

CHEMISTRY

CHEM 100 SURVEY OF CHEMISTRY

Telecourse: *Units 3; Class Hours: Minimum of 48 lecture hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): MATH 111. Description:* Chemistry, the study of matter, is a study of organization, chaos and wonder. This is a general survey course of the chemical concepts and phenomena you encounter everyday. (This course is designed for non-science majors and is not open to students who have had or are taking CHEM 210.) Transfer: CSU, UC*.

CHEM 110 CHEMISTRY AND DAILY LIFE

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Students are introduced to the language of chemistry, followed by investigations into the role chemistry plays in various aspects of our environment and daily life. Topics such as pollution, food additives, energy and drugs are examined from a chemical point of view. Transfer: CSU.

CHEM 111 CHEMISTRY AND DAILY LIFE LABORATORY

Units (Grade Option) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): Concurrent enrollment in or completion of CHEM 110. Description: This course is designed to accompany CHEM 110. Experiments include the investigation, properties, and synthesis of everyday substances such as food, soap, and fuels. Transfer: CSU.

CHEM 112 CHEMISTRY IN ACTION

Units 4; Class Hours: Minimum of 48 lecture/48 lab/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 110. Description: Introduces students to the theories, laws, concepts and language of chemistry as applied to explain chemical processes occurring in the environment and in the body. The laboratory component provides qualitative techniques for the manipulation of selected household chemicals as well as quantitative techniques for more rigorous chemical analyses. Transfer: CSU.

CHEM 192 ELEMENTARY CHEMISTRY

Units (Grade Option) 4; Class Hours: Minimum of 48 lecture/48 lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 110 or satisfactory score on District math placement test and other measures as appropriate that indicate proficiency in Elementary Algebra. Description: In this course students are introduced to some of the theories, laws, concepts and language of chemistry with an emphasis on problem solving. The course is specifically designed to prepare students for General Chemistry, CHEM 210. Concurrent enrollment in Geometry or Intermediate Algebra strongly recommended. Transfer: CSU, UC*.

CHEM 210 GENERAL CHEMISTRY I (CAN CHEM 2) (CAN CHEM SEQ A = CHEM 210 + 220)

Units 5; Class Hours: Minimum of 48 lecture/96 lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): CHEM 192 and MATH 120 with grade of C or better or satisfactory score on District math placement test and other measures as appropriate that indicate proficiency in Intermediate Algebra. Description: This is the first half of a one-year sequence in general college chemistry intended for students majoring in engineering, chemistry, life sciences, physical sciences, earth sciences, pre-medicine, pre-pharmacy, pre-physical therapy, molecular biology and other pre-professional and

science majors. The course presents the fundamental concepts, principles and laws of chemical processes including atomic and molecular structure, stoichiometry, gas laws, thermochemistry, theories of bonding, molecular geometry, states of matter, and solutions. The application of critical thinking skills to chemical problem-solving is emphasized. Transfer: CSU, UC*.

CHEM 220 GENERAL CHEMISTRY II (CAN CHEM 4) (CAN CHEM SEQ A = CHEM 210 + 220)

Units 5; Class Hours: Minimum of 48 lecture/96 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): Completion of CHEM 210 or 224 or equivalent. Description: Continuation of CHEM 210. Topics presented include many types of ionic equilibria, oxidation-reduction reactions, kinetics, thermodynamics, electrochemistry, coordination chemistry, qualitative analysis, descriptive chemistry and nuclear chemistry. The application of critical thinking skills to chemical problem-solving is emphasized. Transfer: CSU, UC.

COMPUTER INFORMATION SCIENCE AND SYSTEMS

(See also Art, Engineering, Geography, and Business/Office Technology)

CIS 118 INTRODUCTION TO OBJECT-ORIENTED PROGRAM DESIGN

Units: (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 110; Prerequisite(s): None; Co-requisite(s): CIS 119. Description: Introduction to object-oriented computer programming for computer science majors (CS0) and computer professionals. Topics include computer hardware and operating systems; problem-solving techniques; object-oriented program design; program coding, testing, and implementation; and documentation issues and techniques. Students explore algorithm development, data types, flow of control, classes, objects, methods, vectors, and event-driven programming. May be repeated once for credit. Transfer: CSU, UC.

CIS 119 OPEN COMPUTER LAB I

Units: (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 110; Prerequisite(s): None; Corequisite(s): Concurrent enrollment in CIS 118. Description: Use of microcomputers to complete lab assignments for CIS 118. May be repeated once for credit. Transfer: CSU, UC.

COMP 235 VISUAL BASIC PROGRAMMING

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 250/251 or 252/253 or COMP 103 or 162; Corequisite(s): Concurrent enrollment in COMP 699. Description: Visual Basic (VB), an object-based language suited to programming with Microsoft Windows, is useful for stand-alone applications, quick prototyping of new applications, and building graphical "front ends" for programs written in other languages. Class time focuses on unique features of Visual Basic: object-based programming, event loops, forms, components, properties and methods; programs incorporate buttons, text boxes, pictures, dialog boxes, menus, scroll bars, disk access, etc. Familiarity with Microsoft Windows and DOS is desirable. Transfer: CSU, UC.

COMP 236 JAVA PROGRAMMING LANGUAGE

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 250/251 or 252/253 or COMP 235; Corequisite(s): Concurrent enrollment in COMP 699. Description: Java can make powerful cross-platform GUI-based applications without modification or recompilation. The course discusses Java's expressions and data structures, objects and classes, inheritance, graphics, programming, applets, exceptions, I/O, multi-threading and networking. By completion of the course students should be able to write Java applets or stand-alone applications using all basic and many advanced features of the language. Transfer: CSU, UC.

CIS 250 PROGRAMMING METHODS I: C++

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 120 or 122; Prerequisite(s): COMP 103 or equivalent; Corequisite(s): Concurrent enrollment in CIS 251. Description: Introduction to computer science and software engineering for majors (CS1) and computer professionals. A systematic approach to the design, implementation, and management of robust C++ computer programs. Course emphasizes object-oriented design, programming documentation, testing and debugging techniques, and computer ethics. This course conforms to the ACM CS1 standards. Transfer: CSU, UC.

CIS 251 OPEN COMPUTER LAB I: C++

Units (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 120 or 122; Prerequisite(s): None; Corequisite(s): Concurrent enrollment in CIS 250. Description: Use of microcomputers to complete lab assignments for CIS 250. Transfer: CSU, UC.

CIS 252 PROGRAMMING METHODS II: C++

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 120 or 122; Prerequisite(s): CIS 250/251 or equivalent; Corequisite(s): Concurrent enrollment in CIS 253. Description: This course uses Object-Oriented techniques and the C++ programming language to illustrate a variety of data structures including: arrays, stacks, queues, linked lists, trees, dictionaries, sets and graphs. Also covered are sorting and searching topics, including Big O notation and hash tables. This course conforms to the ACM CS2 standards. Transfer: CSU, UC.

CIS 253 OPEN COMPUTER LAB II: C++

Units (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 120 or 122; Prerequisite(s): CIS 250/251; Corequisite(s): Concurrent enrollment in CIS 252. Description: Use of microcomputers to complete lab assignments for CIS 252. Transfer: CSU, UC.

CIS 284 PROGRAMMING METHODS I: JAVA

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 118/119 or equivalent, and MATH 120 or equivalent; Corequisite(s): Concurrent enrollment in CIS 285. Description: Introduction to computer science and software engineering for computer science majors (CS1) and computer professionals. A systematic approach to the design, construction, and management of computer programs, emphasizing object-oriented design and programming documentation, testing and debugging techniques. Focuses on designing and implementing robust, well styled, and maintainable computer programs. Course also includes introduction to basic data structures and computer ethics. This course conforms to the ACM CS1 standards. Transfer: CSU, UC.

CIS 285 OPEN COMPUTER LAB I: JAVA

Units (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 118/119 or equivalent, and MATH 120 or equivalent; Corequisite(s): Concurrent enrollment in CIS 284. Description: Use of microcomputers to complete lab assignments for CIS 284. Transfer: CSU, UC.

CIS 286 PROGRAMMING METHODS II: JAVA

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 284/285 or equivalent; Corequisite(s): Concurrent enrollment in CIS 287. Description: Data Structures class for computer science majors (CS2) and computer professionals. This course uses Object-Oriented techniques to illustrate a variety of data structures including: vectors, stacks, queues, linked lists, trees, dictionaries, maps, sets and graphs. Also covered are sorting and searching topics, including Big O notation and hash tables. This course conforms to the ACM CS2 standards. Transfer: CSU, UC.

CIS 287 OPEN COMPUTER LAB II: JAVA

Units (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 118/119 or equivalent, and MATH 120 or equivalent; Corequisite(s): Concurrent enrollment in CIS 286. Description: Use of microcomputers to complete lab assignments for CIS 286. Transfer: CSU, UC.

CIS 290 COMPUTER ARCHITECTURE

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): MATH 120 or equivalent, and knowledge of a computer programming language. Corequisite(s): Concurrent enrollment in CIS 291. Description: Examines computer architecture, design and organization. Includes number systems, data representation, input/output, interrupts and exception handling, paging, memory management, performance, and other relevant issues. Lab assignments and exercises are completed in Assembly language. Transfer: CSU, UC.

CIS 291 OPEN COMPUTER LAB II

Units (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): MATH 120 or equivalent, and knowledge of a computer programming language; Corequisite(s): Concurrent enrollment in CIS 290. Description: Use of microcomputers to complete lab assignments for CIS 290. Transfer: CSU, UC.

COMP 311 INTRODUCTION TO THE UNIX OPERATING SYSTEM

Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 120 or 122; Prerequisite(s): BUS. 103 or COMP 103 or CIS 118. Description: This course introduces the UNIX operating system including the UNIX system architecture, file system, UNIX shell, job control, and an introduction to shell scripts. Transfer: CSU, UC.

COMP 321 JAVASCRIPT I

Units (Grade Option) 1; Class Hours: Minimum of 16 lecture/8 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): BUS. 483 or familiarity with HTML; access to the Internet. Corequisite(s): Concurrent enrollment in COMP 699. Description: Introduction to JavaScript Language. JavaScript is a cross-platform object-oriented scripting language developed by Netscape to be used in HTML (Hypertext Markup Language) documents to provide high levels of interactivity without needing server-based CGI (Common Gateway Interface) programs. Transfer: CSU.

COMP 322 JAVASCRIPT II

Units (Grade Option) 1; Class Hours: Minimum of 16 lecture/8 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): COMP 321; access to the Internet. Corequisite(s): Concurrent enrollment in COMP 699. Description: Continuation of COMP 321. Topics include creating windows, saving data to cookies, and Java applets. Transfer: CSU.

COMP 330 INTRODUCTION TO PERL

Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/8 by arrangement lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 250/251 or 284/285 or COMP 235 or 236 or 311. Description: Perl is a fundamental building block for interactive Web pages and an important programming language in the Biotech industry. Perl is examined as a general purpose programming language, and this course focuses on Perl's unique data types, flow of control, pattern matching and the application of these specialized features to real problems. Students write stand alone Perl programs and Web CGI scripts that take full advantage of all the basic features of the language. Transfer: CSU, UC*.

COMP 331 INTERMEDIATE PERL

Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/8 by arrangement lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): COMP 330. Description: Continuation of COMP 330. Perl is a fundamental building block for interactive Web pages and an important programming language in the Biotech industry. This course builds on Introduction to Perl focusing on Perl's idioms, reference-based compound data structures, and object-oriented programming. It is the basis for advanced Perl library modules including the CGI module for interacting with the WWW pages. Students write sophisticated object-oriented Perl programs and implement basic library modules. Transfer: CSU, UC*.

COMP 340 INTRODUCTION TO UNIX SYSTEMS ADMINISTRATION

Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): Concurrent enrollment in or completion of COMP 311 or equivalent knowledge. Description: Introduction to UNIX system administration functions including managing user accounts, maintaining file systems, backing up, restoring and managing a UNIX system. Transfer: CSU.

COMP 350 INTRODUCTION TO DATABASES AND SQL

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 250/251 or 252/253 or COMP 235 or 236 or equivalent knowledge of C, C++, Visual Basic or Java programming languages. Description: Detailed introduction to structured query lan-

guage (SQL) intended for application programmers and end users of relational databases. Includes creating tables and views, using outer joins, finding information from the catalog, using subqueries, and validating data using referential integrity. Course includes PL/SQL as extensions of SQL and the use of Oracle 7/8 as a server-based information processing tool. Transfer: CSU.

COMP 351 INTRODUCTION TO PL/SQL

Units 1.5; Class Hours: Minimum of 24 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): COMP 350. Description: PL/SQL is a procedural language developed by Oracle. This course provides an introduction to the basic syntax of PL/SQL through lectures, demonstrations, and hands-on exercises. Students learn PL/SQL syntax, stored procedures, Oracle-supplied procedures, functions, triggers, and packages. Transfer: CSU.

CIS 372 OBJECT-ORIENTED SOFTWARE DEVELOPMENT: ADVANCED TOPICS

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 252/253 or 286/287. Corequisite(s): Concurrent enrollment in CIS 373. Description: Introduction to high level object-oriented software development for computer science majors and computer professionals. Includes conceptualization, analysis, design, implementation, testing and maintenance of software, using the Unified Modeling Language (UML). Students use the above tools to build a project involving the development of a software application in cooperative groups. Transfer: CSU, UC.

CIS 373 OPEN COMPUTER LAB

Units (Credit/No Credit) 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CIS 252/253 or 286/287. Corequisite(s): Concurrent enrollment in CIS 372. Description: Use of microcomputers to complete lab assignments for CIS 372. Transfer: CSU, UC.

COMP 411 INTERMEDIATE UNIX

Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 420, ENGL 100, and MATH 120 or 122; Prerequisite(s): COMP 311. Description: Continuation of COMP 311. Topics include features of UNIX shells, job control, and uses of UNIX utilities. Transfer: CSU, UC.

COMP 422 BEGINNING INTERNET

Units (Credit/No Credit) 0.5; Class Hours: Minimum of 32 lecture/16 lab hours/semester; (Total of 4 weeks); Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course introduces science and engineering students to the worldwide computer network, Internet. The Internet provides exciting access to a wide range of resources such as electronic mail, information servers of all types as well as international sites, and government resources. Through hands-on experience students learn the basic equipment and software requirements and develop an understanding of the Internet and how it can best be used. Topics will include navigation through the World Wide Web, E-mail, and Netscape Navigator. Transfer: CSU.

COMP 480 PERSONAL UNIX SYSTEMS

Units (Credit/No Credit) 0.5; Class Hours: Minimum of 8 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Learn how to install Linux, a Unix clone, on your home computer system.

Topics include hardware issues and where to get your own copy on the Internet. Transfer: CSU.

COOPERATIVE EDUCATION

(See courses under specific subjects in the schedule of classes)

670 COOPERATIVE EDUCATION/WORK EXPERIENCE

Units (Grade Option) 1-16 (No more than 4 per semester); Class Hours: 1-3 lecture hours/semester (75 to 300 paid job hours/ semester, 60-240 volunteer job hours/semester); Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): Spring and Fall Semesters: Enrollment in 7 units, including Cooperative Education/Work Experience and a job or volunteer work site. Summer Session: Enrollment in 0.5 unit, plus Cooperative Education/Work Experience and a job or volunteer work site. Description: College credit may be earned by students who are employed or on volunteer assignments. The job/volunteer assignment must be related to the student's major or occupational goals. Students learn to set measurable objectives for improving their skills and job performance. May be repeated for credit up to 16 units. Course orientations are held the first three weeks of the semester and attendance at one is obligatory. Transfer: CSU.

672 COOPERATIVE EDUCATION: INTERNSHIP

Units (Grade Option) 1-16 (No more than 3 per semester); Class Hours: 1-3 lecture hours/semester (60 to 240 volunteer on the job hours/semester); Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): Enrollment in 7 units, including Cooperative Education and a minimum of 12 completed units in the occupational discipline. Description: Students may enroll in a volunteer, cooperative internship to apply skills learned from classroom instruction at a supervised work site. The internship must be supervised by a job supervisor and an instructor from the chosen occupational discipline. May be repeated for credit up to 16 units. Transfer: CSU.

DEVELOPMENTAL SKILLS

DSKL 810 DEVELOPMENTAL LEARNING SKILLS

Units (Credit/No Credit) 0.5-2; Class Hours: Minimum of 16-48 lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): Verifiable learning disability. Description: Individual and small group activities designed to assist students with identified learning disabilities in the following skill areas; basic skills; memory/ organization/ concentration skills; perceptual skills (auditory/visual); language skills (receptive and expressive); conceptual skills. Units do not apply toward AA/AS degree.

DSKL 811 SPECIFIC LEARNING SKILLS ASSESSMENT

Units (Credit/No Credit) 0.5-1; Class Hours: Minimum of 8-16 lecture/4-8 lab hours per semester; Prerequisite(s): Verifiable learning disability. Description: An assessment battery is used to determine specific learning styles as well as academic skill levels in reading, writing, math, and spelling. Based upon assessment, the student with the assistance of the instructor, designs and uses individual learning strategies. Units do not apply toward AA/AS degree.

DSKL 813 DEVELOPMENTAL READING AND THINKING

Units (Credit/No-credit) 0.5-2; Class Hours: Minimum of 24 lecture/24 lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): Verifiable learning disability. Description: Small group classroom instruction designed to assist learners with identified learning disabilities in the development/ improvement of receptive written language and independent thinking skills. Units do not apply toward AA/AS degree.

DSKL 814 DEVELOPMENTAL WRITING AND SPELLING

Units (Credit/No-credit) 0.5-2; Class Hours: Minimum of 24 lecture/24 lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): Verifiable learning disability. Description: Small group and classroom activities designed to assist students with identified learning disabilities in spelling and writing skills. Units do not apply toward AA/AS degree.

DSKL 816 TUTORING

Units (Credit/No-credit) 0.5-2; Class Hours: Minimum of 48-64 lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): DSKL 811 and Verifiable Learning Disability. Description: This course is designed to assist students with identified learning disabilities to achieve success in mainstream classes through instructional techniques which are appropriate to the student's specific needs identified through assessment. Units do not apply toward AA/AS degree.

DRAMA

(See Theater Arts)

EARLY CHILDHOOD EDUCATION/ CHILD DEVELOPMENT

ECE. 201 CHILD DEVELOPMENT

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Overview of the development in children from birth to adolescence with emphasis on the first ten years. The growth areas to be covered include physical, cognitive, language, emotional, and social. A practical application of theory integrates these developmental concepts in a "whole child" approach. Transfer: CSU, UC.

ECE. 210 EARLY CHILDHOOD EDUCATION PRINCIPLES

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/ semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: The historical perspective, nature, and goals of early childhood education are covered in this course. Other topics include qualifications and training needed by teachers who work with children, descriptions of program models, current issues in ECE, future trends, and their social, political, and economic implications. Transfer: CSU.

ECE. 211 EARLY CHILDHOOD EDUCATION CURRICULUM

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/ semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Development of goals and objectives to manage learning environments and their social implications for children are covered. Students identify quality learning experiences, select valuable play activities for children, and evaluate appropriate curriculum methods for optimum learning. Transfer: CSU

ECE. 212 CHILD, FAMILY, AND COMMUNITY

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Emphasized in this course are contemporary family factors influencing middle childhood, life styles, contemporary factors influencing the community, patterns of child rearing and their social, political, and economic implications. Also covered are resources available to children and families from community agencies. Transfer: CSU, UC.

ECE. 213 THE SCHOOL AGE CHILD

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: The focus of this course is relevant and responsible program planning for before and after school childcare. Also presented are the developmental needs of the child 6-12 years (middle childhood) and family involvement in childcare and the social and economic implications, and available community resources for childcare. Transfer: CSU.

ECE. 223 INFANT DEVELOPMENT

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: In this course major emphasis is placed on the developmental trends, abilities, and influences of behavior during the first three years of life and their social implications. Also presented is the establishment of environments which respond to infant needs. Transfer: CSU.

ECE. 225 INFANT/TODDLER ENVIRONMENTS

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Covers the design, maintenance and evaluation of quality environments for children during the first three years of life. The course should be of interest to caregivers, teachers, ECE/CD students and parents. Accreditation guidelines established by the National Association for the Education of Young Children for infant/toddler programs are included. Transfer: CSU.

ECE. 230 CREATIVE ACTIVITIES FOR THE YOUNG CHILD

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Basic Skills Level 1; Prerequisite(s): None. Description: This course is designed to provide practical skills in presenting activities to young children. Other topics include the role of creativity and creative expression through art media, music, dramatic activities, science, and games--both indoors and outdoors. Transfer: CSU.

ECE. 240 EARLY CHILDHOOD EDUCATION**ADMINISTRATION: BUSINESS/LEGAL**

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course is an overview of the business aspects of caring for children and its social, political, and economic implications. Also included are the legal requirements for childcare settings, laws relating to childcare, and facets of business and fiscal management. 12 units of ECE recommended prior to taking this course. Transfer: CSU.

ECE. 241 EARLY CHILDHOOD EDUCATION**ADMINISTRATION: HUMAN RELATIONS**

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course focuses on the human relations aspects of early childhood education as a business and the social, political, and economic implications for care providers and parents. Other topics include staffing and supervision, licenses and/or credentials for staff, assessment and evaluation, issues in ECE, and parent involvement. 12 units of ECE recommended prior to taking this course. Transfer: CSU.

ECE. 242 ADULT SUPERVISION IN ECE/CD CLASSROOMS

Units (Grade Option) 2; Class Hours: Minimum of 32 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: A study of the methods and principles of supervising student teachers, assistant teachers, parents, and volunteers in early childhood education/child development classrooms. Emphasis is on the role of classroom teachers who function as mentors to new teachers while simultaneously addressing the needs of children, parents, and other staff. This course is recommended for master teachers, site supervisors, and program directors of Child Development programs. Transfer: CSU.

ECE. 244 PREKINDERGARTEN LEARNING AND DEVELOPMENT GUIDELINES

Units 2; Class Hours: Minimum of 32 lecture/8 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Reviews criteria for the provision of high quality prekindergarten/preschool experiences for young children. Early child development foundation skills and the design of appropriate learning environments are key topics. Issues examined are developmental, political and economic including school readiness/school success and universal preschool. Transfer: CSU.

ECE. 250 VIOLENCE AND ITS IMPACT ON CHILDREN AND THEIR FAMILIES

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Exploration of violence in America and its impact on adults and children who experience it. The focus of the course is to give the student a perspective on violence and what may cause it, as well as possible intervention strategies. Community resources for prevention and intervention are incorporated also. Transfer: CSU.

ECE. 252 TEACHING VIOLENCE INTERVENTION STRATEGIES TO CHILDREN AND FAMILIES

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Provides an overview of various approaches to violence intervention. The focus of the course is to provide paraprofessionals appropriate curriculum, theory and practice related to working with children and families who have experienced stress and chronic violence. Transfer: CSU.

ECE. 254 ANTI-BIAS CURRICULUM

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Designed to sensitize early childhood teachers and providers to the importance of

anti-bias curriculum. Early childhood diversity issues related to culture, race, religion, gender, and special needs are examined in the context of curriculum development. Transfer: CSU.

ECE. 260 CHILDREN WITH SPECIAL NEEDS

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Overview of the issues related to children with special needs: physical, sensory, communicative, and behavioral disabilities. Additional topics include a historical perspective, current laws and legislation, inclusion practices in ECE/CD settings, and appropriate community resources. Transfer: CSU.

ECE. 262 INTRODUCTION TO FAMILY SUPPORT: BUILDING RESPECTFUL PARTNERSHIPS (Also HMSV 262)

Units 3; Class Hours: Minimum of 48 lecture/8 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Overview of Family Support programs within Early Childhood Education. Included is a historical perspective, Family Support principles, and effective communication guides between families, childcare providers, teachers, and community agencies. This course is one of two (ECE. 264, other course) for a specialization for Master Teacher on the Child Development Permit matrix. Transfer: CSU.

ECE. 264 THE LIFE CYCLE OF THE FAMILY (Also HMSV 264)

Units 3; Class Hours: Minimum of 48 lecture/8 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: The life cycle of the family bridging individual and family development with cultural and social perspectives. The emphasis is on the diversity within contemporary families and the establishment of family support programs. This course is one of two (ECE. 262, other course) for a specialization for Master Teacher on the Child Development Permit Matrix. Transfer: CSU.

ECE. 313 HEALTH AND SAFETY FOR YOUNG CHILDREN

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Health practices and safety regulations for licensed childcare settings. Major topics include infectious disease prevention, establishing safe environments for young children, emergency and disaster preparedness, and community resources. Transfer: CSU.

ECE. 316 FIRST AID FOR CHILDREN

Units (Grade Option) 0.5; Class Hours: Minimum of 8 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course focuses on the techniques required for First Aid and emergency care practices for young children. First Aid certification is available upon completion.

ECE. 317 PEDIATRIC CPR

Units (Grade Option) 0.5; Class Hours: Minimum of 8 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course focuses on the techniques required for pediatric Cardiopulmonary Resuscitation. CPR certification is available upon completion.

ECE. 331 THE TEACHING EXPERIENCE

Units (Grade Option) 1; Class Hours: Minimum of 16 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Overview of the

teaching profession and its implications for educating young children. Other topics include the developmental stages of the teacher, developmentally appropriate practice, professional obligations and affiliations, and career opportunities.

ECE. 333 OBSERVATIONAL SKILLS

Units 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Overview of the importance of developing observational skills as assessment tools in the provision of quality ECE/CD settings. It incorporates the "Desired Results for Children and Families" document materials from the California Department of Education, Child Development Division, as required for State subsidized ECE/CD programs. Transfer: CSU.

ECE. 335 HANDLING BEHAVIOR

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Child guidance and discipline are covered in this course. The primary goal is to give teachers, caregivers, and parents an understanding of the complexity of children's behavior. Theories and trends concerning child guidance are covered to assist adults in developing appropriate strategies related to interacting with children and fostering pro-social behavior.

ECE. 337 CHILD-PARENT RELATIONSHIPS

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Issues related to contemporary parenting including the stages of parenting, the diversity of the parenting experience, communication guides for more effective parenting, and community resources for family support.

ECE. 350 ISSUES IN EARLY CHILDHOOD EDUCATION

Units (Grade Option) 1-12 (No more than 6 units per semester); Class Hours: Minimum of 16 lecture hour/semester per unit; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This modular approach to issues in Early Childhood Education covers diverse content that is of particular relevance to ECE practitioners. Each module is self-contained. Specific modules are offered each semester and are announced in the current schedule of classes. A limit of six of these one-unit modules applies toward the ECE Certificate and AS Degree. Transfer: CSU.

ECE. 351 LANGUAGE ARTS IN EARLY CHILDHOOD

Units 1; Class Hours: Minimum of 16 lecture/3 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: How to develop and present an appropriate language arts program for young children. Current research is combined with the practical application of curriculum principles to foster children's emerging language and literacy skills.

ECE. 353 LITERACY IN EARLY CHILDHOOD

Units 1; Class Hours: Minimum of 16 lecture/3 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course describes the developmental approach to the growth of listening, speaking, reading and writing skills in early childhood. Included are current issues and resources for teachers and parents.

ECE. 355 STORYTELLING IN EARLY CHILDHOOD

Units 1; Class Hours: Minimum of 16 lecture/3 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course provides an appreciation of storytelling especially as it relates to an appropriate literacy program for young children. Included are the history of storytelling, the effective elements for presentations, and creative resources for both parents and teachers.

ECE. 366 PRACTICUM IN EARLY CHILDHOOD EDUCATION (Also HMSV 366)

Units 3; Class Hours: Minimum of 16 lecture/96 lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): 12 units of ECE. Description: A supervised field experience course that focuses on the methods and principles of teaching in early childhood classrooms. Emphasis is on the role of the teacher in a developmentally appropriate setting. This course gives students practical, verifiable experience working with children under the supervision of an experienced teacher. Transfer: CSU.

ECE. 380 FAMILY DAY CARE TRAINING

Units (Grade Option) 1-4; Class Hours: Minimum of 16-64 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: The focus of this course is the operation of a family day care home as a business. Other topics included are planning activities in the home, designing a home environment, and communicating with parents. May be repeated for credit up to 4 units.

ECE. 382 MALE INVOLVEMENT IN EARLY CHILDHOOD

Units 1; Class Hours: Minimum of 16 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: Examines the importance of men in the lives of children. It reviews barriers and issues concerning male involvement in early childhood and how to positively encourage men to be involved with children. Transfer: CSU.

ECE. 384 PRINCIPLES AND POLICIES FOR HOME-BASED CHILD CARE

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course focuses on the principles and policies related to child care in home-based settings; it examines child care in the home as a small business. The course is designed for those already caring for children in their homes and for those considering this as an option in the child care profession. Transfer: CSU.

ECE. 386 ACTIVITY PLANNING AND CURRICULUM FOR HOME-BASED CHILD CARE

Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course focuses on planning activities and curriculum for home-based child care settings. It is designed for those already caring for children in their homes and for those considering this as an option in the child care profession. Transfer: CSU.

ECONOMICS**ECON 100 PRINCIPLES OF MACRO ECONOMICS (CAN ECON 2)**

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: A broad overview of the American economy and its effect on social, political, and cultural environments. The concepts of the price system, the banking system, money and economic activity, policies for stabilization and growth, and money and economic activity are presented. The course concludes with an introduction to the international economy. Transfer: CSU, UC.

ECON 102 PRINCIPLES OF MICRO ECONOMICS (CAN ECON 4)

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course is an overview of the concepts of supply and demand. Pricing and output decisions under competitive, imperfectly competitive, and monopolistic markets are discussed. Profit maximization and cost minimization for the individual firm are analyzed. Allocation of resources, externalities and comparative economic systems are reviewed also. Transfer: CSU, UC.

ECON 230 ECONOMIC HISTORY OF THE UNITED STATES

Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: An introduction to the origin and development of the American economy from 1860 to the present time. Topics studied are industrial growth, land and resource use, role of immigration and various ethnic and cultural groups, the transportation revolution, development of money and banking, trade patterns, organized labor, agriculture, and America in the world economy. (Fulfills Associate degree Ethnic Studies requirement.) Transfer: CSU, UC.

EDUCATION**EDUC 100 INTRODUCTION TO EDUCATION**

Units 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course integrates psychological, historical, sociological, and philosophical foundations of education including planning of effective teaching strategies and classroom environments, exploration of career opportunities and new directions in education. Transfer: CSU.

ENGINEERING**ENGR 100 INTRODUCTION TO ENGINEERING**

Units 3; Class Hours: Minimum of 32 lecture/32 lab /32 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 130. Description: Provides students with an understanding of the different fields of the engineering profession. It also introduces the students to the use of computers in the solution of a wide variety of engineering problems, and provides a basic understanding of engineering processes and tools, including experimentation, data analysis, and computer and commu-

nication skills. Throughout the course, emphasis is given to technical communications, engineering design and problem solving, and ethical considerations. A spreadsheet program (Microsoft Excel) and a high-level computer language (MATLAB) are an integral part of this course. Transfer: CSU, UC.

ENGR 210 ENGINEERING GRAPHICS (CAN ENGR 2)

Units 3; Class Hours: Minimum of 32 lecture/64 lab/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 130. Description: An introduction to the engineering design process and graphical solutions of two- and three-dimensional design problems involving points, lines, surfaces, and solids. The course develops visualization skills and standard design drawing practices. The use of CAD (computer-aided design) software is an integral part of the course. Transfer: CSU, UC.

ENGR 215 COMPUTATIONAL METHODS FOR ENGINEERS

Units 3; Class Hours: Minimum of 32 lecture/48 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): Concurrent enrollment in or completion of MATH 251. Description: The course covers the fundamentals of procedural programming and computational methods for science and engineering. Topics include induction, iteration and recursion, approximations, floating-point computations and an introduction to data structures. Students perform laboratory projects that use the MATLAB programming language to solve problems and examples drawn from algebra, trigonometry, calculus and elementary physics. Transfer: CSU, UC.

ENGR 230 STATICS (CAN ENGR 8)

Units 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): PHYS 250. Description: This course covers vector treatment of force systems acting on particles and rigid bodies; two- and three-dimensional problems; equilibrium problems involving trusses, frames, machines, distributed forces, fluid statics, internal forces and friction; centroids and moments of inertia; shear and moment diagrams for beams and virtual work. Transfer: CSU, UC.

ENGR 240 ENGINEERING DYNAMICS

Units 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): PHYS 250 and ENGR 230. Description: This course covers fundamentals of kinematics and kinetics of particles and rigid bodies. Topics include kinematics of particle motion; Newton's second law, work-energy and momentum methods; kinematics of planar and three-dimensional motions of rigid bodies; D'Alembert's principle, work-energy and momentum principles for rigid body motion; introduction to mechanical vibrations. Transfer: CSU, UC.

ENGR 260 CIRCUITS AND DEVICES (CAN ENGR 12) (CAN ENGR 6 = ENGR 260 + 261)

Units 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 252 and PHYS 260; Corequisite(s): Concurrent enrollment in ENGR 261. Description: An introduction to the theory and techniques of circuit analysis. Circuit laws and nomenclature, resistive circuits with DC sources, controlled sources, ideal operational amplifiers, natural and complete responses of first- and second-order circuits, steady-state sinusoidal analysis, power calculations, amplifiers, and three-phase circuits. MATH 275 is recommended. Transfer: CSU, UC.

ENGR 261 CIRCUITS AND DEVICES LABORATORY (CAN ENGR 6 = ENGR 260 + 261)

Units 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 252 and PHYS 260; Corequisite(s): Concurrent enrollment in ENGR 260. Description: Basic instruments and experimental techniques in electrical engineering. Oscilloscopes, function generators, and multiple-use meters. Measurement of voltage, current, frequency response, and transient response. Semiconductor devices, diodes, rectifiers, transistors, and integrated circuits. Circuit simulations using PSpice. MATH 275 is recommended. Transfer: CSU, UC.

ENGR 270 MATERIALS SCIENCE (CAN ENGR 4)

Units 3; Class Hours: Minimum of 32 lecture/48 lab/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 251 and CHEM 210. Description: Application of basic principles of chemistry and physics to the mechanical, electrical, optical, thermal, magnetic and deteriorative properties of materials. Special emphasis is given to the relationship between microstructure and the properties of metals, polymers, ceramics, and semiconducting materials. (PHYS 250 is recommended prior to taking this course). Transfer: CSU, UC.

ENGR 410 COMPUTER-AIDED GRAPHICS

Units 1.5; Class Hours: Minimum of 16 lecture/32 lab/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 110 or 115. Description: Introduces the engineering student to the basic principles of engineering graphics including computer-aided design and drafting (CADD), pictorial sketching, orthographic projections, dimensioning and tolerances, two- and three-dimensional construction techniques, and solid modeling. Transfer: CSU, UC*.

ENGR 413 DESIGNING WITH CAD

Units 1.5; Class Hours: 16 lecture/32 lab hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): MATH 110 or 115. Description: Principles of descriptive geometry and computer-aided design (CAD) and their applications to solving engineering problems. The course also serves as an introduction to the engineering design process, and provides students with opportunities to do practical engineering design projects, write technical reports, and prepare oral presentations. Transfer: CSU, UC*.

ENGINEERING TECHNOLOGY

ETEC 400 SYSTEMS AND FACILITY MAINTENANCE ENGINEERING I

Units (Grade Option) 6.5; Class Hours: Minimum of 104 lecture hours/semester; Recommended: Eligibility for READ 802 or 836, and ENGL 800 or 836 or 400; Prerequisite(s): None. Description: This course is an overview of facility maintenance engineering. Students analyze and apply essential skills needed in the workplace for maintaining and repairing building control systems, managing energy, handling customers, and applying occupational safety and health laws. Transfer: CSU.