework of U.S. federalism from the time of the nation's founding. Emphasis is placed on the role of significant events, major ethnic groups, and major social groups in the development of the political structures and processes of California state and local governments and contemporary political issues.

*AA/AS GE, CSU, CSU GE***199 SPECIAL STUDIES OR PROJECTS IN POLITICAL SCIENCE****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Political Science under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN POLITICAL SCIENCE****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Political Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN POLITICAL SCIENCE****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Political Science not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
*CSU*

\*Meets part of the American Institutions requirement. See "CSU General Education Breadth" under Transfer Information and Degree Requirements for complete requirements and different options, or visit [www.assist.org](http://www.assist.org).

**PSYCHOLOGY****120 INTRODUCTORY PSYCHOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Introduction to the facts and theories which seek to explain and understand human thought and behavior including such topics as personality, psychotherapy, learning, memory, interpersonal relationships, adjustment and biological influences.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**125 CROSS-CULTURAL PSYCHOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Introduction to theories and research findings regarding cultural influences on human behavior and cognitive processes (lifespan development, abnormal behavior and mental health, drug use, self-concept, emotion, gender schemas and gender roles, social behavior, perception, learning, intelligence and memory). By providing students with a non-judgmental understanding of how culture influences human behavior, they will be more equipped to interact in a world where there is increasing contact among different cultures.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**134 HUMAN SEXUALITY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Review of the biological, psychological and social aspects of human sexuality including sexuality throughout the lifespan, individual and cultural variations, homosexuality, communication and relationships, sex therapy, sex roles, morality, contraception, and sexually transmitted diseases (STDs).  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**138 SOCIAL PSYCHOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Examination of the individual's perception of and reaction to other people and social influences. Topics such as attitude formation, prejudice and discrimination, helping behavior, aggression, conformity, obedience, cooperation and conflict reduction, and group behavior are explored.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**140 PHYSIOLOGICAL PSYCHOLOGY****3 UNITS**

Prerequisite: PSY 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Examination of the relationships between bodily processes and aspects of behavior. Review of fundamental research methods and major research findings in physiological psychology. Application of experimental methods in psychology, physiology and related disciplines to the understanding of perceptual processes, the control of movement, sleep and waking, reproductive behaviors, ingestive behaviors, emotion, learning, language and mental disorders are explored.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**165 DEVELOPMENTAL PSYCHOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Overview of psychological research and theory involving the lifespan approach to human behavior and cognition. Explores the biological, emotional, social and cognitive development from infancy through childhood, adolescence and adulthood. Topics include influences of drugs and disease on prenatal development, child-rearing methods, temperaments and personality, childhood disorders, development of language and thinking, gender roles, friendship, family and relationships, parenting and aging.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**170 ABNORMAL PSYCHOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 An overview of psychological research and theory involving the causes and treatment of abnormal behavior. The major disorders include anxiety disorders (such as phobias, panic attacks, obsessive-compulsive), mood disorders (such as depression and bipolar), schizophrenic disorders, and personality disorders. Also included are the child/adolescence disorders (such as ADHD and eating disorders), substance abuse, mental retardation, sexual disorders, and the effects of stress on the body.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**199 SPECIAL STUDIES OR PROJECTS IN PSYCHOLOGY****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Psychology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**215 STATISTICS FOR THE BEHAVIORAL SCIENCES****3 UNITS**

Prerequisite: MATH 103 or 110 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 3 hours laboratory  
 Methods and experience in defining and solving quantitative problems in the behavioral sciences. Emphasis is on the design of experiments and the application of a variety of parametric and nonparametric techniques to the analysis of data.  
*AA/AS GE, CSU, CSU GE, IGETC, UC credit limit*

**220 LEARNING****3 UNITS**

Prerequisite: PSY 120 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Examination of the basic principles and research in animal and human learning.  
*AA/AS GE, CSU, CSU GE, IGETC, UC*

**298 SELECTED TOPICS IN PSYCHOLOGY****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Psychology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of

Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN PSYCHOLOGY** 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-9 hours

Selected topics in Psychology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

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## REAL ESTATE

**125 ESCROW PROCEDURES I** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Methods and techniques of escrow procedures for real estate transactions and legal and ethical responsibilities. Topics include types of escrows, document preparation, terminology, phraseology, title and escrow procedures, adjustment of taxes, rents and charges.

CSU

**126 ESCROW PROCEDURES II** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of exchanges, loans, escrow sales of trust, deeds and notes, consummation of land contracts and leasehold escrows.

CSU

**127 ESCROW PROCEDURES III** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Escrows relating to condominiums, shopping centers, subdivided land, bulk sales, liquor licenses and other miscellaneous escrow transactions. Actual case problems are presented for evaluation and discussion including compliance with conditions, agency relationships, wrongful delivery, conditional deposits, liability and assignments.

CSU

**190 REAL ESTATE PRINCIPLES** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Fundamental real estate course covering the basic laws and principles of California real estate. Provides understanding, background and terminology necessary for advanced study in specialized courses. Of assistance to those preparing for the real estate license examinations.

CSU

**191 REAL ESTATE PRACTICE** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Day-to-day operation in real estate roles and brokerage including listing, prospecting, advertising, financing, sales techniques, escrow and ethics.

CSU

**192 REAL ESTATE FINANCE** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Analysis of real estate financing including lending policies and problems in financing transactions in residential, apartment, commercial and special purpose properties. Methods of financing properties are emphasized.

CSU

**193 REAL ESTATE LEGAL ASPECTS** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of the law governing real property, its sale, lease or other conveyance. Instruments utilized in conveyance or lease of such property will be examined and drafted.

CSU

**194 REAL ESTATE APPRAISAL** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introductory course covering the purposes of appraisals, the appraisal process, and the different approaches, methods and techniques used to determine the value of various types of property. Emphasis on residential and single-unit property.

CSU

**197 REAL ESTATE ECONOMICS** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of economic factors which determine the market and location of real property investments.

CSU

**199 SPECIAL STUDIES OR PROJECTS IN REAL ESTATE** 1-3 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Real Estate under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**201 REAL ESTATE PROPERTY MANAGEMENT** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of property management and problem areas associated with operating income-producing property.

CSU

**202 BUSINESS OPPORTUNITIES SALES** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Overview of the sale and transfer of a business from the perspective of a real estate licensee handling its listing and sale.

CSU

**204 REAL ESTATE OFFICE ADMINISTRATION** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of administration, supervision and management of a real estate brokerage office.

CSU

**230 COMMERCIAL REAL ESTATE** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introduction to the principles and procedures applicable to the leasing, management and operations of commercial and investment real estate properties. Discussion of computerized property management techniques, procedures and tax and accounting methods applicable to commercial real estate properties.

CSU

**250 REAL ESTATE INTERNSHIP** 1-4 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
75 hours paid or 60 hours unpaid work experience per unit

Practical work experience in the real estate industry. *May be repeated for a maximum of 12 units.*

CSU

**290 REAL ESTATE LICENSE TRAINING** 1 UNIT

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
1 hour lecture

Preparation for the California Department of Real Estate Salesperson's or Broker's examination.

CSU

**292 MORTGAGE LOAN BROKERING AND LENDING** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of the practices and procedures involved in advanced real estate finance including secondary money market sources, federal loan qualification requirements, and special problems in current residential and commercial real estate financing.

CSU

**294 ADVANCED REAL ESTATE APPRAISAL** 3 UNITS

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of the practices and procedures involved in advanced real estate appraising including the analysis of income and commercial properties.

CSU

**298 SELECTED TOPICS IN REAL ESTATE** 1-4 UNITS

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
1-12 hours

Selected topics in Real Estate not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format. **Pass/No Pass only. Non-degree applicable.**



**299 SELECTED TOPICS  
IN REAL ESTATE****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours  
 Selected topics in Real Estate not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
 CSU

**RELIGIOUS STUDIES****100 INTRODUCTION TO RELIGION 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Introductory course in the origins and features of religion as a unifying point in the social ordering of the world and its individual cultures.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**120 WORLD RELIGIONS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Introduction to the teachings, major figures, attitudes and practices of world religions.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**130 SCRIPTURES OF  
WORLD RELIGIONS 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Problems in the study of religions based on the study of scripture selected from Eastern and Western religions.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**140 RELIGION AND CULTURE 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of the various ways in which religious thought and belief are incorporated into the cultural expression of societies. Specific emphasis given to understanding religion through its expression in art, music, literature and philosophy.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**150 SCRIPTURES OF  
INDIA AND CHINA 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of the religious and philosophical modes of thought and ways of life in the Orient.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR PROJECTS  
IN RELIGIOUS STUDIES 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Religious Studies under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**200 SCIENCE AND RELIGION 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of science and religion as two unique aspects of humanity's singular search for personal meaning and the harnessing of natural forces, both of which significantly affect humanity's self-definition and positioning in the cosmic order.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**210 INTRODUCTION TO THE  
HEBREW SCRIPTURES 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Introductory survey of the contents, themes, literary genres, canons, historical background, and modern critical methods for analysis and interpretation of the Hebrew scriptures.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**215 INTRODUCTION TO THE  
NEW TESTAMENT 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Introduction to the history and culture of the New Testament period, the methods of critical analysis of Biblical materials, and the content of the New Testament.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**298 SELECTED TOPICS IN  
RELIGIOUS STUDIES 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Religious Studies not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN  
RELIGIOUS STUDIES 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Religious Studies not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
 CSU

**SOCIAL WORK****110 SOCIAL WORK FIELDS  
OF SERVICE 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 A generalist perspective that introduces students to the profession of social work and the major fields of practice. Explores the relevance of social work to current social issues. Students will identify and understand the implications of social work practice with diverse populations. This includes, but may not be limited to, the impact of cultural diversity, racism, sexism, disabilities, ageism, homophobia and other forms of discrimination, and the need for and provision of basic human services. Strategies for fulfilling the professional responsibility of the

social worker to create an equitable society will be identified and developed.

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**120 INTRODUCTION TO  
SOCIAL WORK 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Students will use a social problems approach to describe how poverty, child abuse, substance abuse, health and mental health issues, sexism, racism, other forms of discrimination, crime and other social issues affect people. Provides students with a framework for analyzing policy issues and for making informed civic decisions on social issues. As part of the course, students are asked to volunteer at a social service/community service agency to observe and report on how social workers attempt to assess and address social problems.  
 CSU

**199 SPECIAL STUDIES OR  
PROJECTS IN SOCIAL WORK 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours  
 Individual study, research or projects in Social Work under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS  
IN SOCIAL WORK 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Social Work not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS  
IN SOCIAL WORK 1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours  
 Selected topics in Social Work not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
 CSU

**SOCIOLOGY****120 INTRODUCTORY SOCIOLOGY 3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture  
 Study of the nature of social life, the dynamics of human interaction, symbolic foundation of behavior, social organization and control, social change, and the tools of sociological investigation.  
 AA/AS GE, CSU, CSU GE, IGETC, UC

**125 MARRIAGE, FAMILY AND ALTERNATIVE LIFESTYLES****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Survey of American courtship, marriage and family behavior with primary emphasis on understanding factors conducive to successful marital and family relationships. Some consideration is given to historical background, minority family types and cross-cultural comparisons.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**130 CONTEMPORARY SOCIAL PROBLEMS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Identification and analysis of contemporary American social problems. Criteria are established whereby students can better judge the effectiveness of various plans for social betterment.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**199 SPECIAL STUDIES OR PROJECTS IN SOCIOLOGY****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Sociology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN SOCIOLOGY****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Sociology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN SOCIOLOGY****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Sociology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

*CSU*

**SPANISH****120 SPANISH I****5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours lecture

Introductory course to the Spanish language and the cultures of its speakers. Designed for students with very little or no knowledge of Spanish. Facilitates the practical application of the language in everyday oral and written communication at the beginning level. Since the focus will be on basic communication skills, the class will be conducted in Spanish as much as

possible. Students will learn structures that will enable them to function in Spanish in everyday contexts while becoming familiar with the Spanish speaking world.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**120A SPANISH I****2.5 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 2.5 hours lecture

Equivalent to the first half of SPAN 120. Allows more time for the student who has not studied the Spanish language. Introduces students to the Spanish language and the cultures of its speakers. Facilitates the practical application of the language in everyday oral and written communication at the introductory beginning novice level. Since the focus will be on basic communication skills, the class will be conducted in Spanish as much as possible. While becoming familiar with the Spanish speaking world, students will be introduced to structures that will enable them to begin to function in Spanish in everyday contexts. *Must be taken with SPAN 120B in order to meet the General Education requirement. If taken in conjunction with SPAN 120, the cumulative number of units which may be earned is 5 units.*

*AA/AS GE, CSU, CSU GE, UC credit limit*

**120B SPANISH I****2.5 UNITS**

Prerequisite: SPAN 120A or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 2.5 hours lecture

Equivalent to the second half of SPAN 120 and the continuation of SPAN 120A. Continues to introduce students to the Spanish language and the cultures of its speakers. Continues to facilitate the practical application of the language in everyday oral and written communication at the beginning novice level. Since the focus will be on basic communication skills, the class will be conducted in Spanish as much as possible. While becoming familiar with the Spanish speaking world, students will continue to acquire structures that will enable them to function in Spanish in everyday situations. *Must be taken with SPAN 120A in order to meet the General Education requirement. If taken in conjunction with SPAN 120, the cumulative number of units which may be earned is 5 units.*

*AA/AS GE, CSU, CSU GE, UC credit limit*

**121 SPANISH II****5 UNITS**

Prerequisite: SPAN 120 or equivalent with a grade of "C" or better or "Pass" or two years of high school Spanish  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours lecture

Continuation of SPAN 120. The course continues to develop oral and written skills based on practical everyday needs.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**135 SPANISH FOR PROFESSIONAL PERSONNEL I****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Practical essentials of conversing in Spanish for persons engaged in some professional fields such as health or business. **Pass/No Pass only.**

*CSU*

**141 SPANISH AND LATIN AMERICAN CULTURES****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Survey of major characteristics of Spanish, Latin American and Chicano cultures as reflected in literature, the arts, philosophy and folklore.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**145 HISPANIC CIVILIZATIONS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

General overview of the cultures of Spain and Latin America while directly providing an opportunity to explore the cultural richness of the Hispanic world through a particular country. May be offered as an on-site tour of a specific Hispanic country.

*AA/AS GE, CSU, CSU GE, UC*

**199 SPECIAL STUDIES OR PROJECTS IN SPANISH****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Spanish under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**220 SPANISH III****5 UNITS**

Prerequisite: SPAN 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school Spanish  
 Corequisite: None  
 Recommended Preparation: None  
 5 hours lecture

Continuation of SPAN 121. The course continues to develop oral, listening, reading and writing skills in order to acquire proficiency in Spanish.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**221 SPANISH IV****5 UNITS**

Prerequisite: SPAN 220 or equivalent with a grade of "C" or better or "Pass" or four years of high school Spanish  
 Corequisite: None

Recommended Preparation: None

5 hours lecture

Continuation of SPAN 220. The course continues to develop oral, listening, reading and writing skills in order to improve proficiency in Spanish.

*AA/AS GE, CSU, CSU GE, IGETC, UC*

**250 CONVERSATIONAL SPANISH I****3 UNITS**

Prerequisite: SPAN 121 or equivalent with a grade of "C" or better or "Pass" or three years of high school Spanish  
 Corequisite: None

Recommended Preparation: None

3 hours lecture

Develop oral, reading, writing and listening skills with an emphasis on oral proficiency.

*AA/AS GE, CSU, CSU GE, UC*

**251 CONVERSATIONAL SPANISH II****3 UNITS**

Prerequisite: SPAN 250 or equivalent with a grade of "C" or better or "Pass" or four years of high school Spanish  
 Corequisite: None

Recommended Preparation: None

3 hours lecture

Continues to develop oral, reading, writing and listening skills with an emphasis on oral proficiency.

*AA/AS GE, CSU, CSU GE, UC*

**298 SELECTED TOPICS  
IN SPANISH****1-5 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-15 hours

Selected topics in Spanish not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS  
IN SPANISH****1-5 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-15 hours

Selected topics in Spanish not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
 CSU

## SURVEYING

**199 SPECIAL STUDIES OR  
PROJECTS IN SURVEYING****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Surveying under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**218 PLANE SURVEYING****4 UNITS**

Prerequisite: MATH 170 or equivalent with a grade of "C" or better or "Pass" or concurrent enrollment  
 Corequisite: None  
 Recommended Preparation: None  
 2 hours lecture, 6 hours laboratory  
 Use, care and adjustment of surveying instruments. Fundamental surveying methods, traverse measurements and area computations. Introduction to horizontal and vertical curves, stadia, construction layout. Introduction to topographic mapping. Earth work computations.  
*Also listed as ENGR 218.*

CSU, UC

**220 BOUNDARY CONTROL  
AND LEGAL PRINCIPLES****3 UNITS**

Prerequisite: SURV/ENGR 218 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Legal and professional aspects of surveying such as U.S. public land surveys, property surveys, title search, and report laws affecting a surveyor, resurveys or surveys based on the deed or record and the new divisions of land.

CSU

**240 ADVANCED SURVEYING****4 UNITS**

Prerequisite: SURV/ENGR 218 or equivalent with a grade of "C" or better or "Pass"  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture, 3 hours laboratory

Topographic, hydrographic and geodetic surveying. Precise equipment and control surveying, city and land surveys. Astronomical observations. State plane coordinates system. Route location and layout, transition, horizontal and vertical curves. Introduction to electronic and photogrammetric methods. U.S. Public

Land Surveys and legal descriptions, and an introduction to Global Positioning Systems (G.P.S.). *Not open to students with credit in ENGR 240.*

CSU, UC

**298 SELECTED TOPICS  
IN SURVEYING****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Surveying not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS  
IN SURVEYING****1-4 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-12 hours

Selected topics in Surveying not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## THEATRE ARTS

**110 INTRODUCTION TO THEATRE** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Designed to give students the analytic tools of theatre to provide a working knowledge of all areas included in the process of producing a play. Through lectures, attendance at selected performances and in-class projects, students will be introduced to theatre arts as it reflects the synthesis of the arts and a definition of the humanities in western civilization. Recommended for students interested in theatre who want to have a better understanding of how this art form continues to help shape society.

AA/AS GE, CSU, CSU GE, IGETC, UC

**120 HISTORY OF THE THEATRE I** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Survey of theatre from Classical Greece through 18th century France and England. The social, political, philosophical and religious impact of theatre and drama will be studied in depth. Exemplary plays from great theatrical periods will be analyzed and critiqued.

AA/AS GE, CSU, CSU GE, IGETC, UC

**121 HISTORY OF THE THEATRE II** 3 UNITS

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Survey of theatre from 19th century Germany through 20th century Europe and America. The social, political, philosophical and religious impact of theatre and drama will be studied in depth. Exemplary plays from great theatrical periods will be analyzed and critiqued.

AA/AS GE, CSU, CSU GE, IGETC, UC

**199 SPECIAL STUDIES OR  
PROJECTS IN THEATRE ARTS****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 3-9 hours

Individual study, research or projects in Theatre Arts under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN  
THEATRE ARTS****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Theatre Arts not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.  
**Pass/No Pass only. Non-degree applicable.**

**299 SELECTED TOPICS IN  
THEATRE ARTS****1-3 UNITS**

Prerequisite: Varies with topic  
 Corequisite: Varies with topic  
 Recommended Preparation: Varies with topic  
 1-9 hours

Selected topics in Theatre Arts not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

## WATER/WASTEWATER TECHNOLOGY

**101 FUNDAMENTALS OF WATER/  
WASTEWATER TECHNOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: None  
 3 hours lecture

Provides a broad overview of the water and wastewater fields and issues confronting the industry. Students will learn how source waters are obtained, treated and distributed and how wastewater is collected, transported and disposed of in the area. Contemporary issues facing the water and wastewater industry will also be explored.

CSU

**102 CALCULATIONS IN WATER/  
WASTEWATER TECHNOLOGY****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: Grade of "Pass" in MATH 090 or equivalent  
 3 hours lecture

Study of the mathematical principles in solving problems related to treatment systems including hydraulic volumes, dimensional analysis, primary and secondary sewage treatment, calculations and chemical dose rates as it relates to water/wastewater technology.

CSU

**104 APPLIED HYDRAULICS****3 UNITS**

Prerequisite: None  
 Corequisite: None  
 Recommended Preparation: WWTR 102 or equivalent with a grade of "C" or better or "Pass"  
 3 hours lecture

Study of the hydraulics necessary in the operation of water and maintenance plants and systems. Consideration of the types of pumps used in water/wastewater service, their

operational characteristics and maintenance, and the problems common to their use.

CSU

**106 INTRODUCTION TO ELECTRICAL AND INSTRUMENTATION PROCESSES 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introductory course in basic electron theory and electrical principles. Electrical safety precautions, component identification, schematic interpretation, motors, transformers, relays and test equipment will be studied. Automated process control devices and an overview of current technologies will be discussed.

CSU

**110 LABORATORY ANALYSIS FOR WATER/WASTEWATER 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Examines basic fundamentals of laboratory analysis with emphasis on applied chemical and microbiological procedures for water and wastewater plant operators. Includes procedures and techniques used in physical, chemical, bacteriological and biological examination of water/wastewater.

CSU

**112 BASIC PLANT OPERATIONS: WATER TREATMENT 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: WWTR 102 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Study of sources of water, public health aspects of water supply, chemical, physical and bacteriological standards of water quality, types of water treatment plants, water treatment procedures, operation, maintenance, storage and distribution.

CSU

**114 BASIC PLANT OPERATIONS: WASTEWATER TREATMENT 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Designed to familiarize students with wastewater collection systems and essential safety procedures necessary to their operation, including preliminary and primary treatment processes and maintenance of a wastewater treatment plant.

CSU

**117 ADVANCED PLANT OPERATIONS: WATER TREATMENT 3 UNITS**

Prerequisite: WWTR 112 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Study of water quality control and treatment. Aspects of public health as it relates to the water supply will be highlighted. Sources of contamination and methods of control will be emphasized as well as maintenance of water treatment facilities with safety cost and environmental factors stressed.

CSU

**120 ADVANCED PLANT OPERATIONS: WASTEWATER TREATMENT 3 UNITS**

Prerequisite: WWTR 114 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Designed to familiarize students with wastewater collection systems, treatment process units, equipment and facilities operation and maintenance, application of laboratory results to process control, and essential safety procedures necessary for operation and maintenance of wastewater facilities.

CSU

**130 WATER DISTRIBUTION SYSTEMS 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: WWTR 102 or equivalent with a grade of "C" or better or "Pass"  
3 hours lecture

Designed to enable students to understand the operation and maintenance of a waterworks distribution system. Part of a series required for eligibility to take state certification examinations; supports certification examinations for grade levels D1 and D2.

CSU

**132 WASTEWATER COLLECTION SYSTEMS 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Designed to familiarize students with the components of wastewater collection systems. Overview of design installation, operation, monitoring, maintenance and repair of sewer pipelines, pump stations and related facilities.

CSU

**134 MECHANICAL MAINTENANCE 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Designed to familiarize students with the basic principles of mechanical equipment design, installation, operation, maintenance, repair, overhaul and replacement. Emphasis on understanding the value of preventative maintenance techniques such as equipment monitoring, lubrication analysis, machine alignment and scheduled overhaul.

CSU

**199 SPECIAL STUDIES OR PROJECTS IN WATER/WASTEWATER TECHNOLOGY 1-3 UNITS**

Prerequisite: Varies with topic  
Corequisite: Varies with topic  
Recommended Preparation: Varies with topic  
3-9 hours

Individual study, research or projects in Water/Wastewater Technology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**265 WATER DISTRIBUTION SYSTEMS II 3 UNITS**

Prerequisite: WWTR 130 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Second of an integrated sequence of courses covering water distribution systems. Enables students to gain a more comprehensive understanding of the operation and maintenance of a waterworks distribution system including

advanced calculations, management, safety and emergency response issues. Contemporary issues facing the water and wastewater industry will also be explored in depth. Part of a series required for eligibility to take state certification examinations; supports certification examinations for grade levels D3, D4 and D5.

CSU

**267 WASTEWATER COLLECTION SYSTEMS II 3 UNITS**

Prerequisite: WWTR 132 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Designed to provide an in-depth understanding of the components of wastewater collection systems. Includes the design, operation, monitoring, maintenance and repair of pump stations as well as equipment maintenance, safety/survival systems, administration and organization principles.

CSU

**270 PUBLIC WORKS SUPERVISION 3 UNITS**

Prerequisite: WWTR 101 or equivalent with a grade of "C" or better or "Pass"  
Corequisite: None  
Recommended Preparation: None  
3 hours lecture

Introduction to the principles and practices of modern supervision and management, with an emphasis on contemporary issues facing supervisors and managers in the water utilities industry.

CSU

**280 BACKFLOW TESTER TRAINING 2 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

1.5 hours lecture, 1.5 hours laboratory  
Prepares students for the American Water Works Association (AWWA) and the American Backflow Prevention Association (ABPA) certification for Backflow Prevention Assembly Tester Certification. Includes backflow device installation and testing procedures required for the certification testing.

CSU

**282 CROSS CONNECTION CONTROL SPECIALIST 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

3 hours lecture  
Study of the administrative and technical procedures required for a cross connection program including system inspections, hazard evaluation, identification of cross connection problems and backflow prevention devices, shut-down tests and reclaimed water systems.

CSU

**284 CROSS CONNECTION CONTROL SPECIALIST-RECYCLED WATER 3 UNITS**

Prerequisite: None  
Corequisite: None  
Recommended Preparation: None

3 hours lecture  
Study of the administrative and technical procedures concerning the production, use and distribution of recycled water including backflow protection, legal, administrative and permitting issues, the treatment process, health and safety aspects, and the cross connection control (shut down) test as conducted in San Diego County. The course will consist of both classroom and demonstration sessions. Demonstration sessions consist of various aspects of cross connection control recycled water shut down testing.

CSU

**290 COOPERATIVE WORK EXPERIENCE****1-4 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

5 hours paid or 4 hours unpaid work experience per week per unit

Practical application of principles and procedures learned in the classroom to the various phases of water and wastewater treatment, distribution or collection. Work experience will be paid or unpaid at appropriate curriculum-related work sites. Two on-campus sessions will be scheduled. *May be repeated for a maximum of 12 units.*

**298 SELECTED TOPICS IN WATER/WASTEWATER TECHNOLOGY****1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Water/Wastewater Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN WATER/WASTEWATER TECHNOLOGY****1-4 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-12 hours

Selected topics in Water/Wastewater Technology not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

CSU

**WORK EXPERIENCE****110 GENERAL COOPERATIVE WORK EXPERIENCE EDUCATION****1-3 UNITS**

Prerequisite: None

Corequisite: None

Recommended Preparation: None

75 hours paid or 60 hours unpaid work experience per unit

Supervised work experience to assist students in acquiring desirable work habits, attitudes and career awareness. Jobs may or may not be directly related to students' educational goals. *May be repeated for a maximum of 6 units.*

**199 SPECIAL STUDIES OR PROJECTS IN WORK EXPERIENCE****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

3-9 hours

Individual study, research or projects in Work Experience under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/instructor conferences and the Office of Instruction. *May be repeated for a maximum of 9 units.*

**298 SELECTED TOPICS IN WORK EXPERIENCE****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Work Experience not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.

**Pass/No Pass only. Non-degree applicable.****299 SELECTED TOPICS IN WORK EXPERIENCE****1-3 UNITS**

Prerequisite: Varies with topic

Corequisite: Varies with topic

Recommended Preparation: Varies with topic

1-9 hours

Selected topics in Work Experience not covered by regular catalog offerings. Course content and unit credit to be determined by the Office of Instruction and faculty. May be offered in a seminar, lecture and/or laboratory format.