CHEM 237 ORGANIC CHEMISTRY LABORATORY I
Units 2; Class Hours: Minimum of 96 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CHEM 234. **Description:** Organic chemistry laboratory designed to accompany CHEM 234. Introduction of the basic techniques of synthesis, separation and purification of organic compounds. Identification of main functional groups by spectroscopic techniques also introduced. Recommended to be taken concurrently with CHEM 234. Transfer: CSU: B1, B3, UC. (IGETC: 5A*)

CHEM 238 ORGANIC CHEMISTRY LABORATORY II
Units 2; Class Hours: Minimum of 96 lab hours/semester; Recommended: Eligibility for READ 420 and ENGL 100; Prerequisite(s): CHEM 235. **Description:** Organic chemistry laboratory designed to accompany CHEM 235 by emphasizing techniques for the synthesis, isolation, purification and identification of organic compounds. Qualitative analysis of unknowns by preparation of derivatives and spectroscopic methods is an integral component of the course. Recommended to be taken concurrently with CHEM 235. Transfer: CSU: B1, B3, UC. (IGETC: 5A*)

CHEM 410 CHEMISTRY FOR HEALTH SCIENCES
Units 4; Class Hours: Minimum of 48 lecture/48 lab/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): MATH 110 or equivalent. **Description:** A survey of basic concepts in general, organic and biological chemistry relevant to the allied health science fields including nursing, radiological technology, respiratory therapy, etc. Transfer: CSU: B1, B3.

COMPUTER BUSINESS OFFICE TECHNOLOGY

(Previously listed under Business/Office Technology)

CBOT 415 BEGINNING COMPUTER KEYBOARDING
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** This course is an overview of correct keyboarding techniques using the alphabetic and numeric keys on the computer. Computer software is used to aid in developing a minimum speed of 25 words per minute. Instruction for using the 10-key calculator and/or the 10-key pad of the computer is included also. Transfer: CSU.

CBOT 417 SKILL BUILDING
Units (Credit/No Credit) 1.5-3; Class Hours: Minimum of 24 lecture/32 by arrangement lab hours/semester per 1.5 units; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 415. **Description:** This course provides individualized, self-paced instruction to improve accuracy and develop keyboarding (typing) speed. Diagnostic tests are given to assess skill levels. May be repeated for credit up to 3 units. Transfer: CSU.

CBOT 430 COMPUTER APPLICATIONS, PART I
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Introduction to the use of PCs including the basic features of Windows, word processing, and presentation graphics using Microsoft Office. CBOT 415 is recommended. Transfer: CSU, UC*.

CBOT 431 COMPUTER APPLICATIONS, PART II
Units (Grade Option) 1.5; Class Hours: 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Students learn the basic features of spreadsheets, database applications, and methods of integration using Microsoft Office. CBOT 430 is recommended. Transfer: CSU, UC*.

CBOT 435 SPREADSHEETS
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Students plan and build worksheets using formulas and functions to solve business problems. The course covers charting, using multiple worksheets, solver, data tables, using and analyzing list data, using What-If Analysis, Pivot Tables, scenario management and macros, and managing workbooks. Integration with other Windows applications included. Transfer: CSU.

CBOT 436 DATABASE MANAGEMENT
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** The use of Microsoft Access to build databases, to establish data entry screens, and to produce business reports. Other topics include relational databases, macros, file operations, and database management. Transfer: CSU.

CBOT 439 MANAGING BUSINESS DOCUMENTS
Units 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 415. **Description:** Learn to create, format, and manage professional-looking business documents using a word processing program. Business documents include business letters, reports, tables, memorandums and electronic mail. Transfer: CSU.

CBOT 440 MACINTOSH APPLICATIONS, PART I
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Introduces new Macintosh users to the operating system and its basic features such as navigating the Dock, the Finder toolbar, and the folder structure. In addition, the course covers word processing, drawing and painting and the presentation modules. Transfer: CSU.

CBOT 448 USING MICROSOFT WINDOWS
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Students learn the Windows operating system features, work with programs and file management. The course includes how to manage files and folders, maintain the computer, manage hardware, and customize Windows. May be repeated once for credit. Transfer: CSU.

CBOT 457 PRESENTATION SOFTWARE: POWERPOINT
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 430. **Description:** Intermediate features of PowerPoint including importing and exporting data, drawing, linking and embedding objects, using color, and creating and running multiple slide shows. Transfer: CSU.

CBOT 458 ADVANCED PRESENTATION SOFTWARE: POWERPOINT
Units 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Learn the advanced features of PowerPoint, including manipulating PowerPoint objects, customizing templates and toolbars, advanced text manipulation, animation and slide show effects, creating charts and tables, flowcharts, organization charts, and diagrams. Transfer: CSU.

CBOT 470 ADVANCED SPREADSHEETS
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/32 lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 435. **Description:** Overview of advanced business applications using software for creating spreadsheets with macros, graphs, databases, and database queries. Other topics include integrating spreadsheets into text, creating database reports, and integrating and printing graphs and databases as part of reports. Transfer: CSU.

CBOT 472 INTRODUCTION TO WORD FOR WINDOWS
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/32 lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** This course covers the basic features of Word for Windows. The topics include creating, editing, printing, and formatting. Transfer: CSU.

CBOT 474 INTERMEDIATE WORD FOR WINDOWS
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/32 lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 472. **Description:** Intermediate features of Word for Windows including labels, merging, macros, sorting, tables, columns, and desktop publishing features. Transfer: CSU.

CBOT 475 USING OUTLOOK
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 430. **Description:** Students learn Outlook, a personal information management program that helps prepare a wide range of organizational tasks within an office environment. Includes sending and receiving messages and managing the Inbox, scheduling appointments and meetings using the Calendar, creating and managing tasks and journal entries using Outlook with other Office applications and using Outlook with the Internet. Transfer: CSU.

CBOT 476 ADOBE ACROBAT
Units 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Learn to create, convert, store, and transport documents from various software programs using Adobe Acrobat. The course covers Adobe Reader, security and password protection, consolidation of PDF files into one Adobe PDF file, application of final edits and modifications to enhance those files. Also, learn to create online documents and interactive forms. Working knowledge of using a computer and its operating system is recommended. Transfer: CSU.

CBOT 478 INTEGRATING MICROSOFT OFFICE
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 431 or equivalent. **Description:** Learn how to integrate and share data among Microsoft Word documents, Excel worksheets, Access databases, and PowerPoint presentations. Other topics include object linking and embedding, multi-tasking, task list, and creating compound documents. Transfer: CSU.

CBOT 480 USING THE INTERNET, PART I
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 448. **Description:** Students learn how the Internet works, Internet connection options available, utilization of Internet addresses, mastery of browsers available, and basic e-mail features. Transfer: CSU.

CBOT 483 CREATING WEB PAGES: INTRODUCTION TO HTML
Units (Grade Option) 1; Class Hours: Minimum of 16 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 480. **Description:** Creating Web pages using HTML, hypertext markup language, structure, protocols, testing, editors, converters, HTML tags, colors, hex codes, style sheets, and printing are covered. This course teaches the user to create Web pages and develop a Web site. Transfer: CSU.

CBOT 484 CREATING WEB PAGES: INTERMEDIATE HTML
Units (Grade Option) 1; Class Hours: Minimum of 16 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 483 or equivalent. **Description:** Learn to create extensive Web pages using intermediate HTML code, hypertext markup language. Tables are explored in depth including merging columns and rows, parameters, alignment of text and images, color, captions, headers; forms and frames, and exploration of design layout is covered also. Transfer: CSU.

COMPUTER INFORMATION SCIENCE

(See also Engineering)

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 or 111; 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 or 111; 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.

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): CIS 118 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 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.

COMPUTER INFORMATION SYSTEMS

(See also Business, Computer Business Office Technology, Computer Information Technology, and Multimedia)

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): CBOT 483 or familiarity with HTML; access to the Internet. **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. **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 CIT 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 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 836, and ENGL 836 or ESL 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 include navigation through the World Wide Web, E-mail, and Netscape Navigator. Transfer: CSU.

COMPUTER INFORMATION TECHNOLOGY

(Previously listed under Business or Computer Information Science and/or Systems)

CIT 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.

CIT 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): Completion of or concurrent enrollment in CIT 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.

CIT 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): CIT 311. **Description:** Continuation of CIT 311. Topics include features of UNIX shells, job control, and uses of UNIX utilities. Transfer: CSU, UC.

CIT 422 HELP DESK
Units 1.5; Class Hours: Minimum of 24 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 430. **Description:** Introduces students to the functions of Help Desk in the technical support setting. The Help Desk roles and responsibilities, processes and procedures, tools and technologies, and performance measures are explored in detail. In addition the course emphasizes the combination of technical, business, and personal skills important to Help Desk personnel. Transfer: CSU.

CIT 450 PC MAINTENANCE AND SYSTEM UPGRADES, PART I
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 415. **Description:** Introduction to problem-solving skills for computers. Topics covered include a review of hardware, software error codes, replacement of boards, optimization of a hard disk, caring for floppy disk drives, hardware versus software problems, troubleshooting, and analysis of problems associated with printers and software. Transfer: CSU.

CIT 451 PC MAINTENANCE AND SYSTEM UPGRADES, PART II
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CIT 450. **Description:** Continuation of CIT 450. Students learn the use of advanced software utilities and testing equipment to perform software/hardware analysis and troubleshooting. Hands-on installation of operating systems, installation of software, and performing system backups is performed. Transfer: CSU.

CIT 453 TROUBLESHOOTING SYSTEMS
Units 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CIT 450 and CBOT 480. **Description:** The course introduces techniques and resources used to identify, analyze and rectify various hardware, software, connection, and user problems. Using text references, computer, and Internet resources, students learn to apply standard problem-solving procedures relating to personal computer malfunctions. Transfer: CSU.

CIT 464 ADVANCED WINDOWS OPERATING SYSTEM
Units 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 448 or equivalent. **Description:** This course covers all utilities and maintenance utilities that are included with Windows. Also included are installing, upgrading, reinstallation, and troubleshooting Windows. Transfer: CSU.

CIT 467 INTERNET/NETWORK SECURITY
Units 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Provides a fundamental understanding of network security principles and implementation. Students receive an in-depth overview of all the current risks and threats to an organization's data, along with a structured way to addressing and safeguarding these electronic assets. A thorough understanding of computer systems and computer networks is highly recommended before taking this course. Transfer: CSU.

CIT 480 PERSONAL UNIX SYSTEMS
Units (Credit/No Credit) 0.5; Class Hours: Minimum of 8 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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.

CIT 492 NETWORKING ESSENTIALS
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Introduces the basics of Local Area Networks to include terminology, network components and their functions, network planning, monitoring, and management of networks with relationships to Microsoft Operating Systems. Transfer: CSU.

CIT 494 SUPPORTING WINDOWS XP PROFESSIONAL
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 448, and CIT 450 and 492. **Description:** Prepares students to install, configure and administer Windows XP Professional in workgroup and domain environments. Topics include installation methods, protocol configuration, user and group management, file, share, and logon security, printing, hardware and software installations, troubleshooting and related Windows XP topics. Transfer: CSU.

CIT 496 WINDOWS 2000 ACTIVE DIRECTORY
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CIT 498. **Description:** Techniques of planning, executing, troubleshooting, and setup of the Windows 2000 Active Directory. Additional topics include: overcoming challenges such as administration, set up user and group accounts, and security. Transfer: CSU.

CIT 497 WINDOWS 2000 PROFESSIONAL
Units (Grade Option) 1.5; Class Hours: Minimum of 24 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CBOT 448 and CIT 492. **Description:** Install, configure and administer Windows 2000 Professional in workgroup and Domain networks. Topics include installation methods; protocol configuration; user and group management; file, share, and logon security; printing; hardware and software installations; troubleshooting and related Windows 2000 topics. Preparation for Microsoft 70-210 examination. Transfer: CSU.

CIT 498 WINDOWS 2000 SERVER
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): CIT 497. **Description:** Implement, configure and support a Windows 2000 server as domain controller in a Microsoft enterprise network environment. Topics include network protocols; domain user and group management; share, NTFS and logon security; introduction to Active Directory Service; printing; server performance optimization and troubleshooting. Prepares student for the Microsoft certification. Transfer: CSU.

COOPERATIVE EDUCATION

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

670 COOPERATIVE EDUCATION/WORK EXPERIENCE
Units (Grade Option) 1-4; Class Hours: 1-3 lecture hours/semester (75 to 300 paid job hours/ semester, 60-240 volunteer job hours/semester.); Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None; Corequisite(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) 1-3; Class Hours: 1-3 lecture hours/semester (60 to 180 volunteer on the job hours/semester); Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. Corequisite(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; Class Hours: Minimum of 8 lecture/8 by arrangement lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): None. **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 as well as self-advocacy. Verifiable learning disability is recommended. Units do not apply toward AA/AS degree.

DSKL 811 SPECIFIC LEARNING SKILLS ASSESSMENT
Units (Credit/No Credit) 0.5; Class Hours: Minimum of 24 by arrangement lab hours per semester; Prerequisite(s): None. **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 by arrangement lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): None. **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. Verifiable learning disability is recommended. Units do not apply toward AA/AS degree.

DSKL 814 DEVELOPMENTAL WRITING
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 in writing skills. Units do not apply toward AA/AS degree.

DSKL 816 TUTORING
Units (Credit/No Credit) 0.5-2; Class Hours: Minimum of 24-96 lab hours/semester; Basic Skills Level: Open Curriculum; Prerequisite(s): None. **Description:** 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. Verifiable learning disability is recommended. Units do not apply toward AA/AS degree.

DRAMA

(See Theater Arts)

EARLY CHILDHOOD EDUCATION/ CHILD DEVELOPMENT

ECE. 191 CHILDREN'S LITERATURE I (Previously LIT. 191)
Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** A survey of children's literature including the following genres: Traditional (folklore, myths, fables, epics, legends, fairytales), picture books, modern fantasy and science fiction. Emphasis is placed on understanding how quality children's literature experiences contribute to children's literacy skills. Included are guides for selecting and evaluating children's literature and related literacy experiences from infancy to adolescence. Transfer: CSU.

ECE. 192 CHILDREN'S LITERATURE II (Previously LIT. 192)
Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** A survey of children's literature including the following genres: poetry, multicultural books, informational books and biography, realistic fiction, and historical fiction. Emphasis is placed on understanding how quality children's literature experiences contribute to children's literacy skills. The course introduces controversies, trends and issues related to children's literature and developmentally appropriate strategies for encouraging children's response to literature (infancy to adolescence). Transfer: CSU: C2.

ECE. 201 CHILD DEVELOPMENT
Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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: DSI, UC. (IGETC: 4)

ECE. 210 EARLY CHILDHOOD EDUCATION PRINCIPLES
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** An overview of contemporary family and community issues influencing childhood. Interactions among the child, family, school, peers, media and the community are explored. The course focuses on the socialization process including cultural, and ethnic diversity, parenting styles, gender roles and the role of the community. Community resources available to children and families are also covered. Transfer: CSU: DSI, UC. (IGETC: 4)

ECE. 213 THE SCHOOL AGE CHILD
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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: DSI.

ECE. 313 HEALTH AND SAFETY FOR YOUNG CHILDREN
Units 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** Overview of methods and in-depth practice of observational skills in ECE/CD settings. Students experience the observation of children, teachers, and programs using the following tools: Desired Results and Environmental Rating Scale, CA Dept. of Education, and NAEYC Accreditation Self Study. Transfer: CSU.

ECE. 335 HANDLING BEHAVIOR
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/ semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): 12 units of ECE., approved sites only. **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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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, are presented. The classical, neo classical and Keynesian models of an economy are introduced. This course concludes with an introduction into the aggregate supply and aggregate demand model of an economy. Transfer: CSU: DSI, UC. (IGETC: 4)

ECON 102 PRINCIPLES OF MICRO ECONOMICS (CAN ECON 4)
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): None. **Description:** 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 also examined. Transfer: CSU: DSI, UC. (IGETC: 4)

ECON 230 ECONOMIC HISTORY OF THE UNITED STATES
Units (Grade Option) 3; Class Hours: Minimum of 48 lecture hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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: DUS-1 & DSI, UC. (IGETC: 4)

EDUCATION

EDUC 100 INTRODUCTION TO EDUCATION
Units 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 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: DSI.

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 836, and ENGL 836 or ESL 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 communication 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.

Recommended Sequence of Classes for Engineering Majors

	Fall Semester	Spring Semester
Year 1	Math 251	Math 252
	Chem 210	Phys 250
	Engr 210	Chem 220
	CIS 118/119	Engr 100
		CIS 250/251
Year 2	Math 270	Math 253
	Math 275	Engr 230
	Phys 260	Engr 260/261
	Engr 270	Phys 270

If students register for courses in this sequence there will be no conflicts of schedule.

In addition to these Science/Engineering courses, students should take other General Education courses to complete the AS and/or transfer requirements.

ENGR 101 THE ENGINEERING PROFESSION
Units 3; Class Hours: Minimum of 32 lecture/32 lab /32 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): MATH 110 or 112. **Description:** Provides students with knowledge of the engineering profession and its different fields; a basic understanding of engineering processes and tools, including experimentation, data analysis, and computer and communication skills applied to a wide variety of engineering problems. 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 the course.

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 836, and ENGL 836 or ESL 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): Completion of or concurrent enrollment in 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 400; Prerequisite(s): 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
Units 3; Class Hours: Minimum of 48 lecture/16 by arrangement lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): MATH 252 and PHYS 260. **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
Units 1; Class Hours: Minimum of 48 lab hours/semester; Recommended: Eligibility for READ 836, and ENGL 836 or ESL 400; Prerequisite(s): MATH 252 and PHYS 260. Completion of, or 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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 836, and ENGL 836 or ESL 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*.