
Announcement of Courses, Degrees and Certificates

Announcement of Courses

This publication must be prepared well in advance of the time period it covers; therefore, changes in some programs and policies may occur. Courses as described are subject to change without notice, and some listed courses are not offered each year. In addition, some courses or programs that are offered may have to be canceled because of insufficient enrollment, elimination, or reduction in programs, or for any other reason considered sufficient by the College president or designee.

Course Descriptions

All courses meet the standards and criteria for courses and classes set forth in the California Education Code Title V regulations, Section 55002 and 55806.

Courses fall into one of two categories: (1) an associate degree credit course or (2) a non-degree credit course.

An associate degree credit course is a course which has been designated as college level, which is appropriate to the associate degree in accordance with the requirements of Section 55805.5 and “which has been recommended by the college and/or district curriculum committee and approved by the district governing board as a collegiate course meeting the needs of the students eligible for admission.”

Only courses that conform to the standards specified in Section 55002 and that fall into the following categories may be offered for associate degree credit:

1. All lower division courses accepted toward the baccalaureate degree by the California State University or University of California or designed to be offered for transfer.
2. Courses that apply to the major in non-baccalaureate occupational fields.
3. English courses not more than one level below the first transfer level composition course, typically known as English 1A or English 100. Each student may count only one such course as credit toward the associate degree.
4. All mathematics courses above and including Intermediate Algebra.
5. Credit courses in English and mathematics taught in or on behalf of other departments and which, as determined by the local board of trustees require entrance skills at a level equivalent to those necessary for the courses specified in subsections (3) and (4).

Non-degree credit courses are courses that earn credit but are not counted toward the 60 units required for the associate degree. Non-degree courses are intended to assist students in performing the skills needed for college level courses. Non-degree courses do apply toward: residency, athletic eligibility, work study and financial aid, veterans benefits, associated student body office, and full-time status.

Course Numbering System Defined

Each course is designated by a number, the first number on the line. A descriptive title and the units allowed for the course follow the course number.

The following numbering system governs the applicability of courses toward completion of programs:

100-299 Courses numbered **100** and above are parallel to baccalaureate-level courses and, as such, are offered for transfer to colleges and universities. The California State University system accepts all courses in this number category for credit. The University of California system accepts only those courses that are also designated “**UC**” to the University of California system. Those courses that are not marked “**UC**” are not transferable to the University of California system.

As a general rule, numbers **200-299** are used to designate higher level courses and usually require introductory courses as prerequisites.

To expedite transfer acceptance, articulation agreements have been negotiated with several nearby institutions and the student is advised to consult his/her counselor to ensure proper transfer and acceptance of earned credits.

198 A-Z Special Topics Courses formerly known as 198 Special Topics will now be designated Special Topics 198 A-Z. These courses are designed to allow faculty to teach transfer level courses in their particular areas of interest and expertise. These courses can also address special interests and needs of students. The letter following the 198 does not represent repeatability but rather identifies each unique course with a specific title.

900 Courses numbered 900 are unique and currently do not have equivalent lower division courses offered at a California State University or University of California. However, these courses typically have the rigor and content of baccalaureate level courses. The transferability will be determined by the receiving institution. Students are advised to keep their syllabi and all assignments and work completed in class as a means to verify course content. Course outlines are available from the Fullerton College Office of Academic Services.

001-099 Courses numbered less than **100** are not designed for transfer. Courses numbered **001-099** are remedial, occupational and/or technical. Some of these courses are college preparatory. Course content is related to both skill development and acquisition of knowledge. Several courses that are typically intended for certificate and associate degree programs are included in this category. Occasionally these courses are accepted for transfer credit by four-year institutions. The determination of acceptance of these courses will be made by the receiving institution.

Credit Values

The number in parentheses following the title of the course is the semester credit value of the course.

Course Prerequisites

- **Prerequisite** When a course has a “prerequisite,” it means that a student must have certain documentable skills and/or knowledge before entering the course. This knowledge is considered necessary for a student to succeed in the course. The prior knowledge may be a skill (type 35 words per minute), some experience (has worked as a tax preparer), an ability (speaks and writes Spanish fluently), a test score (475 on the SAT Verbal Examination), or successful completion of a prior course (ENGL 060 F with a grade of “C” or better). The student must complete the prerequisite successfully, with a grade of “CR” or “C” or better, before enrolling in the course; “D,” “F” or “NC” grades are not acceptable.
- **Corequisite** A “corequisite” is just like a prerequisite (see above) with this exception: a student may take the corequisite concurrently with the course for which it is required. For example, with many lab courses in the sciences, students may take the required lecture course either prior to the lab or concurrently with it.
- **Advisory** When a course has “advisory,” it means that certain preparation is recommended before a student enters the course. The preparation is considered advantageous for a student to succeed in the course. Since the preparation is recommended, the student is advised, but not required, to meet the condition before or in conjunction with enrollment in the course or educational program. For example, an introductory course in design concepts is advised to help give students the skills to succeed in more specialized art courses.

- **Challenges or Exceptions** Prerequisites and corequisites for all courses will be listed in the college catalog under the entry for each class. Students are obligated to know and meet prerequisites and corequisites. Prerequisites and corequisites will be enforced, and students may be required to show proof of having met them. Challenges and exceptions may be granted only if students follow the appropriate challenge procedures. These procedures are found in the “Matriculation” section of the catalog. Students should go to the Counseling/Matriculation Office for copies of procedures and forms.

Definition of Unit

Coursework at Fullerton College is measured in terms of semester units. A “unit” equals eighteen hours of lecture or fifty-four hours of laboratory work per semester in most courses and prorated for short-term classes. Several combinations of lecture-laboratory hours exist in special situations. All college courses have unit credit.

Repeatable Activity Courses

A student may enroll more than once in an activity, performance, and/or studio art course that is designated as repeatable in the schedule or catalog. Courses that have a designated skills level (beginning, intermediate, advanced) may be taken for a combined total of four times. Example: A student who has taken beginning volleyball three times and intermediate volleyball once has completed the maximum number of repetitions allowed for the course, despite the different skills level.

California Articulation Number (CAN)

The California Articulation Number (CAN) System identifies some of the transferable, lower division, introductory, preparatory courses commonly taught within each academic discipline on college campuses.

The system assures students that CAN courses on one participating campus will be accepted “in lieu of” the comparable CAN course on another participating campus. Example: CAN ECON 2 on one campus will be acceptable for CAN ECON 2 on another participating campus. Each campus retains its own numbering system.

It is expected that most CSU campuses throughout the state will qualify to participate and use CAN’s. Check with counselors, academic advisers, and Transfer Center staff as well as campus publications, for lists of participating campuses and courses.

The California Articulation Numbers are listed parenthetically by the course description titles in this catalog.

Transfer Designation

All courses marked UC are transferable to the campuses of the University of California system. All courses with numbers of 100 and higher are transferable to the campuses of the California State University system. Those courses that are not marked UC are not transferable to the University of California campuses.

UC Credit Limitation indicates that there is a total maximum credit limitations of several courses. Students need to see the articulation agreement/counselor to determine the specific limitation.

In order to determine if a specific course meets a general education/breadth transfer requirement at a specific institution or if a course meets a specific major requirement at a transfer institution, students are advised to confer with their counselor regarding the transferability of the course to a particular college or university.

Course Prefixes

ACCT	Accounting
ACG	Computer Graphics
AJ	Administration of Justice
ANAT	Anatomy and Physiology
ANTH	Anthropology
ARCH	Architecture
ART	Art
AUTO	Automotive
BIOL	Biology
BUS	Business Management
CDFL	Child Development and Family Life
CHEM	Chemistry
CHIN	Chinese
CIS	Computer Information Systems
COSM	Cosmetology
COUN	Counseling and Guidance
CRTV	Cinema-Radio-Television
CSCI	Computer Science
CSTR	Construction Technology
DANC	Dance
DRAF	Drafting Technology
ECON	Economics
ELEC	Electronics
ENGL	English
ENGR	Engineering
ENVS	Environmental Sciences
ESC	Earth Sciences
ESL	English as a Second Language
ET	Environmental Technology
ETHS	Ethnic Studies
FASH	Fashion
FOOD	Nutrition and Foods

FREN	French
GEOG	Geography
GERM	German
HED	Health Education
HIST	History
HORT	Horticulture
IDES	Interior Design
ITAL	Italian
JAPN	Japanese
JOUR	Journalism
LIB	Library
MACH	Machine Technology
MATH	Mathematics
METL	Metallurgy
MICR	Microbiology
MKT	Marketing Management
MUS	Music
OT	Office Technology
NUTR	Nutrition and Foods
PE	Physical Education
PHIL	Philosophy and Religious Studies
PHOT	Photography
PHSC	Physical Sciences
PHYS	Physics
PLEG	Paralegal Studies
PORT	Portuguese
POSC	Political Science
PRNT	Printing Technology
PSY	Psychology
RE	Real Estate
READ	Reading
REC	Recreation
RUSS	Russian
SOC	Sociology
SOSC	Social Sciences
SPAN	Spanish
SPCH	Speech
STSV	Student Support Services
TECH	Technology-Related Courses
THEA	Theatre Arts
VIET	Vietnamese
WELD	Welding
WELL	Wellness
WKEX	Work Experience
WMNS	Women's Studies
WOOD	Wood Technology

Accounting

Accounting A.S. Degree

Curriculum leads to the **Associate in Science Degree** and/or employment in the field of bookkeeping and/or accounting. This degree requires the completion of 33-34 units of which 30-31 must be chosen from the required courses listed below. An additional 3 units must be chosen from the restricted electives listed below. See college catalog for options for the Associate of Science Degree general education requirements.

Required Courses (30-31 units)

ACCT 100BF Financial Accounting Principles (3) or
 ACCT 101AF Financial Accounting (4)
 ACCT 101BF Managerial Accounting (4)
 ACCT 104 F Computerized Accounting (2)
 ACCT 112 F Income Tax Procedure (3)
 ACCT 201AF Intermediate Accounting (4)
 ACCT 201BF Intermediate Accounting (4)
 ACCT 202 F Introduction to Cost Accounting (4)
 BUS 111 F Business Communications (3) or
 BUS 211 F Writing for Business (3)
 BUS 240 F Legal Environment of Business (3) or
 BUS 241AF Business Law (3) (See counselor for determination of correct course)

Restricted Electives (3 units)

ACCT 001 F Accounting for Small Business (3)
 ACCT 011 F Payroll Accounting (2)
 ACCT 012 F Updating State Income Tax Regulations (.5-5-.5-.5)
 ACCT 013 F Estate and Gift Tax Regulations (.5-.5-.5-.5)
 ACCT 014 F Updating Federal Tax Laws (.5-.5-.5-.5)
 ACCT 100AF Financial Accounting Principles (3)
 ACCT 105 F Accounting for Supervisors & Managers (3)
 ACCT 107 F QuickBooks (2)
 ACCT 109 F Computerized Tax Preparation (2)
 ACCT 112 F Income Tax Procedure (3)
 ACCT 116 F Tax Preparation for Practitioners I (4-4-4-4)
 ACCT 117 F Tax Preparation for Practitioners II (3-3-3-3)
 ACCT 118 F Tax Preparation for Practitioners III (3-3-3-3)
 ACCT 120 F Tax/Financial Planning (3-3-3-3)
 ACCT 203 F Auditing (3)
 ACCT 204 F Analysis of Financial Statements (3)
 BUS 151 F Business Mathematics (3)
 CIS 105 F Spreadsheet I (2)

Accounting Certificate

The **Accounting Certificate** requires the completion of 29-30 units of which 24-25 is in required courses. An additional 5 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (24-25 units)

ACCT 100BF Financial Accounting Principles (3) or
 ACCT 101AF Financial Accounting (4)
 ACCT 101BF Managerial Accounting (4)
 ACCT 104 F Computerized Accounting (2)
 ACCT 201AF Intermediate Accounting (4)
 ACCT 201BF Intermediate Accounting (4)
 ACCT 202 F Introduction to Cost Accounting (4)
 BUS 111 F Business Communications (3) or
 BUS 211 F Writing for Business (3)

Restricted Electives (5 units)

ACCT 001 F Accounting for Small Business (3)
 ACCT 011 F Payroll Accounting (2)
 ACCT 012 F Updating State Income Tax Regulations (.5-.5-.5-.5)
 ACCT 013 F Estate and Gift Tax Regulations (.5-.5-.5-.5)
 ACCT 014 F Updating Federal Tax Laws (.5-.5-.5-.5)
 ACCT 090 F Current Topics in Taxation (.5-3)
 ACCT 100AF Financial Accounting Principles (3)
 ACCT 105 F Accounting for Supervisors & Managers (3)
 ACCT 107 F QuickBooks (2)
 ACCT 109 F Computerized Tax Preparation (2)
 ACCT 112 F Income Tax Procedure (3)
 ACCT 116 F Tax Preparation for Practitioners I (4-4-4-4)
 ACCT 117 F Tax Preparation for Practitioners II (3-3-3-3)
 ACCT 118 F Tax Preparation for Practitioners III (3-3-3-3)
 ACCT 120 F Tax/Financial Planning (3-3-3-3)
 ACCT 203 F Auditing (3)
 ACCT 204 F Analysis of Financial Statements (3)
 BUS 240 F Legal Environment of Business (3) or
 BUS 241AF Business Law (3) (See counselor for determination of correct course)
 CIS 105 F Spreadsheet I (2)

Accounting Courses

ACCT 001 F Accounting for Small Business (3)

Three hours lecture per week. This course is ideal for the student who wishes to attain a solid foundation in the basic fundamentals of accounting. This includes business students who are planning more advanced studies of accounting and business at four-year institutions, as well as students who desire knowledge in accounting for small businesses, but do not necessarily intend to major in accounting or transfer to a four-year university. Topics covered in the course include fundamentals of double entry accounting; preparation of trial balances; worksheets and simple financial statements for service or retail types of businesses; use of control accounts; special journals; combined cash journals; accrual and cash basis accounting; cash controls and bank reconciliations; payroll accounting including employee earnings and deductions and employer's taxes and payments. (Degree credit)

ACCT 011 F Payroll Accounting (2)

Prerequisite: ACCT 100AF Financial Accounting Principles or ACCT 101AF Financial Accounting with a grade of "C" or better

One and one-half hour lecture and one and one-half hour lab per week. This course is designed to provide an overview of social security, state and federal payroll taxes. The course is of a non-technical nature and is intended to give business students a practical working knowledge of the current tax laws and actual experience in applying the regulations. (Degree credit)

ACCT 012 F Updating State Income Tax Regulations (.5-.5-.5-5)

Credit/no credit only.

A total of eight hours lecture. This course provides an overview of the requirements for filing the California State Income Tax return. The relationship of the Federal Income Tax laws and State Income Tax laws are discussed. Course may be taken four times for credit. (Non-degree credit)

ACCT 013 F Estate and Gift Tax Regulations (.5-.5-.5-5)

Credit/no credit only.

A total of eight hours lecture. This course is designed to provide a yearly update of the basic changes in Estate and Gift Tax regulations. Course may be taken four times for credit. (Non-degree credit)

ACCT 014 F Updating Federal Tax Laws (.5-.5-.5-5)

Credit/no credit only.

A total of eight hours lecture. This course provides an overview of the major current revision of tax reforms and how they affect the individual taxpayer. Course may be taken four times for credit. (Non-degree credit)

ACCT 090 F Current Topics in Taxation (.5-3)

Variable hours of lecture and/or lab. This course offers timely and contemporary income tax law-related topics designed to enhance job skills, expand the student's knowledge of the most current tax practice environment, and increase employment opportunities. Unit credit may vary in any given semester. Consult the class schedule to verify specific topics and credit offered in a particular semester. May be taken for credit four times. (Degree credit)

ACCT 100AF Financial Accounting Principles (3)

Four hours lecture per week. This course is the first part of a two-part financial accounting course that is equivalent to ACCT 101AF after the completion of ACCT 100AF and ACCT 100BF. This course covers the entire accounting cycle, cash, bank reconciliations, receivables, temporary investments, and incorporates a practical approach with the use of business papers and computer applications integrated into the homework. Not open to students who have completed ACCT 101AF Financial Accounting with a grade of "C" or better. (CSU) (UC Credit Limitation) (Degree credit)

ACCT 100BF Financial Accounting Principles (3)

Prerequisite: ACCT 100AF Financial Accounting Principles with a grade of "C" or better

Four hours lecture per week. This course is a continuation of 100AF Financial Accounting Principles with emphasis on the basic concepts of accounting for plant assets, intangible assets, payroll, notes payable and other liabilities, partnerships and corporations, long term liabilities and investments in bonds, inventories, statement of cash flow, and analysis of financial statements. The practical approach is continued with the use of business papers and computer applications integrated into the homework. Upon completion of this course, the student will have fulfilled the equivalent of 101AF Financial Accounting requirement. Not open to students who have completed 101AF Financial Accounting with a grade of "C" or better. (CSU) (UC Credit Limitation) (Degree credit)

ACCT 101AF Financial Accounting (4) (CAN BUS 2) (ACCT 101AF + ACCT 101BF = 3D CAN BUS SEQ A)

Five hours lecture per week. A course in beginning accounting meeting all transfer requirements to most four-year colleges and universities and providing a foundation for advanced work in vocational accounting or in other branches of business administration. This course covers accounting concepts and techniques fundamental to the administration of a business enterprise by analyzing and recording financial transactions, measuring and communicating economic information and the preparing, analyzing and interpreting of financial statements. Computer applications are integrated into the homework. This course is required of all accounting and business administration majors. (CSU) (UC) (Degree credit)

ACCT 101BF Managerial Accounting (4) (CAN BUS 4) (ACCT 101AF + ACCT 101BF = 3D CAN BUS SEQ A)

Prerequisite: ACCT 101AF Financial Accounting or ACCT 100BF Financial Accounting Principles with a grade of "C" or better

Five hours lecture per week. This course provides a foundation for advanced courses in managerial accounting. The nature of the management process and the essential role of managerial accounting in this process are emphasized. Instructional topics include the application of managerial accounting to a manufacturing environment, job and process accounting systems, cost allocation, common cost classifications and estimation, cost-volume-profit analysis, absorption and variable costing, differential analysis for decision making, capital investment analysis, inventory management and analysis, budgeting, standard costing, responsibility accounting in a decentralized operation, and transfer pricing. Computer applications are integrated into the homework. This course is required of all accounting and business administration majors. (CSU) (UC) (Degree credit)

ACCT 104 F Computerized Accounting (2)

Prerequisite: ACCT 100AF Financial Accounting Principles or ACCT 101AF Financial Accounting with a grade of "C" or better
Letter grade or credit/no credit option.

One and one-half hour lecture and one and one-half hour lab per week. This course provides hands-on experience in accounting on a microcomputer. Systems included are the general ledger, accounts receivable and accounts payable, financial statements analysis, depreciation, inventory, and payroll. (CSU) (Degree credit)

ACCT 105 F Accounting for Supervisors and Managers (3)

Three hours lecture per week. This course is designed to provide the supervisor or manager with an understanding of essential accounting functions including a study of financial statement forecasting, cost budgeting, decision-making, accounting terminology, and accounting systems. This course may not be substituted for ACCT 101AF Financial Accounting. (CSU) (Degree credit)

ACCT 107 F QuickBooks (2)

One and one-half hour lecture and one and one-half hour lab per week. This course will introduce students to basic financial record keeping software using the double-entry system for recording transactions. Emphasis will be placed on how to use accounting application software in a small business environment. (CSU) (Degree credit)

ACCT 109 F Computerized Tax Preparation (2)

One and one-half hour lecture and one and one-half hour lab per week. This course will introduce students to basic tax preparation software using up-to-date comprehensive software for recording data. Emphasis will be placed on how to use tax preparation application software in a personal environment. (CSU) (Degree credit)

ACCT 112 F Income Tax Procedure (3)

Three hours lecture per week. This course offers a simple and non-technical presentation of the information needed in preparing Federal Income Tax returns for individuals whose income is derived from wages and other various sources. Tax deductions and credits are also covered in detail. (CSU) (Degree credit)

ACCT 116 F Tax Preparation for Practitioners I (4-4-4-4)

Corequisite: Prior knowledge of income tax returns preparation.
Letter grade or credit/no credit option.

Four lecture hours per week. This special tax course is designed to assist students, tax practitioners and preparers to improve their knowledge of tax return preparation. This course will meet the number of educational hours required for registration as an income tax preparer for the State of California. The course follows the separate line items on the individual income tax form. Special emphasis will be placed on those areas that accounted for the greatest number of discrepancies on federal and state income tax returns in previous years. A minimum of 20 hours will be spent on state income tax returns. Course may be taken four times for credit. (CSU) (Degree credit)

ACCT 117 F Tax Preparation for Practitioners II (3-3-3-3)

Prerequisite: ACCT 116 F Tax Preparation for Practitioners.
Letter grade or credit/no credit option.

Three hours lecture per week. Designed as an intermediate-level course for tax practitioners, covering individual, farm, and small business returns for both federal and state. This course will be of most interest to experienced preparers, enrolled agents and public accountants. Course may be taken four times for credit. (CSU) (Degree credit)

ACCT 118 F Tax Preparation for Practitioners III (3-3-3-3)

Prerequisite: ACCT 116 F Tax Preparation for Practitioners.
Letter grade or credit/no credit option.

Three hours lecture per week. This is an advanced-level course for tax practitioners covering partnerships and corporations. Of primary interest to the more sophisticated preparers, enrolled agents, public accountants, certified public accountants, and tax attorneys. A minimum of four hours is spent covering these topics for state returns. Course may be taken four times for credit. (CSU) (Degree credit)

ACCT 120 F Tax/Financial Planning (3-3-3-3)

Letter grade or credit/no credit option.

Three hours lecture per week. A course designed to cover the fundamentals of planning an estate within the parameters of taxation and family needs. Course may be taken four times for credit. (CSU) (Degree credit)

ACCT 201AF Intermediate Accounting (4)

Prerequisite: ACCT 101BF Managerial Accounting

Five hours lecture per week. A course in second-year accounting dealing with adjustments, working papers, cash and receivables, inventories, plant and equipment, intangibles, deferred charges, liabilities, income tax allocation and accounting for premiums. Required of all vocational accounting majors. (CSU) (Degree credit)

ACCT 201BF Intermediate Accounting (4)

Prerequisite: ACCT 101BF Managerial Accounting

Five hours lecture per week. This course is a continuation of 201AF Intermediate Accounting, involving a study of earnings per share, revenue recognition, accounting for pensions and other post-employment benefits, accounting changes and error corrections, cash flow statements, the impact of changing prices, and financial statement analysis. (CSU) (Degree credit)

ACCT 202 F Introduction to Cost Accounting (4)

Prerequisite: ACCT 101BF Managerial Accounting with a grade of "C" or better

Five hours lecture per week. This course covers the theory of cost accounting including job order costs, estimated costs, standard costs, miscellaneous costs, and distribution cost systems as applied to the control and management of business through cost accounting procedures. Parallels cost account courses in four-year colleges. Required of all vocational accounting majors. (CSU) (Degree credit)

ACCT 203 F Auditing (3)

Prerequisite: ACCT 101BF Managerial Accounting

Three hours lecture per week. This course emphasizes internal auditing with questions and separate cases. Incorporated into the course is one long case for application of auditing principles. (CSU) (Degree credit)

ACCT 204 F Analysis of Financial Statements (3)

Prerequisite: ACCT 101AF Financial Accounting with a grade of "C" or better.

Three hours lecture per week. This course deals with characteristics of financial statements and financial statement analysis. A study of goals, methods, and tools for analysis is studied. In addition, accounts receivable, inventories, projected statements, cash budgets, and cash flow are studied. Emphasis is placed on financial analysis from a banking viewpoint. (CSU) (Degree credit)

Administration of Justice

Associate in Arts Degree

The **Administration of Justice Associate in Arts Degree Program** requires a total of 18-19 units of which 12-13 units are in required courses. An additional 6 units must be chosen from the restricted electives listed below.

Required Courses (12-13 units)

- AJ 100 F Introduction to Law Enforcement (3)
- AJ 110AF Criminal Law (3)
- AJ 223 F Criminal Investigation (3)
- MATH 120 F Introductory Probability and Statistics (4) or
- PSY 161 F Elementary Statistics for Behavioral Science (3)

Restricted Electives (6 units)

- AJ 128 F Police-Community Relations (3)
- AJ 222 F Rules of Evidence (3)
- AJ 278 F Multicultural Issues Within Administration of Justice (3)
- PSY 101 F General Psychology (3)
- SOC 101 F Introduction to Sociology (3)

Associate in Science Degree

Curriculum leads to the **Administration of Justice Associate in Science Degree** and employment in the field of law enforcement. This degree requires a total of 24 units of which 9 units are in required courses. An additional 15 units must be chosen from the restricted electives listed below.

Required Courses (9 units)

- AJ 100 F Introduction to Law Enforcement (3)
- AJ 110AF Criminal Law (3)
- AJ 151 F Police Report Writing* (3)

*Prerequisite required

Restricted Electives (15 units)

- AJ 097 F Law Enforcement Supervisory Update (1.5)
- AJ 102 F Introduction to Probation and Parole (3)
- AJ 110BF Adv Criminal Law (3)
- AJ 111 F Vehicle Code (3)
- AJ 128 F Police-Community Relations (3)
- AJ 135 F Weaponless Defense (1)
- AJ 137 F Firearms (1)
- AJ 140 F Juvenile Control (3)
- AJ 220 F Criminal Procedures (3)
- AJ 222 F Rules of Evidence (3)
- AJ 223 F Criminal Investigation (3)
- AJ 226 F Narcotics and Vice Control (3)
- AJ 230 F Crime Scene Techniques (3)
- AJ 252 F Police Patrol (3)
- AJ 276 F Investigation of Homicidal Behavior (3)

- AJ 278 F Multicultural Issues in Administration of Justice (3)
- AJ 279 F Contemporary Issues in Law Enforcement (3)
- AJ 901 F Organized Crime and the Criminal Justice System (3)

NOTE: Satisfactory completion of the Fullerton College AJ 059AF/AJ 059BF Police Basic Academy Extended Format (26-26) will also fulfill completion of the major. Consult your counselor for selection of coursework for General Education and electives.

Administration of Justice Certificate

The **Administration of Justice Certificate** Program requires the completion of 34 units from the courses listed below, with a minimum grade point average of 3.00 or better. At least one half of the units toward the certificate must be completed at Fullerton College.

Completion of:

- AJ 059AF Police Basic Academy, Extended Format (26)
- AJ 059BF Police Basic Academy, Extended Format (26)

OR, select 34 units from the following lists:

Required Courses (12)

- AJ 110AF Criminal Law (3)
- AJ 151 F Police Report Writing (3)
- AJ 223 F Criminal Investigation (3)
- AJ 278 F Multicultural Issues in Administration (3)

Additional Requirements —

Six units from the following

- AJ 110BF* Advanced Criminal Law (3)
- AJ 111 F Vehicle Code (3)
- AJ 220 F Criminal Procedure (3)
- AJ 222 F Rules of Evidence (3)
- AJ 252 F Police Patrol (3)

*Prerequisite required

Three units from the following

- AJ 128 F Police Community Relations (3)
- AJ 226 F Narcotics and Vice Control (3)
- AJ 230 F Crime Scene Techniques (3)

Three units from the following

- AJ 140 F Juvenile Control (3)
- AJ 276 F Investigation of Homicidal Behavior (3)

Ten additional units from the above or other courses approved by the department.

Crime Analysis

The **Crime Analysis Certificate** Program prepares students for entry-level employment as a crime analyst in the law enforcement and/or private security field. The certificate requires the completion of **17 units**, of which **11 units** are in required courses. An additional **6 units** must be taken from the restricted electives listed below. A minimum grade of "C" is needed for each required course taken. At least one-half of the units toward the certificate must be completed at Fullerton College.

Required Courses (11 units)

AJ	223 F Criminal Investigation (3)
GEOG	230 F Introduction to Geographic Information Systems (3)
GEOG	241 F Basic Crime Mapping* (2)
GEOG	242 F Advanced Crime Mapping* (3)

Restricted Electives (6 units)

AJ	092 F Crime Scene Investigation (1)
AJ	100 F Introduction to Law Enforcement (3)
AJ	110AF Criminal Law (3)
AJ	151 F Police Report Writing* (3)
AJ	252 F Police Patrol (3)

*Prerequisite Required

Crime Scene Investigation

The **Crime Scene Investigation Certificate** Program prepares students for entry-level employment as a crime scene investigator or field evidence technician in the law enforcement field. The program requires the completion of **17 units** with a minimum grade point average of 3.00 or better for courses offered in the certificate program. A minimum of 12 units toward the certificate must be completed at Fullerton College.

Required Courses (17 units)

AJ	092 F Crime Scene Investigation (1)
AJ	093 F DNA Genetic Fingerprinting (.5)
AJ	096 F CAD/Crime Scene Application (.5)
AJ	151 F Police Report Writing (3)
AJ	222 F Rules of Evidence (3)
AJ	223 F Criminal Investigation (3)
AJ	230 F Crime Scene Techniques (3)
BIOL	109 F Genetics and Biotechnology in Society (3)

P.O.S.T. Law Enforcement Skills Development

The **P.O.S.T. Law Enforcement Skills Development Certificate** Program is intended to meet the basic requirements of California Penal Code 13510 in raising the competence level of current and aspiring law enforcement personnel. The certificate requires the completion of 17 units, of which 9.5 units are in required courses. An additional 7.5 units must be taken from the restricted electives listed below. All restricted electives are certified by the California Commission on Peace Officer Standards and Training (P.O.S.T.). A minimum grade of "C" is needed for each required course taken, with the exception of AJ 079 F (CR/NC). At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (9.5)

AJ	079 F Law Enforcement Career Preparation (0.5)
AJ	100 F Introduction to Law Enforcement (3)
AJ	110AF Criminal Law (3)
AJ	151 F Report Writing (3)

Restricted Electives (7.5)

AJ	068 F Parolee Contacts* (1.5)
AJ	069 F H & S 11550 Drug Influence (0.5)
AJ	070 F Emergency Management (1.5)
AJ	071 F Preventing Racial Profiling (0.5)
AJ	072 F Investigating Domestic Terrorism (1)
AJ	073 F Interview and Interrogation Update (1.5)
AJ	074 F Conflict Resolution for Police Officers (0.5)
AJ	075 F Cultural Diversity (1)
AJ	076 F Community-Oriented Policing and Problem Solving (0.5)
AJ	077 F Organized Crime (1)
AJ	078 F Multi-Agency Task Force (0.5)
AJ	080 F Lifetime Fitness for Law Enforcement (2)
AJ	081 F Use of Force (0.5)
AJ	082 F Tactical Awareness (0.5)
AJ	083 F Narcotics Training for Field Officers (0.5)
AJ	084 F Domestic Violence (0.5)
AJ	085 F Police Vehicle Pursuits (2)
AJ	086 F Values, Principles and Ethics (0.5)
AJ	087 F Supervisory Response to Officer Involved Shooting* (1)
AJ	088 F Gang Awareness Update* (1.5)
AJ	089 F Child Abuse/Child Pornography (0.5)
AJ	090 F Weaponless Defense/Baton Training (0.5)
AJ	091 F Instructional Skills Development (2)
AJ	092 F Crime Scene Investigation (1)
AJ	093 F DNA Genetic Fingerprinting (0.5)
AJ	095 F Preventing Sexual Harassment (0.5)
AJ	096 F CAD/Crime Scene Application (0.5)
AJ	097 F Law Enforcement Supervisory Update (1.5)

*Prerequisite required

Administration of Justice Courses

AJ 059AF Basic Police Academy, Extended Format (26)

Prerequisite: AJ 094 F Basic Police Academy Orientation or pre-service status with a law enforcement agency. No felony convictions. Valid California Driver's license. Advisory: AJ 080 F Lifetime Fitness for Law Enforcement.

Twenty-four hours of lecture and six hours of lab per week. This is the first semester of a course that meets all the requirements set forth by the California Commission on Peace Officer Standards and Training. A course study of statutory and case law relating to arrests, searches, seizures, related legal provisions governing the performance of peace officers, and Spanish for law enforcement. This includes the decision making process and moral and legal aspects of the use of force in making arrests. A study of the most modern firearm safety principles, capabilities and techniques of today's weapons and public and organizational policies involving the use of deadly force, in addition to other updated facets of a peace officer's functions. The academy stresses community oriented policing as a value system, a philosophy or management style that permits equal partnerships between the community and law enforcement to address crime and the fear of crime. Additionally, group discussions are held to increase the student's knowledge of Orange County demographics, the diversity of communities and other aspects of community policing. (Degree credit)

AJ 059BF Basic Police Academy, Extended Format (26)

Prerequisite: AJ 059AF Basic Police Academy, Extended Format

Twenty-four hours of lecture and six hours of lab per week. This is the second semester of a course that meets all the requirements set forth by the California Commission on Peace Officer Standards and Training. A course study of statutory and case law relating to arrests, searches, seizures, and related legal provisions governing the performance of peace officers, and Spanish for law enforcement. This includes the decision making process and moral and legal aspects of the use of force in making arrests. A study of the most modern firearm safety principles, capabilities and techniques of today's weapons and public and organizational policies involving the use of deadly force, in addition to other updated facets of a peace officer's functions. The academy stresses community oriented policing as a value system, a philosophy or management style that permits equal partnerships between the community and law enforcement to address crime and the fear of crime. There is instruction to enhance the student's perception of law enforcement from a citizen's perspective. Additionally, group discussions are held to increase the student's knowledge of Orange County demographics, the diversity of communities and other aspects of community policing. (Degree credit)

AJ 068 F: Parolee Contacts (1.5)

Prerequisite: Peace Officer Status

Twenty-four hours lecture per semester. This course is designed to improve the police officer's ability to understand and deal with state prison parolees in many types of settings. It covers a basic understanding of the California prison system, typical parolee behavior, communicating with parolees and understanding conditions of parole. It also emphasizes teaching the officer the cognitive skills needed in a law enforcement field environment including proper field interrogation. Investigative recourses within the Department of Corrections are discussed as well as controlled interviews. (Degree credit)

AJ 069 F H&S 11550 Drug Influence (0.5)

Eight hours lecture per semester. This course is designed to improve the police officer's ability to recognize the objective symptoms of drug intoxication, with emphasis placed on the proper application of California Health and Safety Code 11550. The course covers how the peace officer can develop techniques to better identify signs of specific drug ingestion, use proper drug testing methods and write effective reports to aid in successful prosecution. (Degree credit)

AJ 070 F Emergency Management (1.5)

Twenty-four hours lecture per semester. This course is designed to introduce important tactical concepts when planning for natural and technological disasters and other critical incidents that require law enforcement response. It focuses on basic emergency management principles, including disaster preparedness, mitigation, response and recovery. Emphasis is placed on the use of the Standardized Emergency Management (SEMS) and Law Enforcement Incident Command (ICS) Systems. (Degree credit)

AJ 071 F Preventing Racial Profiling (0.5)

Eight hours lecture per semester. This course is designed to familiarize students with the conceptual and legal issues surrounding the unlawful practice of racial profiling. It examines critical cultural, legal and societal factors that ultimately lead to racial profiling as a discriminatory practice. The course emphasizes the need for the student to develop an understanding and respect for racial and cultural differences, and non-combative methods of carrying out law enforcement duties in a racially and culturally diverse environment. (Degree credit)

AJ 072 F Investigating Domestic Terrorism (1)

Credit/no credit only

Sixteen hours lecture per semester. This course is designed to give the student essential background information about domestic terrorism and demonstrate how law enforcement personnel can properly investigate terrorist crimes. An analysis of the historical, legal and political perspective of terrorist activity as well as assessing philosophical and psychological typologies of terrorists. The curriculum emphasizes how law enforcement can develop investigative and intelligence capabilities to counter terrorist activity as a part of American national security policy. (Non-degree credit)

AJ 073 F Interview and Interrogation Update (1.5)

Credit/no credit only

Twenty-four hours lecture per semester. This course is designed to improve a police investigator's ability to legally gather testimonial evidence from victims, witnesses and suspects. It covers basic communication theory, interview/interrogation preparation, behavioral analysis and investigative tactics. The curriculum emphasizes a legal centered approach to the taking of statements from suspects and witnesses by analyzing current state and federal law. It is intended for the full-time investigator. (Non-degree credit)

AJ 074 F Conflict Resolution for Police Officers (.5)

Credit/no credit only

Eight hours lecture per semester. The class will prepare law enforcement officers, and those interested in a career in law enforcement, to recognize the types of conflict encountered in law enforcement, communication styles that enhance and hinder conflict resolution, various methods of conflict resolution, and the resources available to law enforcement officers to assist in resolving conflict. (Non-degree credit)

AJ 075 F Cultural Diversity (1)

Sixteen hours lecture per semester. This course is designed to give students a perspective of public safety professionals and their relationship to major cultural, racial, and ethnic groups including persons with disabilities as well as gays and lesbians. This course will also examine law enforcement personnel issues that deal with gender, sexual harassment, diversity, affirmative action, and other contemporary challenges. (Degree credit)

AJ 076 F Community-Oriented Policing and Problem Solving (.5)

Eight hours lecture per semester. This course examines the community-oriented policing and problem solving (COPPS) philosophy and its impact on current law enforcement practices. The course explores the concept of police officers and private citizens working together in creative ways to help solve contemporary community problems related to crime, fear of crime and neighborhood decay. Emphasis is placed on how the implementation of the COPPS philosophy influences police planning and operations. (Degree credit)

AJ 077 F Organized Crime (1)

Credit/no credit only

Sixteen hours lecture per semester. This course will analyze the effects of International Organized Crime Groups in the United States and the American law enforcement effort to combat those criminal organizations. The class will review cooperative efforts between the United States and foreign governments to impact those organizations, the pitfalls encountered, and the success and failures that result. It will also examine the secret world of the "Men of Honor." (Non-degree credit)

AJ 078 F Multi-Agency Task Forces (.5)

Credit/no credit only

Eight hours lecture per semester. This course will analyze the need, benefits, and procedures in the establishment of federal, state, and local task forces. Emphasis will be placed on working together in a multi-agency environment and achieving desired outcomes. (Non-degree credit)

AJ 079 F Law Enforcement Career Preparation (.5)

Credit/no credit only.

Eight hours lecture per semester. This class will assist the student in identifying and utilizing effective performance strategies toward entry-level law enforcement employment examinations. Emphasis is placed on specific civil service testing procedures, including written exams, physical agility tests, oral board interviews, and the background investigation process. (Degree credit)

AJ 080 F Lifetime Fitness for Law Enforcement (2-2-2-2)

Credit/no credit only

Two hours lecture and two hours lab per week. This course is designed to introduce important wellness concepts to law enforcement personnel. Through the use of lecture, group discussion and practical demonstration, this course discusses how those in law enforcement can develop and maintain successful fitness habits and minimize job related stress. The course design emphasizes proper fitness assessment, effective anaerobic/aerobic fitness principles, the prevention of physical disabilities through stress reduction, current nutrition guidelines and proper fitness program design. Course may be repeated three times for credit. Intended to meet the basic requirements of Penal Code 13510 in raising the level of competence of California law enforcement officers. (Non-degree credit)

AJ 081 F Use of Force (.5)

Credit/no credit only.

Eight hour (8) lecture per semester. This class will make each student aware of use of force situations in field police activities and demonstrate the necessity for detailed follow-up investigations. In addition the class will cover the involved officer's responsibility when using force and the supervisor's follow-up responsibilities. (Degree credit)

AJ 082 F Tactical Awareness (.5)

Credit/no credit only.

Eight hour (8) lecture per semester. The class will aid the student in developing the positive mental awareness together with the physical consideration to handle tactical police situations. The realization is that in most situations officers respond and function as individuals, however, the importance of team work, control and supervision is reinforced. (Degree credit)

AJ 083 F Narcotics Training for Field Officers (.5)

Credit/no credit only.

Eight hour (8) lecture per semester. This class will allow the student to be able to identify PCP and cocaine, recognize the objective symptoms of a suspect under the influence. The students will understand the law and what is required in reporting to gain a filing and conviction of the suspect. (Degree credit)

AJ 084 F Domestic Violence (.5)

Credit/no credit only.

Eight hour (8) lecture per semester. This class will demonstrate to the student that the intent of the Legislature in domestic violence cases is to stress enforcement of the laws to protect the victim and communicate the attitude that violent behavior is criminal behavior and will not be tolerated. The investigative process, arrest, court protective orders and victim assistance will be stressed. (Degree credit)

AJ 085 F Police Vehicle Pursuits (2)

Credit/no credit only

Two hours lecture per week. A study of police pursuits in California and the nation. Specific emphasis on California laws, both criminal and civil, affecting public agencies and violators involved in police pursuits. An analysis of officer and violator behavioral patterns both during and after police pursuits. This class will establish a better understanding of the dynamics and contemporary issues associated with high speed police chases. (Non-degree credit)

AJ 086 F Values, Principles, and Ethics (.5)

Credit/no credit only.

Eight hour (8) lecture per semester. This class will discuss the principles of honesty and morality within an organization and for the individual. Discussion on the acceptable rules of conduct as they relate to a police department are stressed. Practical guidelines will be given to the student concerning their professional on-duty conduct and their personal off-duty conduct. (Degree credit)

AJ 087 F Supervisory Response to Officer Involved Shooting (1)

Prerequisite: Peace Officer status or approval of Department Coordinator with completion of AJ 110AF Criminal Law, AJ 110BF Adv Criminal Law, AJ 137 F Firearms, AJ 151 F Police Report Writing, AJ 220 F Criminal Procedure, AJ 223 F Criminal Investigation, and AJ 252 F Police Patrol required. Credit/no credit only.

Sixteen hours (16) lecture per semester. The class will prepare the supervisor to handle the necessary steps to ensure a proper at scene investigation, officer interview, completed report and review process. (Degree credit)

AJ 088 F Gang Awareness Update (1.5)

Prerequisite: Peace Officer status or approval of Department Coordinator with completion of AJ 110AF Criminal Law, 220 F Criminal Procedure, 223 F Criminal Investigation, 226 F Narcotics and Vice Control, 252 F Police Patrol, and 278 F Multicultural Issues within Administration of Justice required. Credit/no credit only.

Twenty-four hours (24) lecture per semester. The class will prepare the officer or student to understand the history, dynamics and the problems associated with today's gangs. This class will help the student identify certain gang characteristics and activities. (Degree credit)

AJ 089 F Child Abuse/Child Pornography (.5)

Credit/no credit only.

Eight hours (8) lecture per semester. The class will prepare the student to identify, arrest and investigate child abuse and child pornography crimes. (Degree credit)

AJ 090 F Weaponless Defense/Baton Training (.5)

Credit/no credit only.

Eight hours (8) lecture per semester. The class will give the officer/student an understanding of the proper methods on use of weaponless defense and baton training. Also, the civil liabilities attached to the use of force will be discussed. (Degree credit)

AJ 091 Law Enforcement Instructor Development (2)

Credit/no credit only

Two hours lecture per week. This course is designed to assist both current and future law enforcement instructors to maximize their instructional skills and improve the learning process. The course will introduce law enforcement instructors to current adult learning techniques and developing instructional technology. The instructors will be required to participate in both group and individual activities designed to enhance instructional skills. (Intended to meet the basic requirements of Penal Code 13510 in raising the level of competence of California law enforcement officers.) (Non-degree credit)

AJ 092 F Crime Scene Investigation (1)

Credit/no credit only.

Twelve hours (12) lecture and twelve (12) hours lab per semester. This class will give the police officer the knowledge and practical application to collect, preserve and preserve evidence at crime scenes. Students are required to supply 35mm SLR/camera, two rolls of 24 exposure color film and the cost of processing the film. (Degree credit)

AJ 093 F DNA Genetic Fingerprinting (.5)

Credit/no credit only.

Eight hours (8) lecture per semester. The class will prepare the officer/student to properly handle DNA evidence collection and preservation. An understanding of the fundamentals of DNA and the current techniques of analysis will be presented. (Degree credit)

AJ 094 F Basic Police Academy Orientation (1)

Credit/no credit only

Sixteen hours lecture and eight hours lab. This course is designed to have the student complete a series of competitive tests and evaluations which are a prerequisite to being admitted into the upcoming Policy Academy. An in-depth dissemination of the recruit curriculum, which is specifically designed to achieve technical competence and physical proficiency in all areas of police training. Credit/no credit. (Degree credit)

AJ 095 F Preventing Sexual Harassment (.5)

Credit/no credit only

Eight hours lecture per semester. To provide the student with a basic understanding of the diverse and changing work force, a brief history and an in-depth study of the current laws which define discrimination/sexual harassment. (Degree credit)

AJ 096 F CAD/Crime Scene Application (.5)

Credit/no credit only

Eight hours (8) lecture and sixteen hours (16) lab per week. A twenty-four hour (24) short course to provide the student with a working knowledge of C.A.D. functions utilized in crime scene investigation by using computer drafting to draw various applications for criminal and traffic collision investigations. This course is certified by Peace Office Standards and Training (POST) for continuing education for peace officers.

AJ 097 F Law Enforcement Supervisory Update (1.5)

Letter grade or credit/no credit option.

Twenty-four hours lecture to provide the student with basic skills utilized in supervising law enforcement personnel. (Degree credit)

AJ 100 F Introduction to Law Enforcement (3) (CAN AJ 2)

Three hours lecture per week. Acquaints the student with the historical development of the criminal justice system, criminal behavior, the purpose of criminal law, and the advancement of the ethics and professionalization in the justice system. Provides an overview of the organization of local, state, and federal law enforcement agencies and an analysis of professional career opportunities. (CSU) (UC) (Degree credit)

AJ 102 F Introduction to Probation and Parole (3)

Three hours lecture per week. This course examines the organization and operations of correctional, probation and parole agencies as part of the United States criminal justice system. It introduces the learner to the basic principles of parole and probation at the federal, state and local levels of government. Emphasis is placed on how the parole and probationary functions impact the justice process, particularly at the law enforcement and court levels. (CSU) (Degree credit)

AJ 110AF Criminal Law (3) (CAN AJ 4)

Three hours lecture per week. A legal orientation of crime and the nature of criminal responsibility. Legal philosophy, processes and institutions are examined. Leading principles of law are explored with special emphasis given to laws of arrests, including an examination of the United States Constitution and the Bill of Rights. (CSU) (UC Credit Limitation) (Degree credit)

AJ 110BF Advanced Criminal Law (3)

Prerequisite: AJ 110AF Criminal Law.

Three hours lecture per week. A study of the elements of crimes against persons, property, and the State as they are recognized in the Penal Code and General Laws of California. Parties in crime, culpability, and incomplete offenses are presented from the point of view of the peace officer and the courts. (CSU) (UC Credit Limitation) (Degree credit)

AJ 111 F Vehicle Code (3)

Three hours lecture per week. A study of the California Vehicle Code with emphasis on those sections that are most frequently violated. Special study is made of the vehicle code sections that have created the greatest problems for peace officers. (CSU) (Degree credit)

AJ 128 F Police-Community Relations (3)

Three hours lecture per week. Relationship between law enforcement agencies, ethnic groups, news media, and other segments of the public. Areas of conflict and cooperation are explored. Public-relations programs and their effect upon law enforcement are studied. (CSU) (UC Credit Limitation) (Degree credit)

AJ 135 F Weaponless Defense (1-1-1-1)

One hour lecture and one hour laboratory per week. Provides the student an opportunity to develop proficiency in the utilization of the police baton, the control of combative individuals, and the handling of passive, uncooperative, or armed-aggressive individuals. Meets one semester of physical education requirement. (CSU) (Degree credit)

AJ 137 F Firearms (1-1-1-1)

Prerequisite: AJ 110AF Criminal Law.

One hour lecture and one hour laboratory per week. The moral aspects, legal provisions, safety precautions and restrictions covering the use of firing of the sidearm and shotgun. (CSU) (Degree credit)

AJ 140 F Juvenile Procedures (3)

Three hours lecture per week. A study of juvenile crime, laws and social issues relating to youthful offenders. Examination of child abuse, domestic violence and gang membership. Law enforcement responses to issues relating to juveniles, including the courts, probation and the California Youth Authority. (CSU) (Degree credit)

AJ 151 F Police Report Writing (3)

Three hours lecture and three hours lab per week. This course examines the proper writing of police crime reports and their importance in the successful prosecution of cases. Emphasis is placed on developing the students' ability to accurately take notes, employ appropriate methods of obtaining information from victims, witnesses, and suspects, formulate investigative techniques, and recognize proper report language. (CSU) (Degree credit)

AJ 220 F Criminal Procedure (3)

Three hours lecture per week. Provides a background of operational procedures in California law. Sets forth those procedures necessary for the understanding of legal proceedings pertaining to laws of arrest, search and seizure, admissibility of evidence, and jurisdiction of the courts. (CSU) (Degree credit)

AJ 222 F Rules of Evidence (3) (CAN AJ 6)

Three hours lecture per week. An introduction to the basic rules of evidence admissibility in criminal proceedings. Explains legal principles on how courts determine reliable, relevant and probative evidence in a court of law. Assesses how courts categorize and type evidence into a working framework for use in a criminal trial. Emphasis is placed on developing the law enforcement officers' skills in courtroom evidentiary presentation. (CSU) (Degree credit)

AJ 223 F Criminal Investigation (3)

Three hours lecture per week. Involves preliminary investigation, follow-up investigation, and courtroom presentation relating to criminal offenses and includes specialist lectures on the scientific elements. Emphasis is placed on the investigative process and the legal requirements of criminal inquiry. (CSU) (Degree credit)

AJ 226 F Narcotics and Vice Control (3)

Three hours lecture per week. Types of narcotics and their uses, with resultant law enforcement problems. Covers narcotics and vice enforcement, cures, and rehabilitation programs. (CSU) (Degree credit)

AJ 230 F Crime Scene Techniques (3)

Three hours lecture per week. This class will introduce the student to field techniques for the collection and preservation of physical evidence at the scene of the crime. The course will cover physical and testimonial evidence, scene responsibilities, processing the scene, fingerprint evidence, trace evidence, blood and bodily fluids, impression evidence, firearms evidence, dangerous drugs and clandestine laboratories, sexual assaults, domestic abuse, elder abuse, burglaries and homicide crime scenes. (CSU) (Degree credit)

AJ 252 F Police Patrol (3)

Three hours lecture per week. The fundamentals of proper patrol procedures and techniques, with particular emphasis on officer safety, public relations, and crime prevention. Designed to develop competency in handling frequently encountered police problems through the analysis of actual situations. The course will focus on developing officer survival skills through threat-based decision making. (CSU) (Degree credit)

AJ 276 F Investigation of Homicidal Behavior (3)

Three hours lecture per week. This course is a historical perspective of homicide in America today. Topics include motives for murder, psychology of murder, criminal investigation into homicide, victims of murder, those who murder and various methods of murder. The course will also examine the phenomena of serial and mass murderers. (CSU) (Degree credit)

AJ 277 F PC832 Arrest, Control and Firearms Training (4.5)

Credit/no credit only

Sixty-four lecture and twelve lab hours are required in professional orientation, law, evidence, investigation, community relations, communications, arrest and control and firearms safety and range training. This training is certified by the Commission on Peace Officer Standards and Training and will lead to employment in both the public and private sector. Such jobs as safety and security officers are available to those that satisfactorily complete the training. (CSU) (Degree credit)

AJ 278 F Multicultural Issues Within Administration of Justice (3)

Three hours lecture per week plus a series of practical exercises. A theoretical and conceptual overview of multicultural concepts and issues; an application of those concepts and issues to Administration of Justice; identification of problems related to our increasingly diverse population; examination of strategies to overcome those problems, particularly in relation to the maintenance of social order. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

AJ 279 F Contemporary Issues in Law Enforcement (3)

Three hours lecture per week. This course explores major legal, societal and organizational issues affecting the law enforcement profession as it moves into the 21st century. Topics include ethics, police use of force, high-speed vehicle pursuits, cultural awareness, workplace diversity, and community-oriented policing and problem solving. The course emphasizes the development of problem solving strategies as a way to effectively deal with the challenges that police face. (CSU) (Degree credit)

AJ 901 F Organized Crime and the Criminal Justice System (3)

Three hours lecture per week. This course will analyze the effects of International Organized Crime Groups on the United States and the American law enforcement effort to combat those criminal organizations. The class will review cooperative efforts between the United States and foreign governments to combat those organizations, the pitfalls encountered, and the successes and failures that result. It will also look into the secret world of the mafia "Men of Honor." (Degree credit)

Anatomy and Physiology

ANAT 231 F General Human Anatomy (4) (CAN BIOL 10) (ANAT 231 F + ANAT 240 F = CAN BIOL SEQ B)

Three hours lecture and three hours lab per week. This course includes a logical analysis of body tissues, organs and systems. It stresses the microscopic, developmental and gross anatomy of mammals, with special emphasis on human anatomy. Special attention is given to pathological as well as normal conditions. The laboratory work includes study of the developmental, microscopic and gross anatomy of preserved specimens and models. This course is designed primarily for physical education and allied health majors, but is also available for interested students of various liberal arts majors who desire or require an understanding of basic anatomy. (CSU) (UC Credit Limitation) (Degree credit)

ANAT 240 F Human Physiology (5) (CAN BIOL 12) (ANAT 231 F + ANAT 240 F = CAN BIOL SEQ B)

Prerequisite: One semester of a college laboratory biological science course with a grade of "C" or better. Corequisite: ANAT 231 F Human Anatomy and a chemistry course.

Three hours lecture and six hours lab per week. This course is an in-depth study of human function. Special attention is given to the abnormal as well as the normal functional state. The laboratory experience includes selected exercises that emphasize the interrelationships between structure and function. It is designed for all majors that require a separate course in physiology, including nursing and physical education majors. (CSU) (UC Credit Limitation) (Degree credit)

Anthropology

The **Associate in Arts Degree** program requires a total of 19 units of which 13 units are in required courses. An additional 6 units must be chosen from the restricted units listed below.

Required Courses (13 units)

I. Required Courses — 6 units

- ANTH 101 F Physical Anthropology (3)
ANTH 102 F Cultural Anthropology (3)

II. Category A — 7 units from the following

- ANTH 101LF Physical Anthropology Lab (1)
ANTH 103 F Introduction to Archaeology (3)
ANTH 105 F Language & Culture (3)
ANTH 107 F Anthropology of Magic, Witchcraft & Religion (3)

Restricted Electives (6 units)

Select two courses from the following:

- ANAT 231 F General Human Anatomy (4)
ANAT 240 F Human Physiology (5)
BIOL 266 F General Zoology (5)
BIOL 268 F General Botany (5)
BIOL 272 F Cell and Molecular Biology (4)
ETHS 101 F American Ethnic Studies (4)

- ETHS 129 F Introduction to African American Studies (3)
ETHS 140 F Introduction to Chicano/Chicana Studies (3)
ETHS 160 F History of the Native Americans (3)
ETHS 170 F Introduction to Asian American Studies (3)
GEOG 100 F Global Geography (3)
GEOG 102 F Physical Geography (3)
GEOG 160 F Cultural Geography (3)
GEOG 230 F Introduction to Geographical Information Systems (3)
ESC 100 F Physical Geology (3)
HIST 270 F History of Women in the United States (3)
PHIL 170 F Logic and Critical Thinking (3)
PHIL 172 F Critical Thinking/Writing (3)
PHIL 201 F History of Philosophy: Ancient and Medieval (3)
PHIL 202 F History of Philosophy: Modern (3)
PSY 101 F General Psychology (3)
PSY 161 F Elementary Statistics in Behavioral Sciences (3)
SOC 101 F Introduction to Sociology (3)

Anthropology Courses

ANTH 101 F Physical Anthropology (3) (CAN ANTH 2)

Three hours lecture per week. This course is a study of the theories of human origin and evolutionary development using genetic, fossil evidence, plus a comparison of humankind anatomically and behaviorally with the higher primates. This field includes current research on the intellectual and cultural equality of the human races. At a number of California State universities and other four-year institutions, this course may be used for social sciences or biological science credit. (CSU) (UC) (Degree credit)

ANTH 101LF Physical Anthropology Laboratory (1)

Corequisite: ANTH 101 F Physical Anthropology

Three hours lab per week. This course provides an introduction to laboratory methods used in research in physical (biological) anthropology. Topics include the classification, biology, and behavior of living primates, human skeletal and physiological anatomy, human genetics, methods of phylogenetic reconstruction, and evidence for the evolutionary history of humans and other primates. Emphasis is on practical experience. Students will examine skeletal materials from living and extinct primates, participate in experiments to illustrate analytical techniques used in modern physical anthropology, and observe the behavior of living primates through field trip and/or audio visual resources. In addition to laboratory exercises, one short research paper will be required. (CSU) (UC) (Degree credit)

ANTH 102 F Cultural Anthropology (3) (CAN ANTH 4)

Three hours lecture per week. This course is an introduction to the cultural aspects of man's behavior and the nature of culture. It includes the uniformities and variabilities of culture, social organization, family structure, religion, language, and other basic topics. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ANTH 103 F Introduction to Archaeology (3) (CAN ANTH 6)

Three hours lecture per week. Anthropological archaeology is a specialized branch of anthropology that studies cultural and physical anthropological evolutionary development; archaeology uses scientific methods and theories to trace human ecology from the past to the present. Archaeologists deal with remains of past societies such as tools, shelter, remains of animals eaten for food, and other objects that have survived. These remains, termed artifacts, are used to reconstruct past behavior. (CSU) (UC) (Degree credit)

ANTH 105 F Language and Culture (3)

Three hours lecture per week. Students explore the nature of language in relation to culture and how language processes develop and change. Students will examine how cultural knowledge is linguistically organized and how language shapes our perception of the world, and how it acts as a guide, both symbolic and practical, to understanding human actions. A basic introduction into the primary concepts of the discipline help students to understand what language reveals about human beings as bearers of culture. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ANTH 107 F The Anthropology of Magic, Witchcraft and Religion (3)

Three hours lecture per week. An anthropological survey of systems of magic, witchcraft, and religion from the past and the present, from societies around the world. It examines beliefs and practices in cultural settings with respect to the role of the supernatural. Special topics include myth, religious healing, witchcraft and sorcery, ritual and millenarian movements. (CSU) (UC) (Degree credit)

ANTH 199 F Anthropology Independent Study (1-1-1-1)

One hour lecture or scheduled conference per week. This course is offered for students who wish to increase their knowledge of the Social Sciences through individual study and small group conferences. Students successfully completing this course will be awarded elective credit in the Social Sciences area. Course may be taken four times for credit. (CSU) (UC credit limitation depending upon course content; UC review required.) (Degree credit)

ANTH 231 F Field Course in Archaeology (3, 3)

Thirty-six hours plus fifty-four hours lab per semester. First five weeks of lecture in the classroom; remainder of lecture and lab hours in the field at a selected archaeological site. This class is designed to provide a basic understanding of archaeological scientific field methods used in the investigation of an archaeological site. Field trips to local archaeological sites are a required part of instruction and will emphasize surveying and/or excavation. Site mapping, photography and other recordation techniques will be utilized. Cataloging, appropriate preservation, and the interpretation of surface and/or sub-surface artifacts will be completed. Students will begin the process of proper site survey report writing. Students repeating the course (second semester of 231 F) will be expected to perform survey and excavation tasks at a higher skill level and to have rudimentary skills in tasks not expected of students taking the course for the first time (first semester of 231 F). Course may be taken twice for credit. (CSU) (Degree credit)

Architecture

The curriculum leads to the **Associate in Science Degree** in architectural from Fullerton College. Courses are designed to fulfill requirements (admission is also based on a portfolio review) for transfer to a university for a Bachelor of Architecture (B.Arch.) Degree. The curriculum is also designed to prepare students for employment in the architectural profession. The program requires a minimum of 31 units.

Required Courses (31-35 units)

- ARCH 111 F Introduction to Architecture (3)
- ARCH 113 F Architectural Drawing I (3)
- ARCH 124 F Architectural CAD I (3)
- ARCH 924 F Architectural CAD II (3)
- ARCH 934 F Architectural CAD III (3)
- ARCH 944 F Architectural CAD IV (3)
- ARCH 125 F Design Studio I (4)
- ARCH 215 F Design Studio II (4)
- ARCH 225 F Design Studio III (4)
- ARCH 227 F Internship in Architecture (1-4)

Architectural CAD Technology

The **Architectural CAD Technology Certificate** Program requires the completion of a minimum of 39 units, of which 30 are in required courses. An additional 9 units must be chosen from the restricted electives listed below.

Required Courses (30 units)

- ARCH 111 F Introduction to Architecture (3)
- ARCH 124 F Architectural CAD I (3)
- ARCH 924 F Architectural CAD II (3)
- ARCH 934 F Architectural CAD III (3)
- ARCH 944 F Architectural CAD IV (3)
- ARCH 227 F Internship in Architecture (1-4)
- BUS 111 F Business Communication (3)
- BUS 180 F Entrepreneurship: Small Business Management (3)
- COUN 141 F Career Exploration (1)
- KEY 001 F Beginning Typewriting/Keyboarding (3)
- SPCH 100 F Public Speaking (4)

Restricted Electives (9 units)

- ACG 100 F Introduction to Computer Graphics for Macintosh (3)
- BUS 266 F Human Relations in Business (3)
- DRAF 142 F Customizing AutoCAD (2)
- DRAF 143 F 3D Applications/AutoCAD (2)
- CSTR 036 F Uniform Building Code — Residential (3)
- CSTR 037 F Uniform Building Code — Commercial/Industrial (3)
- SPCH 105 F Interpersonal Communications (3)

The five year Bachelor of Architecture (B.Arch.) Major is an impacted program at many colleges and universities. Fullerton College does offer courses that do meet transfer requirements. Advanced placement into the five-year program of architecture is also based on a review of the student's portfolio.

Architecture Courses

ARCH 111 F Introduction to Architecture (3)

Three hours lecture per week. This course is designed for architecture majors as well as people interested in learning more about the architectural profession. The focus is split into two areas of emphasis. Architectural theory and history are explored from ancient civilizations to the present trends in design. The practical/business side of architecture is discussed, the topics include education requirements and job opportunities as well as the architect's perceived role in our society. (CSU) (UC) (Degree credit)

ARCH 113 F Architectural Drawing I (3)

Two hours lecture and four hours lab per week. An introductory course designed to develop graphic and visualization skills, and its link as a means of externalizing, evaluating and communicating ideas. It will include both freehand and mechanically constructed type of orthographic, axonometric, oblique and lineal perspective drawings on two-dimensional surfaces. It is intended to develop the use of instruments, lettering, line weights, graphics and presentation layout. The media to be used will include pencil, ink, colored pencil and markers. (CSU) (UC) (Degree credit)

ARCH 124 F Architectural CAD I (3)

Two hours lecture and three hours lab per week. This is a beginning course in using the CAD system for architectural applications. The course covers elementary principles associated with the various menu and command structures in computer-assisted drafting. Topics included are file management, layering, symbol libraries, orthographic projection, dimensioning, line types and the generation of text. (CSU) (Degree credit)

ARCH 125 F Design Studio I (4)

Prerequisite: ARCH 113 F Architectural Drawing I

Three hours lecture and three hours lab per week. This course introduces the student to the formal and spatial language of architecture. Assignments will be explored in the form of studio projects. Such projects will be the analysis of case studies, and their integration in the design process. (CSU) (Degree credit)

ARCH 215 F Design Studio II (4)

Prerequisite: ARCH 125 F Design Studio I

Three hours lecture and three hours lab per week. The course is a continuation of Design Studio I to further enhance skills in the development of a personal theory of design. Students will extend their understanding in such areas as visualization, decision making, and evaluation. (CSU) (Degree credit)

ARCH 225 F Design Studio III (4)

Prerequisite: ARCH 215 F Design Studio II

Three hours lecture and three hours lab per week. This course is a continuation of Design Studio II to further enhance skills in understanding the organization of design and emphasis on the means of architecture. Site analysis and building orientation will be explored. Two and three-dimensional drawings and model building will be produced. (CSU) (Degree credit)

ARCH 227 F Internship in Architecture (1-4)

One hour lecture per week and five hours of supervised employment per week in an architectural office. An additional five hours per week of supervised employment is to be completed for each additional unit of credit. This course is designed to provide learning opportunities through employment in an architectural firm or related type of business. No more than three units may be applied toward the degree or certificate. (CSU) (Degree credit)

ARCH 924 F Architectural CAD II (3)

Prerequisite: ARCH 124 F Architectural CAD I

Two hours lecture and three hours lab per week. This is an intermediate course that utilizes the CAD system for architectural applications. The course incorporates principles associated with the various menu and command structures in computer-assisted drafting to develop solutions to 2D and 3D design problems. (Degree credit)

ARCH 934 F Architectural CAD III (3)

Prerequisite: ARCH 924 F Architectural CAD II

Two hours lecture and three hours lab per week. This is an advanced course utilizing the CAD system to produce a set of construction documents. This course deals with two-story residential construction as applicable to the present professional standards in terms of technical drafting and 2D and 3D computer drafting. (Degree credit)

ARCH 944 F Architectural CAD IV (3)

Prerequisite: ARCH 934 F Architectural CAD III

Two hours lecture and three hours lab per week. This course covers applied usage of computer-assisted drafting (CAD) to special problems in architecture. The student will learn various techniques in the generation of architectural projections such as isometric, oblique, one and two point perspective. Three-dimensional solids modeling will also be explored. (Degree credit)

Art

Advertising and Graphic Design

Curriculum leads to the **Associate in Arts Degree** and/or an entry-level position as a commercial artist. This program is not designed to transfer to a four-year institution but will transfer to a private school of art. This degree totals 18 units of which 12 units are in required courses. An additional 6 units must be chosen from the restricted electives listed below.

Required Courses (12 units)

ACG	100 F Introduction: Computer Graphics/Mac (3)
ART	140 F Introduction to Advertising and Graphics Design (3)
ART	145 F Publication Design (3)
ART	147 F Production Techniques for Graphic Designers (3)

Restricted Electives (6 units)

ACG	112 F	Electronic Illustration (3)
ACG	132 F	Electronic Paint for Macintosh (3)
ACG	140 F	Desktop Publishing I (3) or
ACG	146 F	Desktop Publishing II (3)
ART	123 F	Business Practices in Art (3)
ART	146 F	Advertising Design (3)
ART	148 F	Packaging Design (3)

The **Advertising and Graphic Design — Level I Certificate** requires a total of 16 units in required courses. This certificate prepares students for an entry-level position in the advertising and graphic design industry. A minimum grade of “C” is required in each course taken.

Required Courses (16 units)

ACG	100 F	Introduction: Computer Graphics/Mac (3)
ACG	140 F	Desktop Publishing I (3) or
ACG	146 F	Desktop Publishing II (3)
ART	140 F	Introduction to Advertising and Graphic Design (3)
ART	145 F	Publication Design (3)
ART	147 F	Publication Techniques for Graphic Designers (3)
COUN	141 F	Career Exploration (1)

The **Advertising and Graphic Design — Level II Certificate** requires the completion of the Advertising and Graphic Design — Level I Certificate plus 15 units in required courses. This certificate prepares students for a position in advertising, graphic, and packaging design. A minimum grade of “C” is required in each course taken.

Required Courses (15 units)

ACG	112 F	Electronic Illustration (3)
ACG	132 F	Electronic Paint for Macintosh (3)
ART	123 F	Business Practices in Art (3)
ART	146 F	Advertising Design (3)
ART	148 F	Packaging Design (3)

Art

Curriculum leads to the **Associate in Arts Degree**. This degree requires 18 units from the following:

One Art History course (3 units)

ART	112 F	Art History: Ancient and Medieval (3) or
ART	113 F	Art History: Renaissance to Modern (3) or
ART	114 F	Art History: Impressionism to the Present (3) or
ART	116 F	Art History: Mexico (3) or
ART	212 F	Asian Art History (3)

One course required from: (3 units)

ART	120 F	Basic Design (3) or
ART	182 F	Basic Drawing (3)

One course required from: (3 units)

ART	121 F	Three-Dimensional Design (3)
ART	150AF	Ceramics, Beginning Handbuilding (3)
ART	160 F	Fundamentals of Sculpture (3)
ART	174AF	Jewelry: Fabrication (3)
ART	176 F	Stained Glass (3)
ART	185 F	Life Sculpture (3)

And required (9-10 units)

Any ART course **except** ART 110 F, ART 119 F, ART 179 F, ART 187 F

Basic Computer Graphics

The **Basic Computer Graphics – Level I Certificate** provides the beginning skills to create digital based illustrations and paintings. Emphasis is placed on development of student skill set in mainstream software, which will form the bases required for level II certificate. The **Program** requires a total of 15 units of which 9 units are in required courses. An additional 6 units must be chosen from the restricted units listed below. Units earned for level I certificate **may not** be used for level II certificate. Level II certificate may not be earned without the completion of the level I certificate.

Required Courses (9)

ACG	108 F	Survey Graphics Applications (3)
ACG	112 F	Electronic Illustration (3)
ACG	132 F	Electronic Paint for Macintosh (3)

Restricted Electives (6) – Select one Introduction class (3 units)

ACG	100 F	Introduction: Computer Graphics/MAC (3) or
ACG	102 F	Introduction: Web Graphics/Mac (3) or
ACG	104 F	Introduction: 3-D Graphics/Mac (3) or
ACG	106 F	Introduction: Dimensional Design/Mac (3)

Select **one** art class (3 units)

ART	118 F	Color Theory (3)
ART	120 F	Basic Design (3)
ART	140 F	Introduction to Advertising and Graphic Design (3)
ART	182 F	Basic Drawing (3)

Desktop Publishing

Desktop Publishing Certificate – Level II is a continuation of the level I Basic Computer Graphics certificate with an emphasis in desktop publishing software. The certificate provides the skill set required for entry-level employment in the desktop publishing industry. The **Program** requires a total of 15 units of which 12 units are in required courses. An additional 3 units must be chosen from the restricted units listed below. Units earned from level I certificate may not be used for level II certificate. Any advanced ACG course may replace required Introduction class of level II if Introduction was completed as part of level I certificate.

Required Courses (12)

- ACG 100 F Introduction: Computer Graphics/Mac (3)
 ACG 140 F Desktop Publishing I (3)
 ACG 146 F Desktop Publishing II (3)
 ART 140 F Introduction to Advertising and Graphic Design (3)

Restricted Electives (3) Select **one** course from below

- ART 118 F Color Theory (3)
 ART 145 F Publication Design (3)
 ART 146 F Advertising Design II (3)
 ART 147 F Production Techniques for Graphic Designers (3)
 ART 148 F Packaging Design (3)

3D Animation

3D Animation Certificate — Level II is a continuation of the level I Basic Computer Graphics certificate with emphasis in 3D animation software. This certificate provides the skill set required for entry-level employment in the 3D animation and modeling industry. The **Program** requires a total of 15 units of which 9 units are in required courses. An additional 6 units must be chosen from the restricted units listed below. Units earned from level I certificate **may not** be used for level II certificate. Any advanced ACG course may replace required introduction to class of Level II if introduction was completed as part of the Level I certificate.

Required Courses (9)

- ACG 104 F Introduction: 3D Graphics/Mac (3)
 ACG 120 F 3D Computer Graphics/Mac (3)
 ACG 150 F 3D Computer Animation/Mac (3)

Restricted Electives (6) Select **two** courses from below

- ART 120 F Basic Visual Design Concepts (3) or
 ART 182 F Basic Drawing (3)
 ART 121 F Three Dimensional Design (3) or
 ART 186 F Beginning Life Drawing (3)

Work produced in art classes for credit may be retained by the Art Department for up to one year for exhibition and display purposes. Art majors are encouraged to enroll in ART 182 Basic Drawing and ART 120 Basic Visual Design Concepts during their first semester to acquire skills used in all other studio classes. Cost of Classes: Most studio art classes require that equipment and supplies be purchased by students. A textbook is not usually required. The cost of basic materials necessary to begin a class, if the student had none to begin with, is between \$25 and \$75 unless otherwise specified in the course description. Equipment can usually be used in several related classes and need not be duplicated for each class. Additional materials may be required from time to time during the semester.

*Art History***ART 110 F Introduction to Art (3)**

Three hours lecture per week. This course provides an introduction to art from prehistoric times to the present. While examining the role that the visual arts have played in the development of the world's cultures, the student is exposed to a wide variety of artistic media. Classroom presentations are supplemented by gallery and museum visits. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses. (CSU) (UC) (Degree Credit)

**ART 112 F Art History — Ancient & Medieval (3)
(CAN ART 2) (ART 112 F + ART 113 F- CAN ART SEQ A)**

Three hours lecture per week. This course presents a study of Western art, including architecture, sculpture and painting from Prehistory through the Middle Ages. Art history courses may be taken in any sequence; at least two semesters are required of art majors. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses. (CSU) (UC) (Degree Credit)

**ART 113 F Art History — Renaissance to Modern (3)
(CAN ART 4) (ART 112 F + ART 113 F- CAN ART SEQ A)**

Three hours lecture and slide presentation per week. This course is a survey of architecture, sculpture and painting from the Renaissance through the Twentieth Century. Art history courses may be taken in any sequence; at least two semesters are required of art majors. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses. (CSU) (UC) (Degree Credit)

ART 114 F Art History — Impressionism to the Present (3)

Three hours lecture and slide presentation per week. The development of modern architecture, sculpture, and painting from its origins in the 19th century to the present. Art history courses are open to all students and may be taken in any sequence; at least two semesters are required of all art majors. (CSU) (UC) (Degree credit)

ART 116 F Art History — Mexico (3)

Three hours lecture per week. This course is a survey of the visual arts of Mexico from the earliest civilizations to contemporary Mexican and Chicano art. Both traditional and popular art forms are studied in the context of the cultures that produced them. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses.

ART 117 F History of American Art (3)

Three hours lecture and slide presentation per week. This course is a survey of American art and architecture from the 17th century to the present. Lectures will present an overview of painting, sculpture, photography, and architecture from Colonial beginnings through recent Post-Modern developments. Emphasis will be placed on discovering what is American in American art. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses. (CSU) (UC) (Degree Credit)

ART 212 F Asian Art History (3)

Three hours lecture and slide presentation per week. This course surveys the arts of China and Japan from Prehistory through the 19th century. It examines the role of the visual arts in relation to society, religion, and history, while identifying major themes and techniques in these arts. Classroom presentations are supplemented by gallery and museum visits. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses. (CSU) (UC) (Degree credit)

ART 213 F Pre-Columbian Art (3)

Three hours lecture and slide presentation per week. A survey of the architecture, sculpture, painting, and ceramics of Pre-Columbian Mexico, Central, North and South America from formative through post-classic times. Slide lectures, videos, and museum visits will supplement the course. In a full semester course an additional 15 minutes per week will be spent in the art gallery, pro-rated per semester for short-term courses. (CSU) (UC) (Degree credit)

*Art Design***ART 118 F Color Theory (3) (CAN ART 22)**

Two hours lecture and 4 hours lab per week. Introduction to fundamentals of color theory through lecture and applied exercises in paint and collage. Includes discussion of cultural differences in color symbolism and the historical development of conceptual models of color usage in both science and art. Theoretical focus will be on the Brewster, Munsell and Ostwald systems of color organization and the emphasis of the studio exercises is on practical applications of color theory in the visual arts professions. The course concludes with an introduction to digital color as used in computer graphics. (CSU) (UC) (Degree credit)

ART 119 F Design & Color for Non-Art Majors (2)

One hour lecture and 3 hours lab per week. This course covers the elements of art, principles of design and color theory with emphasis on creative experiences in two-dimensional design. Media include pencil, ink, paint, and collage. Recommended for non-art majors. (CSU) (UC) (Degree credit)

ART 120 F Basic Design (3) (CAN ART 14)

Two hours lecture and four hours lab per week. This course includes an introduction to the art elements of line, shape, value, texture, pattern, color, and the principles of composition. These design elements and principles will be used to create two-dimensional visual images. Various media are used. (CSU) (UC credit) (Degree Credit)

ART 121 F Three-Dimensional Design (3) (CAN ART 116)

Advisory: ART 120 F Basic Design

Two hours lecture and four hours lab per week. An introduction to three-dimensional design. This course defines the contrast of three-dimensional form to the two-dimensional format. The focus is on 360 degree design, in materials selected to best depict this contrast. This course involves the use of hand tools and some power equipment. Course may be taken one time for credit. (CSU) (Degree credit)

*Gallery and Business Practices***ART 122 F Gallery Design and Exhibition (2-2-2-2)**

One hour lecture and three hours studio per week. A workshop course in which students will be involved in the actual installation of art exhibits in the Fullerton College Art Gallery. The course includes excursions to galleries and museums. ART 122 F covers the basic skills of installing an art exhibition including arrangements, labeling, security, and brochure design. Recommended for art majors. Course may be taken four times for credit. (CSU) (Degree credit)

ART 123 F Business Practices in Art (3)

Three hours lecture per week with field trips and guest speakers. This course examines the basic business and professional practices needed to begin or continue a career in the visual arts. The class will require portfolio presentation, creation of resume and self-promotional pieces in addition to an understanding of proposals, contracts, and personal business practices. Also, a personal business notebook is to be kept by the students for future use. (CSU) (Degree credit)

*Advertising and Graphic Design***ART 140 F Introduction to Advertising & Graphic Design (3)**

Two hours lecture and four hours lab per week. This is a basic course in advertising and graphic design with an emphasis on communication through use of concepts, type and images. The course includes development of layout skills, style and an introduction to logotype design. The computer is demonstrated as a graphic design tool. (CSU) (Degree credit)

ART 144 F Fundamentals of Cartooning (2)

Advisory: ART 182 F Basic Drawing or ART 179 F Drawing for Non-Art Majors

One hour lecture and three hours lab per week. An introduction to basic cartooning techniques. Includes sketching, inking, and the development of characters. Projects include gag line cartooning, political cartooning, and the development of a weekly cartoon strip. In addition, there will be an analysis of the elements of both the humorous and the dramatic in cartoon art. This analysis will include a review of historically significant Sunday funnies and comic book characters, as well as an examination of major trends in comic art from 1895 to the present. (CSU) (Degree credit)

ART 145 F Publication Design (3)

Prerequisite: ART 140 F Introduction to Advertising and Graphic Design and ACG 100 F Introduction to Computer Graphics for Macintosh.

Two hours lecture and three hours lab per week. This is an advanced course with emphasis on the design of publications such as brochures and magazines layouts to simulate real world assignments. Finished comprehensive projects will be created on the computer to a professional quality suitable for inclusion in a student's portfolio. (CSU) (Degree credit)

ART 146 F Advertising Design (3)

Prerequisite: ART 140 F Introduction to Advertising and Graphic Design and ACG 100 F Introduction to Computer Graphics for Macintosh.

Two hours lecture and three hours lab per week. This is an advanced course with emphasis on design for advertising. The assignments are intended to simulate real world experience and may include advertising campaigns, posters, billboards, and web sites. Finished comprehensive projects will be created on the computer to a professional quality suitable for inclusion in a student's portfolio. (CSU) (Degree credit)

ART 147 F Production Techniques for Graphic Designers (3)

Corequisite: ART 140 F Introduction to Advertising and Graphic Design
Two hours lecture and three hours lab per week. A study of methods and techniques necessary in preparing artwork for reproduction. Areas emphasized are: computer generated preparation of mechanical art, electronic pre-press, typography, paper specification, and commercial printing methods. This course is oriented specifically to the needs of graphic design students. (CSU) (Degree credit)

ART 148 F Packaging Design (3)

Prerequisite: ART 140 F Introduction to Advertising and Graphic Design and ACG 100 Introduction to Computer Graphics for Macintosh.

Two hours lecture and three hours lab per week. This is an advanced level course with emphasis on design for packaging. The assignments are intended to simulate real world experience and will include designing for a range of 3D surfaces and materials. Finished comprehensive projects will be created on the computer to a professional quality. Students will be introduced to basic digital photography concepts for recording their work and creating images suitable for portfolio inclusion. (CSU) (Degree credit)

ART 244 F Illustration (2)

Prerequisite: ART 120 F Basic Visual Design Concepts and ART 140 F Advertising/Graphic Design I

One hour lecture and three hours studio per week. An intermediate course on the problems of creating finished illustrations for printed media. Primary emphasis is on developing a concept from thumbnail sketch to comprehensive rough to final art, and applied to newspaper, magazine, book, and marketing illustrations. Projects are designed to prepare the student for the professional skills needed in the advertising agency/illustrator relationship. (CSU) (Degree credit)

Ceramics

ART 150AF Ceramics, Beginning Handbuilding (3) (CAN ART 6)

Two hours lecture and four hours studio with one hour open studio per week. A survey course dealing with ceramic handbuilding techniques. Emphasis is on creating forms, using the coil, slab and pinch processes, and on textural and sculptural embellishment of surface. Glazing technique, kiln loading, and basic technology of clay, glazes, and firing are included. (CSU) (UC) (Degree credit)

ART 150BF Ceramics, Beginning Throwing (3)

Prerequisite: ART 150AF Ceramics: Beginning Handbuilding or previous ceramics experience.

Two hours lecture and four hours studio and one hour open studio per week. Developing technique in the use of the potter's wheel is emphasized. An introduction to design, decoration, and glazing of wheel-thrown utilitarian forms. Kiln loading and basic technology of clay, glazes, and firing are included. (CSU) (UC) (Degree credit)

ART 150CF Ceramics, Advanced (3-3)

Prerequisite: ART 150AF Ceramics: Beginning Handbuilding and/or ART 150BF Ceramics: Beginning Throwing.

Two hours lecture and four hours lab and one hour open studio per week. Advanced study of handbuilding and/or throwing techniques, design of forms, and surface decoration. Kiln operation is emphasized. Development of further skills, knowledge, and conceptual ability is accomplished through individually determined projects. Course may be taken twice for credit. (CSU) (UC) (Degree credit)

ART 151 F Technical Ceramics (2-2)

One hour lecture and three hours studio and one hour open studio per week. An investigation of clay, glazes, and oxides commonly used in the craft of ceramics. Material covered will include sources of base, neutral and acid oxides, and an investigation of colorants for clays and glazes of various types. Basic glaze calculation will be stressed. First semester: emphasizes clay materials and formulation. Second semester: emphasizes glaze material and formulation. Course may be taken twice for credit. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

ART 152 F Ceramics Laboratory (1-1-1-1)

Corequisite: ART 150AF, 150BF, 150CF Ceramics; ART 151AF, ART 261F, or completion of Art 150AF, ART 150BF, ART 150CF. Credit/no credit only.

Forty-eight hours lab per unit in the Ceramics Lab doing studio ceramics activities including handbuilding techniques, slab, coil, pinch construction, glaze preparation and application, throwing on the potters wheel, sculptural and combined building techniques and other studio activities. For each 48 hours that the student spends working in the Ceramics Lab beyond the Ceramics Lab requirements of the concurrent course, one unit of credit will be granted. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 159 F Master Potters (2)

One hour lecture and three hours studio per week. This course offers the experienced student an expanded knowledge of the Ceramic Arts through an in depth study of the work of a featured Master Potter. Each semester the work of a different Master Potter will provide inspiration for the students to analyze and emulate in their own work. This course may be repeated up to three times.

Sculpture

ART 160 F Fundamentals of Sculpture (3-3) (ART 160 F (first semester) — CAN ART 12)

Two hours lecture and analysis, four hours studio and one hour arranged per week. Development of three dimensional expression through the investigation of sculptural form and space. Traditional and contemporary concepts, techniques and materials employed. Designed for the beginning student and those with only limited sculpture experience. Course may be taken twice for credit. (CSU) (UC) (Degree credit)

ART 161 F Advanced Sculpture (3-3)

Prerequisite: ART 160 F Fundamentals of Sculpture.

Two hours lecture and analysis and four hours studio plus one hour open studio per week. This course introduces support processes of sculpture, of mold making, welding and casting to add breadth of knowledge and professionalism. Class requirements arranged by contract of projects to allow wide diversity of expression. Emphasis on developing individual style and the ability to plan and direct a semester schedule of projects. This course is for students with at least two semesters of sculpture. Course may be taken twice for credit. (CSU) (UC) (Degree credit)

ART 162 F Sculpture — Cast Metal (Bronze and Aluminum) (3-3-3-3)

Advisory: ART 160 F Fundamentals of Sculpture or ART 185 F Life Sculpture.

Two hours lecture and analysis and four hours studio plus one hour arranged per week. An introduction to the lost wax bronze casting process, investment, vacuum and sand casting. This class includes wax model production and mold making. The cast bronze sculpture is completed by metal chasing and patination. In semesters two, three and four, the complexity of the projects require alternative skills, techniques and materials. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 163 F Sculpture Open Studio (1-1-1-1)

Corequisite: Concurrent enrollment in 3-D design facility classes. Credit/no credit only.

Fifty-four hours of studio time in the sculpture and three-dimensional design facility. The lab course gives access to the facility and equipment, for students that are enrolled in any one of these three-dimensional classes, ART 160 ABF, ART 161 ABF, ART 162 ABCDF, ART 173 ABCDF, ART 174AF, ART 176 ABCDF or ART 121 F or students that have completed these courses. For each forty-eight hours that a student spends in the studio beyond their class hours, one unit of credit will be earned. All hours must be verified by a sign-in sheet. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 185 F Life Sculpture (3-3-3-3)

Two hours lecture and four hours studio per week. The class involves three dimensional problems in sculptural concepts and modeling from the human figure with an emphasis on accurate anatomical training in sculpture. This course is designed to develop an understanding of human anatomy as it pertains to sculpture; and to develop the ability of the student to sculpt the figure in various attitudes and movements. Skeleton, plaster cast and live models are used. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 261 F Sculpture — Ceramics (2)

Prerequisite: ART 160 F Sculpture — Beginning or 150AF Ceramics: Beginning Handbuilding.

One hour lecture and three hours studio per week. An exploration of the methods, limitations, and characteristics of various clays when used to create sculpture in the round and bas-relief. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

*Jewelry/Crafts***ART 173 F Jewelry Casting (3-3-3-3)**

Two hours lecture and four hours studio per week. This course is an introduction to basic concepts and techniques in designing and casting jewelry including reproduction techniques and wax models. The focus of this class is originality in jewelry design relating to contemporary and historical aesthetics. The additional semesters involve advanced problems in jewelry casting. Course may be taken four times for credit. (CSU) (Degree credit)

ART 174AF Jewelry: Fabrication (3)

Two hours lecture and four hours studio per week. This class is an introduction to concepts and techniques in the design and construction of jewelry and small objects using cutting, forming and soldering techniques. The focus of this course is on original design fine art jewelry in precious metals. (CSU) (Degree credit)

ART 174BF Jewelry: Fabrication (3-3-3)

Prerequisite: ART 174AF Jewelry: Fabrication.

Two hours lecture and four hours studio per week. This class is a continuation of 174AF Jewelry: Fabrication. Further development of jewelry fabrication techniques are explored which include hollow form, articulation, surface treatment, repousse, patina and inlay. Emphasis is placed on individual design development. Course may be taken three times for credit. (CSU) (Degree credit)

ART 176 F Stained Glass (Architectural Fabrication for Residential & Commercial) (3-3-3-3)

Two hours lecture and four studio per week. Section A will instruct the student in the basics of designing and constructing both two and three dimensional stained glass projects using the "Tiffany Foil" technique and other cold glass process such as mosaic. Proper use of tools, materials and vocabulary will be emphasized. Project emphasis will be in the design and fabrication of residential and commercial pieces. Section B will involve continued development of the skills learned in Section A in addition to learning alternative processes such as overlay, sandblasting, fusing. Project emphasis will be in the design and fabrication of residential and commercial pieces. Section C will involve the student in three dimensional and large scale projects; and will also involve independent, instructor approved fabrications of real world commission type projects utilizing all processes and vocabulary learned in Section A & B. Project emphasis will be in the design and fabrication of residential and commercial pieces. This course may be taken a total of four times with Section A & B taken once each and Section C taken two times. Production hours outside of class time are required. (CSU) (Degree Credit)

*Drawing***ART 139 F Fashion Sketching (2-2-2)**

One hour lecture and three hours studio per week. Designed for the student interested in a fashion career or the graphic design or illustration major wanting to develop fashion sketching skills. The course will include refinement of basic skills in drawing of the clothed figure as well as rendering of fabrics and patterns. Media used includes graphite, ink, marking pens, charcoal, colored pencils, photocopy, and mixed media. Development of a personal sketching style will be encouraged. Course may be taken three times for credit. (CSU) (Degree credit)

ART 179 F Drawing for Non-Art Majors (2)

One hour lecture and three hours studio per week. Beginning course in traditional and contemporary drawing techniques and terminology with an emphasis on representational drawing accomplished with a variety of media, including, but not limited to, graphite, charcoal, conte, ink, oil and/or chalk pastel, and colored pencil. (CSU) (UC) (Degree credit)

ART 180 F Perspective Drawing and Rendering (2-2)

Prerequisite: ART 182 F Basic Drawing.

One hour lecture and three hours studio per week. The lecture portion covers basic fundamentals of perspective and traditional rendering. Emphasis is on creating the illusion of three dimensions on a two-dimensional drawing surface. The course includes explanations of simple solid shapes in space, lighting, and accurately depicting surface qualities. This course also meets student needs in advertising, illustration, and industrial design. Course may be taken twice for credit. (CSU) (Degree credit)

ART 181 F Drawing from the Masters (2-2-2-2)

Corequisite: ART 182 F Basic Drawing or ART 119 F Design and Color for Non-Art Majors

One hour lecture and three hours studio per week. Lecture covers working methods and media of master draftsmen from previous centuries. Lab consists of analyzing and copying master drawings in a variety of media. Emphasis is on traditional approach to drawing as practiced by renaissance masters such as Dürer, Michelangelo, DaVinci, Raphael, Rubens, and others. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 182 F Basic Drawing (3) (CAN ART 8)

Two hours lecture and four hours studio per week. An introduction to the fundamentals of representational drawing. Media used include pencil, ink, charcoal, conte, pastels, watercolor, and mixed media. Designed for art majors. (CSU) (UC) (Degree credit)

ART 183 F Representational Drawing (2)

Prerequisite: ART 182 F Basic Drawing.

One hour lecture and three hours studio per week. Study of contemporary and traditional realistic drawing concepts with emphasis on their creative application. Media: pencil, ink, charcoal, conte, pastel, watercolor, mixed media. Recommended for art majors. (CSU) (UC) (Degree credit)

ART 184 F Expressive Drawing (2)

Prerequisite: ART 182 F Basic Drawing. Advisory: ART 186AF Beginning Life Drawing

One hour lecture and three hours studio per week. Surveys a variety of drawing styles introduced by artists whose mark-making itself communicates emotion, whether or not recognizable objects are depicted. Starting with Van Gogh and continuing through German Expressionism and Abstract Expressionism, the course leads toward the development of a personal, contemporary drawing style. Media covered include ink, pastel, watercolor, collage, and mixed media. (CSU) (UC) (Degree credit)

ART 186AF Beginning Life Drawing (3)

Two hours lecture and four hours studio per week. An introductory course in drawing from the human figure. Course emphasis is on the development of a basic understanding of structure, anatomy and movement. The focus of this course is the accurate anatomy study, through continued use of the skeleton and life models. Required for all art majors. (CSU) (UC) (Degree credit)

ART 186BF Intermediate Life Drawing (3)

Prerequisite: ART 186AF Beginning Life Drawing.

Two hours lecture and four hours studio per week. An intermediate course in drawing the human figure. The course emphasis is on the refinement of basic skills, exercises and anatomy. Complex techniques reinforce the understanding gesture, structure and anatomy, through the continued use of the skeleton and life models. Recommended for all art majors. (CSU) (UC) (Degree credit)

ART 186CF Advanced Life Drawing (3)

Prerequisite: ART 186BF Intermediate Life Drawing.

Two hours lecture and four hours studio per week. An advanced course in drawing the human figure, the emphasis of this course is a focused review of previous drawing exercises and the refinement of techniques. Advanced studio problems will be addressed, with historical and contemporary examples. Recommended for all art majors. (CSU) (UC) (Degree credit)

ART 195 F Anatomical Figure Drawing (2-2-2-2)

Prerequisite: ART 182 F Basic Drawing.

One hour lecture and three hours studio per week. The course explains and demonstrates how a specific area of the human body is constructed, how it moves and how it looks in different positions. A full size human skeleton, plaster casts and slides of master's anatomy studies are used as reference. The lab consists of copying and analyzing a variety of anatomical studies to compile a note book representing all the components of the figure. This class serves the needs of the student in drawing, painting and sculpting the human figure. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

*Print Making***ART 131 Printmaking (3-3) (CAN ART 20)**

Prerequisite: ART 182 F Basic Drawing or ART 186AF Life Drawing or ART 119 F Design and Color for Non-Art Majors or ART 120 F Basic Design

Two hours lecture and analysis and four hours studio per week. This course provides experience with materials and processes involved in the basic approaches of relief, intaglio, and stencil printing. Designed to encourage graphic creativity and professional skill in the development of plates and their printing, augmented by an awareness of traditional and contemporary methods and styles. Course may be taken twice for credit. (CSU) (UC) (Degree credit)

*Painting***ART 127 F Painting Concepts — Floral (2-2-2-2)**

One hour lecture and three hours studio per week. This course covers a conceptual approach to organic form including floral compositions and various visual plant elements. The students will deal with classic symbolism and contrasts, employing fundamentals of color harmony and structure. Work is from nature, still life and photography in various painting media. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 128 F Oil Portrait Painting (2-2-2-2)

Prerequisite: ART 129 F Portrait Drawing and Painting.

One hour lecture and three hours studio per week. Representation of features and varied facial types in oil paint. Costume, setting, color harmony and portraiture concepts. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 129 F Portrait Drawing and Painting (2-2-2-2)

Advisory: ART 182 F Basic Drawing and 186AF Beginning Life Drawing.

One hour lecture and three hours studio per week. An exploration course in portrait drawing and painting based upon the study of the human head. Facial structure and the representation of many types of people in various art media are explored. Growth of individual expression and development of personal style is encouraged. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 187 F Watercolor for Non-Art Majors (2-2)

Letter grade or credit/no credit option.

One hour lecture and three hours studio per week. A beginner's watercolor painting course with emphasis upon a wide variety of traditional and contemporary techniques and skills. Creative self-expression encouraged in still life, landscape and figurative and abstract approaches. Media possibilities include transparent and opaque watercolor and related materials. Not recommended for art majors. Course may be taken twice for credit. (CSU) (UC) (Degree credit)

ART 188 F Watercolor Painting (3-3-3-3)

Two hours lecture and four hours studio per week. This class is designed specifically for the art major. This course will provide a better understanding of the structure, techniques, and vocabulary of transparent watercolor painting. The course will help students to develop conceptual, perceptual, and technical understanding of the elements of value, texture, color, and space while content, concept and subject matter are being explored. A variety of traditional and contemporary methods are presented through demonstration, lectures, slide presentations, individual instruction, critiques, class discussions, and field trips. The advanced students are encouraged to develop their personal style and own means of expression through a creative, experimental approach to watercolor painting. Course may be taken four times for credit. (CSU) (UC) (Degree credit)

ART 189AF Beginning Painting (3)

Two hours lecture and four hours studio per week. This course approaches painting as a creative process while developing the elementary skills of painting as a means of self-expression. In this course emphasis is upon the fundamentals of composition, color theory, and craftsmanship as applied to painting. Required by art majors. (CSU) (UC) (Degree credit)

ART 189BF Intermediate Painting (3)

Prerequisite: ART 189AF Beginning Painting

Two hours lecture and four hours studio per week. This course is a continued study of painting techniques and media. As a creative process, emphasis is placed upon individual experimentation with multi-media application as well as continued skills development and conceptual application to issues in painting. Recommended for art majors. (CSU) (UC) (Degree credit)

ART 189CF Advanced Painting (3)

Prerequisite: ART 189BF Intermediate Painting

Two hours lecture and four hours studio per week. This course constitutes a study of advanced painting problems stressing experimentation, traditional and contemporary painting composition and methods. This course may be repeated one time. The second semester of the class, emphasis is upon a body of work demonstrating individual conceptualism and material exploration.

ART 194 F Studio Painting Laboratory (1-2)

Fifty-four hours of laboratory per one unit in the painting studio. The lab course provides the opportunity for the painting student to work on new or on-going projects; to learn to operate studio equipment; to have available the supervision of a painting instructor for advice and guidance; to work with a peer group; and to expand and complete work for a portfolio. May be taken for credit up to a maximum of four units.

Independent Studies and Creative Arts

ART 190 F Art Seminar (.5-2, .5-2, .5-2, .5-2)

Prerequisite: ART 189AF Beginning Painting

Lecture/Laboratory hours may vary with credit given. Various classes may be offered from semester to semester, which are designed to meet the interests and needs of students and faculty. Students may enroll up to a maximum of four semesters. (Not currently being offered — if interested, contact Division Office.) (UC credit limitation depending on course content) (CSU) (Degree credit)

ART 196HF Honors Creative Arts (3)

Three hours lecture plus one hour per week arranged in the attendance at museums, concerts, and theatrical performances. This course explores the nature of creativity through exposure to the performing arts, literature, and the fine arts. Honors students will make independent investigations into the various art forms and apply aesthetic theory to discover interrelationships between genres. Students who receive credit in this course may not receive credit in MUS 196HF or THEA 196HF. (CSU) (UC credit limitation) (Degree credit)

ART 299 F Art Independent Study (1-2, 1-2, 1-2)

One hour conference per week. For advanced students who wish to pursue a particular area of art through individual study. Course may be repeated three times for credit. (UC Credit Limitation depending on course content) (CSU) (UC review required.) (UC review required.) (Degree credit)

Automotive Technology

Curriculum leads to the **Associate in Science Degree** and employment in automotive specialties: tune-up and electrical, engine repair, automatic transmissions, brakes and suspensions, power trains, air conditioning, service writing, parts control.

Complete 24 or more units from the following list:

Any Automotive course

MACH 116 F Machine Tools (2)

TECH 081 F Technical Mathematics I (3)

WELD 121AF Introduction to Welding (2)

Automotive Chassis Specialist

The **Automotive Chassis Specialist Certificate** Program requires a total of 15 units in required courses.

Required Courses (15 units)

AUTO 050 F Automotive Specialty Practice (2)

AUTO 065 F Automotive Electricity and Electronics (5)

AUTO 083 F Brake and Suspension Systems Repair (8)

Automotive Maintenance Specialist

The **Automotive Maintenance Specialist Certificate** Program requires a total of 19 units in required courses. This program will help the student become employed as an entry-level automotive maintenance specialist.

Required Courses (19 units)

AUTO 050 F Specialty Practice (2)

AUTO 065 F Automotive Electricity and Electronics (5)

AUTO 082 F Automotive Engine Performance and Drivability (8)

AUTO 089 F Automotive Air Conditioning (4)

Automotive Management Certificate

The **Automotive Management Certificate** Program leads to entry-level employment in dealerships, service establishments, or automotive centers. The certificate also assists students who will be starting self-employment in the auto industry. The emphasis is on automotive management rather than automotive repair. The **Automotive Management Certificate** Program requires a total of 50 units of which 45 units are in required courses. An additional 5 units must be chosen from the restricted electives listed below.

Required Courses (45 units)

COUN 141 F Career Exploration (1)
 AUTO 055 F Automotive Business Management (5)
 AUTO 060 F Automotive Power Trains (5)
 AUTO 065 F Automotive Electrical and Electronic Systems (5)
 AUTO 081 F Engine Rebuilding and Repair (8)
 AUTO 082 F Automotive Engine Performance and Drivability (8)
 AUTO 083 F Brakes and Suspension Systems (8)
 AUTO 084 F Automatic Transmissions (8)
 AUTO 086 F Front Wheel Drive Auto/Transaxle (3)
 AUTO 089 F Automotive Air Conditioning (4)

Restricted Electives (5 units)

MACH 116 F Machine Tools (2)
 BUS 151 F Business Mathematics (3)
 TECH 081 F Technical Mathematics I (3)
 BUS 180 F Entrepreneurship: Small Business Management (3)
 CIS 100 F Introduction to Personal Computers (3)
 BUS 266 F Human Relations in Business (3)
 AUTO 051 F Internship in Automotive Management (1-4)
 ET 100 F Introduction to Environmental Technology (3)

Automotive Service Advisor

The **Automotive Service Advisor Certificate** Program requires a total of 16 units of which 11 units are in required courses. An additional 5 units must be chosen from the restricted electives listed below.

Required Courses (11 units)

AUTO 055 F Automotive Business Management (5)
 BUS 180 F Entrepreneurship: Small Business Management (3)
 CIS 100 F Introduction to Personal Computers (3)

Restricted Electives (5 units)

AUTO 050 F Automotive Specialty Practice (2)
 AUTO 131 F Automotive Fundamentals (4)
 BUS 266 F Human Relations in Business (3)

Automotive Technology

The **Automotive Technology Certificate** Program requires the completion of 32 units of which 28 units must be chosen from required courses. An additional 4 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (choose 28 units)

AUTO 050 F Automotive Specialty Practice (2)
 AUTO 060 F Automotive Power Trains (5)
 AUTO 065 F Automotive Electrical and Electronic Systems (5)
 AUTO 070 F Engine Reconditioning (7)
 AUTO 072 F Automotive Engine Performance (7)
 AUTO 073 F Brake Systems Repair (7)
 AUTO 081 F Engine Rebuilding and Repair (8)
 AUTO 082 F Automotive Engine Performance and Drivability (8)
 AUTO 083 F Brakes and Suspension Systems (8)
 AUTO 084 F Automatic Transmissions (8)
 AUTO 086 F Automatic Transmission Fundamentals (3)
 AUTO 088 F Fuel Systems and Advanced Diagnosis (4)
 AUTO 089 F Automotive Air Conditioning (4)
 AUTO 090 F Emission Control Systems and Advanced Diagnosis (6)
 AUTO 091 F Cylinder Head Repair (4)
 AUTO 096 F Performance Technology (4)

Restricted Electives (4 units)

MACH 116 F Machine Tools (2-2)
 DRAF 070 F Blueprint Reading (2)
 WELD 121AF Introduction to Welding (2)
 WELD 121BF Fundamentals of Inert Gas Welding (2)

Automatic Transmission Specialist

The **Automatic Transmission Specialist Certificate** Program requires a total of 18 units in required courses. This program will help the student become employed as an automatic transmission specialist.

Required Courses (18 units)

AUTO 050 F Automotive Specialty Practice (2)
 AUTO 065 F Automotive Electrical and Electronic Systems (5)
 AUTO 084 F Automatic Transmissions (8)
 AUTO 086 F Automatic Transmission Fundamentals (3)

Emission Control Specialist

The **Emission Control Specialist Certificate** Program requires a total of 16 units in required courses. This program will help the student become employed as an automotive emissions testing and repair specialist, and provide opportunities to study toward National Institute of Automotive Excellence (ASE) certification and toward the State of California emission control license examination.

Required Courses (16 units)

- AUTO 050 F Automotive Specialty Practice (2)
- AUTO 082 F Automotive Engine Performance and Drivability (8)
- AUTO 090 F Emission Control Systems and Advanced Diagnosis (6)

Engine Performance Specialist

The **Engine Performance Specialist Certificate** Program requires a total of 17 units in required courses. This provides preparation for advanced entry-level employment as an automotive technician who will specialize in engine performance diagnosis and drivability problem repair, and will also qualify the student to take the National Institute for Automotive Service Excellence (ASE) A6 Electrical and Electronics and A8 Engine Performance examinations.

Required Courses (17 units)

- AUTO 065 F Automotive Electrical Systems (5)
- AUTO 082 F Automotive Engine Performance and Drivability (8)
- AUTO 088 F Fuel Systems and Advanced Drivability Diagnosis (4)

Fabrication Specialist

The **Fabrication Specialist Certificate** Program requires a total of 18 units in required courses. This certification will be an important first step toward gaining employment in the automotive fabrication area where it is necessary to design and manufacture parts as well as repair them.

Required Courses (18 units)

- AUTO 065 F Automotive Electricity and Electronics (5)
- AUTO 055 F Automotive Business Management (5)
- DRAF 171 F Fundamentals of Drafting (2)
- MACH 116 F Machine Tools (2)
- WELD 121AF Introduction to Welding (2)
- WELD 121BF Fundamentals of Inert Gas Welding (2)

Light Repair Specialist

The **Light Repair Specialist Certificate** Program requires a total of 18 units in required courses. Completion of this program will help the graduate find entry-level employment as an automotive light repair specialist.

Required Courses (18 units)

- AUTO 050 F Automotive Specialty Practice (2)
- AUTO 065 F Automotive Electrical and Electronic Systems (5)
- AUTO 073 F Brake Repair (7)
- AUTO 089 F Air Conditioning (4)

Manual Drive Train Specialist

The **Manual Drive Train Specialist Certificate** Program requires a total of 13 units in required courses. This program will help provide skills necessary to obtain employment in the area of manual transmission, transaxle, driveline, and axle repair. Students will study the material necessary to take the National Institute for Automotive Service Excellence (ASE) examinations in Manual Drive Train and Axle repair and in Automotive Electricity and Electronics.

Required Courses (13 units)

- AUTO 050 F Automotive Specialty Practice (2)
- AUTO 060 F Automotive Power Trains (5)
- AUTO 065 F Automotive Electrical and Electronic Systems (5)

Automotive Courses

AUTO 050 F Automotive Specialty Practice (2-2-2-2)

Corequisite: Concurrent enrollment in any automotive technology course

One hour lecture and up to six hours lab practice per week. Emphasis is placed on the development of skill in the specialty areas of the students' preparation. Lectures cover service department organization, job analysis and information relative to the employer, employee and customer relations. Course may be taken four times for credit. (Degree credit)

AUTO 051 F Internship in Automotive (1-4, 1-4, 1-4, 1-4)

Corequisite: Any vocational automotive class

One hour lecture per week and five hours of supervised employment per week in an automotive dealership or independent service facility. An additional five hours per week of supervised employment is to be completed for each additional unit of credit. This course is designed to provide vocational learning opportunities through employment in an automotive servicing/repair business. No more than three units may be applied toward the degree or certificate. Course may be taken four times for credit. (Degree credit)

AUTO 055 F Automotive Business Management (5)

Advisory: AUTO 131 F Automotive Fundamentals

Four hours lecture and three hours lab per week. The course covers the automotive service management operations of an automotive business/dealership as related to service advisor/manager by focusing on the repair order as a legal document. It also covers the appointment system, telephone skills, warranties, communications strategies, product knowledge, selling skills, proactive customer handling, and multiple ways to reduce costs and improve profits. (Degree credit)

AUTO 060 F Automotive Powertrains (5)

Advisory: AUTO 131 F Automotive Fundamentals

Four hours demonstrated lecture and four hours lab per week. Repair of the manual Rear Wheel Drive (RWD)/Front Wheel Drive (FWD) powertrains including the study of principles of operation, gears, bearings, drive lines, universal joints, CV joints, drive train electrical/electronic systems, and rear axles. The student will perform hands-on laboratory assignments. (Degree credit)

AUTO 065 F Automotive Electrical and Electronic Systems (5)

Advisory: AUTO 131 F Automotive Fundamentals

Four hours lecture and four hours lab per week. An introductory course in the concepts of the electrical system and the electronic control of the automobile. Course instruction will include lecture, demonstration and student application in the use of test equipment on simulator board and in-car diagnosis and repair with electrical diagrams and charts. Instruction for this class will closely parallel topics addressed on the National Institute for Automotive Service Excellence (ASE) Electrical Systems (A6) examination. (Degree credit)

AUTO 070 F Engine Reconditioning (7)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and three hours lab per week. This course covers operating principles, nomenclature, design, diagnostic inspection and reconditioning procedures on contemporary high-tech automotive engines. Use of a computer database and engine improvement software is also covered. (Degree credit)

AUTO 072 F Automotive Engine Performance (7)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and three hours lab per week. Instruction is given on engine tune-up, diagnosis, and repair of the electronic ignition system, emissions control system, and electronic powertrain management systems, including electronic fuel injection. Instruction will be given to prepare the student for the National Institute of Automotive Service Excellence (ASE) Engine Performance (A8) test. Modern test equipment will be utilized in the laboratory sessions. (Degree credit)

AUTO 073 F Brake Systems Repair (7)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and three hours lab per week. Operation, nomenclature, diagnosis, adjustment and repair procedures of automotive brake components, including electronically controlled anti-lock braking systems. Course instruction will include lecture, demonstration, and student application on vehicles in the lab. Instruction for this class will closely parallel topics addressed on the National Institute for Automotive Service Excellence (ASE) Brake Systems (A5) examination. (Degree credit)

AUTO 081 F Engine Rebuilding and Repair (8)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and six hours lab per week. Operating principles, nomenclature, design, and repair procedures on the modern automotive engines. Emphasis is upon procedures of rebuilding an engine while out of the chassis and repairing while in the chassis. Instruction for this class will closely parallel topics addressed on the National Institute for Automotive Service Excellence (ASE) Engine Repair (A1) examination. (Degree credit)

AUTO 082 F Automotive Engine Performance and Drivability (8-8)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and six hours lab per week. Engine tune-up, diagnosis, and repair of the ignition system (electronic, distributor-less, and electromechanical), fuel injection system, including the computer control system, and the emission control system. Diagnosis of engine performance and drivability problems is emphasized. Instruction is provided on domestic and imported vehicles. Modern test equipment will be utilized in lab sessions where live cars are repaired. Instruction for this class will closely parallel topics addressed on the National Institute for Automotive Excellence (ASE) Engine Performance (A8) examination. Course may be taken twice for credit. First semester students will concentrate on General Motors electronic control systems; those repeating the course will concentrate on Ford, Chrysler and import vehicle electronic control systems. (Degree credit)

AUTO 083 F Brake and Suspension Systems Repair (8)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and six hours lab per week. Operation, nomenclature, adjustment and repair procedures of automotive brake, suspension, and steering systems. Instruction will closely parallel topics addressed on the National Institute for Automotive Service Excellence (ASE) Suspension and Steering (A4) and Brakes (A5) examinations. (Degree credit)

AUTO 084 F Automatic Transmission (8)

Advisory: AUTO 131 F Automotive Fundamentals

Six hours demonstrated lecture and six hours lab per week. Technical principles of automatic transmissions. Theory and principles of operation of planetary gear systems and hydraulic systems of automatic transmission. Operating principles, overhaul and adjustment and servicing procedures of automatic transmissions. Design and operation of fluid couplings of torque converters. Students to perform testing, diagnosis, maintenance, and overhaul on various types of automatic transmissions including electronically controlled transmissions and transaxles. Instruction for this class will closely parallel topics addressed on the National Institute for Automotive Service Excellence (ASE) Automatic Transmission/Transaxle (A2) examination. (Degree credit)

AUTO 086 F Automatic Transmission Fundamentals (3-3)

Advisory: AUTO 131 F Automotive Fundamentals

Two hours lecture and three hours lab per week. Fundamentals of automatic transmissions, theory and operation of planetary gears and related gear systems, principles of hydraulic systems, design and operation of torque converters and lock-up type converters, and operation of electronic controls. Emphasis will be on rear wheel drive transmissions. Diagnosis and maintenance fundamentals, along with service, adjustment and overhaul procedures, also will be emphasized. Instruction for this class will closely parallel topics addressed on the National Institute for Automotive Service Excellence (ASE) Automatic Transmission and Transaxle (A2) examination. The course may be taken twice for credit. First semester students will study hydraulic controlled transmission; students repeating the course will study electronically controlled transmissions. (Degree credit)

AUTO 088 F Fuel Systems and Advanced Drivability Diagnosis (4)

Advisory: AUTO 131 F Automotive Fundamentals

Three hours demonstrated lecture and three hours laboratory per week. Instruction includes the theory and principles of engine control systems diagnosis and automotive emission control systems. This course prepares students for the National Institute of Automotive Service Excellence (ASE) A8 and L1 tests. Modern diagnostic equipment including the exhaust gas analyzer, digital meters, scan tools, and digital oscilloscope will be used in lab sessions. (Degree credit)

AUTO 089 F Automotive Air Conditioning (4)

Advisory: AUTO 131 F Automotive Fundamentals

Four hours demonstrated lecture and two hours lab per week. Theory and principles of automotive air conditioning. Study of design features of various type systems. Demonstrated lectures on servicing, maintenance, diagnosis, and repair procedures. Students to perform on laboratory units or on other vehicles. (Degree credit)

AUTO 090 F Emission Control Systems and Advanced Diagnosis (6)

Six hours lecture and two hours lab per week. Instruction includes the theory and principles of automotive emission control systems. This course prepares students for the State of California Smog Check Mechanic Test and for the National Institute for Automotive Service Excellence (ASE) A8 and L1 examinations. Modern diagnostic equipment including the exhaust gas analyzer, digital meters, and engine oscilloscope will be used in lab sessions. (Degree credit)

AUTO 091 F Cylinder Head Repair (4)

Three hours demonstrated lecture and three hours lab per week. Covers operating principles, nomenclature, design and repair procedures on modern cylinder heads. Emphasis is on cylinder head repair procedures that are performed by small garages, including diagnosis, bench work and removal and installation. (Degree credit)

AUTO 096 F Performance Technology (4)

Advisory: AUTO 131 F Automotive Fundamentals

Three hours lecture and three hours lab per week. Practical applications of performance and durability pertaining to motorized vehicles. Covers areas of engine, drivelines, brakes, and suspension necessary for better performance and increased safety and durability. (Degree credit)

AUTO 131 F Automotive Fundamentals (4)

Four hours lecture and two hours demonstration and lab per week. Emphasis is placed on the basic operating principles, nomenclature, car care, inspection, preventive maintenance and minor repair procedures. (CSU) (Degree credit) (For Industrial Arts Vocational Majors)

Biology

The **Biology Associate in Arts Degree** program requires a total of 18 units of which 7-10 units are in required courses. An additional 8-11 units may be chosen from the required courses or restricted electives listed below.

Required Courses (7-10)**Any two of the following:**

ANAT	231 F	General Human Anatomy	(4)
ANAT	240 F	Human Physiology	(5)
BIOL	222 F	Marine Biology	(3)
BIOL	266 F	General Zoology	(5)
BIOL	268 F	General Botany	(5)
BIOL	272 F	Cell and Molecular Biology	(4)
BIOL	274 F	General Ecology	(4)
BIOL	276 F	Genetics and Evolutionary Biology	(4)
MICR	262 F	General Microbiology	(5)

Additional 8-11 units from the above list and/or the following:

CHEM	111AF	General Chemistry	(5)
CHEM	111BF	General Chemistry	(5)
CHEM	200 F	Elementary Organic Chemistry	(3)
CHEM	211AF	Organic Chemistry	(5)
CHEM	211BF	Organic Chemistry	(5)
MATH	141 F	College Algebra	(4)
MATH	142 F	Trigonometry	(4)
MATH	150AF	Calculus	(4)
MATH	150BF	Calculus	(4)
PHYS	205 F	College Physics	(4)
PHYS	206 F	College Physics	(4)
PHYS	210 F	Physics	(4)
PHYS	211 F	Physics	(4)
PHYS	221 F	General Physics	(4)
PHYS	222 F	General Physics	(4)
PHYS	223 F	General Physics	(4)

Biology Technician

The **Biological Technician Associate in Science Degree** program requires a total of 18 units chosen from the courses listed below.

Normal High School Preparation: Biology Recommended Complete 9-10 units from the following:

BIOL	101 F	General Biology	(5) or
BIOL	170 F	Organismal Biology	(5)
BIOL	109 F	Genetics and Biotechnology in Society	(3)
CHEM	101 F	Introduction to Chemistry	(5) or
CHEM	107 F	Elementary Chemistry	(5)
CIS	111 F	Introduction to Information Systems	(3)
ELEC	100 F	DC/AC Theory	(1-4)
ELEC	100LF	DC/AC Lab	(1-2)
HORT	001 F	Principles of Horticulture	(4)
HORT	002 F	Principles of Horticulture	(4)
MICR	220 F	Medical Microbiology	(4)
TECH	082 F	Technical Mathematics	(3)

Select additional 8-9 units from below:

BIOL	222 F Marine Biology (3)
CHEM	111AF Chemistry (5)
ESC	130 Introduction to Oceanography
HORT	205 F Applied Entomology (3)
MICR	262 F Microbiology (5)

*Biology Courses***BIOL 060 F Fundamentals of Biology (3)**

Four hours lecture/discussion per week for twelve weeks. This course is intended to provide an introduction to the fundamental concepts and terminology necessary for the basic understanding of science and especially biology. This class is designed for students with limited high school background in science that wish to take college level biology classes. Topics covered will include scientific method, taxonomic system, basic chemistry, cells, energetics, heredity, ecology, and evolution. (Non-degree credit)

BIOL 071 F Biological Techniques and Applications (4)

Three hours lecture and three hours laboratory per week. A semester course introducing students to modern laboratory skills. Various instruments are used to sample and collect data under laboratory and natural conditions. Course includes units on lab safety; basic microbiology; culture techniques; histotechnology; environmental sampling and monitoring systems; the fundamentals of experimental design; and applications of the microcomputer. Class emphasizes practical hands-on experience and can help prepare students for entry-level positions in industry. (Degree credit)

BIOL 100 F General Biology (4)

Four hours lecture or equivalent per week. This course is an introductory non-majors course that will 1) emphasize the fundamental understanding of basic biological principles, 2) illustrate the structure and function of living organisms and their relationship to the physical world, and 3) develop the student's ability to make effective decisions regarding contemporary issues in natural sciences. Topics include 1) the structure and function of life at the cellular and organismic levels, 2) metabolism, photosynthesis and energetics, 3) cell division and animal development, 4) classical and molecular genetics, 5) biotechnical development and applications, 6) evolution and adaptations of living organisms, and 7) ecological relationship and environmental conservation. (CSU) (UC Credit Limitation: BIOL 100 F and 101 F combined: maximum credit one course) (Degree credit)

BIOL 101 F General Biology (5)

Four hours lecture and three hours lab per week. This integrated lecture-laboratory course will 1) emphasize the fundamental understanding of basic biological principles, 2) illustrate the structure and function of living organisms and their relationship to the physical world, and 3) develop the student's ability to make effective decisions regarding contemporary issues in natural sciences. Lecture topics include 1) the structure and function of life at the cellular and organismic levels, 2) metabolism, photosynthesis and energetics, 3) cell division and animal development, 4) classical and molecular genetics, 5) biotechnical development and applications, 6) evolution and adaptations of living organisms, and 7) ecological relationships and environmental conservation. (CSU) (UC; no UC credit if taken after a 200 level Biology) (Degree credit)

BIOL 101HF Honors General Biology (5)

Four hours lecture and three hours lab per week. This integrated lecture-laboratory course will 1) emphasize the fundamental understanding of basic biological principles, 2) illustrate the structure and function of living organisms and their relationship to the physical world, and 3) develop the student's ability to make effective decisions regarding contemporary issues in natural sciences. Lecture topics include 1) the structure and function of life at the cellular and organismic levels, 2) metabolism, photosynthesis and energetics, 3) cell division and animal development, 4) classical and molecular genetics, 5) biotechnical development and applications, 6) evolution and adaptations of living organisms, and 7) ecological relationships and environmental conservation. The honors section will include extra computer simulations, reading, writing assignments and field trips. (CSU) (UC; no UC credit if taken after a 200 level Biology) (Degree credit)

BIOL 102 F Human Biology (3)

Three hours lecture and discussion per week. Integrated lectures, discussions and films are designed to study modern biological concepts presented in a human context. The concepts include biological chemistry, cellular basis of life, energetics, cell cycle, anatomy, physiology, reproduction, development, genetics, demography, ecology and evolution. Included in the course are discussions of current topics on environmental, nutritional and public health issues as they relate to the human condition. (CSU) (UC; no UC credit if taken after BIOL 101 F or 101HF) (Degree credit)

BIOL 102LF Human Biology Laboratory (1)

Corequisite: BIOL 102 F Human Biology

Three hours lab per week. This laboratory supplements the BIOL 102 F Human Biology lecture. This is a general education course for non-biology majors providing direct participation in experiments, demonstrations, and discussions. Topics include: elements of human anatomy and physiology, fitness, nutrition, disease, elements of human heredity and environmental adaptations. (CSU) (UC; no UC credit if taken after BIOL 101 F or 101HF) (Degree credit)

BIOL 104 F Biology of Insects and Spiders (3)

Three hours lecture per week. This course familiarizes students with basic biological principles as illustrated by insects and spiders. Special emphasis is placed on their relations to plants and animals including humans. Living and preserved insects and spiders and many other visual aids will be used to help describe in detail life cycles, evolution, adaptations to local environment and the major taxonomic groups. (CSU) (UC) (Degree credit)

BIOL 108 F Plants and People (3)

Letter grade or credit/no credit option.

Three hours lecture per week. This class introduces the history, uses of plants and plant products that have played major roles in the molding of civilization. Plants used by native Americans will be observed and studied. Lectures are integrated with discussion, demonstration and hands-on learning activities. Specific topics include plant structure, function, origins of agriculture and domestication. Historical and contemporary uses of important plant products such as drugs, medicines, oils, resins, beverages, foods and industrial products are included. The nutritional values of major food plants are evaluated. (CSU) (UC) (Degree credit)

BIOL 109 F Genetics and Biotechnology in Society (3)

Three hours lecture per week. This introductory survey course will cover the basic concepts of heredity and current advanced in biotechnology, such as cloning, recombinant DNA technology, DNA fingerprinting and gene therapy. This course will emphasize the applications, social consequences and ethical implications of biotechnology in medicine and agriculture. (CSU) (UC; no UC credit if taken after a 200 level Biology) (Degree credit)

BIOL 109LF Genetics and Biotechnology in Society Laboratory (2)

Six hours lab per week. A semester course introducing students to the modern biological laboratory. Various instruments used to sample, measure, and collect data under laboratory and natural conditions. Course includes units on lab safety; basic microbiology; culture techniques; molecular analysis; and applications of the computer. Class emphasizes practical hands-on experience and an understanding of the basic principles behind the technologies. (CSU) (Degree credit)

BIOL 141 F Marine Mammal Biology and Conservation (3)

Three hours lecture per week. This course will provide an overview of the diversity of marine mammal species, along with their natural history, behavior, physiology, and ecology. It will introduce students to the techniques used to study marine mammals, and their applications to conservation and management issues. Required field trips are included. (CSU) (UC) (Degree credit)

BIOL 170 F Organismal Biology (5)

Prerequisite: High School Biology with a grade of "B" or better. Advisory: BIOL 101 F with a "C" or better or advanced placement high school biology with a grade of 3 or better on the placement exam.

Three hours lecture, three hours lab, and one hour of discussion per week. This course is designed to familiarize students with the diversity and biology of living organisms. Integrated laboratory and lecture sessions emphasize the classification of organisms with respect to the evolution of anatomical and physiological adaptations. There are required field trips for this class. This class is designed for Biological Science majors in transfer programs. (CSU) (UC) (Degree credit)

BIOL 222 F Marine Biology (3)

Prerequisite: A biological science laboratory course with a grade of "C" or better.

Two hours lecture and three hours lab and field work per week. This course presents an overview of life in the sea. Lectures, labs and field-work provide an introduction to the diversity of marine organisms and the physical and biological processes that influence their structure, life history, behavior, and distribution. An emphasis is placed on the interactions of these organisms and processes in a variety of marine habitats. Marine ecology and conservation are also discussed. Both lab and field exercises will be used to provide hands-on experience with marine organisms, habitats, and research techniques. (CSU) (UC) (Degree credit)

BIOL 266 F General Zoology (5)

Three hours lecture and six hours lab per week. This course is designed to familiarize students with the animal kingdom. Integrated laboratory and lecture sessions emphasize the evolution of anatomical, physiological and behavioral adaptations. This class is designed for Biological Science majors in transfer programs. (CSU) (UC) (Degree credit)

BIOL 268 F General Botany (5)

Prerequisite: A biological science laboratory course with a grade of "C" or better.

Three hours lecture and six hours lab/field work per week. Study of structure and function of roots, stems, leaves, flowers, fruits, and seeds of the flowering plants. Characteristics and life cycles of some of the algae, fungi, mosses, ferns, club mosses, and cone-bearing plants are covered. Environmental relationships, classification, genetics, propagation, and the applications of these to agriculture and forestry are included. (CSU) (UC) (Degree credit)

BIOL 272 F Cell and Molecular Biology (4)

Prerequisite: BIOL 170 F Organismal Biology and one semester of college chemistry with a grade of "C" or better

Three hours of lecture/discussion and three hours of lab per week. Integrated lectures and laboratories are designed to 1) develop a strong foundation in biological facts, concepts, and theoretical models, 2) extend the student's ability to solve scientific problems through data collection and analysis, and 3) provide training in a variety of laboratory techniques and instrumentation used in modern biology. Discussion topics which are supported by laboratory experiences include (a) the molecular basis of life, (b) tissue, (c) enzyme kinetics, (d) gene expression, (e) development, and (f) immunology. Designed for Biological Sciences majors in transfer programs. (CSU) (UC) (Degree credit)

BIOL 274 F General Ecology (4)

Prerequisite: BIOL 170 F Organismal Biology

Three hours classroom lecture, and three hours of lab/field work per week. Two weekend field trips are required. Field trips, including an overnight trip, are required. This course is designed to familiarize students with basic principles governing interactions between organisms and the environment. Integrated lectures, field trips, and laboratory sessions emphasize basic ecological principles and relationships. These include identification of plants and animals, community analysis, environmental survey techniques, laws of thermodynamics, behavioral and physiological adaptations of organisms, and ecological models. (CSU) (UC) (Degree credit)

BIOL 276 F Genetics and Evolutionary Biology (4)

Prerequisite: BIOL 272 F Cell and Molecular Biology or equivalent

Three hours lecture and three hours lab per week. This course is a comprehensive survey of the processes and products of genetics. Through a review of experimental evidence, students evaluate the basic tenets of molecular, transmission and population genetics, and use the science of genetics to appraise the relationship of genetics to the processes and products of microevolution and macroevolution. Laboratory topics include DNA replication/repair, transcription and translation and regulation of gene expression. The philosophy and methods of science, as well as the theory of evolutionary thought are integrated throughout. Field trips may be required. (CSU) (UC) (Degree credit)

BIOL 299 F Biological Science Independent Study (1-1-1)

Prerequisite: A 200-level course in the Biological Sciences Division with a grade of "B" or better.

Laboratory and/or field investigations with the guidance of members of the Life Sciences faculty. Hours to be arranged. Primarily for majors in Life Sciences who wish to increase their knowledge of the sciences through individual study and small group conferences. Independent laboratory research problems with staff supervision may be approved. Outside reading and written report required. Elective credit in the sciences area. Course may be taken three times for credit. (CSU) (UC review required.) (Degree credit)

Business

Business Administration A.A. Degree

Curriculum leads to the **Associate in Arts Degree in Business Administration**. This degree requires 18 units of which 18 units are in required courses listed below.

Complete 18 units from the following:

ACCT	101AF	Financial Accounting (4)
ACCT	101BF	Managerial Accounting (4)
BUS	131 F	Principles of International Business (3)
BUS	100 F	Introduction to Business (3)
BUS	211 F	Writing for Business (3)
BUS	240 F	Legal Environment of Business (3) or
BUS	241AF	Business Law (3) (See counselor for determination of correct course.)
CIS	111 F	Introduction to Information Systems (3)
ECON	101 F	Principles of Economics — Micro (3)
ECON	102 F	Principles of Economics — Macro (3)
MATH	120 F	Introductory Probability and Statistics (4) or
MATH	130 F	Calculus for Business (4) or
MATH	150AF	Calculus (4)
MKT	100 F	Introduction to Marketing (3)
PHIL	160 F	Introduction to Ethics (3) or
PHIL	170 F	Logic and Critical Thinking (3)

Business Management A.S. Degree

Curriculum leads to the **Associate in Science Degree in Business Management**. This degree requires 29-30 units chosen from the required courses listed below.

Required Courses (6 units):

BUS	262 F	Principles of Management (3)
CIS	100 F	Introduction to Personal Computers (3)

One course from the following for a total of 3-4 units:

ACCT	001 F	Accounting for Small Business (3)
ACCT	100BF	Financial Accounting Principles (3)
ACCT	101AF	Financial Accounting (4)

One course from the following for a total of 3 units:

BUS	111 F	Business Communications (3)
BUS	211 F	Writing for Business (3)

One course from the following for a total of 3 units:

BUS	100 F	Introduction to Business (3)
BUS	180 F	Small Business Management (3)

One course from the following for a total of 3 units:

BUS	162 F	Business Economics (3)
BUS	251 F	Business Finance (3)
ECON	101 F	Principles of Economics — Micro (3)

One course from the following for a total of 3 units:

(See counselor for determination of correct course.)

BUS	240 F	Legal Environment of Business (3)
BUS	241AF	Business Law (3)

One course from the following for a total of 3 units:

BUS	266 F	Human Relations in Business (3)
BUS	267 F	Principles of Supervision (3)

One course from the following for a total of 2 units:

CIS	150 F	Introduction to the Internet (2)
MKT	151 F	Internet Marketing (2)

One course from the following for a total of 3 units:

MKT	100 F	Introduction to Marketing (3)
BUS	224 F	International Marketing (3)

Business and Technology Skills Certificate

Curriculum leads to the **Business and Technology Skills Certificate** and/or entry-level employment in business. The certificate program is 38-44 units and satisfies the goals of Tech Prep and SCANS. Students create a career path and select electives. This certificate program is designed to promote communications, decision-making and interpersonal skills used in business. A minimum grade of "C" is required in each course taken.

Required Courses (28 units)

BUS	111 F	Business Communications (3)
BUS	151 F	Business Mathematics (3)*
BUS	262 F	Principles of Management (3)
BUS	266 F	Human Relations in Business (3)
CIS	100 F	Introduction to Personal Computers (3)*
COUN	141 F	Career Exploration (1)
LANG	101 F	Elementary Foreign Language (3)* or Course which meets Multicultural Course Requirement
MKT	208 F	Principles of Selling (3)
OT	080 F	Keyboarding-Beginning (1.5)*
OT	081 F	Keyboarding-Speed & Accuracy (1.5)*
READ	142 F	College Reading: Logical Analysis and Evaluation (3)

* Students completing one year of high school algebra with a grade of "C" or better meet the business mathematics (BUS 151 F) requirement; students completing a portfolio or MOUS tests (Word, Excel and Access) meet the requirement for personal computers (CIS 100 F); students who test out at 35 net WPM on a 5 minute timed test meet the keyboarding requirement (OT 080 F and OT 081 F); and students who complete one year of high school foreign language with a grade of "C" or better meet the foreign language/multicultural course requirement (LANG 101 F). Classes that satisfy the Multicultural Education Requirement are listed under Graduation Requirements in this catalog.

Restricted Electives (10-16 units)

Student selects four electives that have been pre-approved by the counselor and department coordinator and that provide the skills required for the student's career path. Student is responsible for completing any necessary prerequisites.

- BUS 061 F Business Skills Internship (1-4)
 TECH Elective 1 (3)
 TECH Elective 2 (3)
 TECH Elective 3 (3)
 TECH Elective 4 (3)

Business Management Certificate

The **Business Management Certificate** requires the completion of 29-30 units chosen from the courses listed below. A minimum grade of "C" required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required course:

- CIS 100 F Introduction to Personal Computers (3)

One course from the following for a total of 3-4 units:

- ACCT 001 F Accounting for Small Business (3)
 ACCT 100BF Financial Accounting Principles (3)
 ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

- BUS 111 F Business Communications (3)
 BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

- BUS 100 F Introduction to Business (3)
 BUS 180 F Small Business Management (3)

One course from the following for a total of 3 units:

- BUS 162 F Business Economics (3)
 BUS 251 F Business Finance (3)
 ECON 101 F Principles of Economics — Micro (3)

One course from the following for a total of 3 units

(See counselor for determination of correct course)

- BUS 240 F Legal Environment of Business (3)
 BUS 241AF Business Law (3)

One course from the following for a total of 3 units:

- BUS 090 F Current Issues in Business (.5-3) (Must take a total of 3 units to meet requirement)
 BUS 262 F Principles of Management (3)

One course from the following for a total of 3 units:

- BUS 266 F Human Relations in Business (3)
 BUS 267 F Principles of Supervision (3)

One course from the following for a total of 2 units:

- BUS 269 F Managing Business Projects (2)
 CIS 150 F Introduction to Internet (2)
 MKT 151 F Internet Marketing (2)

One course from the following for a total of 3 units:

- BUS 224 F International Marketing (3)
 MKT 100 F Introduction to Marketing (3)

E-Business Development Certificate

The **E-Business Development Certificate** requires the completion of 15-17 units chosen from the required courses listed below.

Required Courses (9 units):

- BUS 170 F Principles of E-Business (3)
 BUS 182 F Doing Business Online (2)
 CIS 150 F Introduction to Internet (2)
 MKT 151 F Internet Marketing (2)

One course from the following for a total of 2-3 units:

- BUS 180 F Small Business Management (3) or
 BUS 181 F Business Plan Development (2)

One course from the following for a total of 2-3 units:

- CIS 100 F Introduction to Personal Computers (3)
 CIS 105 F Spreadsheet I (2)

One course from the following for a total of 2 units:

- CIS 050 F Web Page Design I (2)
 CIS 152 F Web Page Design II (2)

Entrepreneurship A.S. Degree

Curriculum leads to the **Associate in Science Degree in Entrepreneurship**. This degree requires 29-30 units chosen from the required courses listed below.

Required Courses (6 units):

- BUS 180 F Small Business Management (3)
 CIS 100 F Introduction to Personal Computers (3)

One course from the following for a total of 3-4 units:

- ACCT 001 F Accounting for Small Business (3)
 ACCT 100BF Financial Accounting Principles (3)
 ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

- BUS 111 F Business Communications (3)
 BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

- BUS 100 F Introduction to Business (3)
 BUS 170 F Principles of E-Business (3)

One course from the following for a total of 3 units:

BUS 162 F Business Economics (3)
 BUS 251 F Business Finance (3)
 ECON 101 F Principles of Economics—Micro (3)

One course from the following for a total of 2 units:

BUS 181 F Business Plan Development (2)
 BUS 182 F Doing Business Online (2)

One course from the following for a total of 3 units:

(See counselor for determination of correct course)
 BUS 240 F Legal Environment of Business (3)
 BUS 241AF Business Law (3)

One course from the following for a total of 3 units:

BUS 266 F Human Relations in Business (3)
 BUS 267 F Principles of Supervision (3)

One course from the following for a total of 3 units:

MKT 100 F Introduction to Marketing (3)
 MKT 201 F Small Business Promotions (3)

Entrepreneurship Certificate

The **Entrepreneurship Certificate** requires the completion of 29-30 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (6 units):

BUS 180 F Small Business Management (3)
 CIS 100 F Introduction to Personal Computers (3)

One course from the following for a total of 3-4 units:

ACCT 001 F Accounting for Small Business (3)
 ACCT 100BF Financial Accounting Principles (3)
 ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

BUS 111 F Business Communications (3)
 BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

BUS 100 F Introduction to Business (3)
 BUS 170 F Principles of E-Business (3)

One course from the following for a total of 3 units:

BUS 162 F Business Economics (3)
 BUS 251 F Business Finance (3)
 ECON 101 F Principles of Economics — Micro (3)

One course from the following for a total of 2 units:

BUS 181 F Computerized Business Plan Development (2)
 BUS 182 F Doing Business Online (2)
 BUS 269 F Managing Business Projects (2)

One course from the following for a total of 3 units

(See counselor for determination of correct course)
 BUS 240 F Legal Environment of Business (3)
 BUS 241AF Business Law (3)

One course from the following for a total of 3 units:

BUS 090 F Current Issues in Business (.5-3) (Must take 3 units to meet requirement)
 BUS 266 F Human Relations in Business (3)
 BUS 267 F Principles of Supervision (3)

One course from the following for a total of 3 units:

MKT 100 F Introduction to Marketing (3)
 MKT 201 F Small Business Promotions (3)

International Business Management A.S. Degree

Curriculum leads to the **Associate in Science Degree in International Business Management**. This degree requires 29-30 units of which all 29-30 units are required courses.

Required Courses (15 units):

BUS 131 F Principles of International Business (3)
 BUS 132 F Principles of Import/Export (3)
 BUS 224 F International Marketing (3)
 BUS 225 F International Business Management (3)
 CIS 100 F Introduction to Personal Computers (3)

One course from the following for a total of 3-4 units:

ACCT 001 F Accounting for Small Business (3)
 ACCT 100BF Financial Accounting Principles (3)
 ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

BUS 111 F Business Communications (3)
 BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

BUS 100 F Introduction to Business (3) or
 BUS 180 F Small Business Management (3)

One course from the following for a total of 3 units:

BUS 240 F Legal Environment of Business (3) or
 BUS 241AF Business Law (3) (See counselor for determination of correct course)

One course from the following for a total of 2 units:

CIS 150 F Introduction to Internet (2) or
 MKT 151 F Internet Marketing (2)

International Business Certificate

The **International Business Certificate** requires a total of 9 units.

Required Courses (9 units)

- BUS 131 F Principles of International Business (3)
- BUS 132 F Principles of Import/Export (3)
- BUS 224 F International Marketing (3) or
- BUS 225 F International Management (3)

International Business Management Certificate

The **International Business Management Certificate** requires the completion of 29-30 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

It is strongly recommended that students majoring in International Business become proficient in one or more foreign languages. The following languages are offered in the Foreign Language Department: Chinese, French, German, Italian, Japanese, and Spanish.

Required Courses (15 units):

- BUS 131 F Principles of International Business (3)
- BUS 132 F Principles of Import/Export (3)
- BUS 224 F International Marketing (3)
- BUS 225 F International Management (3)
- CIS 100 F Introduction to Personal Computers (3)

One course from the following for a total of 3-4 units:

- ACCT 001 F Accounting for Small Business (3)
- ACCT 100BF Financial Accounting Principles (3)
- ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

- BUS 111 F Business Communications (3)
- BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

- BUS 100 F Introduction to Business (3)
- BUS 180 F Small Business Management (3)

One course from the following for a total of 3 units:

- (See counselor for determination of correct course)
- BUS 240 F Legal Environment of Business (3)
 - BUS 241AF Business Law (3)

One course from the following for a total of 2 units:

- MKT 150 F Introduction to Internet (2)
- MKT 151 F Internet Marketing (2)

Managerial Communications Certificate

The **Managerial Communications Certificate** requires a total of 9 units of which 9 units are required courses.

Required Courses (9 units):

- BUS 211 F Writing for Business (3)
- BUS 290 F Managerial Communications (3)
- BUS 266 F Human Relations in Business (3) or
- MKT 208 F Principles of Selling (3)

Marketing Management A.S. Degree

Curriculum leads to the **Associate in Science Degree in Marketing Management**. This degree requires 29-30 units chosen from the required courses listed below.

Required Courses (5 units):

- CIS 100 F Introduction to Personal Computers (3)
- MKT 151 F Internet Marketing (2)

One course from the following for a total of 3-4 units:

- ACCT 001 F Accounting for Small Business (3)
- ACCT 100BF Financial Accounting Principles (3)
- ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

- BUS 111 F Business Communications (3)
- BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

- BUS 100 F Introduction to Business (3)
- BUS 180 F Small Business Management (3)

One course from the following for a total of 3 units:

- BUS 162 F Business Economics (3)
- BUS 170 F Principles of E-Business (3)
- ECON 101 F Principles of Economics — Micro (3)

One course from the following for a total of 3 units:

- (See counselor for determination of correct course)
- BUS 240 F Legal Environment of Business (3)
 - BUS 241AF Business Law (3)

One course from the following for a total of 3 units:

- BUS 224 F International Marketing (3)
- MKT 100 F Introduction to Marketing (3)

One course from the following for a total of 3 units:

- MKT 103 F Principles of Advertising (3)
- MKT 205 F Multicultural Markets in the U.S. (3)

One course from the following for a total of 3 units:

- MKT 201 F Small Business Promotions (3)
- MKT 208 F Principles of Selling (3)

Marketing Management Certificate

The **Marketing Management Certificate** requires completion of 28-30 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (5 units):

CIS 100 F Introduction to Personal Computers (3)
MKT 151 F Internet Marketing (2)

One course from the following for a total of 3-4 units:

ACCT 001 F Accounting for Small Business (3)
ACCT 100BF Financial Accounting Principles (3)
ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

BUS 111 F Business Communications (3)
BUS 211 F Writing for Business (3)

One course from the following for a total of 3 units:

BUS 100 F Introduction to Business (3)
BUS 180 F Small Business Management (3)

One course from the following for a total of 3 units:

BUS 162 F Business Economics (3)
BUS 170 F Principles of E-Business (3)
ECON 101 F Principles of Economics — Micro (3)

One course from the following for a total of 3 units:

(See counselor for determination of correct course)
BUS 240 F Legal Environment of Business (3)
BUS 241AF Business Law (3)

One course from the following for a total of 3 units:

BUS 224 F International Marketing (3)
MKT 100 F Introduction to Marketing (3)

One course from the following for a total of 3 units:

MKT 103 F Principles of Advertising (3)
MKT 205 F Multicultural Markets in U.S. (3)

One course from the following for a total of 2-3 units:

BUS 269 F Managing Business Projects (2)
MKT 090 F Current Issues in Marketing (.5-3) (Must take a minimum of 2 units to meet requirement)
MKT 201 F Small Business Promotions (3)
MKT 208 F Principles of Selling (3)

Project Management Certificate

The Project Management Certificate program requires a total of 6 units of which 6 units are in required courses.

Required Courses (6 units):

BUS 269 F Managing Business Projects (2)
CIS 120AF Project Management I (2)
CIS 120BF Project Management II (2)

Business Management Consumer-Related Courses

BUS 021 F Securities Market (1)

Credit/no credit only

One hour lecture per week. This course provides an overview of the securities market. Topics to be discussed include types of markets, economic benefits, regulation, types of securities, participants in the market, brokerage houses, types of trades and orders, sources of investment information, and services offered by various types of investment professionals. (Degree credit)

BUS 022 F Common Stocks (1)

Credit/no credit only

One hour lecture per week. This course is an introduction to fundamental and technical analysis as it relates to common stock. Topics to be discussed include total return concept, return-risk characteristics, rights of stockholders, advantages and disadvantages of stock ownership, and basic valuation methods. An introduction to technical analysis with emphasis on chart patterns and technical indicators is also covered. (Degree credit)

BUS 023 F Fixed Income Securities (1)

Credit/no credit only

One hour lecture per week. This course covers the different types of fixed-income securities and their characteristic features, the rights of security holders, and basic valuation approaches. (Degree credit)

BUS 024 F Stock Options (1)

Credit/no credit only. Recommended: BUS 021 F The Securities Market.

One hour lecture per week. This course provides an introduction to put and call options. Topics to be discussed include the options market, mechanics of investing in options, basic options strategies, and return-risk characteristics. (Degree credit)

BUS 025 F Investment and Retirement Plans (1)

Credit/no credit only

One hour lecture per week. This course provides the fundamental concepts of mutual fund investing. The different types of investment companies, unique features, and advantages and disadvantages are covered. An overview of tax-deferred retirement plans is presented. Focus will be on managing self-directed IRA's and Keogh Plans. (Degree credit)

BUS 101 F Personal Financial Management (3)

Three hours lecture per week. This basic course covers the proper management of personal incomes and expenditures. The course includes a study of inflation and business cycles; commercial and savings accounts; budgets, charge accounts, installment buying, and borrowing money; property, income, estate, inheritance, and gift taxes; life, health, accident, property and miscellaneous insurance; pension plans and Social Security; owning a home; investing in securities; and trust funds and wills. (CSU) (Degree credit)

BUS 201 F Personal Investments (3)

Three hours lecture per week. This course provides a comprehensive study of stocks, bonds, and related securities that includes a detailed study of the nature of these securities and their markets. Emphasis is placed on personal investment objectives for growth, growth with incomes, and income with preservation of capital together with taxes that affect investment policy. (CSU) (Degree credit)

English-Related Courses

BUS 055 F Business English (3)

Three hours lecture per week. A basic business English review course intended for the vocational business student. Practice is provided in essentials of grammar, punctuation, English usage, capitalization, number usage, sentence structure, and spelling. Basic principles of letter writing are introduced. (This course does not meet English requirements for transfer to CSU) (Non-degree credit)

BUS 111 F Business Communications (3)

Three hours lecture per week. This course provides instruction and practice in writing in English usage, writing business letters, interoffice memoranda, and reports, business English, mechanics, and appearance. Included are letters of inquiry, order and acknowledgement, sales, application, claims and adjustment and collection. One original research report is required. Meeting the needs of the readers underlies each section of study. (CSU) (Degree credit)

BUS 113 F Introduction to Technical Writing (3)

Three hours lecture per week. This introductory technical writing class covers research, editing, proofreading and writing skills. Designed for students who wish to develop their professional technical writing skills and for students who are exploring careers as technical writers or editors. Emphasis is placed on organizing technical data into a specified format and on editing technical material. (CSU) (Degree credit)

BUS 211 F Writing for Business (3)

Prerequisite: ENGL 100 F College Writing with a grade of "C" or better

Three hours lecture per week. An intermediary course to communication skills and knowledge needed in organizations. This course will include communication fundamentals; ethical, legal, multicultural issues; correspondence applications; employment communication; oral and nonverbal communication; report writing; management presentations; team/group building skills; research methods; and running effective meetings and conferences. Computer-mediated applications will be presented throughout the course. (CSU) (Degree credit)

International Business

BUS 131 F Principles of International Business (3)

Three hours lecture per week. This course provides an overview of the global business environment by examining the similarities and differences in comparison with the United States of doing business in various contemporary foreign cultural settings. It focuses on the differences of the economic, political, financial, and legal systems. It also discusses the ways of managing these differences through understanding the principles of marketing, exporting, financing, production, and human resource management in the context of a multicultural business environment. This course is recommended for all business management/international business majors. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (Degree credit)

BUS 132 F Principles of Import/Export (3)

Three hours lecture per week. This course provides a thorough and practical treatment of the importing and exporting activities involved in international trade. The course is designed to acquaint the student through a comprehensive approach to import/export as a continuous activity. It allows gaining firsthand how-to knowledge for those seeking to either get familiarized or work in the international trade industry, contemplating to start an import/export activity, or for managers wishing to expand their company's market opportunities. Special emphasis is placed on agencies involved, terms and conditions, documentation requirements and formalities, transportation, insurance, banking and finance, marketing, and sources of information. (CSU) (Degree credit)

BUS 224 F International Marketing (3)

Three hours lecture per week. This course provides an analysis of worldwide marketing opportunities through a consideration of political, legal, economic, and cultural factors in the international context. Special emphasis will be placed on international market research, product development and positioning, pricing, distribution, and promotion. Recommended for students pursuing business management and international business degrees. (CSU) (Degree credit)

BUS 225 F International Management (3)

Three hours lecture per week. This course provides practical knowledge with specific applications in international business management. Topics include import/export management, international financial management, foreign joint venture, foreign licensing and franchising, and countertrade. The course combines integrated text materials with carefully selected comprehensive case studies that are designed to demonstrate the practical experience of firms of all sizes as they come to grips with an increasingly competitive global environment. Recommended for students pursuing business management and international business degrees. (CSU) (Degree credit)

Law-Related Courses

BUS 041 F Survey of Business Law (3)

Three hours lecture per week. This law course emphasizes California business law and includes an introduction to law concerning the practicing attorney and the court systems. The general subject areas to be studied are contracts, agency, sales, negotiable instruments, personal and real property, partnerships and corporations, insurance, suretyship and guaranty, and creditors' rights and bankruptcy. (Degree credit)

BUS 240 F Legal Environment of Business (3) (CAN BUS 12)

Three hours lecture per week. This course is an introduction to the legal environment in which a business firm operates. Topics include an introduction to the American legal system, contracts, torts, product liability, forms of business organization, trade regulation, labor law, environmental law, and international business law. (CSU) (UC) (Degree credit)

BUS 241AF Business Law (3) (CAN BUS 8)

Three hours lecture per week. This course is an introduction to business law principles and cases, including a review of the classes and sources of law, agencies for enforcement, court procedure, and civil and criminal liability. The major subject area studied is the law of contracts. A special study is made of sales of goods based upon the Uniform Commercial Code with emphasis placed on consumer protection. (CSU) (UC Credit Limitation) (Degree credit)

BUS 241BF Business Law (3)

Prerequisite: BUS 241AF Business Law.

Three hours lecture per week. This course is a continuation of BUS 241AF Business Law with emphasis on business organizations. Areas of study include commercial paper, agency employment, partnerships, corporations, antitrust, securities, and bankruptcy law. (CSU) (UC Credit Limitation) (Degree credit)

Management-Related Courses

ACCT 105 F Accounting for Supervisors and Managers (3) (See Accounting.)

BUS 061 F Business Skills Internship (1-4)

Prerequisite: Completion of 7 units or 20 percent of the Business and Technology Skills Certificate. Credit/no credit only.

One hour lecture per week and five hours of supervised employment or volunteer work per week in business or industry for each unit for a maximum of 4 units (20 hours). This course provides vocational learning opportunities for a student through employment in business or industry. Students must have completed 7 units or 20 percent of the Business and Technology Skills Certificate prior to enrolling in this course. Students must be enrolled in at least 6 units of required or restricted courses, which may include the internship course, in the Business and Technology Skills Certificate. (Degree credit)

BUS 080 F E-Business Technology (.5)

One hour lecture per week. This course explains the essential Internet technology needed to implement electronic business strategies for the small business. Designed for non-technical persons, topics include understanding e-business terminology, defining e-business goals, determining hardware and software requirements, evaluating different types of connectivity, identifying resources, and estimating costs. (Degree credit)

BUS 090 F Current Issues in Business (.5-3)

Maximum of three hours lecture and maximum of 9 hours lab. This course offers timely business-related topics designed to enhance job skills, expand the student's knowledge of the business world, and increase employment opportunities. Unit credit may range from .5 to 3 units in any given semester. Consult the class schedule to verify specific topic area and credit offered for a particular semester. May be taken for credit four times.

BUS 100 F Introduction to Business (3)

Three hours lecture per week. An introductory business course designed to give an understanding and appreciation of the American business/economic system. The course surveys the nature of business, ownership, physical factors, personnel relations, marketing, finance, corporate ownership, management control, business regulations, law, taxation, and the international business environment. (CSU) (UC) (Degree credit)

BUS 162 F Business Economics (3)

Three hours lecture per week. Economic principles and problems of today's business world are emphasized. An elementary and practical course intended to acquaint the student with the present-day operation of the American free enterprise system. Business terminology, price competition, labor problems, business cycles, national income, public and international finance, and government control are emphasized. This course provides an independent, business-related study of economics for the student of business management courses. (CSU) (Degree credit)

BUS 170 Principles of E-Business (3)

Three hours lecture per week. This course will provide a comprehensive introduction to the field of e-business and integration of the Internet into existing business, taking into consideration the four critical infrastructures: technology, capital, public policy and media. This course focuses on presenting a working definition and framework for the study and practice of electronic commerce, e-business and Internet integration strategies. (CSU) (Degree credit)

BUS 180 F Small Business Management (3)

Three hours lecture per week. This course studies various small business enterprises including retail, wholesale, manufacturing, service, and home-based business. Factors in business success and advantages and disadvantages of business ownership are analyzed. This course covers the problems encountered in organizing and operating a small business, including financial sources, accounting information, marketing and other related information. (CSU) (Degree credit)

BUS 181 F Business Plan Development (2)

One and one-half hour lecture and one and one-half hour lab per week. This course focuses on strategies and techniques to write an effective business plan for small businesses. Students will research, evaluate, and prepare a comprehensive business plan, utilizing business planning software. (CSU) (Degree credit)

BUS 182 F Doing Business Online (2)

One and one-half hour lecture and one and one-half hour lab per week. This course will prepare students to use the Internet with a business or home-based business. Emphasis will be placed on planning and organizing the Internet business. Students will learn how to connect to the Internet; create a secure Web site; organize E-mail, use FTP and Telnet; create a Web-based business or integrate the Internet in an existing business; and write an Internet business plan. (CSU) (Degree credit)

BUS 251 F Business Finance (3)

Three hours lecture per week. An introductory course to the field of finance, the focus is on the practical significance of the fundamental concepts of finance. The class will include the analysis of financial markets, financial statements, planning and control, working capital management, time value of money, valuation models, capital budgeting, dividend policy, and mergers and acquisitions. (CSU) (Degree credit)

BUS 262 F Principles of Management (3)

Three hours lecture per week. A course designed for first-line, new, or future managers covering the skills required to effectively supervise and manage employees in organizations. This class emphasizes the supervisor's need for a working understanding of the functions of management and the practical supervisory skills relating to employees, work teams, workplace diversity, ethics and special concerns. Topics include the role and function of supervisors, recruitment and evaluation of workers, task delegation, motivation, employee discipline, training and professional development, conflict management, labor relations and legislation, communication, employee safety, and time management. (CSU) (Degree credit)

BUS 266 F Human Relations in Business (3)

Three hours lecture per week. This course examines human behavior in the work place and the most important and useful practices found in the management of organizations. Typical employment situations are analyzed for the purpose of establishing sound practices in the working environment. Topics include communications, leadership development, job conflict, motivation, human relations training, workforce diversity, group dynamics, job politics, organizational change, and stress management are covered. (CSU) (Degree credit)

BUS 267 F Principles of Supervision (3)

Three hours lecture per week. A course designed for first-line, new, or future managers covering the skills required to effectively supervise and manage employees in organizations. This class emphasizes the supervisor's need for a working understanding of the functions of management and the practical supervisory skills relating to employees, work teams, workplace diversity, ethics and special concerns. Topics include the role and function of supervisors, recruitment and evaluation of workers, task delegation, motivation, employee discipline, training and professional development, conflict management, labor relations and legislation, communication, employee safety, and time management. (CSU) (Degree credit)

BUS 269 F Managing Business Projects (2)

Two hours lecture per week. An introductory course in the study of project management. This course covers the principles and methods necessary to create an effective plan and schedule for a project; the techniques to monitor, control, and measure performance of the project once it is underway; and the relationships of timing, costs, and resources (including personnel). (CSU) (Degree Credit)

BUS 290 F Managerial Communications (3)

Three hours lecture per week. This course covers a variety of communication challenges that typically arise in management and emphasizes the development of communication skills to successfully manage individuals and groups. Topics include leadership and management skills, developing work relationships, issues of diversity, managing meetings, making presentations, interviewing, performance appraisals, negotiation, conflict resolution, using electronic communications technology, and group communication strategies. (CSU) (Degree credit)

Math-Related Courses

BUS 051 F Basic Business Mathematics (3)

Three hours lecture per week. This course reviews the fundamentals of addition, subtraction, multiplication, division, fractions, decimals, and interest. Practice drills are provided to improve accuracy and speed. Recommended to all majors in the Business and CIS Division who lack proficiency in basic mathematics as determined by the learning skills evaluation instrument. (Non-degree credit)

BUS 151 F Business Mathematics (3)

Three hours lecture per week. Reviews the essentials of business arithmetic in fundamental computation and problem solving. Includes problems in interest and bank discount, taxation, business ownership, retailing, annuities, sinking funds, compound interest, and amortization. BUS 151 F Business Mathematics is recommended of all majors in the Business Division. This course does not meet math requirements for transfer to CSU. (CSU) (Degree credit)

Carpentry

Curriculum leads to the **Associate in Arts Degree**. This degree requires 18 units chosen from the following:

Select 18 units from the courses listed below:

- ARCH 113 F Architectural Drawing I (3)
- CSTR 006 F Introduction to Residential Plumbing & Mechanical Systems (3)
- CSTR 014 F Contractor's License Law (3)
- CSTR 018 F Residential Construction Practice II (4)
- CSTR 020 F Remodeling and Additions Construction I (4)
- CSTR 022 F Remodeling and Additions Construction II (4)
- CSTR 032 F Uniform Plumbing Code (3)
- CSTR 034 F National Electrical Code (3)
- CSTR 036 F Uniform Building Code — Residential (3)
- CSTR 038 F Uniform Mechanical Code (3)
- CSTR 100 F Beginning Residential Construction (4)
- CSTR 102 F Residential Finish Construction (4)
- CSTR 104 F Concrete and Masonry (2.5)
- CSTR 108 F Surveying for Builders (2)
- CSTR 110 F Residential Estimating (3)
- CSTR 112 F Construction Materials, Specifications, and Purchasing (2)
- CSTR 116 F Residential Construction Practice I (4)
- WOOD 012 F Cabinetmaking/Millwork (4)

Chemistry

Curriculum leads to the **Associate in Arts Degree**. This degree requires 18 units of which 10 units are in required courses; the additional 8 units must be chosen from the restricted electives listed below.

Required Courses (10 units)

- CHEM 111AF General Chemistry (5)
- CHEM 111BF General Chemistry (5)

Restricted Electives (8 units)

- CHEM 211AF Organic Chemistry (5)
- CHEM 211BF Organic Chemistry (5)
- PHYS 205 F College Physics (4)
- PHYS 206 F College Physics (4)
- PHYS 210 F Physics (4)
- PHYS 211 F Physics (4)
- PHYS 221 F General Physics (4)
- PHYS 222 F General Physics (4)
- PHYS 223 F General Physics (4)
- MATH 150AF Calculus (4)
- MATH 150BF Calculus (4)

Chemistry Courses

CHEM 100 F Chemistry for Daily Life (4)

Three hours lecture and three hours lab per week. The focus is on the practical significance of the fundamental concepts of chemistry in the context of societal, political and economic issues that impact our world. Units may include, but are not limited to the following: the chemistry of the atmosphere and water, fission and fusion, energy, chemistry, and society, pharmaceutical, new materials, the chemistry of nutrition and agriculture. Student participation is stressed individually and in groups, through written and oral assignments. The laboratory provides hands-on experience with chemical phenomena. The course is designed for the non-science major seeking a laboratory science. (CSU) (UC; no credit if taken after CHEM 111AF.) (Degree credit)

CHEM 101 F Introduction to Chemistry (5) (CAN CHEM 6)

Prerequisite: MATH 040 F Intermediate Algebra with a grade of "C" or better.

Four hours of lecture, one hour problem solving, three hours of lab per week. This introductory course emphasizes the principles of inorganic and organic chemistry and includes a laboratory. It will meet physical science transfer requirements and is required of numerous allied health sciences majors. (CSU) (UC Credit Limitation: no credit if taken after CHEM 111AF) (Degree credit)

CHEM 103 F Chemistry in a Changing World (3)

Three hours lecture per week. This course is intended for non-science students seeking general education credit in a physical science course without a laboratory. The course emphasizes basic principles of chemistry and their relationship to the modern world. This course will foster an interest in science by preparing students to make effective decisions, and by developing thinking skills that can be applied to challenges in a changing world. Topics include air and water pollution, energy resources, basic biochemistry, and current scientific developments involving chemistry. (CSU) (UC Credit Limitation: no credit if taken after CHEM 111AF) (Degree credit)

CHEM 107 F Elementary Chemistry (5)

Prerequisite: MATH 040 F Intermediate Algebra with a grade of "C" or better.

Four hours lecture, three hours lab, and one hour problem solving per week. This course is strongly recommended for students who have not had high school chemistry or who earned a grade of "C" or less in the high school course. The fundamental principles of chemistry are stressed, with emphasis on the chemistry of inorganic compounds. Includes atomic structure, chemical bonding, descriptive chemistry, stoichiometry, gas laws, solutions, equilibrium and redox. This course is intended to prepare students specifically for 111AF/111BF General Chemistry. Laboratory work supports topics of Chemistry 107 F. (CSU) (UC Credit Limitation; no credit if taken after CHEM 111AF) (Degree credit)

CHEM 111AF General Chemistry (5) (CAN CHEM 2) (CHEM 111AF + 111BF = CAN CHEM SEQ A)

Prerequisite: CHEM 107 F Elementary Chemistry with a grade of "C" or better or a passing score on the Chemistry Proficiency Test; and MATH 040 F Intermediate Algebra with grade of "C" or better or two years of high school algebra.

Three hours lecture, two hours of problem solving, three hours lab, and one hour discussion per week. Lecture topics include: course introduction, chemical reactions and stoichiometry; thermochemistry and calorimetry; atomic structure and chemical periodicity; chemical bonding; molecular structure; gases; physical properties of solids, liquids and solutions. Laboratory work supports topics of Chemistry 111AF. (CSU) (UC) (Degree credit)

CHEM 111BF General Chemistry (5) (CAN CHEM 4) (CHEM 111AF + 111BF = CAN CHEM SEQ A)

Prerequisite: CHEM 111AF General Chemistry with a grade of "C" or better.

Three hours lecture, two hours of problem solving, three hours lab, and one hour discussion per week. Chemistry lecture topics are selected from kinetics, equilibria, acid-base, thermodynamics, electrochemistry, transition metals and coordination compounds. Laboratory work supports topics of Chemistry 111BF. (CSU) (UC) (Degree credit)

CHEM 200 F Elementary Organic Chemistry (3)

Prerequisite: CHEM 111AF General Chemistry with a grade of "C" or better.

Three hours lecture per week. This is a brief introductory organic chemistry course intended for students majoring in areas other than chemistry. Emphasis is upon nomenclature, structure, reactivity, chemical and physical properties, reaction mechanisms, and structure determination using spectroscopy. (CSU) (UC credit limitation) (Degree credit)

CHEM 201 F Basic Concepts of Organic and Biochemistry (5)

Prerequisite: CHEM 101 F Introduction to Chemistry with a grade of "C" or better

Four hours lecture, one hour of problem solving, two hours lab, and one hour discussion per week. This course is the second semester of a two semester sequence (CHEM 101 F and CHEM 201 F). This course is a study of organic chemistry: structures, nomenclature, reactions and functions of organic and biochemical compounds; cell structure, metabolism, bioenergetics, biochemical genetics, and mechanisms of vitamin and enzyme action. This course is designed for the health professions. (CSU) (UC credit limitation) (Degree credit)

CHEM 211AF Organic Chemistry (5)

Prerequisite: CHEM 111BF General Chemistry with a grade of "C" or better.

Three hour lecture, four hours lab, and two hours discussion per week. This course is the first part of a full year organic chemistry course designated primarily for chemistry majors but strongly recommended for pre-medical, pre-dental, pre-veterinary, pre-chiropractic, and biology majors. Emphasis is upon fundamental concept and application to molecular structure and chemical reactivity. Considerable stress is placed upon reaction mechanism, energetics, syntheses, stereochemistry, and molecular spectroscopy. Laboratory work includes techniques such as distillation, extraction, chromatography, and synthesis and qualitative analysis. (CSU) (UC Credit Limitation) (Degree credit)

CHEM 211BF Organic Chemistry (5)

Prerequisite: CHEM 211AF Organic Chemistry with a grade of "C" or better.

Three hour lecture, four hours lab, and two hours discussion per week. This course is the second part of a full year organic chemistry course designed primarily for chemistry majors but strongly recommended for pre-medical, pre-dental, pre-veterinary, pre-chiropractic, and biology majors. Aliphatic and aromatic compounds are integrated with the functional group approach maintained. Considerable emphasis is placed upon reaction mechanism, energetics, syntheses, stereochemistry, and spectroscopy. Laboratory work is on synthesis and qualitative analysis employing techniques learned in CHEM 211AF. (CSU) (UC Credit Limitation) (Degree credit)

Child Development and Family Life

Curriculum leads to the **Associate in Arts Degree** and/or employment as a teacher or assistant in private preschools or children's centers. The AA and CDFL 225 F ECE: Student Teaching with Field Experience will meet the Title V Child Development Teacher Permit requirement. This degree requires a total of 18 units of which 15 units are in required courses. An additional 3 units must be chosen from the restricted units listed below. A minimum grade of "C" is required in each course taken.

Required Courses (15 units)

- CDFL 110 F Anti-Bias Perspective (3)
- CDFL 120 F Human Development: Early Years (3)
- CDFL 200 F Human Development: Adolescence (3)
- CDFL 201 F Child in the Home and Community (3)
- CDFL 204 F Introduction to Special Education (3)

Restricted Electives (3 units)

- CDFL 115 F Introduction to ECE Curriculum (2)
- CDFL 122 F ECE: Principles (3)
- CDFL 123AF ECE Art Creativity Education (2)
- CDFL 123BF ECE Language Literacy Education (2)
- CDFL 123CF ECE Science Math Education (2)
- CDFL 123DF ECE Music Education (2)
- CDFL 151 F School Age Child: Programs, Curriculum & Guidance (3)
- CDFL 173 F The Process of Parenting (3)
- CDFL 238 F ECE Curriculum Design (3)

Child Development

After School Care Certificate

The **After School Care Certificate** is designed to train adults for employment in programs serving school-age children in after school settings. Completion of this certificate will meet the State requirements for school-age providers in a facility licensed for after-school care. The **After School Care Certificate** requires completion of 15 units of which 12 units are required courses. An additional 3 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken.

Required Courses (12 units)

- CDFL 110 F Anti-bias Perspective Seminar (3)
- CDFL 120 F Human Development: Early Years (3)
- CDFL 151 F School Age Child: Programs, Curriculum and Guidance (3)
- CDFL 201 F Child in Home and Community (3)

Restricted Electives (3 units)

- CDFL 112 F Teaching Peace (2)
- CDFL 123BF ECE: Language Literacy Education (2)
- CDFL 123DF ECE: Music Education (2)*
- CDFL 200 F Human Development: Adolescence (3)
- CDFL 208 F Working with Families of Children with Special Needs (3)
- CDFL 215 F Food and Nutrition for Children (2)

Associate Teacher Certificate

The **Associate Teacher Certificate** exceeds the minimum requirements for a Title 22 qualified preschool teacher. The Associate Teacher Certificate plus required experience qualifies the student for the Title V Child Development Permit, Associate Teacher Level. The **Associate Teacher Certificate** requires 15 units of which 11 are in required courses. An additional 4 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken.

Required Courses (11 units)

- CDFL 120 F Human Development: Early Years (3)
- CDFL 121 F Preschool Child (1.5)
- CDFL 121LF Preschool Child Lab (.5)
- CDFL 122 F ECE: Principles (3)
- CDFL 201 F Child in Home and Community (3)

Restricted Electives (4 units)

- CDFL 123AF ECE: Art Creativity Education (2)
 CDFL 123BF ECE: Literacy Education (2)
 CDFL 123CF ECE: Science Math Education (2)
 CDFL 123DF ECE: Music Education (2)*

* Students recommended for articulation with certificates from NOCROP Careers with Children, Preschool Occupations Program or Cooperative Vocational Education, Preschool Teacher Program receive two units of credit for CDFL 121 F and 121LF. This credit will be posted to the transcript upon completion of four units in Child Development at Fullerton College. For information call (714) 992-7731.

Articulation for students who qualify for the Placentia-Yorba Linda High School District. Student will receive one and a half units for CDFL 121 F The Preschool Child Lecture. The Preschool Lab will be completed in the Fullerton College Child Development Lab School site.

Weekend Associate Teacher Certificate

The **Weekend Associate Teacher Certificate** is the same number of units as required in the Associate Teacher Certificate, and will provide students a weekend option to complete the minimum State requirements under Title 22 for employment as a teacher or assistant in privately owned children's programs serving children 2 to 5 years of age. The weekend certificate meets the educational requirements for the Child Development Permit Matrix, Associate Teacher level. Weekend sessions include Friday, Saturday, and Sunday. The **Weekend Associate Teacher Certificate** requires 15 units of which 11 are in required courses. An additional 4 units must be chosen from the restricted electives listed below. Students must complete 12 units during the weekend course offerings to be eligible for the Weekend Associate Teacher Certificate. A minimum grade of "C" is required in each course taken.

Required Courses (11 units)

- CDFL 120 F Human Development: Early Years (3)
 CDFL 122 F ECE: Principles (3)
 CDFL 135 F ECE: Health and Safety (2)
 CDFL 201 F Child in Home and Community (3)

Restricted Electives (4 units)

- CDFL 123AF ECE: Art Creativity Education (2)
 CDFL 123BF ECE: Literacy Education (2)
 CDFL 123CF ECE: Science Math Education (2)
 CDFL 123DF ECE: Music Education (2)*

* Students recommended for articulation with certificates from NOCROP Careers with Children, Preschool Occupations Program or Cooperative Vocational Education, Preschool Teacher Program receive one and one half units of credit for CDFL 121 F The Preschool Child Lecture. This credit will be posted to the transcript upon completion of four units in Child Development at Fullerton College. For information call (714) 992-7731.

Early Childhood Education Teacher Certificate

The **Early Childhood Education Teacher Certificate** Program requires the completion of 30 units of which 26 are in required courses. An additional 4 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. The certificate plus 16 units of general education will meet the Title V Child Development Permit, Teacher level requirements. A valid American Red Cross First Aid Card or equivalent must be on file.

Required Courses (26 units)

- CDFL 110 F Anti-bias Perspective Seminar (3)
 CDFL 120 F Human Development: Early Years (3)
 CDFL 122 F ECE: Principles (3)
 CDFL 201 F Child in Home and Community (3)
 CDFL 215 F Food and Nutrition for Children (2)
 CDFL 225 F ECE: Student Teaching with Field Experience (3)
 CDFL 238 F Curriculum Design in Early Childhood Education (3)

Plus any 6 units from the following:

- CDFL 123AF ECE Curriculum: Creative Arts (2)
 CDFL 123BF ECE Curriculum: Language Arts (2)
 CDFL 123CF ECE Curriculum: Science (2)
 CDFL 123DF ECE Curriculum: Music & Movement (2)*

Restricted Electives (4 units)

- CDFL 112 F Teaching Peach (2)
 CDFL 121 F Preschool Child (1.5)
 CDFL 121LF Preschool Child Lab (.5)
 CDFL 135 F ECE: Health and Safety (2)
 CDFL 141 F Principles of Infant Toddler Care (3)
 CDFL 173 F The Process of Parenting (3)
 CDFL 200 F Human Development: Adolescence (3)
 CDFL 202 F Contemporary Family Living (3)
 CDFL 204 F Introduction to Special Education (3)
 CDFL 206 F Perceptual-Motor Development for Children (2)
 CDFL 207 F Principles and Techniques for EC Special Ed with Field Exp (3)
 CDFL 208 F Working with Families of Children with Special Needs (3)

* Students recommended for articulation with certificates from NOCROP Careers with Children, Preschool Occupations Program or Cooperative Vocational Education, Preschool Teacher Program receive two units of credit for CDFL 121 F and 121LF. This credit will be posted to the transcript upon completion of six units in Child Development at Fullerton College. For information call (714) 992-7731.

Articulation for students who qualify for the Placentia-Yorba Linda High School District. Student will receive one and a half units for CDFL 121 F The Preschool Child Lecture. The Preschool Lab will be completed in the Fullerton College Child Development Lab School site.

Early Childhood Education Administration Certificate

To qualify for the **Early Childhood Education Administration Certificate**, the student must have already met the minimum requirements for a State-approved fully qualified teacher and must complete 21 additional units, 14 of those units must be from required courses and 7 units must be chosen from the restricted electives shown below. A minimum grade of "C" is required in each course taken.

See Child Development Permit Matrix for requirements needed for Title V programs. The Child Development Permit Matrix is available in the Social Sciences Division Office.

Required Courses (14 units)

- CDFL 110 F Anti-bias Perspective Seminar (3)
- CDFL 204 F Introduction to Special Education (3)
- CDFL 205 F Planning Environments for Young Children (2)
- CDFL 230 F ECE: Administration (3)
- CDFL 231 F ECE: Administration II (3)

Restricted Electives (7 units)

- CDFL 112 F Teaching Peace (2)
- CDFL 135 F ECE: Health and Safety (2)
- CDFL 141 F Principles of Infant/Toddler Care (3)
- CDFL 173 F The Process of Parenting (3)
- CDFL 200 F Human Development: Adolescence (3)
- CDFL 206 F Perceptual Motor Development for Children (2)
- CDFL 207 F Principles and Techniques for EC Special Ed with Field Exp (3)
- CDFL 208 F Working with Families of Children with Special Needs (3)
- CDFL 240 F Leadership in the Early Childhood Profession (3)

Family Child Care Certificate

The **Family Child Care Certificate** prepares the individual to be a licensed family childcare provider. Providers need to apply to the State Department of Social Services for licensing. The certificate requires completion of 14 units. A minimum grade of "C" is required in each course taken.

- CDFL 131 F Business Principles of Family Child Care (3)
- CDFL 132 F Environments and Programs for Family Child Care (3)
- CDFL 120 F Human Development: Early Years (3)
- CDFL 110 F Anti-bias Perspective Seminar (3)
- CDFL 135 F ECE: Health and Safety (2)*

* If the student is health and safety certified through a non-credit agency, then one of the following courses is required: CDFL 141 F, 121 F and CDFL 121LF, CDFL 123AF, CDFL 123BF, CDFL 123CF, CDFL 123DF, CDFL 151F.

Students are encouraged to add coursework specific to the ages of children whose care is provided.

Infant/Toddler Caregiver Certificate

This certificate is designed to train caregivers for employment in programs serving infants and toddlers. It is also recommended for the Licensed Family Child Care Providers who care for very young children in their homes. Completion of this certificate will meet the State of California Title 22 requirements to teach infants and toddlers in a licensed facility. The **Infant/Toddler Caregiver Certificate** requires completion of 15 units. A minimum grade of "C" is required in each course taken.

Required Courses (15 units)

- CDFL 110 F Anti-bias Perspective Seminar (3)
- CDFL 120 F Human Development: Early Years (3)
- CDFL 140 F Infant Development and Relationships (3)
- CDFL 141 F Principles of Infant/Toddler Care (3)
- CDFL 201 F Child in Home and Community (3)

Completion of the AA degree (transfer) in Child Development is strongly recommended for those students considering a professional career in the area of Infant Development.

Child Development and Family Life Courses

CDFL 110 F Anti-Bias Perspective Seminar (3)

Three hours lecture per week. This course examines the stages of becoming an anti-bias educator. The focus of this course is to prepare the student to create a culturally relevant teaching environment where adults and/or children actively foster cognitive, emotional, and behavioral skills needed to respectfully and effectively learn about differences and similarities. An emphasis is placed on addressing issues of bias that children and families experience on a daily basis in our society. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (Degree credit)

CDFL 112 F Teaching Peace (2)

A total of thirty-two hours lecture. This course provides an overview of peace education and a framework for creating peaceful campus/programs for children and youth within the community and/or school setting. It includes child/youth tools to help create a safer world using skills in conflict management, the anti-bias perspective, promoting non-violence and community building. (CSU) (Degree credit)

CDFL 115 F Introduction to Early Childhood Education Curriculum (2) (CAN H EC 14)

A total of 36 lecture hours. This is a foundational course in basic curriculum terminology, planning and development. It provides the students with information and experience in observing and planning curriculum and using the information gained through these observations. Individual and program assessment, an overview of curriculum models, and writing lesson plans are also included. (CSU) (Degree credit)

**CDFL 120 F Human Development: Early Years (3)
(CAN FCS 14)**

Three hours lecture per week. This course provides students with research methodologies and studies the physical, intellectual, social and emotional development of the individual. Prenatal, infancy, toddler-hood, early childhood, middle childhood, and adolescent development are presented in a chronological sequence. Inclusive viewpoints of theory and practice are addressed. (CSU) (Degree credit)

CDFL 121 F The Preschool Child (1.5)

Prerequisite: CDFL 120 F Human Development: Early Years and CDFL 122 F Early Childhood Education: Principles completed with a grade of "C" or better.

Corequisite: CDFL 121LF The Preschool Child Laboratory

One and one-half hour lecture per week. This course emphasizes the role of the adult in fostering the physical, emotional, social, intellectual, and creative needs of each child in a group setting. It is designed to help students better understand and guide young children (not limited to child development majors). (CSU) (Degree credit)

CDFL 121LF The Preschool Child Laboratory (.5)

Concurrent enrollment: CDFL 121 F The Preschool Child

Three and one-half hours per week of observation and participation with young children in the Child Development Laboratory School. The practical application of guidance techniques promoting the child's physical, emotional, social, and intellectual development is emphasized. (CSU) (Degree credit)

CDFL 122 F Early Childhood Education: Principles (3)

Three hours lecture per week. The whole child is the focus of this course in relation to philosophy and culturally relevant, developmentally appropriate practices in Early Childhood Education. Issues addressed are professional ethics, cross-cultural/non-sexist education, curriculum, health and safety, working with parents, and the role of the adult as teacher and advocate. (CSU) (Degree credit)

CDFL 123AF ECE Art and Creativity Education (2)

Prerequisite: CDFL 115 F Introduction to ECE Curriculum

A total of 32 lecture/demonstration hours. This course examines the teacher's role in supporting children's artistic growth and providing developmental art experiences. Instructional topics include: "the child artist at work," "the arts and children's learning," "the arts and young children's development." The teacher's role in encouraging children to express and explore their creativity is strongly emphasized. (CSU) (Degree credit)

CDFL 123BF ECE Language and Literacy Education (2)

Prerequisite: CDFL 115 F Introduction to ECE Curriculum

A total of 32 lecture/demonstration hours. Students explore the four major areas of language arts: listening, speaking, pre-reading, and pre-writing. Literature appropriate for young children, including criteria for selection, presentation, and evaluation are emphasized. (CSU) (Degree credit)

CDFL 123CF ECE Science and Math Education (2)

Prerequisite: CDFL 115 F Introduction to ECE Curriculum

A total of 32 lecture/demonstration hours. Students learn techniques for developing science experiences that encourage children to explore, experience and problem solve within the natural and physical environment. Also included in the science course are: block play, wood working, and pre-number activities. (CSU) (Degree credit)

CDFL 123DF ECE Music Education (2)

Prerequisite: CDFL 115 F Introduction to ECE Curriculum

A total of 32 lecture/demonstration hours. Students learn to create musical environments for young children. This course includes the study and development of song activities, creative movement experience, and the creation of musical tools and instruments. (CSU) (Degree credit)

CDFL 131 F Business Principles of Family Child Care (3)

Three hours lecture per week. This course addresses the theory, practice and principles of operating a quality family child care home. Philosophy, goals, regulations, parent communication, business policies, record-keeping, safety, physical space requirements, and nutrition are the primary focus. Accreditation/certification options and family child care support services are discussed. (CSU) (Degree credit)

CDFL 132 F Environments and Programs for Family Child Care (3)

Three hours lecture per week. This course prepares the family child care provider with the knowledge and techniques to create quality environments and programs for the Family child care home. Current brain research, developmental theories and innovative models will be explored. This course is relevant for the new and experienced family child care provider. (CSU) (Degree credit)

CDFL 135 F Early Childhood Education: Health and Safety (2)

Two hours lecture per week. This course is designed to prepare the student to administer pediatric Cardio-Pulmonary Resuscitation (CPR) techniques as well as pediatric first-aid. Topics such as injury prevention, prevention of infectious diseases, disaster preparedness and care for the mildly ill child are also covered. This course meets the California Department of Social Services health and safety requirements for family child care and center-based providers. (CSU) (Degree credit)

CDFL 140 F Infant Development and Observations (3)

Three hours lecture per week. This course studies the child from birth to age three including prenatal development with an emphasis on physical, intellectual, social and emotional growth and development. Family interrelationships, establishment of basic trust and autonomy, and cultural variations on nurturing are included. Interwoven into this course are appropriate observation and assessment techniques. (CSU) (Degree credit)

CDFL 141 F Principles of Infant/Toddler Care (3)

Three hours lecture per week. This course provides the student with an overview of the organization and operation of infant-toddler programs including: goals, philosophy, infant and family needs, activities and routines, physical space, and equipment. An emphasis is on developmentally appropriate, culturally sensitive care for infants in group settings. (CSU) (Degree credit)

CDFL 151 F School-Age Child: Program, Curriculum, Guidance (3)

Three hours lecture/demonstration per week. This course is designed for those working with children in school-age extended-day programs. The course content includes philosophy and techniques of guidance and discipline, program/curriculum development, legal issues, and developmentally appropriate activities reflecting issues of diversity. Students develop criteria for evaluating quality programs. (CSU) (Degree credit)

CDFL 173 F The Process of Parenting (3)

Three hours lecture/demonstration per week. This course applies a developmental framework in examining theoretical and practical approaches to the process of parenting. It explores expectations, influences and strategies of parenting with focus on attitudes and behaviors. Topics include: facilitating the parent-child relationship from birth through adolescence; adaptations of parenting techniques for working parents, single parents, and step-parents. These topics are addressed within the context of cultural diversity. (CSU) (Degree credit)

CDFL 199 F Child Development Independent Study (1-1-1-1)

One hour lecture or scheduled conference per week. This course is offered for students who wish to increase their knowledge of the Social Sciences through individual study and small group conferences. Students successfully completing this course will be awarded elective credit in the Social Sciences area. Course may be taken four times for credit. (CSU) (UC Credit Limitation depending upon course content; UC review required.) (Degree credit)

CDFL 200 F Human Development: Adolescence (3)

Three hours lecture per week. This course is designed to examine in depth the developmental period of adolescence. The emphasis is on physical, social, intellectual, moral, and identity development in a framework reflecting the growing diversity of our population. While theoretical understanding is emphasized, issues such as teen pregnancy, family relationships, and education are addressed. (CSU) (UC Credit Limitation) (Degree credit)

CDFL 201 F Child in Home and Community (3)

Three hours lecture per week. This course is a sociological and environmental study of the interaction of the family, school, and community in the life of the developing child through age 12. Students explore the diversity of families and the validation and support of these families throughout various social structures. Particular emphasis is on child care, schools, community agencies, and the responsibility of the professional as an advocate. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (Degree credit)

CDFL 202 F Contemporary Family Living (3)

Three hours lecture per week. A developmental approach to the study of marriage and family life is the focus of this course. Content includes the development and maintenance of relationships, communication and conflict resolution skills, gender roles, partner selection, parenting, divorce, family planning, adult development and old age within the context of cultural diversity. (CSU) (Degree credit)

CDFL 204 F Introduction to Special Education (3)

Three hours lecture per week. This course provides an overview of special education. It includes the theoretical and educational foundations of special education, a historical background to the field of special education, legal issues, and techniques for inclusion of individuals with special needs in all settings. Various implications of full inclusion are discussed. (CSU) (Degree credit)

CDFL 205 F Planning Environments for Young Children (2)

A total of 32 hours of lecture. This course is designed for adults interested in planning inclusive environments for children. It is valuable for administrators, interior designers, and teachers. Students develop ways of examining the environmental settings for children through age 12 and evaluate the use of physical space and the selection of activity settings in terms of program goals. The study of environmental planning to enrich children's experience is emphasized. Students design both indoor and outdoor environments for a group setting. (CSU) (Degree credit)

CDFL 206 F Perceptual-Motor Development for Children (2)

A total of 32 hours lecture. This course provides early childhood education teachers and parents with a better understanding of the motor development of young children. Guidelines used to develop daily programs in the area of perceptual-motor curriculum and activities will be explored. Techniques for early identification of learning and emotional problems and strategies for establishing an environment to enhance physical development will also be addressed. (CSU) (Degree credit)

CDFL 207 F Principles and Techniques for Early Childhood Special Education with Field Experience (3)

Two hours lecture and 3 hours lab/field experience per week. This course is designed for those who are or will be working with groups of young children. Identifying the teacher's role in early diagnosis, using IEP's, working with specialists, and working with families are discussed. Teaching techniques, appropriate teaching goals, and curriculum adaptations are emphasized in relation to all the federally recognized categories of special education. Specific behavior management techniques and the importance of environmental adaptations for effective programs are included. Full inclusion policies and natural environments are discussed. Field experience in an inclusive setting will be incorporated into the course content. (CSU) (Degree credit)

CDFL 208 F Working with Families of Children with Special Needs (3)

Three hours lecture per week. This course is designed for teachers, administrators, parents, and others interested in supporting children with special needs and their families. The first part of the course will focus on supporting families of children with special needs in early childhood settings. Developing techniques and strategies to provide this support will be emphasized, as well as building a knowledge base of resources available to parents and early childhood programs. There will be a focus on creating inclusive environments for young children and their families. (CSU) (Degree credit)

CDFL 215 F Nutrition and Food Experiences for Children (2)

A total of 32 hours lecture. This course focuses on the use of food as an instructional medium in early childhood settings. Emphasis is placed on the planning and organization of food-related activities for young children, including safety and sanitation issues; the application of basic nutrition principles to menu planning/evaluation; the resolution of common food-related problems such as obesity and caregiver manipulation; and techniques and resources for providing culturally-appropriate foods and nutrition education. (CSU) (Degree credit)

CDFL 225 F Early Childhood Education: Student Teaching with Field Experience (3)

Prerequisite: CDFL 120 F Human Development: Early Years, 122 F ECE: Principles, 123AF/123BF/123CF/123DF ECE: Curriculum (two courses), and 201 F Child in Home and Community all with a grade of "C" or better. Corequisite: CDFL 238 F Curriculum Design for Children's Programs all with a grade of "C" or better

Two hours lecture and seven hours field placement per week. Placement may be in the Fullerton College Development Lab School/s in a Mentor Teacher site, or in an NAEYC accredited center. Student teachers observe and document the behavior of a diverse group of children in order to design, implement and evaluate meaningful and relevant child-child as well as child-adult interactions. Student teachers will learn to employ emergent curriculum techniques as they study the notion of child as researcher. Student teachers will explore their role in maintaining a professional environment to include authentic adult-child interactions, family dialogue, and co-teaching relationships. (CSU) (Degree credit)

CDFL 230 F Early Childhood Education Administration (3)

Prerequisite: Completion of the Basic Children's Program Certificate at Fullerton College or completion of the California Department of Social Services required core courses as required by Title 22 Child Day Care General Licensing requirements.

Forty-eight hours lecture per semester. This course is required for the Early Childhood Education Administration Certificate and meets the State Department of Social Services licensing regulations for administrators. The course emphasizes the following components: facility and financial management, marketing, enrollment, managing health and safety, food service, and legal considerations for child care centers. This is one course in a series of administrative course offerings. (CSU) (Degree credit)

CDFL 231 F Early Childhood Education Administration II (3)

Prerequisite: Completion of the Basic Children's Program Certificate at Fullerton College or completion of the California Department of Social Services required core courses as required by Title 22 Child Day Care General Licensing requirements.

Forty-eight hours lecture per semester. The course is required for the Early Childhood Education Administration Certificate and meets the State Department of Social Services licensing regulations for administrators. This course emphasizes the following components: Child development and educational theory and philosophy; effective administrative, supervisory, and leadership skills; quality child care and development programming; planning, organizing, staffing, and evaluating child care centers; effective communication; and advocacy. This is one course in a series of administrative course offerings. (CSU) (Degree credit)

CDFL 235 F Bilingual/Cross-Cultural Teacher Aide Methods (3)

Prerequisite: ETHS 101 F American Ethnic Studies or 118 Intro to Bilingual/Cross-Culturalism. Letter grade or credit/no credit option.

Three hours lecture per week. The course is for students preparing to become bilingual/cross-cultural teacher aides. It includes the role of the teacher/aide team with emphasis on effective use of the bilingual aide, practical classroom skills and techniques, and ways of establishing an effective learning environment. It covers current bilingual/cross-cultural curriculum methods and evaluation. Information on employment trends, ways to find jobs, and ways to further career will be provided. (Not currently being offered — if interested, contact Division Office.) (CSU) (Degree credit)

CDFL 238 F Curriculum Design for Early Childhood Education (3)

Prerequisite: CDFL 115 F Introduction to ECE Curriculum

Three hours lecture per week. Students examine innovative curriculum development strategies based upon observation, reflection and documentation of children's thinking. The course will focus on the development of a child-centered, play-based curriculum, utilizing constructivist theories. Students will explore the Reggio Emilia Philosophy, the Project Approach, the Emergent Curriculum, intentionality of environmental design and home-school connections. Course meets the specialization unit requirements for the Master Teacher level Child Development Permit Matrix. (CSU) (Degree credit)

CDFL 240 F Leadership in the Early Childhood Profession (3)

Prerequisite: Student must meet requirement for the Associate Teacher on the Child Development Permit Matrix, California Commission on Teacher Credentialing, and the Child Development Division, State Department of Education

Three hours lecture per week. This course will explore leadership strategies for positive growth and change in the early childhood profession. Course will focus on the promotion of quality professional teaching environments that will include the study of the following: mentoring, supervising, communication skill development, effective working relationships and innovations in the field. Class lectures will include the exploration of the following leadership development topics: creating a vision, planning for change, implementing change, building a team, ethical responsibilities, exploration of bias, professional development and the need for advocating and leading change. For entry into the course, the student must qualify at the Associate Teacher level on the Child Development Permit Matrix. Course meets requirements for adult supervision and application to the Mentor Teacher Project. 12 ECE units and one year of employment experience with young children.

PE 232 F Games and Rhythms for Elementary Schools (2)

(See Division of Physical Education.)

Chinese

CHIN 101 F Elementary Chinese — Mandarin I (5)

Letter grade or credit/no credit option.

Five hours lecture plus one arranged lab hour per week. The course focuses on the four major skills of language learning — listening comprehension, speaking, reading and writing — and the grammar and vocabulary necessary to acquire these skills. Included is an introduction to customs, culture, and civilization of Chinese-speaking countries. This course is conducted primarily in Chinese. (CSU) (UC) (Degree credit)

CHIN 102 F Elementary Chinese — Mandarin II (5)

Prerequisite: CHIN 101 F with a grade of "C" or better or one year of high school Chinese with a grade of "C" or better. Letter grade or credit/no credit option.

Five hours lecture per week plus one arranged lab hour per week. The course continues to focus on the four major skills of language learning — listening comprehension, speaking, reading and writing — and the grammar and vocabulary necessary to acquire these skills. Included is an introduction to customs, culture, and civilization of Chinese-speaking countries. This course is conducted primarily in Chinese. (CSU) (UC) (Degree credit)

CHIN 203 F Intermediate Chinese — Mandarin III (4)

Prerequisite: CHIN 102 F with a grade of "C" or better or two years high school Chinese with grade of "C" or better. Letter grade or credit/no credit option.

Four hours lecture per week. This course is a review of grammar with written and oral practice. Conversation is based on cultural and literary materials. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

CHIN 204 F Intermediate Chinese — Mandarin IV (4)

Prerequisite: CHIN 203 F with a grade of "C" or better or three years high school Chinese with a grade of "C" or better. Letter grade or credit/no credit option.

Four hours lecture per week. This course is a review of grammar with written and oral practice. Conversation is based on cultural and literary materials. The course includes an introduction to Chinese literature. Instruction is in Chinese. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

Cinema-Radio-Television

Radio Broadcasting Certificate

The **Radio Broadcasting Certificate** Program requires the completion of 25 units of which 19 units are in required courses. An additional 6 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. Upon completion of this certificate program a student will be prepared for an entry-level position with a radio station.

Required Courses (19 units)

- CRTV 118 F Introduction to Radio, Television and Film (3)
- CRTV 122 F Audio Production Techniques (3)
- CRTV 124 F Broadcast Advertising Sales (1)
- CRTV 129 F Broadcast News (3)
- CRTV 130 F Broadcast Audio Production (3)
- CRTV 135 F Radio Announcing (3)
- CRTV 235 F On-Air Radio Broadcasting (3)

Restricted Electives (6 units)

- CIS 100 F Introduction to Personal Computers (3)
- CRTV 128 F Writing for Radio, Television and Film (3)
- CRTV 235 F On-Air Radio Broadcasting (3)
- CRTV 290 F Career Advancement/Internship in Radio-Television-Film (2-4)
- SPCH 105 F Interpersonal Communication (3)
- THEA 127 F Oral Interpretation (3)
- THEA 129 F Beginning Voice for Actors (3)

Radio and Television/Video Production Certificate

The **Radio and Television/Video Production Certificate** Program prepares students for entry-level employment in the radio broadcasting and television/video production industries. A total of 37 units must be completed of which 32 are in required courses. An additional 5 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken.

Required Courses (32 units)

- CRTV 118 F Introduction to Radio, Television and Film (3)
- CRTV 122 F Audio Production Techniques (3)
- CRTV 128 F Writing for Radio, Television and Film (3)
- CRTV 129 F Broadcast News (3)
- CRTV 130 F Broadcast Audio Production (3)
- CRTV 135 F Radio Announcing (3)
- CRTV 150 F Television Studio Production (3)
- CRTV 164AF Digital Production and Non-Linear Editing for Video/Film (3)
- CRTV 235 F On-Air Radio Broadcasting (3)
- CRTV 245AF Digital Editing, Graphics and Effects (3)
- CRTV 280 F Television Production Workshop (2)

Restricted Electives (5 units)

- CRTV 127 F Screenwriting (3)
- CRTV 137 F Television Announcing (3)
- CRTV 164BF Advanced Digital Production and Non-Linear Editing for Video/Film (3)
- CRTV 196 F Communication Seminars (1-3)
- CRTV 235 F On-Air Radio Broadcasting (3) (Level B)
- CRTV 290 F Career Advancement in Radio-Television-Film (2-4)

Sports Broadcasting Certificate

The **Communications: Sports Broadcasting Certificate** requires a total of 17 units of which 12 units are in required courses. An additional 5 units must be chosen from the restricted units listed below. A minimum grade of "C" is required in each course taken. Upon completion of this certificate, the student will be prepared for entry-level position in radio, television or cable television sports broadcasting.

Required Courses (12 units)

- CRTV 118 F Introduction to Radio, Television and Film (3)
- CRTV 122 F Audio Production Techniques (3)
- CRTV 129 F Broadcast News (3)
- CRTV 145AF Sports Broadcasting (3)

Restricted Electives (5 units)

- CRTV 130 F Audio Production (3)
- CRTV 135 F Radio Announcing (3)
- CRTV 137 F Television Announcing (3)
- CRTV 145BF Sports Broadcasting (3)
- CRTV 150 F Television Studio Production (3)
- CRTV 164AF Digital Production and Non-Linear Editing for Video/Film (3)
- CRTV 235 F On-Air Radio Broadcasting (3)
- CRTV 290 F Career Advancement/Internship in Radio-Television-Film (2-4)
- JOUR 101 F Reporting and Writing (3)
- JOUR 102 F Reporting and Writing (3)
- PE 247 F Sports Management (3)

Television/Video Certificate

The **Television/Video Certificate** Program provides the background and skills needed for an entry-level position in the television/video industry. This certificate requires a total of 30 units of which 9 units are in required courses. An additional 3 units of restricted courses and at least 18 units of recommended electives must be chosen from the lists below. A minimum grade of "C" is required in each course taken. A student may earn one or more endorsements on their certificate by completing the suggested endorsement criteria.

Required Courses (9 units)

- CRTV 118 F Introduction Radio, Television and Film (3)
- CRTV 122 F Audio Production Techniques (3)
- CRTV 150 F Television Studio Production (3)

Restricted Courses (3 units)

- CRTV 127 F Screenwriting (3)
- CRTV 128 F Writing for Radio-Television-Film (3)
- CRTV 129 F Broadcast News (3)

Recommended Electives (18 units)

- CRTV 030 F Media Industry Independent Contractor (1)
- CRTV 120 F Media Aesthetics (3)
- CRTV 121 F The American Cinema (3)
- CRTV 127 F Screenwriting (3)
- CRTV 128 F Writing for Radio-Television-Film (3)
- CRTV 129 F Broadcast News (3)
- CRTV 130 F Broadcast Audio Production (3)
- CRTV 137 F Television Announcing (3)
- CRTV 164AF Digital Production and Non-Linear Editing for Video/Film (3)
- CRTV 164BF Advanced Digital Production and Non-Linear Editing for Video/Film (3)
- CRTV 196 F Communication Seminars (1-3)
- CRTV 245AF Digital Editing, Graphics and Effects (3)
- CRTV 245BF Advanced Digital Editing, Graphics and Effects (3)
- CRTV 280 F Television Production Workshop (2-5)
- CRTV 290 F Career Advancement/Internship in Radio-Television-Film (2-4)

Endorsements to the Television/Video Certificate

Performance (6 units)

- CRTV 129 F Broadcast News (3)
- CRTV 137 F Television Announcing (3)

Electronic Field Production (9 units)

- CRTV 120 F Media Aesthetics (3)
- CRTV 164AF Digital Production and Non-Linear Editing for Television/Film (3)
- CRTV 164BF Advanced Digital Production and Non-Linear Editing for Television/Film (3)

Remote Van Production (6 units)

- CRTV 120 F Media Aesthetics (3)
- CRTV 280 F Television Production Workshop (3)

Studio Production (9 units)

- CRTV 120 F Media Aesthetics (3)
- CRTV 150 F Television Studio Production (3)
- CRTV 196 F Communications Seminars (1-3)
- CRTV 280 F Television Production Workshop (2-5)

Video Post-Production (12 units)

- CRTV 120 F Media Aesthetics (3)
- CRTV 164AF Digital Production and Non-Linear Editing for Television/Film (3)
- CRTV 164BF Advanced Digital Production and Non-Linear Editing for Television/Film (3)
- CRTV 245AF Digital Editing, Graphics and Effects (3)
- CRTV 245BF Advanced Digital Editing, Graphics and Effects (3)

Writing (15 units)

- CRTV 120 F Media Aesthetics (3)
- CRTV 127 F Screenwriting (3-3)
- CRTV 128 F Writing for Radio, Television and Film (3)
- CRTV 129 F Broadcast News (3)

Cinema-Radio-Television Courses

CRTV 030 F Media Industry Independent Contractor (1) (formerly RTV 030 F)

One hour lecture per week. This course will present the basics of working as an independent freelance professional in the media industry. Subjects to be covered include choosing a business structure, basic business practice, handling finances and taxes, marketing and managing your personal life. This course uses discussions and exercises, expert guest speakers and videotaped interviews with independent professionals from around the country. This course is designed for anyone who is thinking about, or currently working as an independent contractor in the areas of writing, producing, directing, technical crew or performing talent.

CRTV 118 F Introduction to Radio, Television and Film (3) (formerly RTV 118 F)

Three hours lecture per week. This course is designed to assist the beginning student in understanding radio, television, cable, film, and electronic mass media. For those who plan to pursue a career in broadcasting or film, this course will provide guidance for career decisions and background for more specialized courses. For those with a general interest in broadcasting and film, this course will provide a broad understanding of the electronic mass media, including: regulation of broadcasting and film, the effects of broadcasting and film, non-commercial broadcasting, ratings and research, production and marketing of films, and electronic mass media. (CSU) (Degree credit)

CRTV 120 F Media Aesthetics (3) (formerly RTV 120 F)

Three hours lecture per week. This course provides a background in understanding aesthetics used in television, motion pictures, and computer graphics and explores the development and impact of mediated messages. The interplay and structuring of elements of sight, sound, and motion as message components, and their capacity to generate impressions, stimulate feelings, shape attitudes, and convey information are examined. (CSU) (Degree credit)

CRTV 121 F The American Cinema (3) (formerly RTV 121 F)

Three hours lecture per week. This course examines the American motion picture industry as a unique economic, industrial, aesthetic, and cultural institution. Development and changes related to technology; industrial and economic models; aesthetic styles and genres; production, marketing, and distribution processes; and audiences are examined. (CSU) (UC) (Degree credit)

CRTV 122 F Audio Production Techniques (3) (formerly RTV 122 F)

Advisory: CRTV 118 F Introduction to Radio, Television and Film

Two hours lecture/discussion and four hours laboratory per week. This course provides instruction in the operation of radio and television audio equipment broadcast microphones, and computer software associated with media recording. Projects will include production of radio commercials, television commercial soundtracks, digital audio editing, and special radio and television broadcast procedures with an emphasis on smooth operation of the audio control board and other audio equipment. (CSU) (Degree credit)

CRTV 124 F Broadcast Advertising Sales (1) (formerly RTV 124 F)

One hour lecture per week. This course covers the analysis of the sales function in commercial radio and television stations, and cable television franchises. The students examine the methodology and practical application of electronic media advertising, sales, and research. Audience demographics, market surveys, rate structure, and client relationships are included. Students will learn to write standard length commercials that focus on the targeted consumer and produce results for the advertiser. Discussion of media competitive advantages and disadvantages, as well as vocabulary and techniques of broadcast sales are also examined. (CSU) (Degree credit)

CRTV 126AF World Cinema to 1945 (3) (formerly RTV 126AF)

Three hours lecture per week. This is the first course in a two-course sequence that will provide a background in cinema history with a global perspective, following the growth of cinema from primarily a U.S. and European form of entertainment and communication to an international medium with significant production centers, cultural traditions, and production styles found in a variety of locations around the world. This course will focus on world cinema from its early development through the end of World War II. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

CRTV 126BF World Cinema 1946 to Present (3) (formerly RTV 126BF)

Three hours lecture per week. This is the second course in a two-course sequence that will provide a background in cinema history with a global perspective, following the growth of cinema from primarily a U.S. and European form of entertainment and communication to an international medium with significant production centers, cultural traditions, and production styles found in a variety of locations around the world. This course will focus on world cinema after World War II to the present. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

CRTV 127 F Screenwriting (3-3) (formerly RTV 127 F)

Three hours lecture/discussion per week. This course covers the concepts and practices in the various types of dramatic writing for television and motion picture production. Students will learn about characterization, conflict, structure, and commercial prospects. Course may be taken twice for credit. (CSU) (Degree credit)

CRTV 128 F Writing for Radio-Television-Film (3) (formerly RTV 128 F)

Three hours lecture/discussion per week. This course covers the concepts, practices and forms for film and television. This is a course in all forms of media writing. (CSU) (Degree credit)

CRTV 129 F Broadcast News (3) (formerly RTV 129 F)

Two hours lecture and four hours laboratory per week. This course provides instruction and practice in gathering and writing news for radio and television. The emphasis is on writing copy and familiarization with professional practices in radio and television news operations, including the use of local news sources, international wire services and other news material. Course activities include planning, gathering, writing, and delivering news for radio and television. (CSU) (Degree credit)

CRTV 130 F Broadcast Audio Production (3) (formerly RTV 130 F)

Prerequisite: CRTV 122 F Broadcast Audio Operations with a grade of "C" or better.

Two hours lecture/discussion and four hours laboratory per week. This course is designed to increase digital audio production skills for radio and television. Projects are designed to give students the opportunity to use the audio production room for a variety of production purposes for radio, television, and media production. (CSU) (Degree credit)

CRTV 131 F Contemporary Cinema (3) (formerly RTV 131 F)

Three hours lecture per week. This course focuses on motion pictures made during the last thirty years and the production processes, economic factors, and social influences that have shaped and been shaped by them. This will include changes in industry practices relating to production aesthetics and techniques, marketing, distribution, and technology. (CSU) (UC) (Degree credit)

CRTV 135 F Radio Announcing (3) (formerly RTV 135 F)

Prerequisites: CRTV 122 F Broadcast Audio Operations

Corequisite: CRTV 122 F Broadcast Audio Operations

Two hours lecture/discussion, three hours laboratory per week. This is a course in announcing technique focusing on the announcing skills most needed in contemporary radio. This course concentrates on disc jockey voice technique, commercial interpretation, news announcing, and ad-libbing. (CSU) (Degree credit)

CRTV 137 F Television Announcing (3) (formerly RTV 137 F)

Three hours lecture/discussion per week. This course covers on-camera television announcing for newscasts, commercials, interviewing, and ad-lib productions. Students develop non-dramatic television announcing skills through practice and evaluation. (CSU) (Degree credit)

CRTV 145 F Radio/TV Sports Broadcasting (3-3-3-3) (formerly RTV 145 F)

Two hours lecture, four hours lab per week. Class members will be involved in the broadcast of local sports on radio station KBPK, 90.1 FM and the Fullerton College Cable Television Network. The sports to be broadcast include football, basketball, baseball and soccer. Students will also perform as sportscasters on news programs for KBPK. Students will interview local athletes, write, and produce feature material for broadcast. This course may be repeated up to three times for credit. (CSU) (Degree credit)

CRTV 150 F Television Studio Production (3) (formerly RTV 150 F)

Advisory: CRTV 118 F Introduction to Radio, Television and Film

Two hours lecture/discussion and three hours laboratory per week. This course covers the basic use and operation of television equipment utilizing camera, lenses, switching, sound, lights, graphics, videotape recording, and character generator. Laboratory work will center on video programs. (CSU) (Degree credit)

CRTV 160 F Introduction to Filmmaking (3) (formerly RTV 160 F)

Two hours lecture and three hours lab per week. Introduction to the fundamental techniques and aesthetics of film production. The lecture/laboratory will emphasize camera operation, editing, lighting, cinematography and directing. Study and analysis of classic films as well as student's own work will be viewed. (CSU) (Degree credit)

CRTV 164AF Single-Digital Production and Non-Linear Editing for Video/Film (3) (formerly RTV 164AF)

Prerequisite: CRTV 150 F Television Studio Operations or 160 F Introduction to Filmmaking, with a grade of "C" or better

Two hours lecture and four hours lab per week. This course introduces single-camera video and film production techniques; including operation of digital video cameras and recorders and sound, lighting, and non-linear editing equipment. Students will use professional procedures from pre-production through post-production to develop, produce, and execute to completion various non-fiction and fiction program formats applicable to television and motion pictures. (CSU) (Degree credit)

CRTV 164BF Advanced Digital-Camera Production and Non-Linear Editing for Video/Film (3) (formerly RTV 164BF)

Prerequisite: CRTV 164AF Digital Production and Non-Linear Editing for Video/Film with a grade of "C" or better

Two hours lecture and four hours lab per week. This course is designed to provide students with training and experience related to the design and execution of professional quality single-camera productions that would comprise a demo tape appropriate to pursue employment in the television/film industry. The focus will be on achieving levels of design and execution that are effective in meeting project/client needs and industry. (CSU) (Degree credit)

CRTV 196 F Communications Seminars (.5-4, .5-4, .5-4) (formerly RTV 196 F)

Lecture and laboratory hours will vary according to the nature of the seminar. Communications seminars are courses designed to expose students to up-to-date equipment, methods, techniques, and materials. These courses offer the student opportunities for specialized training in greater depth than can be offered in a general course. These courses will vary from semester to semester depending on student interest, industry developments, and need for specialized training. See class schedule for current offerings. Course may be taken four times for credit or a maximum of four units. (CSU) (Degree credit)

CRTV 199 F Cinema-Radio-Television Independent Study (1-3, 1-3, 1-3, 1-3) (formerly RTV 199 F)

Prerequisite: Approval of Communications Department Coordinator

One hour lecture or scheduled conference or three hours independent laboratory research per week per unit of credit. This course is designed for students who wish to increase their knowledge of cinema, radio or television through individual study. Project with written report or outside reading with written report is required. Independent laboratory research problems with staff supervision may be approved. Course may be taken up to a maximum of four times for credit. (CSU) (UC review required.) (Degree credit)

CRTV 235 F On-Air Radio Broadcasting (3-3-3-3) (formerly RTV 235 F)

Prerequisite: CRTV 122 F Broadcast Audio Operations and CRTV 135 F Radio Announcing, with a grade of "C" or better.

One hour lecture/discussion and six hours laboratory per week. Course includes daily broadcast preparation and presentation of on-the-air programs. Students gain actual on-the-air experience on College FM station, KBPK, 90.1 MHz. This course may be repeated until a total of 12 units has been accumulated or up to a maximum of four semesters. (CSU) (Degree credit)

CRTV 245AF Digital Editing, Graphics and Effects (3) (formerly RTV 245AF)

Prerequisite: CRTV 164AF Digital Production and Non-Linear/Editing for Video/Film with a grade of "C" or better

Two hours lecture and four hours laboratory per week. The course builds on the knowledge and skills received in CRTV 164A Digital-Camera Production/Editing for Television/Film. Students learn the aesthetics and techniques of incorporating graphics and special effects while practicing advanced non-linear video editing skills. (CSU) (Degree credit)

CRTV 245BF Advanced Digital Editing, Graphics and Effects (3) (formerly RTV 245BF)

Prerequisite: CRTV 245AF Digital Editing, Graphics and Effects with a grade of "C" or better

Two hours lecture and four hours laboratory per week. This course is designed to provide students with more advanced training in non-linear editing, incorporating graphics, audio mixing and utilizing special effects in editing. Special emphasis will be placed on in-depth knowledge of equipment, speed, accuracy, aesthetics and special effects. (CSU) (Degree credit)

CRTV 280 F Television Production Workshop (2-5, 2-5, 2-5) (formerly RTV 280 F)

First semester: Prerequisite: CRTV 150 F Television Studio Production with a grade of "C" or better

Second semester: Prerequisite: First semester CRTV 280 F Television Production Workshop with a grade of "C" or better

Third semester: Prerequisite: Second semester CRTV 280 F Television Production Workshop with a grade of "C" or better

Fourth semester: Prerequisite: Third semester CRTV 280 F Television Production Workshop with a grade of "C" or better

One hour lecture and one hour laboratory plus three hours arranged per week for the first two units. An additional three hours laboratory per week is required for each added unit for a maximum of five units each semester and a cumulative total of 20 units. Students participate as crew members on Media Services and Communication Department cable and campus productions utilizing four-camera remote van, studio, and EFP Equipment. Instruction is equipment operation, production management and production design. The course prepares students for employment in the industry through development of advanced hands-on skills and in-depth, varied production experience. Course may be taken four times for credit. (CSU) (Degree credit)

CRTV 290 F Career Advancement/Internship in Cinema-Radio-Television (2-4, 2-4, 2-4, 2-4)
(formerly RTV 290 F)

Prerequisite: Students must have declared the Cinema-Radio-Television major and have either applicable employment or a verified internship.

One hour lecture per week and five hours of supervised employment or unpaid internship per week in a radio or television station, television/video or audio production facility, or program origination facility. An additional five hours per week of supervised employment or unpaid internship is required for each additional unit of credit. This course offers career development opportunities for students and industry professionals who need to broaden or strengthen their skills to retain their current position or wish to advance in their careers. Students obtain vocational learning opportunities through employment/internship at radio, television and cable stations, audio, video and film production facilities and allied entertainment offices. Course may be taken four times for credit. (CSU) (Degree credit)

Civil Engineering Technology

Curriculum leads to an **Associate in Science Degree** for employment in the construction industry, government agencies, and private surveying/civil engineering firms. It is not designed to fulfill requirements to transfer to a Bachelor's Degree in Civil Engineering. The degree requires a total of 26 units of which 18-19 units are in required courses. An additional 7-8 units must be chosen from the restricted electives listed below.

Required Courses (18-19 units)

ENGR 101AF Surveying (4)
ENGR 101BF Surveying (4)
ENGR 102 F Engineering Drawing (3)
ENGR 105 F Engineering CAD (4)
TECH 081 F Technical Mathematics I (3) or
MATH 141 F College Algebra (4)

Restricted Courses (7-8 units)

CHEM 107 F Elementary Chemistry (5)
ESC 100 F, 100LF Physical Geology and Lab (3,1)
MATH 142 F Trigonometry (4)
RE 101 F Principles of Real Estate (3)
TECH 088 F Technical Science (3)

Communications

Communications: General

The **Communications: General Associate in Arts Degree** requires 18 units chosen from the list below. This A.A. Degree provides a sound base for students interested in all areas of Communications. This degree is especially beneficial to students interested in Broadcast Journalism

Required Courses (18 units)

CRTV 118 F Introduction to Radio, Television and Film (3)
CRTV 122 F Broadcast Audio Operations (3)
CRTV 129 F Broadcast News (3)
CRTV 137 F Television Announcing (3)
CRTV 145 F Radio/TV Sports Broadcasting (3)
CRTV 150 F Television Studio Production (3)
CRTV 164AF Digital Production and Non-Linear Editing for Video/Film (3)
JOUR 101 F Reporting and Writing (3)
JOUR 102 F Reporting and Writing (3)
JOUR 110 F Mass Media Survey (3)
PHOT 101 F Introduction to Photography (3)

Communications: Journalism

Curriculum leads to the **Associate in Arts Degree** and/or entry-level employment in radio and television communications. High School Preparation: typing and speech. This degree requires 18 units chosen from the courses listed below.

Required Courses (18 units)

JOUR 101 F Reporting and Writing (3)
JOUR 102 F Reporting and Writing (3)
JOUR 110 F Mass Media Survey (3)
JOUR 126 F Advertising Copy and Layout (3)
JOUR 225 F Newspaper Production (3)
PHOT 101 F Introduction to Photography (3) or
PHOT 219 F Photojournalism (3)

Communications: Radio Broadcasting

The **Communications: Radio Broadcasting Associate in Arts Degree** requires a total of 18 units of which 15 units are in required courses. An additional 3 units must be chosen from the restricted electives listed below. Curriculum leads to the A.A. Degree in Radio Broadcasting and/or entry-level employment in radio broadcasting.

Required Courses (15 units)

CRTV 118 F Introduction to Radio, Television and Film (3)
CRTV 122 F Audio Production Techniques (3)
CRTV 130 F Broadcast Audio Production (3)
CRTV 135 F Radio Announcing (3)
CRTV 235 F On-Air Radio Broadcasting (3)

Restricted Electives (3 units)

- CRTV 124 F Broadcast Advertising Sales (1)
 CRTV 128 F Writing for Radio, Television and Film (3)
 CRTV 129 F Broadcast News (3)
 CRTV 145 F Radio/Television Sports Broadcasting (3)

Communications: Radio Production

The **Communications: Radio Production Associate in Arts Degree** requires a total of 18 units of which 12 units are in required courses. An additional 6 units must be chosen from the restricted electives listed below. Curriculum leads to the A.A. Degree in Radio Production and/or entry-level employment in radio/audio production.

Required Courses (12 units)

- CRTV 118 F Introduction to Radio, Television and Film (3)
 CRTV 122 F Audio Production Techniques (3)
 CRTV 128 F Writing for Radio, Television and Film (3)
 CRTV 130 F Broadcast Audio Production (3)

Restricted Electives (6 units)

- CRTV 124 F Broadcast Advertising Sales (1)
 CRTV 129 F Broadcast News (3)
 CRTV 135 F Radio Announcing (3)
 CRTV 235 F On-Air Radio Broadcasting (3)
 CRTV 290 F Career Advancement/Internship in Radio-Television-Film (2-4)

Communications: Television/Film

The **Communications: Television/Film Associate in Arts Degree** requires a total of 18 units of which 6 units are required courses. An additional 12 units must be chosen from the restricted electives listed below.

Required Courses (6 units)

- CRTV 120 F Media Aesthetics (3)
 CRTV 150 F Television Studio Production (3)

Restricted Electives (12 units)

- CRTV 118 F Introduction to Radio, Television & Film (3)
 CRTV 121 F The American Cinema (3)
 CRTV 122 F Audio Production Techniques (3)
 CRTV 126AF World Cinema to 1945 (3)
 CRTV 126BF World Cinema 1946 to Present (3)
 CRTV 127 F Screenwriting (3, 3)
 CRTV 128 F Writing for Radio, Television and Film (3)
 CRTV 130 F Broadcast Audio Production (3)
 CRTV 131 F Contemporary Cinema (3)
 CRTV 160 F Introduction to Filmmaking (3)
 CRTV 164AF Digital Production and Non-Linear Editing for Video/Film (3)
 CRTV 164BF Advanced Digital Production and Non-Linear Editing for Video/Film (3)
 CRTV 196 F Communications Seminars (.5-3)
 CRTV 245AF Digital Editing, Graphics and Effects (3)

- CRTV 245BF Advanced Digital Editing, Graphics and Effects (3)
 CRTV 280 F Television Production Workshop (2-5)
 CRTV 290 F Career Advancement/Internship in Radio-Television-Film (2-4)
 JOUR 110 F Mass Media Survey (3)

Advertising Certificate

The **Advertising Certificate** Program totals 23 units, of which 17 are in required courses. An additional 6 units must be chosen from restricted electives below. A minimum grade of "C" is required in each course taken.

Required Courses (17 units)

- ACG 100 F Introduction to Computer Graphics/Macintosh (3)
 JOUR 101 F Reporting and Writing (3)
 JOUR 126 F Advertising Copy and Layout (3-3) (Levels A and B)
 JOUR 140 F Public Relations and Publicity (3)
 MKT 103 F Principles of Advertising (3)

Restricted Electives (6 units)

- ART 140 F Advertising/Graphic Design I (2)
 JOUR 135 F Magazine Production (3)
 JOUR 225 F Newspaper Production (3)
 MKT 100 F Introduction to Marketing (3)
 MKT 208 F Principles of Selling (3)
 PHOT 101 F Introduction to Photography (3)
 PRNT 130 F Graphics (2)
 WKEX 091 F Work Experience/Vocational (Communications) (2)

*Computer Graphics**Computer Animation/Multi Media Certificate*

The **Computer Animation/Multi Media Certificate** Program requires the completion of 31 units chosen from the courses listed below. This certificate provides skills necessary to create animated and/or interactive projects for distribution on a variety of media, including video tape, CD-ROM, etc. A minimum grade of "C" is required in each course taken.

Select one of the Introduction classes (3 units)

- ACG 100 F Introduction to Computer Graphics/Mac (3) or
 ACG 102 F Introduction to Macintosh Graphics (3)

Required Courses (17 units)

- ACG 120 F 3D Computer Graphics for Macintosh (3) or
 ACG 126 F Solid Modeling/Paint for Macintosh (3)
 ACG 150 F 3D Computer Animation for Macintosh (3)

- ACG 162 F Multi Media for Macintosh (3)
 ACG 164 F Multi Media Authoring for Macintosh (3)
 ART 118 F Color Theory (3) or
 ART 120 F Basic Design (3)
 ART 144 F Fundamentals of Cartooning (2)

Restricted Electives (11 units)

- ACG 112 F Electronic Illustration (3)
 ACG 132 F Electronic Paint (3)
 ACG 140 F Desktop Publishing I (3)
 ACG 146 F Desktop Publishing II (3)
 ART 118 F Color Theory (3) or
 ART 120 F Basic Design (3)
 ART 123 F Business Practices in Art (3)
 ART 180 F Perspective Drawing and Rendering (2)
 ART 182 F Basic Drawing (3)
 ART 299 F Independent Study — Art (1)
 MUS 124 F Beginning Studio Recording Techniques (3)
 CRTV 150 F Basic Television Studio Operations (3)
 CRTV 164AF Single-Camera Production/Editing for
 Television/Film (3)
 CRTV 245AF Videotape Post-Production (3)

Computer Graphics Certificate

The **Computer Graphics Certificate** Program requires the completion of 30 units chosen from the courses listed below. This certificate provides the skills to create computer-designed graphs, charts, layouts, logos and presentation graphics. A minimum grade of "C" is required in each course taken.

Select one of the Introduction classes (3 units)

- ACG 100 F Introduction to Computer Graphics/Mac (3) or
 ACG 102 F Introduction to Macintosh Graphics (3)

Required Courses (15 units)

- ACG 112 F Electronic Illustration (3)
 ACG 132 F Electronic Paint (3)
 ART 118 F Color Theory (3) or
 ART 120 F Basic Design (3)
 ART 140 F Introduction to Advertising and Graphic
 Design (3)
 ART 182 F Basic Drawing (3)

Plus two from the following (6 units):

- ACG 140 F Desktop Publishing I (3)
 ACG 146 F Desktop Publishing II (3) or
 ACG 162 F Multi Media for Macintosh (3)

Restricted Electives (6 units)

- ACG 120 F 3D Computer Graphics for Macintosh (3)
 ACG 126 F Solid Modeling/Paint for Macintosh (3)
 ACG 140 F Desktop Publishing I (3)
 ACG 146 F Desktop Publishing II (3)
 ACG 150 F 3D Computer Animation for Macintosh (3)
 ACG 162 F Multi Media for Macintosh (3)
 ACG 164 F Multi Media Authoring for Macintosh (3)
 ART 118 F Color Theory (3) or

- ART 120 F Basic Design (3)
 ART 123 F Business Practices in Art (3)
 ART 145 F Publication Design (3)
 ART 146 F Advertising Design (3)
 ART 147 F Production Techniques for Graphic
 Designers (3)
 ART 299 F Independent Study — Art (1)
 PRNT 101 F Introduction to Printing (3)
 PRNT 130 F Graphics (2)

Desk Top Publishing Certificate

The **Desk Top Publishing Certificate** Program requires the completion of no fewer than 29 units from the courses listed below. This certificate provides an individual with the skills to create computer generated page layouts including text and graphics. A minimum grade of "C" is required in each course taken.

Select one of the Introduction classes (3 units)

- ACG 100 F Introduction to Computer Graphics/Mac (3) or
 ACG 102 F Introduction to Macintosh Graphics (3)

Required Courses (15 units)

- ACG 112 F Electronic Illustration (3)
 ACG 132 F Electronic Paint for Macintosh (3)
 ACG 140 F Desktop Publishing I (3)
 ACG 146 F Desktop Publishing II (3)
 ART 140 F Introduction to Advertising and Graphic
 Design (3)

Select at least two from the following (6 units)

- ART 120 F Basic Design (3)
 ART 145 F Publication Design (3)
 PRNT 070 F Quick Print/In-Plant Graphics (3)
 PRNT 075 F Electronic Pre Press (3)

Restricted Courses (5 units)

- ACG 120 F 3D Computer Graphics for Macintosh (3)
 ACG 150 F 3D Computer Animation for Macintosh (3)
 ACG 162 F Multi Media for Macintosh (3)
 ACG 164 F Multi Media Authoring for Macintosh (3)
 ART 118 F Color Theory (3)
 ART 120 F Basic Design (3)
 ART 123 F Business Practices in Art (3)
 ART 146 F Advertising Design (3)
 JOUR 227 F Newspaper Management, Makeup and
 Editing (3)
 PRNT 101 F Introduction to Printing (3)
 PRNT 075 F Electronic Pre Press (3)
 PRNT 130 F Graphics (2)

Computer Graphics Courses

ACG 068 F Multimedia Sound for Macintosh (3)

Prerequisite: ACG 100 F Introduction to Computer Graphics for Macintosh or ACG 102 F Introduction to Macintosh Graphics

Two hours lecture and three hours lab per week. Study of current means (including computer hardware and software, and audio equipment) for designing sound and music components of interactive multimedia presentations. The student learns: 1) the role of sound in combination with various other media (text, still and motion pictures); 2) the role of sound in eliciting and guiding the viewer's interaction with the presentation. Interactive multimedia is used in education and training (i.e., military/vocational), entertainment (game industry), informative dissemination (INTERNET, library materials, and creative self expression). (Degree credit)

ACG 100 F Intro: Computer Graphics/MAC (3)

Two hour lecture and three hours lab per week. This course focuses on the creation of graphic imagery including the use of the major programs used in computer graphics. The areas covered are paint and photo-manipulation, drawing, and paste-up programs. The uses of various input and output devices will be covered. This class teaches the fundamentals of computer graphics to input, create, manipulate and output graphic imagery for print. Open lab work may be needed to complete lab assignments. (CSU) (Degree Credit)

ACG 102 F Intro: Web Graphics/MAC (3)

Two hours lecture and three hours lab per week. This is a study of page development, navigation, graphics, animation, video, and sounds media for use on the Internet. During the course of the semester, the student builds an assigned web site and a personal web site. This class is intended as a gateway to a web certificate. Students can pursue additional in-depth study on the topics(s) that most attracted them during the semester. (CSU) (Degree credit)

ACG 104 F Intro: 3D Graphics/Mac (3)

Two hours lecture and three hours lab per week. The course emphasis is on the introduction of three dimensional computer modeling and animation with a program that uses standard industry tools and techniques. The course evolves from typical three-dimensional concepts, varied modeling techniques, texture mapping, lighting, basic motion control, parenting, to the use of FK and IK structures, and other modeling and animation skills. Additional open lab work may be needed to complete assignments. (CSU) (Degree credit)

ACG 105 F 2D Computer Graphics and Paint for DOS (3)

Two hours lecture and three hours lab per week. This course focuses on computer generated 2D drafting and design techniques, employed as a tool by graphic designers, through use of micro-computer based design and paint programs. Open lab work may be required to complete assignments. (CSU) (Degree credit)

ACG 106 F Intro: Dimensional Design/MAC (3)

Two hours lecture and three hours lab per week. An introduction to 3D modeling and drafting where the final result is scaled drawings. A focus on presentation techniques of designs includes colored output in static, animated, and virtual reality forms, making this an ideal course for scene designers, architects and other dimensional designers whose final presentation must be of the highest quality. Open lab work may be required to complete assignments. (CSU)(Degree credit)

ACG 108 F Survey Graphics Applications (3)

Two hours lecture and three hours lab per week. This is a survey of the many uses of computer multimedia. The course emphasis is on using all graphics applications for electronic publishing over the Internet. In the course of the semester, the students build a personal web page enriched with such audiovisual elements as animation, sound, video, 3-D, and different types of still images. This class is intended as a gateway into the varied offerings of the Art Computer Graphics program, where the student can pursue more in-depth study on the topic(s) that most attracted them during this survey class. (CSU) (Degree credit)

ACG 112 F Electronic Illustration (3)

Prerequisite: ACG 100 F Intro: Computer Graphics/Mac, or ACG 102 F Intro: Web Graphics/Mac or ACG 104 F Intro: 3D Graphics/Mac, or ACG 106 F Intro: Dimensional Design/Mac, or ACG 108 F Survey Graphics Applications/Mac, or six months related industry experience.

Two hours lecture and three hours lab per week. Teaches how to make pictures using vector graphics programs. Vector graphics is the technology of choice for adaptable artwork, suitable for traditional print formats as well as new electronic media, such as Web pages on the Internet. Visually, vector images are often characterized by a stylized, hardedge appearance. These programs are less appropriate for photographic or painterly material. The course covers leading vector graphics software, with plenty of hands-on use of the computer to build a portfolio and acquire the experience levels demanded by employers and clients.

ACG 120 F 3D Modeling (3)

Prerequisite: ACG 100 F Intro: Computer Graphics/Mac, or ACG 102 F Intro: Web Graphics/Mac or ACG 104 F Intro: 3D Graphics/Mac, or ACG 106 F Intro: Dimensional Design/Mac, or ACG 108 Survey Graphics Applications/Mac, or six months related industry experience.

Two hours lecture and three hours lab per week. The course emphasis is on further development of computer modeling and animation concepts with a program that is a standard in the industry. The course focus is on advanced three-dimensional concepts and the use of complex modeling tools, texture mapping, and lighting. Motion control using control parenting, IK structures, and other modeling and animation fundamentals is introduced. Additional open lab work will be necessary to complete assignments.

ACG 132 F Electronic Paint for Macintosh (3)

Prerequisite: ACG 100 F Introduction to Computer Graphics for Macintosh or ACG 102 F Introduction to Macintosh Graphics or ACG 104 F 2D Computer Graphics and Paint for Macintosh, or consent of instructor with portfolio review

Two hours lecture and three hours lab per week. The course focus is on the creation of bit-mapped (raster) images. Original art work, photographs, videotape or scanned image provide the basis for image manipulation. The course also offers the professional artist basic Macintosh skills needed for employment and/or advancement. (CSU) (Degree credit)

ACG 140 F Desk Top Publishing I for Macintosh (3)

Prerequisite: ACG 100 F Introduction to Computer Graphics for Macintosh

Two hours lecture and three hours lab per week. This course focuses on the use of computer as a design aid to generate the "camera ready" page layouts, integrating graphics and text. Emphasis is on design of the page, use of the computer programs, and printing skills required for a finished product. Open lab work may be required to complete assignments. (CSU) (Degree credit)

ACG 146 F Desktop Publishing II (3)

Prerequisite: ACG 100 F Intro: Computer Graphics/Mac, or ACG 102 F Intro: Web Graphics/Mac or ACG 104 F Intro: 3D Graphics/Mac, or ACG 106 F Intro: Dimensional Design/Mac, or ACG 108 F Survey Graphics Applications/Mac, or six months related industry experience.

Two hours lecture and three hours lab per week. This course focuses on the use of advanced options of desktop publishing programs as a design aid to generate "Camera ready" page layouts. Emphasis is on developing experience in varied types and sizes of commercial projects. Open lab work maybe required for completing assignments. (CSU) (Degree credit)

ACG 150 F 3D Computer Animation for Macintosh (3-3)

Prerequisite: ACG 120 F 3D Computer Graphics for Macintosh, or six months professional/industry related experience

Two hours lecture and three hours lab per week. This course is an extension of ACG 130 F Solid Modeling/Full Color Paint. Course focus is on computer animated 3D image making, which includes project development from storyboard to finished video tape output. Additional open-lab work may be necessary to complete assignments. Course may be taken twice for credit. (CSU) (Degree credit)

ACG 162 F Multi Media for Macintosh (3)

Prerequisite: ACG 100 F Introduction to Computer Graphics for Macintosh or ACG 102 F Introduction to Macintosh Graphics or ACG 104 F 2D Computer Graphics and Paint for Macintosh, or consent of instructor with portfolio review.

Two hours lecture and three hours lab per week. This course focuses on the multi-media approach by using charts, graphs, sound text and 2D animation as a promotional technique. The final presentations will use various outputs including videotape and color or black and white laser printers. (CSU) (Degree credit)

ACG 164 F Multimedia Authoring (3)

Prerequisite: ACG 100 F Intro: Computer Graphics/Mac, or ACG 102 F Intro: Web Graphics/Mac or ACG 104 F Intro: 3D Graphics/Mac, or ACG 106 F Intro: Dimensional Design/Mac, or ACG 108 F Survey Graphics Applications/Mac, or six months related industry experience.

Two hours lecture and three hours lab per week. This course focuses on designing interactive multimedia presentations by integrating a variety of programs and media (sound, text, graphics, and video). Final output may take the form of CD-ROMS, web pages, complete web sites, videos, cartoons, animated shorts, games, education, instructional training, and creative self-expression. Students' familiarity with computer graphics and sound is assumed. Open lab work may be required to complete assignments. (CSU) (Degree credit)

ACG 170 F Digital Photography (3)

Two hours lecture and three hours lab per week. The course focus is on digital photography and the advanced usage of software for the manipulation of raster images for the development of fine art and photographic images appropriate for advertising design. Digital cameras, scanners, photo CDs, and video images provide the basis for image manipulation pushing to the extreme of digital photography. Course topics include camera selection, image enhancement, editing, compositing, retouching, photomontages, pre-press, color management, color separations and service bureaus.

ACG 180 F Digital Video (3)

Two hours lecture and three hours lab per week. The course includes the study and hands on use of Macintosh computers, assorted software, CD-ROMs, videodiscs, and other tools and techniques used for digitalizing, editing and composition of video and audio sources. The course is to provide an in-depth introduction to the world of desktop video used in the fields of multimedia, video editing (both on line and off line) and the creation of Quick time movies.

Computer Information Systems

(Also see Office Technology)

Computer Information Systems

A.S. Degree

Curriculum leads to the **Associate in Science Degree in Computer Information Systems** and/or employment in computer applications and computer information systems. This degree requires 30-31 units which must be chosen from the required courses listed below. (See college catalog for options for the Associate of Science Degree general education requirements.)

Required Courses (8 units)

CIS 107 F Intro to Operating Systems (2)
CIS 180 F Introduction to Networking Concepts (3)
CIS 217 F Visual Basic Programming I (3)

One of the following for a total of 3-4 units:

ACCT 001 F Accounting for Small Business (3)
ACCT 100BF Financial Accounting Principles (3)
ACCT 101AF Financial Accounting (4)

One of the following for a total of 3 units:

BUS 111 F Business Communications (3)
BUS 211 F Writing for Business (3)

One of the following for a total of 2 units:

BUS 182 F Doing Business Online (2)
MKT 151 F Internet Marketing (2)

One of the following for a total of 3 units:

CIS 100 F Introduction to Personal Computers (3)
CIS 111 F Introduction to Information Systems (3)

One of the following for a total of 2 units:

CIS 105 F Spreadsheet I (2)
CIS 205 F Spreadsheet II (2)

One of the following for a total of 2 units:

- CIS 142 F Database I (2)
- CIS 242 F Database II (2)

One of the following for a total of 2 units:

- CIS 150 F Introduction to Internet (2)
- CIS 151 F Internet Research (2)

One of the following for a total of 2 units:

- CIS 152 F Web Page Design II (2)
- CIS 252 F Web Page Design III (2)

One of the following for a total of 3 units:

- CIS 225 F Netware System Manager (3)
- CIS 291 F Enterprise Networking (3)

Computer Information Systems Certificate

The **Computer Information Systems Certificate** requires the completion of 29-34 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (5 units)

- CIS 107 F Intro to Operating Systems (2)
- CIS 180 F Introduction to Networking Concepts (3)

One course from the following for a total of 3-4 units:

- ACCT 001 F Accounting for Small Business (3)
- ACCT 100BF Financial Accounting Principles (3)
- ACCT 101AF Financial Accounting (4)

One course from the following for a total of 3 units:

- BUS 111 F Business Communications (3)
- BUS 211 F Writing for Business (3)

One course from the following for a total of 2 units:

- BUS 182 F Doing Business Online (2)
- MKT 151 F Internet Marketing (2)

One course from the following for a total of 3 units:

- CIS 100 F Introduction to Personal Computers (3)
- CIS 111 F Introduction to Information Systems (3)

One course from the following for a total of 2 units:

- CIS 105 F Spreadsheet I (2)
- CIS 205AF Spreadsheet II (2)
- CIS 205BF Macro Programming (2)

One course from the following for a total of 2 units:

- CIS 142 F Database I (2)
- CIS 242 F Database II (2)

One course from the following for a total of 2-3 units:

- CIS 109 F Personal Computer Security (2)
- CIS 149 F Internet Entertainment (3)
- CIS 150 F Introduction to Internet (2)
- CIS 151 F Internet Research (2)

One course from the following for a total of 2-3 units:

- CIS 152 F Web Page Design II (2)
- CIS 252 F Web Page Design III (2)
- CIS 157 F Dreamweaver I (3)
- CIS 212 F Robotic Programming (3)
- CIS 230 F PHP & MySQL Programming (3)
- CIS 154 F JavaScript Programming I (2)
- CIS 254 F JavaScript Programming II (2)
- CIS 155 F Web Page Multimedia Design I (2)
- CIS 255 F Web Page Multimedia Design II (2)

One course from the following for a total of 3 units:

- CIS 217 F Visual Basic Programming I (3)
- CIS 218 F Visual Basic Programming II (3)
- CIS 219 F Visual Basic Programming III (3)
- CIS 220 F Web Programming (3)
- CIS 223 F Programming in C++ (3)
- CIS 226 F Java Programming I (3)
- CIS 228 F Java Programming II (3)
- CIS 229 F XML Programming (3)
- CIS 257 F Dreamweaver II (3)

Choose one from the following for a total of 2-3 units:

- CIS 183 F Network Security Fundamentals (3)
- CIS 225 F NetWare System Manager (3)
- CIS 260 F Solaris System Administration (3)
- CIS 280 F Introduction to Oracle: SQL and PL/SQL (3)
- CIS 285 F Windows Server (2)
- CIS 291 F Enterprise Networking (3)

Computer Software Applications Specialist Certificate

The **Computer Software Applications Specialist Certificate** requires the completion of 36-37 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (27 units)

- CIS 048 F Intro to PC Communications (2)
- CIS 050 F Web Page Design I (2)
- CIS 090 F Office Certification Preparation (1)
- CIS 104 F Presentation Graphics (2)
- CIS 105 F Spreadsheet (2)
- CIS 107 F Intro to Operating Systems (2)
- CIS 109 F Personal Computer Security (2)
- CIS 123AF Word Processing I (2)
- CIS 123BF Word Processing II (2)
- CIS 142 F Database I (2)
- CIS 242 F Database II (2)
- CIS 150 F Introduction to the Internet (2)
- CIS 151 F Internet Research (2)
- CIS 152 F Web Page Design II (2)

One course from the following for a total of 3 units:

- CIS 100 F Introduction to Personal Computers (3)
 CIS 102 F Intro to Open Source Software (3)

One course from the following for a total of 2 units:

- BUS 182 F Doing Business Online (2)
 MKT 151 F Internet Marketing (2)

One course from the following for a total of 2-3 units:

- CIS 153 F Business Web Graphics (2)
 CIS 155 F Web Page Multimedia Design I (2)
 CIS 157 F Dreamweaver I (3)

One course from the following for a total of 2 units:

- CIS 205AF Spreadsheet II (2)
 CIS 205BF Macro Programming (2)

Database Applications Certificate

The **Database Applications Certificate** prepares the student for a career using database applications software. This certificate requires a total of 8 units of which 8 units are in required courses.

Required Courses (8)

- CIS 090 F Office Certification Preparation (1)
 CIS 142 F Database I (2)
 CIS 242 F Database II (2)
 CIS 218 F Visual Basic Programming III (3)

E-Commerce Programming Certificate

The **E-Commerce Programming Certificate** requires the completion of 15-16 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (5 units)

- CIS 152 F Web Page Design II (2)
 CIS 180 F Introduction to Networking Concepts (3)

One of the following for a total of 2-3 units:

- CIS 154 F JavaScript Programming I (2)
 CIS 211 F Basic Programming for Business (3)

One of the following for a total of 3 units:

- CIS 217 F Visual Basic Programming I (3)
 CIS 220 F Web Server Programming (3)

One of the following for a total of 3 units:

- CIS 226 F Java Programming I (3)
 CIS 230 F PHP & MySQL Programming (3)

One of the following for a total of 2 units:

- CIS 252 F Web Page Design III (2)
 CIS 254 F JavaScript Programming I (2)

Enterprise Database Certificate

The **Enterprise Database Certificate** program prepares the student for a career using enterprise database software. Skills include developing a database design, implementing the design in various databases, and managing a database environment. This certificate requires a total of 10 units of which 10 units are in required courses.

Required Courses (10 units)

- CIS 142 F Database I (2)
 CIS 242 F Database II (2)
 CIS 270 F SQL Server Administration (3)
 CIS 280 F Introduction to Oracle: SQL and PL/SQL (3)

Internet Certificate

The **Internet Certificate** requires the completion of 15 units chosen from the courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (11 units)

- CIS 050 F Web Page Design I (2)
 CIS 107 F Intro to Operating Systems (2)
 CIS 149 F Internet Entertainment (3)
 CIS 152 F Web Page Design II (2)
 MKT 151 F Internet Marketing (2)

One of the following for a total of 2 units:

- CIS 150 F Introduction to Internet (2)
 CIS 151 F Internet Research (2)

One of the following for a total of 2 units:

- CIS 153 F Business Web Graphics (2)
 CIS 155 F Web Page Multimedia Design (2)

Networking Certificate

The **Networking Certificate** prepares the student for a career using computer networks in business. This will include skills in installing and managing Windows networks. The **Networking Certificate** Program requires a total of 15 units of which 12 are required and 3 may be chosen from the restricted electives listed. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (12 units)

- CIS 180 F Introduction to Networking Concepts (3)
 CIS 183 F Network Security Fundamentals (3)
 CIS 285 F Windows Server (3)
 CIS 291 F Enterprise Networking (3)

One of the following courses for a total of 3 units:

- CIS 260 F Solaris System Administration (3)
- CIS 286 F Web Server Management (3)
- CIS 287 F Exchange Server (3)
- CIS 289 F Windows Active Directory (3)
- CIS 290 F Unix Operating System (3)

PC Application Certificate

The **PC Application Certificate** requires the completion of 16 units chosen from the courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (10 units)

- CIS 104 F Presentation Graphics (2)
- CIS 105 F Spreadsheet I (2)
- CIS 107 F Intro to Operating Systems (2)
- CIS 142 F Database I (2)
- CIS 242 F Database II (2)

One of the following for a total of 2 units:

- CIS 050 F Web Page Design I (2)
- CIS 150 F Introduction to Internet (2)

One of the following for a total of 2 units:

- CIS 048 F Introduction to PC Communications (2)
- CIS 109 F Personal Computer Security (2)

One of the following for a total of 2 units:

- CIS 205AF Spreadsheet II (2)
- CIS 205BF Macro Programming (2)

Programming Certificate

The **Programming Certificate** requires the completion of 15 units of which 12 units are in required classes listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (12 units)

- CIS 211 F Basic Programming for Business (3)
- CIS 217 F Visual Basic Programming I (3)
- CIS 218 F Visual Basic Programming III (3)
- CIS 223 F Programming in C++ (3) or
- CIS 226 F Java Programming I (3)

One of the following for a total of 3 units:

- CIS 212 F Robotic Programming (3)
- CIS 219 F Visual Basic Programming II (3)
- CIS 222 F CGI/Perl Scripting
- CIS 228 F Java Programming II (3)
- CIS 229 F XML Programming (3)
- CIS 230 F PHP & MySQL Programming (3)

Project Management Certificate

See page 129 (Business).

Spreadsheet Applications Certificate

The **Spreadsheet Applications Certificate** prepares the student for a career using spreadsheet applications software. This certificate requires a total of 7 units of which 7 units are in required courses.

Required Courses (7 units)

- CIS 090 F Office Certification Preparation (1)
- CIS 105 F Spreadsheets I (2)
- CIS 205AF Spreadsheets II (2)
- CIS 205BF Macro Programming (2)

Web Design Certificate

The **Web Design Certificate** requires the completion of 12-15 units chosen from the required courses listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

One of the following for a total of 2 units:

- CIS 107 F Intro to Operating Systems (2)
- CIS 120AF Microsoft Project I (2)
- CIS 120BF Microsoft Project II (2)

One of the following for a total of 2-3 units:

- CIS 050 F Web Page Design I (2)
- CIS 157 F Dreamweaver I (3)

One of the following for a total of 2 units:

- CIS 150 F Introduction to Internet (2)
- CIS 152 F Web Page Design II (2)
- CIS 159 F Introduction to XML (2)

One of the following for a total of 2 units:

- CIS 153 F Business Web Graphics (2)
- CIS 155 F Web Page Multimedia Design I (2)

One of the following for a total of 2-3 units:

- CIS 154 F JavaScript Programming I (2)
- CIS 156AF Web Master – Foundations (3)
- CIS 156BF Web Master – Designer (3)
- CIS 156CF Web Master – Administration (3)
- CIS 180 F Introduction to Networking Concepts (3)
- CIS 222 F CGI/Perl Scripting (3)
- CIS 229 F XML Programming (3)
- CIS 252 F Web Page Design III (2)

One of the following for a total of 2-3 units:

- CIS 254 F JavaScript Programming II (2)
- CIS 255 F Web Page Multimedia Design II (2)
- CIS 257 F Dreamweaver II (3)

Web Scripting Certificate

The **Web Scripting Certificate** program prepares the student for a career using various Web scripting tools to create and manage databases. Skills include using typical Web scripting tools to create Web pages and Web sites. The **Web Scripting Certificate** requires a total of 11 units of which 11 units are in required courses.

Required Courses (11 units)

CIS	152 F	Web Page Design II (2)
CIS	252 F	Web Page Design III (2)
CIS	154 F	JavaScript Programming I (2)
CIS	254 F	JavaScript Programming II (2)
CIS	230 F	PHP & MySQL Programming (3)

Computer Information Systems Courses

CIS 048 F Intro to PC Communications (2)

Advisory: CIS 150 F Introduction to the Internet

One and one-half hour lecture and one and one-half hour lab per week. This course is an introduction to personal electronic communications and management using state-of-the-art email and scheduling software. Students learn how to connect the software with Internet email servers and how to receive and manage email. Students will also learn to manage an electronic calendar, schedule appointments, and manage appointment information. (Degree credit)

CIS 050 F Web Page Design I (2)

Advisory: CIS 150 F Introduction to the Internet

One and one-half hour lecture and one and one-half hour lab per week. This course is an introduction to automatic Web page creation using state-of-the-art software. Students will learn the operation of the software and how the software connects with Web servers, to insert graphics, components, multimedia content, and other Web-related components. Students will also learn to create and use Web page templates and other design tools. (Degree credit)

CIS 070 F Current Computer Topics (1-3)

One to three hours lecture and up to three hours lab per week. This course is for students who wish to increase their knowledge and skills in various computer related topics. Unit credit may range from 1 to 3 units in any given semester. Consult the class schedule to verify course topics being offered for a particular semester. May be taken for credit four times.

CIS 090 F Office Certification Preparation (1-3)

Variable hours of lecture and/or lab. This course is for students who wish to prepare for the Microsoft Office Specialist tests. Unit credit may range from 1-3 units in any given semester. Consult the class schedule to verify topics and credit offered in a particular semester. May be taken for credit four times. (Degree credit)

CIS 100 F Introduction to Personal Computers (3)

Three hours lecture and two hours lab per week. This course introduces students as well as the business professional to the use of the personal computer using state-of-the-art software. Topics include an overview of personal computer applications including a brief introduction to computer concepts, use of a word processor, spreadsheet application, presentation manager application, and how to use the Internet. (CSU) (Degree credit)

CIS 102 F Intro to Open Source Software (3)

Three hours lecture and two hours lab per week. This course teaches students to use various Open Source software on a Windows computer. Topics include finding Open Source software, downloading and installing software, and using typical packages like Open Office and Open CD. Students will also learn how to participate in the Open Source community. (CSU) (Degree credit)

CIS 104 F Presentation Graphics (2)

One and one-half hour lecture and one and one-half hour lab per week. This course is an introduction to business presentation graphics. Topics include planning presentations, creating business presentations and templates, enhancing presentations with graphics, sound, animation, transition, and video and using presentations on a Web server. State-of-the-art software will be used. (CSU) (Degree credit)

CIS 105 F Spreadsheet I (2)

One and one-half hour lecture and one and one-half hour lab per week. This provides an introduction to spreadsheets in the solution of business problems. Students will create, format and print worksheets that include formulas, functions, charting, relative and absolute cell references, work with large worksheets. Also covered are creation of static and dynamic Web pages and design and manipulation of databases. State-of-the-art software will be used. (CSU) (Degree credit)

CIS 107 F Intro to Operating Systems (2) (formerly CIS 040 F)

One and one-half hour lecture and one and one-half hour lab per week. This course is designed to introduce the operating system on the personal computer. This course will cover the fundamentals of the graphical user interface, mouse operations, how to manipulate the interface, how to use Help, Search, launch applications, manage files and folders and add/delete hardware and software. Additional topics include accessories and system tools. (Degree credit)

CIS 109 F Personal Computer Security (2)

One and one-half hour lecture and one-half hour lab per week. This class introduces the student to personal security on individual computers and across the Internet. Students will learn how to protect their own computers from viruses, Trojan Horse programs, and other intrusive software. Students will also learn to protect their personal information over the Internet and how to securely send information. (CSU) (Degree credit)

CIS 111 F Introduction to Information Systems (3) (CAN BUS 6)

Three hours lecture and two hours lab per week. This course is an introduction to computer information systems; computer organization and problem-solving concepts, computer operating systems, spreadsheet and database management application software, and programming in a modern high level programming language. (CSU) (UC) (Degree credit)

CIS 120AF Project Management I (2) (formerly CIS 120 F)

One and one-half hour lecture and one and one-half hour lab per week. This course covers project management application skills including planning a project, creating project schedules, communicating project information, adding tasks and durations, changing relationships, tracking progress, and closing the project. Also covered are customizing project management software, Web resources and project management certifications. State-of-the-art software will be used. (CSU) (Degree credit)

CIS 120BF Project Management II (2)

Advisory: CIS 120AF Project Management I

One and one-half hour lecture and one and one-half hour lab per week. This course covers project management concepts and application skills including tracking project work, analyzing and adjusting schedules, advanced formatting and printing, project communications, managing multiple projects and exchanging project data. The course will be taught with state-of-the-art project management software. (CSU) (Degree credit)

CIS 123AF Word Processing I (2) (formerly WP 020 F)

One and one-half hour lecture and one and one-half hour of lab per week. This course is designed as an introduction to word processing software. The course will cover the fundamental operations of word processing; typing text, saving, editing, copying, moving, printing, formatting, margins, tabs, footers and headers, footnotes, vertical and horizontal alignment and line spacing. State-of-the-art software will be used. (CSU) (Degree credit)

CIS 123BF Word Processing II (2) (formerly WP 021 F)

Advisory: CIS 123AF Word Processing I

One and one-half hour lecture and one and one-half hours lab per week. This course introduces advanced topics using word processing software. Covered topics include creating tables and charts, columns, adding graphics and multimedia elements, managing and printing files, merged documents, table of contents, and indexes. State-of-the-art software will be used. (Degree credit)

CIS 142 F Database I (2)

One and one-half hours lecture and one and one-half hours of lab per week. This course is to teach use of state-of-the-art personal database software. The course will cover introductory concepts including database structure and design, editing database records, sorting/indexing records, query techniques, custom form creation, database report design and printing, database relational techniques, and general file management techniques. (CSU) (Degree credit)

CIS 149 F Internet Entertainment (3)

Three hours lecture and two hours lab per week. This class teaches the various elements of entertainment on the Internet. These include how media companies are using the Internet for content distribution and marketing, how various types of Internet Entertainment programs work with client operating systems like Windows, and how to configure clients to use various Internet Entertainment packages. (CSU) (Degree credit)

CIS 150 F Introduction to Internet (2)

One and one-half hour lecture and one and one-half hour lab per week. This course is an introduction to the organizational, operational, and technical aspects of the Internet. Students will learn how to use a personal computer to access Internet and the World Wide Web to search for its wealth of online resources. Topics include an overview of personal computer operations; the history and philosophy of the Internet; configuring a personal computer to connect to the Internet; selecting an Internet service provider; sending and receiving electronic mail (E-mail); log in to remote computers using Telnet; locating network resources using Search Engines; participating in discussion groups using Usenet; downloading software, online text, graphics, sound and video files using file transfer protocol (FTP) and ethical uses of the Internet. Other topics include developing, creating and posting personal and business Web pages using the hypertext markup language (HTML). (CSU) (Degree credit)

CIS 151 F Internet Research (2)

Advisory: CIS 150 F Introduction to the Internet

One and one-half hour lecture and one and one-half hour lab per week. This course is an introduction to the information resources available on the Internet, for the purpose of performing research. Students will learn how to use Internet search tools and methods to locate useful, accurate, and reliable information on the Internet. Topics include search engines; advanced search strings and options; comparison of search engines; Boolean operators, locating people, businesses, libraries, and multi-media; industry specific search engines, methods, and sources; electronic bulletin board services; Listserv; archives; File Transfer Protocol, and information literacy. Other topics include evaluation of Internet materials; legal issues and copyrights of Internet information; and citing Web and Internet resources. (CSU) (Degree credit)

CIS 152 F Web Page Design II (2)

One and one-half hour lecture and one and one-half hour lab per week. This course will prepare students to create Internet Web pages for personal and business purposes. Students will learn basic Internet concepts, using an Internet browser, and Web page creation. Emphasis is placed on learning the Hypertext Markup Language, using and editing graphic files, and creating various types of Web pages. (CSU) (Degree credit)

CIS 153 F Business Web Graphics (2)

Advisory: CIS 150 F Introduction to the Internet

One and one-half hour lecture and one and one-half hour lab per week. This course teaches the skills necessary to create business graphics for Web pages. Topics include graphic file formats used on Web pages, designing Web components using a graphical editor and using graphical elements in Web page design. Students should be familiar with using the Internet. (CSU) (Degree credit)

CIS 154 F JavaScript Programming I (2)

Advisory: CIS 150 F Introduction to the Internet with a grade of "C" or better or 152 F Web Page Design II with a grade of "C" or better

One and one-half hour lecture and one and one-half hour lab per week. This course teaches the student to use the JavaScript programming language with Hyper-Text Markup Language (HTML) pages. Emphasis is placed on creating HTML pages that include JavaScript programs. The student will learn the basic syntax of the JavaScript language, how to create JavaScript programs inside HTML documents, and how to use JavaScript programs to enhance Web pages. (CSU) (Degree credit)

CIS 155 F Web Page Multimedia Design I (2)

Advisory: CIS 152 F Web Page Design II with a grade of "C" or better

One and one-half hour lecture and one and one-half hour lab per week. This course introduces students to multimedia Web design. Topics include how to create multimedia content for Web pages, how to choose the right multimedia material, how to edit the material, and how to include the material in Web pages. (CSU) (Degree credit)

CIS 156AF WebMaster — Foundations (2)

One and one-half hour lecture and one and one-half hour lab per week. This course covers an introduction to the structure, operation, and technical aspects of the Internet. Students will learn how to use a personal computer to access Internet and the World Wide Web to search for its wealth of online resources. Topics include an overview of personal computer operations; the history and philosophy of the Internet; configuring a personal computer to connect to the Internet; selecting an Internet Service Provider; sending and receiving electronic mail (E-mail); locating network resources using Search Engines; downloading software, online text, graphics, sound and video files using file transfer protocol (FTP) and ethical uses of the Internet. Other topics include developing, creating and posting personal and business Web pages using the hypertext markup language (HTML). The course also covers CIW [Certified Internet Webmaster] material so it will prepare students for the all other CIW exam(s) (CSU) (Degree credit).

CIS 156BF WebMaster — Designer (3)

Three hours lecture and two hours lab per week. This course covers designing web sites that have e-commerce capabilities. Topics include using web programs and editors to create, set-up, and edit B2C and B2B web sites. Information on design methodology, e-commerce strategies, and web site structure will be examined. Students must have a working knowledge of basic Internet concepts, HTML/DHTML, and some programming language. The course also covers CIW [Certified Internet Webmaster] material so will prepare students for the 1DO-420, and 1DO-425 test. These exams fulfill the requirements for CIW Designer certification. (CSU) (Degree credit)

CIS 156CF WebMaster — Administration (3)

Advisory: CIS 156AF Webmaster — Foundations, CIS 150 F Intro to Internet, or CIS 152 F Web Page Design II, and some knowledge of a programming language

Three hours lecture, two hours lab per week. This course covers administration of web resources. Topics include using web programs and editors to set-up, edit, and manage web sites. Information on server administration, Internetworking, and web security will be examined. Students must have a working knowledge of basic Internet concepts, HTML, basic networking and some programming language. The course also covers CIW [Certified Internet Webmaster] material so will prepare students for the 1DO-450, 1DO-460, and 1DO-470. These exams fulfill the requirements for CIW Administrator certification. (CSU) (Degree credit)

CIS 157 F Dreamweaver I (3)

Advisory: CIS 150 F Introduction to the Internet

Three hours of lecture and two hours of lab per week. This course covers using Dreamweaver to create Web pages. Topics include creating web pages with graphics, links, and multimedia elements. Students will also learn how to import files and graphics into Dreamweaver from other programs. Students should be familiar with the Internet. (CSU) (Degree credit)

CIS 159 F Introduction to XML (2)

Advisory: CIS 152 F Web Page Design II

One and one-half hour lecture and one and one-half hour lab per week. This course teaches the basic concepts of XML. Topics include the structure of an XML document, creating XML documents, using Data Definitions, and linking XML documents to other web components. Students should have a working knowledge of HTML. (CSU) (Degree credit)

CIS 180 F Introduction to Networking Concepts (3)

Three hours lecture per week. This class introduces the student to data communications and networking concepts used in businesses. Topics include the major components of a data communications networks, local area networks, wide area networks, networking topologies, network protocols, internetworking, and categorizing network operating systems. (CSU) (Degree credit)

CIS 183 F Network Security Fundamentals (3)

Advisory: Complete CIS 107 F Introduction to Operating Systems and CIS 180 F Introduction to Networking Concepts with a grade of "C" or better.

Three hours lecture and one hour lab per week. This course covers terminology, technology, and software used with network security. This course is designed to provide students with an overview of network security. Students will learn about communication security, infrastructure security and cryptography. Business plans for disaster recovery will be covered. This course may be taken four times for credit. (CSU) (Degree credit)

CIS 205AF Spreadsheet II (2) (formerly CIS 205 F)

Advisory: CIS 105 F Spreadsheet I

One and one-half hour lecture and one and one-half hour lab per week. Building upon knowledge gained in CIS 105 F Spreadsheet I, advanced applications including worksheet design, worksheet text enhancements, graphs and formatting capabilities will be covered. Advanced concepts on the creation and use of databases, integration with other database software, and how spreadsheet software can be used as a repository and report writer for data queried from other databases or from a corporate SQL relational database will be covered. Development of complex formulas using functions, and an in-depth study of macros, including the design of custom menus to automate spreadsheet applications will also be included. This course will cover integration of spreadsheet software with other Windows-based software. State-of-the-art software will be used. (CSU) (Degree credit)

CIS 205BF Macro Programming (2)

Advisory: CIS 105 F Spreadsheet I

One and one-half hour lecture and one and one-half hour lab per week. This course covers using the macro and programming features spreadsheet application programs. Students will learn how macros work, how to define macros by capturing actions, and how to create custom macros. Students will also learn the Visual Basic for Applications programming language including looping, input and output, and decisions. This course may be taken four times for credit. (CSU) (Degree credit)

CIS 211 F Basic Programming for Business (2) (formerly 211BF)

Three hours lecture and two hours lab per week. This class teaches fundamental programming concepts using a modern programming language. Students learn the concepts behind program design and operation, how to use decision-making commands, how to perform input and output, how to create and use looping instructions, and how to use other current programming concepts. (CSU) (UC Credit Limitation) (Degree credit)

CIS 212 F Robotic Programming (3)

Three hours lecture and two hours lab per week. This class teaches basic programming concepts by creating applications for physical robotic devices. Students will learn how to connect to these robotic devices, how to design a program that controls the device, and how to download their program to the device. Programming topics include looping, making decisions, variables, and arrays. (CSU) (Degree credit)

CIS 217 F Visual Basic Programming I (3)

Three hours lecture and two hours lab per week. This course is an introduction to Visual Basic programming. The course provides a study of the use and implementation of Visual Basic programming including objects, events, methods, properties, project windows, forms, strings, control structures, custom menus, custom procedures, sequential files, random access files, color, drawing, and error trapping. (CSU) (UC Credit Limitation) (Degree credit)

CIS 218 F Visual Basic Programming II (3)

Advisory: CIS 105 F Spreadsheet I and CIS 142 F Database I

Three hours lecture and two hours lab per week. This class introduces Visual Applications programming. Topics include the structure of a VBA program, programming logic, and using VBA to create Microsoft Office applications. Additional topics include using VBA in Excel, Word, Access, and Outlook. The may be taken four times for credit. (CSU) (Degree Credit)

CIS 219 F Visual Basic Programming III (3)

Prerequisite: CIS 217 F Visual Basic Programming I with a grade of "C" or better.

Three hours lecture and two hours lab per week. This course covers various specialized visual basic programming tasks including database management, component level programming, XML processing, distributed network programming, and embedded device programming. Students learn to create programs that read and write to databases, which are structured as components, process XML files, and can be distributed across a network. (CSU) (Degree credit)

CIS 220 F Web Server Programming (3)

Advisory: CIS 152 F Web Page Design II and CIS 217 F Visual Basic Programming I

Three hours lecture and two hours lab per week. This course covers topics on Web programming for the Internet and Intranets. Topics include an explanation of how programs are run across the Internet, the various types of Web programs, and how information is loaded into network databases. Programming for both clients and servers will be covered in this class. Students should have a background in Web page design with HTML and have a background in Visual Basic programming. (CSU) (Degree credit)

CIS 222 F CGI/Perl Scripting (3)

Advisory: Complete CIS 152 F — Web Page Design II

Three hours lecture and two hours lab per week. This course teaches the Perl scripting language. Topics include using Perl in Web Pages with CGI. Topics include basic Perl syntax, data types, and functions. Topics also include using Perl with files and databases. Students must have a working knowledge of HTML. (CSU) (Degree credit)

CIS 223 F Programming in C++ (3)

Advisory: CIS 226 F Java Programming I or CIS 211 F Basic Programming for Business

Three hours lecture and two hours lab per week. This course is designed for students who have some experience with structured programming techniques. Students will learn the C++ programming language as it applies to business applications. Documenting, coding, entering, computing, and executing programs will take place on the personal computer. (CSU) (UC Credit Limitation — CIS 223 F and CSC1 233 F combined: maximum credit one course) (Degree credit)

CIS 225 F Netware System Manager (3-3)

Three hours lecture and two hours lab per week arranged. This course covers terminology, technology, topologies, and software used in local area networks. The course is designed for computer users and managers of local area networks. System administrators will learn to support users, save user accounts, implement levels of security, apply diagnostics, and back up and maintain LAN software. Course may be taken twice for credit. (CSU) (Degree credit)

CIS 226 F Java Programming I (3)

Advisory: CIS 211 Basic Programming for Business or CIS 217 F Visual Basic Programming I or CIS 223 F Programming in C++ with a grade of "C" or better

Three hours lecture and two hours lab per week. This course is an introduction to designing, creating, and debugging Java programs. Students will learn the syntax of the Java programming language, how to design programs using Object Oriented Analysis and Design, and how to create programs that run over the Internet as well as stand-alone programs. Emphasis is placed on program design, using Java programs with HTML pages, and software re-use. (CSU) (UC) (Degree credit)

CIS 228 F Java Programming II (3)

Advisory: CIS 226 F Java Programming I and CIS 107 F Intro to Operating Systems with a grade of "C" or better

Three hours lecture and two hours lab per week. This course covers advanced topics in Java programming. Topics include using the Java Swing programming environment, the CORBA programming models, event driven and messaging based structure of programs, and Java network programming. Students should be familiar with Microsoft Windows and with the Java programming language. (CSU) (Degree credit)

CIS 229 F XML Programming (3)

Advisory: CIS 159 F Introduction to XML

Three hours lecture and two hours lab per week. This course covers XML programming. Topics include using XML parsers in JavaScript and Java, using XML for file input/output, and connecting to XML databases. Students must have a working knowledge of XML. (CSU) (Degree credit)

CIS 230 F PHP & MySQL Programming (3)

Advisory: CIS 152 F Web Page Design II and CIS 154 F JavaScript Programming I

Three hours lecture and two hours lab per week. This class teaches how to use the PHP Web programming language and MySQL database program to create interactive, database-driven Web sites. Students learn how to create PHP enhanced pages, how to install and configure MySQL, and how to connect Web clients to the database. This course may be taken four times for credit. (CSU) (Degree credit)

CIS 242 F Database II (2)

Advisory: CIS 142 F Database I

One and one-half hour lecture and one and one-half hour lab per week. This course teaches advanced topics in personal databases using state-of-the-art database software. Students will learn how to design and implement complex databases, how to create complex queries and how to use Structured Query Language, how to create personal databases with other applications, and how to write database macro programs. Other topics include the theory of database design, interfacing personal databases with external databases, and creating Internet personal databases. Students in this course should have fundamental skills in using a personal database. (CSU) (Degree credit)

CIS 252 F Web Page Design III (2)

Advisory: CIS 152 F Web Page Design II

One and one-half hour lecture and one and one-half hour lab per week. This course presents advanced topics in Web page design. Students will learn how to create Web pages that include style sheets, how to use multimedia objects, how to plan and manage large-scale Web sites, how to use client plug-ins, how to work with CGI, Java, and other server side technologies, how to design effective user interfaces, and how to use elements of dynamic HTML. Other topics include using JavaScript, using VBScript, working with different types of graphic objects, and working with the Document Object Model. Students should have a working knowledge of HTML and have created Web pages with HTML. (CSU) (Degree credit)

CIS 254 F JavaScript Programming II (2)

Advisory: CIS 154 F JavaScript Programming I

One and one-half hour lecture and one and one-half hour lab per week. This course teaches advanced concepts in JavaScript. Students learn how to use JavaScript for client and server side design and implementation. Students must have a working knowledge of JavaScript (completing CIS 154 F with a grade of "C" or better). (CSU) (Degree credit)

CIS 255 F Web Page Multimedia Design II (2)

Advisory: CIS 152 F — Web Page Design II

One and one half hour lecture and one and one-half hour lab per week. This course teaches advanced concepts in Flash. Students learn how to use advanced features of Flash to create and script Web pages. Topics include using Flash interactively, connecting Flash scripts to servers, and connecting Flash scripts to databases. Students should have a working knowledge of Flash. (CSU) (Degree credit)

CIS 257 F Dreamweaver II (3)

Advisory: CIS 157 F Dreamweaver I

Three hours lecture and two hours lab per week. This course covers advanced topics in Dreamweaver. Topics include using layers, styles, and automation to create Web pages. Topics also include using Dreamweaver with JavaScript and other Web components. Students should be familiar with Dreamweaver. (CSU) (Degree credit)

CIS 260 F Solaris System Administration (3)

Advisory: Complete CIS 290 F Unix Operating System

Three hours lecture and 2 hours lab per week. This course provides students with the necessary knowledge and skills to perform essential system administration tasks in the Sun Solaris Unix Operating System. Students must have a working knowledge of Unix. Topics include file system management, security, process control, user administration, device management, name services, backup procedures, installation, and application of patches. (CSU) (Degree credit)

CIS 270 F SQL Server Administration (3) (formerly CIS 915 F)

Advisory: CIS 180 F Introduction to Networking Concepts and CIS 107 F Intro to Operating Systems with a grade of "C" or better

Three hours lecture and one hour lab per week. This course introduces students to the administration of Microsoft SQL Server. Students learn an overview of the SQL server environment, installing and administering SQL server, user and database management, and operating SQL server in a networking environment. Emphasis is placed on installing and administering SQL server, setting up user accounts and use access, and managing resources. (Degree credit)

CIS 280 F Intro to Oracle: SQL and PL/SQL (3)

Advisory: Complete CIS 142 F Database I

Three hours lecture and two hours lab per week. This course offers students an extensive introduction to database technology. The class covers the concepts of relational databases and the powerful SQL and PL/SQL programming languages. Students are taught to create and maintain database objects and to store, retrieve, and manipulate data. In addition, students learn to create PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications. Demonstrations and hands-on practice reinforce the fundamental concepts. (CSU) (Degree credit)

CIS 284 F Windows Professional (2) (formerly CIS 929 F)

Advisory: CIS 180 F Introduction to Networking Concepts and CIS 107 F Intro to Operating Systems with a grade of "C" or better

One and one-half hour lecture and one and one-half hour lab per week. This course introduces students to the latest Microsoft Operating System software. Students learn an overview of the Windows environment, installing and administering software, software management, performance tuning, and connecting to a network. Emphasis is placed on configuring Windows as a network client. (Degree credit)

CIS 285 F Windows Server (3) (formerly CIS 940 F)

Advisory: CIS 180 F Introduction to Networking Concepts and CIS 040 F Introduction to Windows both with a grade of "C" or better

Three hours lecture and one hour lab per week. This course introduces students to Microsoft Windows Server and enterprise networks. Students learn an overview of the Windows environment, installing and administering servers, domain management and networking. Emphasis is placed on managing a Windows network, setting up user accounts and user access, and managing resources. (Degree credit)

CIS 286 F Web Server Management (3) (formerly CIS 918 F)

Advisory: CIS 180 F Introduction to Networking Concepts and CIS 107 F Intro to Operating Systems with a grade of "C" or better

Three hours lecture and one hour lab per week. This course introduces students to Microsoft Windows Information Server and enterprise networks. Students learn an overview of the Windows environment, installing and administering Internet information server, domain management and networking. Emphasis is placed on managing Internet information server, setting up user accounts and user access, and managing resources. (Degree credit)

CIS 287 F Exchange Server (3) (formerly CIS 920 F)

Advisory: CIS 180 F Introduction to Networking Concepts and CIS 107 F Intro to Operating Systems with a grade of "C" or better

Three hours lecture and one hour lab per week. This course introduces students to the administration of Microsoft Exchange Server. Students learn an overview of the Exchange server environment, installing and administering Exchange server, user and database management, and operating Exchange server in a networking environment. Emphasis is placed on installing and administering Exchange server, setting up user accounts and user access, and managing resources. (Degree credit)

CIS 289 F Windows Active Directory (3) (formerly CIS 948 F)

Advisory: CIS 180 F Introduction to Networking Concepts and CIS 107 F Intro to Operating Systems with a grade of "C" or better

Three hours lecture and one hour lab per week. This course introduces students to Microsoft Windows Active Directory and enterprise networks. Students learn an overview of the Windows environment, installing and administering DNS servers, Active Directory management and networking. Emphasis is placed on managing a Windows Directory network, setting up user accounts and user access and managing resources. (Degree credit)

CIS 290 F Unix Operating System (3) (formerly CIS 910 F)

Advisory: CIS 107 F Intro to Operating Systems

Three hours lecture and two hours lab per week. This course is an introduction to the Unix operating system. Topics include installing and configuring Unix, using Unix utilities to manage files and resources, and using Unix on a network. Other topics include installing and configuring common Unix graphical user interfaces, solving operating system problems, and interfacing Unix with other operating systems. Students should be familiar with another operating system such as a Microsoft Windows or Windows NT. (Degree credit)

CIS 291 F Enterprise Networking (3)

Advisory: CIS 180 Introduction to Networking Concepts and either CIS 285 F Windows Server, CIS 225F Netware System Manager, or CIS 260 F Solaris System Administration.

Three hours lecture and two hours lab per week. This class teaches concepts and skills in enterprise networking. Topics include cross platform and enterprise level networking hardware and software including DNS, routing, backups, security, and integrating and managing servers running different network operating systems. Students will get hands-on experience configuring different network operating systems to work in an enterprise network. (CSU) (Degree credit)

Computer Science

The **Computer Science Associate in Science Degree** program requires 20 units of which 16 units are in required courses. An additional 4 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in all required and restricted courses.

Required Courses (16 units)**Suggested sequence**

CSCI	123 F Introduction to Programming Concept in C++ (4) (1st semester)
CSCI	133 F Data Structures in C++ (4) (2nd semester)
MATH	171 F Discrete Mathematical (4)
MATH	172 F Graph Theory and Linear Algebra (4)

Restricted Electives (4 units)

CSCI	223 F C Language for Mathematics and Science (4)
CSCI	241 F Assembly Language Programming (4)

Computer Science Courses

CSCI 123 F Introduction to Programming Concepts in C++ (4)

Prerequisite: MATH 141 F College Algebra or MATH 142 F Trigonometry, or equivalent with a grade of "C" or better

Advisory: READ 096 F Preparation for College Reading or the recommended score for placement in READ 142 F College Reading: Logical Analysis and Evaluation on the Reading evaluation exam.

Four hours lecture and one hour arranged per week. This course is an introduction to the basic principles of programming using C++ as the development tool. Topics include the structure and design of algorithms, input/output, branching structures, functions, built-in data types, arrays, structures, files, pointers and elementary operations on linked structures. The object-oriented programming paradigm will be introduced. Topics include encapsulation, polymorphism, libraries, streams, inheritance and abstract data types. Students will design algorithms, write external and internal documentation and design and write source code in C++. (CSU) (UC) (Degree credit)

CSCI 133 F Data Structures in C++ (4)

Prerequisite: CSCI 123 F Introduction to Programming Concepts in C++ or equivalent, with a grade of "C" or better

Four hours lecture and one hour arranged per week. This is a course in algorithm design and data structures implemented using C++. Data structures examined are arrays, linked lists, stacks, queues, trees, tables, and graphs. Algorithm topics include hashing, sorting heaps, searches and algorithm efficiency using Big-O notation. Students will create and modify class libraries to implement these structures. (CSU) (UC) (Degree credit)

**CSCI 223 F C Language for Mathematics and Science (4)
(CAN CSCI 16)**

Prerequisite: CSCI 123 F Introduction to Programming Concepts in C++ or one prior programming language with a grade of "C" or better

Four hours lecture and one hour arranged per week. This course is an introduction to the C programming language. One of the latest C compilers will be used on a personal computer. Topics include data types, functions, pointers, bit manipulation and file I/O. Students will design, code and test program applications in the mathematics, scientific and engineering environments. (CSU) (UC) (Degree credit)

**CSCI 241 F Assembly Language Programming (4)
(CAN CSCI 10)**

Prerequisite: CSCI 133 F Data Structures C++ or CSCI 223 F C Programming for Mathematics and Science with a grade of "C" or better

Four lecture hours and one hour arranged per week. This course is an introduction to assembly language programming. It includes reviews of computer organization, programming techniques and concepts, addressing techniques, input/output, hardware architecture, and data structures. (CSU) (UC credit limitation) (Degree credit)

Construction

Construction Estimating

The **Construction Estimating Certificate** Program requires a total of 17 units in required courses. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (17 units)

- CSTR 015 F Construction Management (3)
- CSTR 030 F Construction Blueprint Reading (3)
- CSTR 060 F Computer Estimating in Construction (3)
- CSTR 065 F Construction Project Scheduling (3)
- CSTR 110 F Residential Estimating (3)
- CSTR 112 F Construction Materials, Specifications, and Purchasing (2)

Construction Inspection

Curriculum leads to the **Associate in Science Degree** and/or entry-level employment in the construction industry.

Required courses (18 units)

- CSTR 030 F Construction Blueprint Reading (3)
- CSTR 032 F Uniform Plumbing Code (3)
- CSTR 034 F National Electric Code (3)
- CSTR 036 F Uniform Building Code — Residential (3)
- CSTR 037 F Uniform Building Code — Commercial/Industrial (3)
- CSTR 038 F Uniform Mechanical Code (3)

The **Construction Inspection Certificate** requires the completion of 25 units of which 15 units are in required courses. An additional 10 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (15 units)

- CSTR 032 F Uniform Plumbing Code (3)
- CSTR 034 F National Electrical Code (3)
- CSTR 036 F Uniform Building Code — Residential (3)
- CSTR 037 F Uniform Building Code — Commercial/Industrial (3)
- CSTR 038 F Uniform Mechanical Code (3)

Restricted Electives (10 units)

- CSTR 006 F Introduction to Residential Plumbing and Mechanical Systems (3)
- CSTR 030 F Construction Blueprint Reading (3)
- CSTR 104 F Concrete and Masonry (3)
- CSTR 108 F Surveying for Builders (2)
- TECH 081 F Technical Mathematics I (3)
- TECH 088 F Technical Science (3)
- TECH 127 F Industrial Safety (1)

Construction Management

Curriculum leads to the **Associate in Science Degree** and/or employment in the construction industry. A total of 24 units are required. High School preparation: woodwork, drafting, and mathematics are recommended.

Complete 24 or more units from the following list:

- ACCT 101AF Financial Accounting (4)
- BUS 161 F Introduction to Business (3)
- BUS 180 F Entrepreneurship: Small Business Management (3)
- CIS 100 F Introduction to Personal Computers (3)
- CSTR 014 F Construction Office Practice (3)
- CSTR 015 F Construction Management (3)
- CSTR 030 F Construction Blueprint Reading (3)
- CSTR 110 F Residential Estimating (3)
- CSTR 112 F Construction Materials, Specifications & Purchasing (2)

Construction Technology

Curriculum leads to the **Associate in Science Degree** and/or employment in the construction industry. A total of 24 units are required.

High School preparation in woodwork, drafting, and mathematics are recommended.

Complete 24 or more units from the following list:

- CSTR 006 F Introduction to Residential Plumbing and Mechanical Systems (3)
- CSTR 007 F Residential Electrical Systems (2)

CSTR	014 F Contractor's Office Practices (3)
CSTR	018 F Residential Construction Practice II (4)
CSTR	030 F Construction Blueprint Reading (3)
CSTR	042 F Residential Steel Frame Construction (4)
CSTR	100 F Beginning Residential Construction (4)
CSTR	102 F Residential Finish Construction (4)
CSTR	104 F Concrete and Masonry (3)
CSTR	108 F Surveying for Builders (2)
CSTR	110 F Residential Estimating (3)
CSTR	112 F Construction Materials, Specifications & Purchasing (2)
CSTR	116 F Residential Construction Practice I (4)
WOOD	110 F Fundamentals of Woodwork (3)

The **Construction Technology Certificate** Program requires a total of 29 units of which 17 units are in required courses. An additional 12 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College. Any course offered in the construction technology department (ARCH, CSTR or WOOD) will fulfill requirements for the restricted electives. The certificate leads to entry-level employment in the construction industry.

Required Courses (17 units)

CSTR	006 F Introduction to Residential Plumbing and Mechanical Systems (3)
CSTR	100 F Beginning Residential Construction (4)
CSTR	102 F Residential Finish Construction (4)
CSTR	104 F Concrete and Masonry (3)
CSTR	110 F Residential Estimating (3)

Restricted Electives (12 units)

Any classes offered by the Construction Technology Department fulfill the requirements for restricted electives. (Architecture, Construction, and Woodworking)

Construction Courses

CSTR 005 F Construction Technology Lab (0.5-2)

Corequisite: Concurrent enrollment in any one of the following courses: CSTR 006 F Introduction to Residential Plumbing and Mechanical Systems, CSTR 007 F Residential Electrical Systems, CSTR 100 F Beginning Residential Construction, CSTR 102 F Residential Finish Construction, CSTR 104 F Concrete and Masonry.

Twenty-four hours lab for each .5 unit credit. This course offers students the opportunity to further develop their skills at hand and power tool operations, and to devote more time to construction projects. One-half unit credit will be given for each twenty-four hours of laboratory participation. Course may be repeated four times for credit for a maximum of 8 units. Open Entry. (Degree credit)

CSTR 006 F Introduction to Residential Plumbing and Mechanical Systems (3)

Three hours lecture per week. Fundamentals of residential plumbing, heating, air conditioning, and ventilation. (Degree credit)

CSTR 007 F Residential Electrical Systems (2)

One and one-half hours lecture and one and one-half hours laboratory per week. This course is an introduction to load center sizing, wiring circuits and grounding systems used in residential construction. Laboratory exercises will cover the wiring of lighting and power circuits, dedicated circuits, grounding and troubleshooting. (Degree credit)

CSTR 014 F Contractors' License Law (3)

Three hours lecture per week. Covers the problems in the legal and practical aspects of contracting: Contractors' License Law, the Mechanic's Lien Law, labor code, Worker's Compensation, and Insurance. Business management for both the private and public sector will also be covered. This course will prepare the student to pass the Law and Business Exam required for a Contractors' License in the state of California. (Degree credit)

CSTR 015 F Construction Management (3)

Three hours lecture per week. The course covers the organization and problems associated with managing a building construction business. Topics will include sales, bidding, contracts, purchasing, scheduling, safety, and community relations. (Degree credit)

CSTR 016 F Business Administration for the Construction Industry (3)

Three hours lecture per week. Provides the student with instruction in the practical aspects of business administration concepts and practices within the construction industry. The course surveys successful operating techniques, business structure, business plans, ownership, accounting, marketing, finance, taxation and business regulations. (Degree credit)

CSTR 018 F Residential Construction Practice II (4)

Prerequisite: CSTR 102 F Residential Finish Construction

Two hours lecture and six hours laboratory per week. Provides actual practice in the finish work of the house project. Course work includes: insulating, dry walling, door installation, finish hardware, finish plumbing, finish electrical, finish trim, painting, and any finishing processes that are deemed necessary to complete the house project. (Degree credit)

CSTR 020 F Remodeling and Additions Construction I (4)

Prerequisite: CSTR 100 F Beginning Residential Construction

Two hours lecture and six hours laboratory per week. Experiences in room additions and remodeling construction with emphasis on: starting the job, scheduling, estimating, job progress, and people relations. Tie-ins, foundations, plumbing, framing, roofing, electrical and mechanical areas will be covered. (Degree credit)

CSTR 022 F Remodeling and Additions Construction II (4)

Prerequisite: CSTR 102 F Residential Finish Construction

Two hours lecture and six hours laboratory per week. This course will provide the experiences in finish work in remodeling and additions to include patching and finish carpentry, electrical, plumbing, and heating. (Degree credit)

CSTR 028 F Introduction to Alternate Energy (2)

Two hours lecture per week. Course provides an overview of the world energy situation and a study into alternate energy sources. Solar water heating, solar space heating and cooling, photovoltaics, geothermal, wind generators, and others will be studied. (Degree credit)

CSTR 030 F Construction Blueprint Reading (3)

Three hours lecture per week. Interpretation of architectural working drawings as they relate to residential and light commercial construction. The meaning of various lines, symbols, and conventions as well as construction documents will be covered. (Degree credit)

CSTR 031 F International Building Code (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent published adoption of the International Building Code. The student will study the building codes as they pertain to commercial and industrial construction. (Degree credit)

CSTR 032 F Uniform Plumbing Code (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials. (Degree credit)

CSTR 033 F Commercial Construction Blueprint Reading (3)

Three hours lecture per week. Course emphasizes the interpretation of commercial architectural drawings as they relate to commercial construction industry. Contract documents, specifications, site work, structural steel construction, reinforced concrete, mechanical systems, and electrical systems will be covered. Knowledge and understanding of residential blueprints are recommended. (Degree credit)

CSTR 034 F National Electrical Code (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent National Electrical Code as published by the National Fire Protection Association. (Degree credit)

CSTR 035 F California Accessibility & Energy Costs (3)

Three hours lecture per week. Interpretation and application of the California Code of Regulations (Title 24) as it pertains to various types of structures within the building industry. Special emphasis will be placed on California Energy Regulations and modifications for the disabled for accessibility requirements. (Degree credit)

CSTR 036 F Uniform Building Code — Residential (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent Uniform Building Code as published by the International Conference of Building Officials. The course will study the codes related to residential construction. (Degree credit)

CSTR 037 F Uniform Building Code — Commercial/Industrial (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent Uniform Building Code as published by the International Conference of Building Officials. The course will study the codes related to commercial and industrial construction. (Degree credit)

CSTR 038 F Uniform Mechanical Code (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent Uniform Mechanical Code as published by the International Conference of Building Officials. The course will study the codes related to commercial and industrial construction. (Degree credit)

CSTR 039 F Commercial Mechanical Code (3)

Three hours lecture per week. This course has been designed for the individual who deals with the design of heating, cooling, ventilation and refrigeration in larger, more complex type buildings. Training received in this course will make the individual aware of the areas where the Building and Mechanical Codes overlap. (Degree Credit)

CSTR 040 F Building Design for Hazardous Materials (3)

Advisory: ET 200 F Hazardous Materials Management Applications

Three hours lecture per week. The course is designed to introduce the student to the provisions of the Building and Fire Codes affecting the storage, handling and use of hazardous materials. Emphasis will be placed on the requirements for the safety aspects of the codes and recognized standards for solutions. Instruction will focus on problem solving with compliance to the building standards. (Degree credit)

CSTR 041 F International Residential Code (3)

Three hours lecture per week. Topics of instruction will follow the content of the most recent published adoption of the International Residential Code. The student will study the residential codes as they pertain to residential construction. (Degree credit)

CSTR 042 F Residential Steel Frame Construction (4)

Three hours lecture and three hours laboratory per week. This is a comprehensive course that covers the fundamentals of utilizing light frame steel for residential and light commercial. Course emphasizes the safe use of hand and power tools, construction terminology, plan interpretation, and construction practices for foundation systems, and wall, ceiling, and roof framing. (Degree credit)

CSTR 050 F Computer Design Software for the Contractor (2)

One and one-half hours lecture and two and one-half hours lab per week. This course provides the student with instruction in the concepts and practices associated with using computer architectural design software to prepare students in the preparation of designs, blueprints, and material lists for the construction industry. Students will process programs that demonstrate features and functions of the architectural design software. (Degree credit)

CSTR 060 F Computer Estimating in Construction (3)

Two hours lecture and three hours computer lab per week. This course provides the student with instruction in the concepts and practices with using computer estimating software for estimating positions within the construction industry. Students will process programs that demonstrate features and functions of the estimating software. Knowledge and understanding of blueprint reading is beneficial. (Degree credit)

CSTR 065 F Construction Project Scheduling (3)

Two hours lecture and three hours lab per week. This course provides the student with instruction in the concepts and practices associated with using project scheduling software currently used in the construction industry. Students will learn the practical application practices and demonstrate their ability to use the software and concepts associated with construction scheduling. (Degree credit)

CSTR 100 F Beginning Residential Construction (4)

Three hours lecture and three hours lab per week. Course emphasizes the safe use of hand and power tools, construction terminology, plan interpretation and construction practices in: ground work, foundation systems, wall framing, ceiling framing, roof framing, and roofing materials. (CSU) (Degree credit)

CSTR 102 F Residential Finish Construction (4)

Three hours lecture and three hours lab per week. Units of instruction to include: tool usage and safety, terminology, drywall installation and finishing, setting of door frames and hanging doors, installation of casing and base, finish hardware, paneling, railings, stairs, and trim/detail. (CSU) (Degree credit)

CSTR 104 F Concrete and Masonry (3)

Two and one-half hour lecture and one and one-half hour lab per week. The course includes units of instruction in basic concrete technology, concrete testing, concrete placing and finishing, masonry units — block and brick, masonry tools and methods. (CSU) (Degree credit)

CSTR 108 F Surveying for Builders (2)

One hour lecture and three hours lab per week. This is a course for builders and contractors, both general and sub. It includes surveying instruments, surveying practice for construction limited to plot layouts, simple topography as on hillside lots, establishing grade points, using bench marks and other references. Basic applied trigonometry will be reviewed. (CSU) (Degree credit)

CSTR 110 F Residential Estimating (3)

Three hours lecture per week. Stresses residential blueprint reading, estimating, and material listing. Includes site preparation, foundations, framing, exterior finish, interior finish, roofing, hardware, and various specialty trade subcontracts. (CSU) (Degree credit)

CSTR 112 F Construction Materials, Specifications, and Purchasing (2)

Two hours lecture per week. The course covers the study of building materials as used in modern building construction and how they are represented in working drawings and specifications. (CSU) (Degree credit)

CSTR 116 F Residential Construction Practice I (4)

Prerequisite: CSTR 100 F Beginning Residential Construction.

Two hours lecture and six hours lab per week. Provides actual practice in the construction of a house project. Course emphasizes the correct and safe use of tools, rough framing problems, rough electrical, rough plumbing, mechanical systems, roofing, flashing, and exterior finish. (CSU) (Degree credit)

Cosmetology

Curriculum leads to the **Associate in Science Degree** and prepares the student to pass the California Bureau of Barbering and Cosmetology board examination. The program requires 54 units in required courses.

Required Courses (54 units):

COSM 055AF Cosmetology (11)
 COSM 055BF Cosmetology (11)
 COSM 055CF Cosmetology (11)
 COSM 055DF Cosmetology (11)
 COSM 055EF Cosmetology (11)

The **Cosmetology Certificate** requires the completion of 55 units with a grade of "C" or better in each course taken. At least one half of the units completed must be taken at Fullerton College.

Required Courses (54 units)

COSM 055AF Cosmetology (11)
 COSM 055BF Cosmetology (11)
 COSM 055CF Cosmetology (11)
 COSM 055DF Cosmetology (11)
 COSM 055EF Cosmetology (11)

Cosmetology Instructor

Curriculum leads to the **Cosmetology Instructor Associate in Science Degree** requires a total of 18-19 units of which 15 units are in required courses. An additional 3-4 units must be chosen from the restricted electives listed below. This program is designed to Introduce and/or expand Pivot Point principles and advanced techniques.

Required Courses (15 units)

COSM 060 F Instruction Techniques in Cosmetology (15)

Restricted Electives (3-4 units)

COSM 061AF Pivot Point Instruction (1)
 COSM 061BF Pivot Point Instruction (1)
 COSM 061CF Pivot Point Instruction (1)
 COSM 070 F Continuing Education for Instruction Techniques in Cosmetology (2, 2)

Cosmetology Courses

COSM 041 F Esthetician: Level 1 (10)

Prerequisite: 10th grade education

Advisory: Must be 17 years of age when applying for State Board Examination

This course includes basic skin care procedures and techniques; analysis of the skin; facial treatments (manual, electrical and chemical); facial massage manipulations; temporary hair removal (tweezing and waxing); makeup techniques and applications; health, safety and sanitation precautions and procedures; bacteriology, chemistry, electricity, anatomy and physiology; professional ethics, hygiene, personality development, personal and professional management. Related subjects, as they are applicable to Esthetics, are covered. This program is designed toward preparation for the Board of Barbering and Cosmetology Examination, and a successful career as an esthetician. Ten (10) units are given for 300 hours of coursework completed with a "C" or better average. This is the first of two consecutive segments. (Degree credit) Pivot Point Member School.

COSM 042 F Esthetician: Level 2 (10)

Prerequisite: COSM 041 F Esthetician Level 1 with a grade of "C" or better

Advisory: Must be 17 years of age when applying for State Board Examination

This course includes an advanced study of skin care procedures and techniques; analysis of the skin; facial treatments (manual, electrical and chemical); facial massage manipulations (European, lymphatic and acupressure); temporary hair removal (tweezing and waxing); makeup techniques and applications; hygiene, health, safety and sanitation precautions and procedures; chemistry, electricity; professional ethics, growth and personality development; personal, professional and business management; advanced topics and procedures (aromatherapy, spa treatments, chemical exfoliation). Related subjects, as they are applicable to Esthetics, are covered. This program is designed toward preparation for the Board of Barbering and Cosmetology Examination, and a successful career as an esthetician. Ten (10) units are given for 300 hours of coursework completed with a "C" or better average. This is the first of two consecutive segments. (Degree credit) Pivot Point Member School.

COSM 055AF Cosmetology: Level 1 (11)

Prerequisite: 10th grade education

Advisory: Must be 17 years of age when applying for State Board Examination

This course includes basic hair styling, manicuring, facial, and day make-up, permanent waving, scalp treatments, hair cutting, tinting, and bleaching. Related subjects, as they are applicable to cosmetology, are covered. The program is designed toward preparation for the Bureau of Barbering and Cosmetology examination, and a successful career as a cosmetologist. Eleven (11) units will be given for 320 hours of class work completed with a "C" or better average. This is the first of five consecutive segments. (Degree credit) Pivot Point Member School.

COSM 055BF Cosmetology: Level 2 (11)

Prerequisite: COSM 055AF Cosmetology: Level 1 with a grade of "C" or better

Advisory: Must be 17 years of age when applying for State Board Examination

The course includes basic hair styling, manicuring, facials, make-up, permanent waving, scalp treatments, hair cutting, tinting and bleaching, soft permanent wave and chemical relaxing-sodium hydroxide. Related subjects, as they are applicable to cosmetology, are covered. The program is designed toward preparation for the California Bureau of Barbering and Cosmetology examination, and a successful career as a cosmetologist. Eleven (11) units are given for 320 hours of class work completed with a "C" or better average. This is the second of five consecutive segments. (Degree credit) Pivot Point Member School.

COSM 055CF Cosmetology: Level 3 (11)

Prerequisite: COSM 055BF Cosmetology: Level 2, with a grade of "C" or better

Advisory: Must be 17 years of age when applying for State Board Examination

The course includes hair design, manicuring and pedicuring, acrylic nails, facials and corrective make-up, salon permanent waving/chemical texturizing scalp treatments, hair sculpting, color design, soft curl permanent wave/chemical texturizing and chemical relaxing/texturizing. Related subjects, as they are applicable to cosmetology, are covered. The program is designed toward preparation for the California Bureau of Barbering and Cosmetology examination, and a successful career as a cosmetologist. Eleven (11) units are given for 320 hours of class work completed with a "C" or better average. (Degree credit) Pivot Point Member School.

COSM 055DF Cosmetology: Level 4 (11)

Prerequisite: COSM 055CF Cosmetology: Level 3 with a grade of "C" or better; or equivalent

Advisory: Must be 17 years of age when applying for State Board Examination

The course includes advanced hair design, advanced manicuring, advanced facials and make-up, advanced permanent waving/chemical texturizing, advanced hair sculpting, extensions, advanced color design, and advanced chemical relaxing-sodium hydroxide. Related subjects, as they are applicable to cosmetology, are covered. The program is designed toward preparation for the California Bureau of Barbering and Cosmetology Examination, and a successful career as a cosmetologist. Eleven (11) units are given for 320 hours of class work completed with a "C" or better average. (Degree credit) Pivot Point Member School.

COSM 055EF: Cosmetology: Level 5 (11)

Prerequisite: COSM 055DF Cosmetology: Level 4 with a grade of "C" or better; or equivalent

The course includes salon hair design, salon hair sculpting, salon manicuring and pedicuring, salon facials and makeup, salon hair removal, salon permanent design, electrical and manual scalp relaxing-sodium hydroxide. Related subjects, as they are applicable to cosmetology, are covered. The course also includes State Board of Barbering and Cosmetology mock written and performance examinations. The program is designed toward preparation for the Board of Barbering and Cosmetology Examination, and a successful career as a cosmetologist. Eleven (11) units are given for 320 hours of class work completed with a "C" or better average. This is the fifth of five consecutive segments. (Degree Credit) Pivot Point Member School.

COSM 060 F Instruction Techniques in Cosmetology (15)

Prerequisite: COSM 051AF, COSM 051BF, COSM 051CF, COSM 051DF Cosmetology with a "B" average or better. Valid California cosmetology license. Verified work experience as a cosmetologist in a licensed cosmetological establishment. Minimum of five year's experience, one year of which is within the last two years.

Designed to prepare the student for the teacher's examination required by the California Bureau of Barbering and Cosmetology and enable the student to secure employment as an instructor in a private beauty school. The lecture section consists of demonstrations in teaching with the student participating in both lectures of related information and practical trade demonstrations. A laboratory period involves the instructor trainee in the teaching of Cosmetology students in practical salon work. Fifteen units for 600 clock hours of technical instruction. Offered as a self-pacing, open entry course with flexible hours with a minimum of twelve lab hours per week. Pivot Point Member School. (Degree credit)

COSM 061AF Pivot Point Instruction (1)

Prerequisite: Valid California Cosmetology License and Cosmetology Instructor's License or proof of enrollment in an Instructor Trainee Program

This course is specifically designed for cosmetologists, instructors, and instructor trainees that need to know and teach Pivot Point techniques to obtain employment in most community college Cosmetology departments and progressive salons or private schools. Pivot Point Member School. (Degree credit)

COSM 061BF Pivot Point Instruction (1)

Prerequisite: Valid California Cosmetology License and Cosmetology Instructor's License or proof of enrollment in an Instructor Trainee Program

This course is specifically designed for cosmetologists, instructors, and instructor trainees that need to know and teach Pivot Point techniques to obtain employment in most community college Cosmetology departments and progressive salons or private schools. Pivot Point member School. (Degree credit)

COSM 061CF Pivot Point Instruction (1)

Prerequisite: Valid California Cosmetology License and Cosmetology Instructor's License or proof of enrollment in an Instructor Trainee Program

This program course is specifically designed for cosmetologists, instructors, and instructor trainees that need to know and teach Pivot Point techniques to obtain employment in most community college Cosmetology departments and progressive salons or private schools. Pivot Point Member School. (Degree credit)

COSM 070 F Continuing Education Instruction Techniques in Cosmetology (2-2-2-2)

Prerequisite: Valid California Cosmetology Instructor's License

Designed to meet the criteria for minimum hours of continuing education required for renewal of an instructor's license. The lecture consists of demonstration in teaching with student participating in both lectures of related information and practical trade demonstration. Course may be taken four times for credit. Pivot Point Member School. (Degree credit)

Counseling and Guidance

COUN 050 F College Orientation (1)

Credit/no credit only.

One hour of lecture per week or equivalent. This course is designed to satisfy the California Community Colleges Matriculation requirements of Assessment, Orientation, and Counseling/Advising. The course will familiarize the student with Fullerton College associate degree, certificate, and transfer requirements. Students will explore the rules, policies, and campus resources of Fullerton College. (Degree credit)

COUN 060 F Academic Success (1)

Credit/no credit only.

One hour of lecture per week or equivalent. This course is designed to promote student success. Students will develop skills in time management, decision making, study techniques, and learning strategies. Students will increase their awareness of community resources, current college policies and procedures, and cultural diversity. (Degree credit)

COUN 063 F Self-Esteem: Pathway to Success (1)

Letter grade or credit/no credit option.

One hour of lecture per week or equivalent. This course provides students with skills necessary for developing a positive self-image. Students will acquire knowledge and experiences in areas such as awareness/perception, behavior, communication, personality, stress management, motivation, and success. Recommended for students interested in personal growth and in improvement of their success in college. (Degree credit)

COUN 101 F The College Experience (2)

Two hours of lecture per week or equivalent. This course will facilitate an understanding of the issues involved in having a successful college experience. The emphasis includes four major components of study: self-exploration; development of academic and survival skills; awareness of higher education; and transfer exploration and vocational options. Topics will include: student development theory, purpose for attending college, maintaining health, development of positive self-esteem, strategies for living a balanced life, and acquisition of academic and survival skills. Students will develop knowledge of college resources, policies and procedures. (CSU) (Degree credit)

COUN 110 F Teaching as a Career (3-4)

Letter grade or credit/no credit option.

Two hours lecture per week and 50-100 laboratory hours per semester. Orientation to teaching as a profession. This course surveys the nature of the work, qualifications, and the supply and demand for teachers. A field work experience including observation and assistance in a school and/or community agency is required. This course is designed for prospective teachers. (CSU) (Degree credit)

COUN 140 F Educational Planning (.5)

Credit/no credit only.

Two hours per week for four weeks or equivalent. Students taking this course will review an overview of graduation requirements, transfer requirements, campus policies, student services, and career planning. Strongly recommended for first-time students with declared majors or enrollment in specific programs. (CSU) (Degree credit)

COUN 141 F Career Exploration (1)

Letter grade or credit/no credit option.

One hour of lecture per week or equivalent. This course is designed to introduce students to a career decision-making process that includes both evaluation of self and exploration of the world of work. Self-evaluation activities include identification of personality/temperament, interests, skills, goals, and values. Career research activities are utilized to examine the world of work. The focus of the course is on self-description in relation to choice of occupation and career. (CSU) (Degree credit)

COUN 143 F Creative Job Search (1)

Letter grade or credit/no credit option.

One hour of lecture per week or equivalent. The course will cover the basic practical aspects of conducting a successful job search. The focus will be on application, cover letter, resume, and interview as well as labor market research. (CSU) (Degree credit)

COUN 144 F Career Motivation and Self-Confidence (1)

Letter grade or credit/no credit option.

One hour of lecture per week or equivalent. This course is designed to help students identify individual differences, examine personal characteristics and behavior, and evaluate self-concept. Students will interpret information and apply knowledge about self as related to career demands and opportunities with increased motivation and self-confidence. (CSU) (Degree credit)

COUN 148 F Human Potential (1)

Letter grade or credit/no credit option.

One hour of lecture per week or equivalent. This course will facilitate students to understand and enhance their self-concept through an exploration of how that self-concept directs behavior patterns. This course will also enable students to examine and assess their strengths and potential, values, and decision-making skills in order to develop an improved self-concept, and improve communication and listening skills. By becoming aware of their individual potential, students can plan and achieve their educational goals. (CSU) (Degree credit)

COUN 151 F Career/Life Planning (3)

Letter grade or credit/no credit option.

Three hours of lecture per week. A course designed for, but not restricted to, undecided students and persons in career transition. Includes training in life problem-solving and self-management skills. Topics include extensive exploration of one's values, interests, and abilities; adult development theory and the changes that occur over the life span; self-assessment including identifying one's skills and matching personality with work; an intensive career investigation; decision making, goal setting and motivation; and job search and interview techniques. (CSU) (Degree credit)

COUN 161 F Assertion Skills/Communication (1, 1)

Letter grade or credit/no credit option.

One hour of lecture per week or equivalent. Course will equip students with a basic understanding of assertive communication and present skills, techniques and strategies for implementation of assertive communication behaviors. Course may be taken twice for credit. (CSU) (Degree credit)

COUN 199 F Counseling and Guidance Independent Study (.5-2, .5-2, .5-2, .5-2)

Letter grade or credit/no credit option.

Selected hours depend upon units assigned. Designed for students who wish to explore in depth various guidance-related topics. Unit credit may range from one-half to two units in any given semester. Consult class schedule for list of topics and to verify credit for the particular term. Students may enroll up to a maximum of three semesters. Course may be taken three times for credit. (CSU) (UC review required.) (Degree credit)

Dance

The **Dance Associate in Arts Degree** program requires a total of **18 units** of which **18 units** are in required courses. An additional **0 units** must be chosen from the restricted units listed below.

Required Courses (18 Units)

- DANC 103 F Dance Technique I (1) or
- DANC 104 F Dance Technique II (1)
- DANC 105 F Ballet I (1) or
- DANC 106 F Ballet II (1)
- DANC 107 F Modern Dance I (1) or
- DANC 108 F Modern Dance II (1)
- DANC 111 F Jazz I (1) or
- DANC 112 F Jazz II (1)
- DANC 120 F Dance History (3)
- DANC 202 F Dance Composition and Choreography (2)
- DANC 203 F Dance Production (2)
- DANC 204 F Dance Rehearsal and Performance (1)
- DANC 205 F Dance ensemble (2)

Restricted Electives (4 Units)**Select 2 Units from the following:**

- DANC 110 F Ballet Folkloric (1)
- DANC 115 F Hip Hop Dance I (1)
- DANC 130 F Afro-Caribbean Dance (1)
- DANC 132 F Flamenco Dance (1)

Select 2 Units from the following:

- DANC 102 F Conditioning for Dance (1)
- DANC 113 F Tap Dance I (1)
- DANCE 114 F Tap Dance II (1)
- DANC 119 F Dance for Theatre (1)
- DANC 214 F Dance Repertory (2)

Drafting Technology: Industrial

Curriculum leads to the **Associate in Science Degree** and/or employment in a variety of industries. A total of 24 units are required.

High School preparation: algebra (two years recommended) and mechanical drafting are recommended.

Complete 24 or more units from the following list:

- DRAF 140 F AutoCAD for Industry (2)
- DRAF 141 F Adv Computer Aided Design for Industry (2)
- DRAF 142 F Customizing AutoCAD (2)
- DRAF 143 F 3D Applications Using AutoCAD (2)
- DRAF 145 F CAD/CAM (2)
- DRAF 171 F Fundamentals of Drafting (2)
- DRAF 173 F Geometric Dimensioning, and Tolerancing (2)
- DRAF 944 F AutoCAD Mechanical Desktop (3)
- DRAF 958 F Electronics Drafting using AutoCAD (2)
- ENGR 102 F Engineering Drawing (3)
- MACH 116 F Machine Tools (2) (Level A)
- TECH 108 F Manufacturing Processes (3)

AutoCAD for Industrial Drafting Certificate

The **AutoCAD for Industrial Drafting Certificate Program** requires completion of all 9 units in required courses. A grade of 'B' or better is required in each course taken. All units toward the certificate must be completed at Fullerton College. The goal of this certificate is to provide preparation for entry-level employment as a user of the AutoCAD computer aided design software application in an industrial setting.

Required Courses (9 units)

- DRAF 141 F Advanced Computer Aided Design for Industry (2)
- DRAF 142 F Customizing AutoCAD (2)
- DRAF 143 F 3D Applications using AutoCAD (2)
- DRAF 944 F AutoCAD Mechanical Desktop (3)

Industrial Drafting — Level 1 Certificate

The **Industrial Drafting – Level I Certificate** a total of 18 units with a grade of “C” or better in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (6 units)

DRAF 070 F Blueprint Reading for the Metal Trades (2)
 DRAF 140 F AutoCAD for Industry (2)
 DRAF 173 F Geometric Dimensioning and Tolerancing (2)

Restricted Electives (12 units)

DRAF 171 F Fundamentals of Drafting (2)
 DRAF 958 F Electronics Drafting Using AutoCAD (2)
 ENGR 102 F Engineering Drawing (3)
 MACH 116 F Machine Tools (2)
 TECH 081 F Technical Mathematics I (3)
 TECH 088 F Technical Science (3)
 WELD 121AF Introduction to Welding (2)

Industrial Drafting — Level 2 Certificate

The **Industrial Drafting – Level II Certificate** requires completion of the Level I Certificate plus a minimum of 18 units. A grade of “C” or better is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College. Eleven units are from a list of required courses; 7 units are from a list of restricted electives.

Completion of 18 units from Level I Certificate, plus:

Required Courses (11 units)

DRAF 141 F Adv Computer Aided Design for Industry (2)
 DRAF 142 F Customizing AutoCAD (2)
 DRAF 143 F 3D Applications Using AutoCAD (2)
 DRAF 145 F CAD/CAM (2)
 DRAF 944 F AutoCAD Mechanical Desktop (3)

Restricted Electives (7 units)

MACH 050 F CNC Programming Using Mastercam (3) or
 MACH 060 F CNC Programming Using SURFCAM (3)
 MACH 116 F Machine Tools (2)
 WELD 121BF Introduction to Welding (2)

Drafting Technology Courses

DRAF 070 F Blueprint Reading for the Metal Trades (2)

Two hours lecture per week. This course is designed to prepare Machine Tool, Welding and Metal Fabrication students to interpret drawings related to the metal trades. Studies of dimensioning and drawing symbols will be included. (Degree credit)

ENGR 102 F Engineering Drawing (3)

(See Engineering)

DRAF 140 F AutoCAD for Industry (2)

Advisory: DRAF 171 F Fundamentals of Drafting or equivalent industry experience

Two hours lecture per week. This is a comprehensive introduction to AutoCAD designed for practicing drafters, engineers, and other manufacturing oriented persons. Topics include hardware requirements and operation, database management, terminology, 2D AutoCAD drawing commands, plotting, symbol libraries, dimensioning, productivity, and basic 3D commands. (CSU) (Degree credit)

DRAF 141 F Advanced Computer Aided Design for Industry (2)

Advisory: DRAF 140 F AutoCAD for Industry or equivalent industry experience

One and one-half hour lecture and one and one-half hour lab per week. This is an advanced course in computer aided design (CAD) using AutoCAD. Students will learn advanced industrial drafting concepts while strengthening their CAD skills. Emphasis will be on drafting and design areas such as fasteners, gears, cams, surface development and intersections, and weldments. A “2D” approach to AutoCAD will be used. (CSU) (Degree credit)

DRAF 142 F Customizing AutoCAD (2)

Advisory: DRAF 140 F AutoCAD for Industry or equivalent industry experience

One and one-half hour lecture and one and one-half hour lab per week. This is an advanced level CAD course using AutoCAD software. It is designed for practicing drafters, engineers, and other manufacturing oriented persons who need to increase their AutoCAD productivity and customize the software for their application. Topics will include symbol attributes, system performance and database management, DOS, menu customization, script files, macros, and AutoLisp. (CSU) (Degree credit)

DRAF 143 F 3D Applications Using AutoCAD (2)

Advisory: DRAF 140 F AutoCAD for Industry or equivalent industry experience

One and one-half hour lecture and two and one-half hours lab per week. This course is designed for the experienced AutoCAD user who needs a working knowledge of AutoCAD’s 3D environment. Topics will include an introduction to 3D applications, the 3D coordinate system, display control wire frame modeling, surface modeling, solids modeling, analysis of a solids model (mass properties), model rendering, hardcopy output, and 2D/3D transfer. The course will be taught with an emphasis on mechanical drafting applications.

DRAF 145 F CAD/CAM (2)

Advisory: DRAF 140 F AutoCAD for Industry or equivalent industry experience

Two hours lecture and one hour lab per week. This course will introduce the process of manufacturing using a common database. Students will use popular Computer-Aided-Drafting (CAD) programs to document design ideas and transfer the database for manufacturing purposes using a Computer-Aided-Manufacturing (CAM) program. Students will produce a prototype of their original idea using a CNC machine tool driven by the CAM data. Topics will include the CAD/CAM industry environment, review of basic CAD concepts and design for manufacturing, introduction to CAM, CAD/CAM communication, CNC code generation and editing, set up and operation of machine tools, and inspection techniques. Some previous machining experience would be helpful. (CSU) (Degree credit)

DRAF 171 F Fundamentals of Drafting (2)

One hour lecture and three hours laboratory per week. A beginning drafting course. Proper use of drafting instruments, lettering, geometric construction, pictorial drawings, orthographic projection, dimensions, single-auxiliary views and sections are introduced. Emphasis is placed on line quality and lettering. Some problems drawn from the industrial field. (CSU) (Degree credit)

DRAF 173 F Geometric Dimensioning and Tolerancing (2)

Advisory: DRAF 070 F Blueprint Reading for the Metal Trades or DRAF 171 F Fundamentals of Drafting or equivalent industry experience

Two hours lecture per week. This is an introductory course in the application and interpretation of geometric dimensioning and tolerancing concepts per the latest revision of the American National Standards Institute (ANSI) Standard #Y14.5M. This course is designed for persons working in the fields of drafting, machining, manufacturing and quality. (CSU) (Degree credit)

DRAF 944 F AutoCAD Mechanical Desktop (3)

Advisory: DRAF 143 F 3D Applications using AutoCAD or industry experience using AutoCAD in a 3D drafting environment

Two and one-half hours lecture and one and one-half hour lab per week. This course provides the student with instruction in the concept, practice, and development of feature based solid modeling using Autodesk Mechanical Desktop. Students will demonstrate the features of the software by creating parametric solid models. (Degree credit)

DRAF 958 F Electronics Drafting Using AutoCAD (2)

Advisory: DRAF 140 F AutoCAD for Industry or equivalent industry experience

One hour and one-half hour of lecture and two and one-half hours of lab per week. This course is designed to provide experience in the use and application of microcomputer based computer-aided design (CAD) in the development of block, flow, single line, schematic, logic, and wiring diagrams. The design and development of a printed wiring board along with all necessary documentation is covered as well. Topics include software and hardware configuration, file management, productivity, menu structure, drawing creation, editing, symbol libraries, and hard copy output. (Degree credit)

Earth Sciences

Astronomy

Curriculum leads to the **Associate in Arts Degree**. This degree requires 18 units of which 17 are in required courses; an additional 1 unit must be chosen from the restricted electives listed below.

Required Courses (17 units)

ESC	116 F Astronomy (3)
ESC	116LF Astronomy Lab (2)
PHYS	221 F General Physics (4)
PHYS	222 F General Physics (4)
PHYS	223 F General Physics (4)

Restricted Electives (1 unit)

CHEM	111AF General Chemistry (5)
CHEM	111BF General Chemistry (5)
MATH	150AF Calculus (4)
MATH	150BF Calculus (4)
MATH	250AF Intermediate Calculus (4)
MATH	250BF Linear Algebra and Differential Equations (4)

Earth Sciences Courses

ESC 100 F Physical Geology (3) (CAN GEOL 6) (ESC 100 F + 100LF — CAN GEOL 2)

Letter grade or credit/no credit option.

Three hours lecture per week. This introductory course explores the physical composition of the earth and those processes that modify its surface. Topics include rocks and minerals, plate tectonics, earthquakes, volcanoes, landslides, flooding, groundwater, beach processes, and earth resources. Contemporary environmental changes such as global warming and resource acquisition problems will also be discussed. Concurrent enrollment in Physical Geology 100 Laboratory is recommended. Field trips may be taken. (CSU) (UC) (Degree credit)

ESC 100LF Physical Geology Laboratory (1) (ESC 100 F + 100LF — CAN GEOL 2)

Letter grade or credit/no credit option. Corequisite: ESC 100 F Physical Geology.

Three hours lab per week. The course supplements ESC 100 F Physical Geology. Laboratory includes identification of minerals and rocks, interpretation of topographic maps and geologic folios, study of landforms and rock structures and field studies. (CSU) (UC) (Degree credit)

ESC 101 F Earth Science Survey (3)

Three hours lecture per week. Laboratory not required but recommended. This multidisciplinary course explores the fields of geology, oceanography, meteorology, and astronomy. Topics include earthquake and volcanic processes, global current patterns, beach formation, hurricane and tornado development, and star and planetary evolution. Special emphasis is placed on contemporary human-induced environmental changes such as global warming and resource acquisition. Class discussions will also focus on the interaction between science and society. Field trips may be taken. (CSU) (UC Credit Limitation: no credit for ESC 101 F if taken after college level class in astronomy, meteorology, geology or oceanography) (Degree credit)

ESC 101LF Earth Science Survey Laboratory (1)

Corequisite: ESC 101 F Earth Science Survey

Three hours lab per week. This laboratory enhances topics covered in the ESC 101 F Earth Sciences Survey lecture course. Included are exercises in identifying minerals and rocks, reading topographic maps, analyzing earthquakes, interpreting coastal processes, forecasting weather, and recognizing the stars and planets. Field trips may be taken. (CSU) (UC Credit Limitation; no credit if taken after a college level course in astronomy, geology or oceanography.) (Degree credit)

ESC 102 F Survey of Natural Disasters (3)

Three hours lecture per week. This course explores those natural disasters that affect human activities. Topics include earthquakes, floods, landslides, volcanoes, hurricanes, tornadoes and asteroid/meteor impacts. The consequences of pollution and population growth will also be explored. Hypothetical and case histories of natural disasters will also be studied. Class discussions will focus on aspects of regional planning, environmental laws and the interaction between science and society. Field trips are optional. (CSU) (UC) (Degree credit)

**ESC 103 F Historical Geology (4)
(CAN GEOL 4)**

Letter grade or credit/no credit option.

Three hours lecture and three hours lab per week. The earth's origin, geological development through time and history of its life are presented using the plate tectonic theory. The importance of environment to evolution and extinction of life forms are stressed. Study and classification of major rock and fossil groups, interpretation of geologic and topographic maps, and application of rock and fossil interpretations to geologic problems are included. Field trips are required. (CSU) (UC) (Degree credit)

ESC 104 F Geology of National Parks and Monuments (3)

Letter grade or credit/no credit option.

Three hours lecture per week. A description of the broad geologic features of North America with special emphasis on U.S. National Parks and Monuments, will be presented. Photographic slides and rock samples will be used to illustrate the geologic significance of the parks and monuments. Utilizing the plate tectonic theory, a geologic history of North America will be deduced from the descriptive geology. Field trips may be taken to national parks or monuments. (CSU) (Degree credit)

ESC 105 F Elements of Meteorology (3)

Three hours lecture per week. A non-mathematical introduction to the science of the Earth's atmosphere, covering both global climate and local weather. Physical explanations of phenomena familiar in southern California such as temperature changes, sea breezes, Santa Ana winds, cloud patterns, rain showers and steady rain, thunderstorms, fronts, and air pollution as well as those more common elsewhere such as tornadoes and hurricanes. Optical effects such as mirages, rainbows, coronas, glories, haloes, and auroras. Topics of growing international concern include the greenhouse effect, global warming, and the hole in the ozone layer. (CSU) (UC) (Degree credit)

ESC 116 F Astronomy (3)

Three hours lecture per week. An introduction to the tools and methods of astronomy and the study of the universe, with particular emphasis on the solar system. High school algebra and plane geometry or their equivalents are highly desirable. (CSU) (UC) (Degree credit)

ESC 116LF Astronomy Laboratory (2)

Corequisite: ESC 116 F Astronomy.

Four hours laboratory or field work per week. This course introduces the student to astronomical viewing and measurement as well as analysis of astronomical data. Students will do lab experiments to understand principles of astronomy and data analysis. They will use telescopes to make observations and gather data (or use computer images) and perform exercises relating to the moon, planets, stars, and galaxies. A field trip for dark sky observation may be arranged. (CSU) (UC) (Degree credit)

ESC 120 F Geology of California (3)

Three hours of lecture per week or equivalent. This course examines the physical and historical geology of California. Each of California's natural provinces will be analyzed for tectonic structures, rock and fossil occurrences, geologic hazards, and mineral deposits. Pertinent state laws and ordinances relating to geologic concerns will be reviewed. Field trips may be taken. (CSU) (Degree credit)

ESC 130 F Introduction to Oceanography (3)

Three hours of lecture per week. The lectures present a survey of the geological, physical, chemical, and biological principles and processes of oceanography. This course examines how these processes interact to form a variety of habitats within the marine ecosystem. An overview is provided of the physical properties of these habitats, along with the distribution and characteristics of organisms found within them. The interactions of humans with the marine environment is presented, as is an introduction to oceanographic tools and their uses. (CSU) (UC) (Degree credit)

ESC 130LF Introduction to Oceanography Field Experience (1)

Corequisite: ESC 130 F Introduction to Oceanography

Four hours field study per week for eight weeks or the equivalent. Field studies to correspond to material covered in ESC 130 F Introduction to Oceanography. Each field experience will be preceded by an orientation lecture/discussion period. May include field work from boats. (CSU) (UC) (Degree credit)

ESC 133 F Navigation and Seamanship (3)

Two hours lecture and three hours laboratory per week. This course is designed to present the basics of navigation theory and the fundamentals of small boat handling and safety. Laboratory and field exercises are designed to give practical experience in navigation techniques and small boat seamanship. (CSU) (Degree Credit)

ESC 180 F Modern Techniques in Sampling (4)

Three hours lecture and three hours lab per week. An introduction to modern survey and sampling methods in terrestrial and ocean sciences, including geological, physical, chemical and biological techniques. Special emphasis will be placed on interdisciplinary and synoptic measurements, including data acquired from earth-orbiting satellites, weather stations, ocean buoys and seismic networks. Laboratory experience will include sampling design, field studies, data acquisition and data analysis, covering a range of environments and data types. Students will be responsible for preparing oral and written reports of their work. Basic computer skills are recommended. (CSU) (Degree credit)

ESC 190 F Environmental Geology (3)

Letter grade or credit/no credit option.

Three hours lecture per week. This course explores those geologic processes that affect human activities. These worldwide processes are occurring today. Topics include the geologic hazards, such as earthquakes, floods, landslides, and volcanoes; the occurrences and limitations of natural resources; and the consequences of pollution and waste disposal on the earth. Hypothetical and case histories of natural disasters will be studied. Class discussions will also focus on geologic aspects of regional planning, environmental laws, and the interaction between science and society. Field trips are optional. (CSU) (UC) (Degree credit)

ESC 196 F Regional Field Studies in Geology (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in selected areas throughout the Southwestern United States. During a given semester, multiple sections may be offered to different study areas or for different topics. Lectures will examine the geologic importance of the area to be visited and how to recognize key geologic features in the field. Study areas include, but are not limited to, Mojave Desert, the Sierra Nevada, and coastal areas. Areas outside of California (i.e., Arizona, New Mexico) may also be selected. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198AF Geology of California Coastal Areas (2)

Two hours of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in selected areas along California's coastline. Lectures will examine the geologic importance of coastal areas and how to recognize key geologic features in the field. Particular attention will be focused on identifying geologic hazards and understanding the natural resource potential. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198BF Geology of the Anza-Borrego Desert State Park Area (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in the Anza-Borrego Desert State Park area. Lectures will examine the geologic importance of the area and how to recognize key geologic features in the field. Particular attention will be focused on identifying geologic hazards and understanding the natural resource potential. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198CF Geology of the Mojave Desert Area (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in the Mojave Desert area. Lectures will examine the geologic importance of the area and how to recognize key geologic features in the field. Particular attention will be focused on identifying geologic hazards and understanding the natural resource potential. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198DF Geology of the Owens Valley/Mammoth Lakes Area (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in the Owens Valley — Mammoth Lakes area. Lectures will examine the geologic importance of the area and how to recognize key geologic features in the field. Particular attention will be focused on identifying geologic hazards and understanding the natural resource potential. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198EF Geology of the Southern California Mountain Areas (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in the Transverse Ranges area. Lectures will examine the geologic importance of the area and how to recognize key geologic features in the field. Particular attention will be focused on identifying geologic hazards and understanding the natural resource potential. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198FF Geology of the Death Valley National Park Area (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in the Death Valley National Park area. Lectures will examine the geologic importance of the area and how to recognize key geologic features in the field. Particular attention will be focused on understanding the natural resource potential of the region. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ESC 198GF Geology of the Joshua Tree National Park Area (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of geologic processes and features in the Joshua Tree National Park area. Lectures will examine the geologic importance of the area and how to recognize key geologic hazards and understanding the natural resource potential. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

Economics

Curriculum leads to the **Associate in Arts Degree**. The Economics AA Degree Program requires a total of 18 units of which 6 are in required courses. An additional 12 units must be chosen from the restricted units listed below.

Required Courses (6 units)

ECON 101 F Principles of Economics – Micro (3) or
 ECON 101HF Honors Principles of Economics – Micro (3)
 ECON 102 F Principles of Economics – Macro (3) or
 ECON 102H Honors Principles of Economics – Macro (3)

Restricted Electives (12 units)

ACCT 101AF Financial Accounting (4)
 BUS 131 F Principles of International Marketing (3)
 ENGL 102 F Introduction to Literature (3)
 GEOG 260 F Economic Geography (3)
 HIST 110 F Western Civilization (3)
 HIST 111 F Western Civilization (3)
 HIST 170 F History of the United States (3)
 HIST 171 F History of the United States (3)
 MATH 120 F Introductory Probability and Statistics (4)
 MATH 130 F Calculus for Business (4)
 MATH 150AF Calculus (4)
 MATH 150BF Calculus (4)
 PHIL 100 F Introduction to Philosophy (3)
 PHIL 160 F Introduction to Ethics (3)
 PHIL 165 F Business and Professional Ethics (3)
 Foreign Language 203F Intermediate (4)
 Foreign Language 204F Intermediate (4)

Economics Courses

ECON 101 F Principles of Economics — Micro (3) (CAN ECON 4)

Three hours lecture per week. Microeconomic analysis. This course presents the basic structure of the economic system of the United States and emphasizes the behavior of the firm within this structure. Special attention is given to the allocation of products and resources through the price mechanism. Topics treated include comparative economic systems, supply and demand, product and resource pricing, the market models, and general equilibrium. (CSU) (UC Credit Limitation) (Degree credit)

ECON 101HF Honors Principles of Economics — Micro (3)

Three hours lecture per week. Microeconomics analysis. This course is enhanced for honors students, presenting the basic structure of the economic system of the United States and emphasizing the behavior of the firm within this structure. Topics treated include comparative economic systems, supply and demand, product and resource pricing, the market models, and general equilibrium. More attention will be given to the quantitative methods used by economists. Students will be expected to give frequent oral reports, participate in group projects, and travel off-campus for special programs. Internet access will be arranged for student groups to participate in a competitive stock market game. (CSU) (UC Credit Limitation) (Degree credit)

ECON 102 F Principles of Economics — Macro (3) (CAN ECON 2)

Prerequisite: ECON 101 F Principles of Economics — Micro

Three hours lecture per week. Macroeconomic analysis. This course is concerned with the economic aggregates and analyzes the overall performance of the United States economy, with special emphasis on the role of government. Topics treated include national income, employment theory, business cycles, fiscal and monetary policy, economic growth, and international economics. Some of the problems of specific sectors of the economy are examined. (CSU) (UC) (Degree credit)

ECON 102HF Honors Principles of Economics — Macro (3)

Three hours lecture per week. Macroeconomics analysis. This course is enhanced for honors students. It is concerned with the economic aggregates and analyzes the overall performance of the United States economy, with special emphasis on the role of government. Topics treated include national income, employment theory, business cycles, fiscal and monetary policy, equilibrium growth, and international economics. Some of the problems of specific sectors of the economy are examined. Students will be expected to give oral reports, participate in group projects, and perform independent research outside of class. (CSU) (UC) (Degree Credit)

GEOG 260 F Economic Geography (World and National Trade Relationships) (3) (see Geography)

Electronics and Computer Technology

Curriculum leads to the **Associate in Science Degree** and/or employment as electronics technician. This degree requires completion of 18 units of which 12 units are in required courses. An additional 6 units must be chosen from the restricted electives listed below.

Normal High School preparation in algebra (two years recommended) and drafting is recommended.

Required Courses (12 units)

ELEC 050 F Electronics Fabrication/Prototyping (3)
 ELEC 056AF Electronics Math (3)
 ELEC 056BF Electronics Math (3)
 ELEC 100 F Direct Current-Alternating Current Theory (4)
 ELEC 100LF Direct Current-Alternating Current Lab (2)
 ELEC 101 F Electronic Devices (4)
 ELEC 101LF Electronic Devices Laboratory (2)
 ELEC 153 F Electronic Instruments: Use and Application (2)
 ELEC 172 F Introduction to Computer/Digital Logic (4)
 ELEC 173 F Digital Microcomputer Theory (4)

Restricted Electives (6 units)

- ELEC 067 F C Programming for Technicians (3)
- ELEC 166 F Electronic Circuit Analysis (3)
- ELEC 174 F Microcomputer Systems and Troubleshooting I (4)
- ELEC 176 F Microcomputer Systems/A+ Certification Preparation (4)
- ELEC 202 F Electronic Circuits and Systems (3)
- ELEC 202LF Electronic Circuits and Systems Laboratory (3)
- ELEC 203 F Electronic Circuits and Systems (3)
- ELEC 203LF Electronic Circuits and Systems Laboratory (3)
- ENGR 203 F Electric Circuits (4)
- ENGR 203LF Electric Circuits Laboratory (1)

Digital Electronics Certificate

The **Digital Electronics Certificate** Program requires the completion of 20 units chosen from the courses listed below, with a minimum grade of "C" in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Complete 20 units from the following list:

- ELEC 067 F "C" Programming for Technicians (3)
- ELEC 100 F Direct Current-Alternating Current Theory (1-4)
- ELEC 100LF Direct Current-Alternating Current Lab (1-2)
- ELEC 101 F Electronic Devices (1)
- ELEC 153 F Electronics Instruments: Use and Application (2)
- ELEC 172 F Introduction to Computer/Digital Logic (4)
- ELEC 173 F Digital Microcomputer Theory (4)
- ELEC 174 F Microcomputer Systems and Troubleshooting I (4)
- ELEC 176 F Microcomputer Systems/A+ Certification Preparation (4)

Electronics Certificate

The **Electronics Certificate Program** requires the completion of 33 units chosen from the courses listed below with the minimum grade of "C" in each course taken. At least 16 of the units toward the certificate must be completed at Fullerton College. The Endorsements require the completion of the Electronics certificate and the units listed in the Endorsement with a minimum grade of "C" in each course taken.

Required Courses (33 units)

- ELEC 050 F Electronics Fabrication/Prototyping (3)
- ELEC 056AF Electronics Math (3)
- ELEC 056BF Electronics Math (3)
- ELEC 100 F Direct Current-Alternating Current Theory (4)
- ELEC 100LF Direct Current-Alternating Current Lab (2)
- ELEC 101 F Electronic Devices (4)
- ELEC 101LF Electronic Devices Lab (2)
- ELEC 153 F Electronic Instruments (2)
- ELEC 172 F Introduction to Computer/Digital Logic (4)
- ELEC 202 F Electronic Circuits and Systems (3)
- ELEC 202LF Electronic Circuits and Systems Lab (3)

Advanced Electronics Endorsement (6 units)

- ELEC 203 F Electronic Circuits and Systems (3)
- ELEC 203LF Electronic Circuits and Systems Laboratory (3)

Digital Endorsement (12 units)

- ELEC 173 F Digital Microcomputer Theory (4)
- ELEC 174 F Microcomputer Systems and Troubleshooting I (4)
- ELEC 176 F Microcomputer Systems/A+ Certification Preparation (4)

Additional Recommended Course in Electronics*

- ELEC 067 "C" Programming for Technician (3)

* Note: With Approval from the Technology and Engineering Division, courses listed as "Additional Recommended Courses" may be used in place of specific requirements for the Certificate or the Endorsement.

Microcomputer Technology Certificate

The **Microcomputer Technology Certificate** Program requires the completion of 31 units of which 17 units are in required courses. An additional 14 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (17 units)

- ELEC 101 F Electronic Devices (1)
- ELEC 172 F Introduction to Computers and Digital Logic (4)
- ELEC 173 F Digital Microcomputer Theory (4)
- ELEC 174 F Microcomputer Systems and Troubleshooting I (4)
- ELEC 176 F Microcomputer Systems/A+ Certification Preparation (4)

Restricted Electives (14 units)

- ELEC 050 F Electronics Fabrication/Prototyping (3)
- ELEC 056BF Electronics Mathematics (1-3)
- ELEC 067 F "C" Programming for Technicians (3)
- ELEC 100 F Direct Current-Alternating Current Theory (4)
- ELEC 100LF Direct Current-Alternating Current Lab (2)
- ELEC 101 F Electronic Devices (1-3)
- ELEC 101LF Electronic Devices Lab (1-2)
- ELEC 153 F Electronic Instruments: Use and Application (2)
- ELEC 202 F Electronic Circuits and Systems (3)
- ELEC 202LF Electronic Circuits and Systems Lab (3)
- ELEC 203 F Electronic Circuits and Systems (3)
- ELEC 203LF Electronic Circuits and Systems Lab (3)

Technical Networking Certificate

The goal of the program is to provide the student with the computer hardware knowledge and networking skills to be successful in the computer-networking field. The combined hardware and networking background will provide the student with the necessary tools for entry-level employment in the computer-networking field. The **Technical Networking Certificate** requires a total of 15 units of which 15 units are in required courses. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Required Courses (15)

- ELEC 176 F Microcomputer Systems/A+ Certification Prep (4)
 ELEC 082 F Cisco Internetworking I (4)
 ELEC 083 F Cisco Internetworking II (4)
 ELEC 085 F Network+ Certification Prep (3)

Electronics and Computer Technology Courses

ELEC 050 F Electronics Fabrication/Prototype Development (3)

Corequisite: ELEC 100LF DC/AC Laboratory

Two hours lecture and three hours lab per week. The student develops the knowledge and skills necessary for hardware implementation of electronic circuitry. Included are hand tool skills including soldering and wire work, recognition of common components, readying component marking and codes, reading and wiring from schematics, layout and fabrication of chassis, circuit boards, brackets. (Degree credit)

ELEC 051 F Survey of Electronics (3)

Three hours lecture per week. A non-mathematical survey of the entire field of electronics beginning with the electron theory and ending with complete integrated systems. (Degree credit)

ELEC 056AF Electronic Mathematics (1-3)

Prerequisite: One year of high school algebra

One to three hours lecture per week. The study of fundamental mathematical operations essential to achieving success in basic electronics courses. Units of instruction include signed numbers, powers of ten, scientific notation and prefixes, fundamental algebra, and graphs. Self-pacing, open entry, flexible hours, and variable units; or may be offered as a structured class. (Degree credit)

ELEC 056BF Electronic Mathematics (1-3)

Prerequisite: ELEC 056A Electronic Mathematics or grade of "B" or better in two years of high school algebra.

One to three hours lecture per week. The study of the fundamental operations of trigonometry, periodic functions, logarithms, and phasor analysis as applied to the study of alternating current theory. Self-pacing, open entry, flexible hours, and variable units. (Degree credit)

ELEC 065F Audio Systems (3)

Prerequisite: ELEC 100 F DC/AC Theory and ELEC 101 F Electronic Devices.

Two hours lecture and three hours lab per week. Provides electronic technicians and broadcasting majors with the general principles of sound recordings and reproduction, voltage and power amplifiers circuits, equalizer networks, loudspeakers, microphones and enclosures, alternators and mixers, feedback amplifiers, and measuring characteristics of amplifiers. (Degree credit)

ELEC 067 F "C" Programming for Technicians (3)

Prerequisite: ELEC 056AF Electronic Mathematics

Two hours lecture and three hours lab per week. This is an introductory course in computer programming for non-programmer technical students who would benefit from learning a high level language. The course concentrates on the elements of the "C" programming language with applications in technology. Topics include: comparison of machine language, assembly language, and high level languages, the relationship between the programming language, the operating system, and the system hardware, and the basic elements of the "C" programming language including data types, functions, decision and looping structures, and pointers. Extensive "hands-on" practical experience, using the Microsoft QuickC compiler, is provided to emphasize important "C" concepts and provide practical programming experience. (Degree credit)

ELEC 070AF General Radiotelephone License Preparation (3)

Prerequisite: ELEC 100 F DC/AC Theory.

Two hours lecture and three hours lab per week. Provides instruction in F.C.C. rules and regulations and electronics theory, which prepares students to be eligible for F.C.C. General Telephone License. Deals with F.C.C. license examinations. Includes formal lecture, lecture demonstration, and emphasizes directed study of typical F.C.C. examination questions. (Degree credit)

ELEC 070BF Radiotelephone Certification Preparation (3)

Prerequisite: ELEC 070AF General Radiotelephone License Preparation or F.C.C. General Radiotelephone License.

Two hours lecture and three hours lab per week. Provides instruction in electronics theory that prepares students to be eligible for industry-required specialty certification in areas such as aviation, marine, and international fixed public radio service. (Degree credit)

ELEC 082 F Cisco Internetworking I (4)

Three hours lecture and three hours lab per week. This class provides instruction in the material contained in the first two semesters of the Cisco Computer Networking Academy Curriculum covering computer internetworking. Topics covered include network topology, the OSI model, cabling, bridges, hubs, routers and Cisco Internet Operating System setup and configuration. Provides the student with the skills needed to design, build, and maintain small to medium-size networks. Upon completion of this course and the second semester Cisco Internetworking II, the student is prepared to take the Cisco Certified Network Associate test. (Degree credit)

ELEC 083 F Cisco Internetworking II (4)

Prerequisite: ELEC 082 F Cisco Internetworking I

Three hours lecture and three hours lab per week. This course consists of the third and fourth courses in the Cisco Systems Networking Academy curriculum. Topics covered include the advanced features of router and routing concepts including IPX access lists, LAN segmentation using bridges and switches, network congestion issues, cut-through and store-and-forward switches, operation of the Spanning Tree protocol, and Wide Area Network services including LAPB, Frame Relay, ISDN, HDLC, PPP and DDR. This class includes hands-on experience using Cisco routers. (Degree credit)

ELEC 085 F Network+ Certification Prep (3)

This course provides the instructional scope and content, as defined by CompTIA, for students preparing to pass CompTIA's broad-based, vendor independent networking certification exam, Network+. This course covers a wide range of networking concepts including local area networks, wide area networks, protocols, topologies, transmission media, and security. Upon course completion, students will be prepared to pass the Network+ Certification exam.

ELEC 100 F Direct Current/Alternating Current Theory (1-4)

Corequisite: ELEC 056AF Electronic Mathematics

Four hours lecture per week. Direct and Alternating Current Theory is presented through the application of Ohm's Law, Kirchoff's laws, and network analysis. Analysis techniques presented include: Thevenen's Theorem, Norton's Theorem, and Superposition. Series, parallel and combination circuits are studied. Other topics include RC and RL time constants, and the response of basic circuits to the application of voltages of varying frequency. This course is offered as a standard structured class and/or self pacing, open entry with flexible hours and variable units. (CSU) (Degree credit)

ELEC 100LF Direct Current/Alternating Current Laboratory (1-2)

Corequisite: ELEC 100 F DC/AC Theory

Six hours laboratory per week. Laboratory exercises are performed that complement ELEC 100 F DC/AC Theory. The student is introduced to the use and application of basic measurement equipment. The measurement of circuit performance is emphasized through data analysis. Self-pacing, open entry and flexible hours. (CSU) (Degree credit)

ELEC 101 F Electronic Devices (1-4)

Prerequisite: ELEC 100 F DC/AC Theory, ELEC 100LF DC/AC Laboratory

Four hours lecture per week. The theory of electronic devices is presented through the study of diodes, bipolar transistors and field effect transistors. Devices will be treated in both discrete and integrated circuit packages. Emphasis will be placed upon the study of the response to DC and AC forcing functions, biasing methods and the development of AC models. Both small signal and large signal applications will be considered. Response of devices and circuits to AC voltages over normal frequency ranges will be studied. This class is offered as a standard structured class or self pacing, open entry with flexible hours and variable units. (CSU) (Degree credit)

ELEC 101LF Electronic Devices Laboratory (1-2)

Corequisite: ELEC 101 F Electronic Devices

Six hours lab per week. Laboratory exercises are performed that complement ELEC 101 F Electronic Devices. Students continue to expand working knowledge of test equipment. Self pacing, open entry and flexible hours. (CSU) (Degree credit)

ELEC 153 F Electronic Instruments: Use and Applications (2)

Prerequisite: ELEC 101LF DC/AC Laboratory

One and one-half hour lecture and one and one-half hour lab per week. This is the instruments course for ELEC 172 F Introduction to Computer/Digital Logic. Provides the student with experience in the use and application of electronics instruments to obtain desired measurements. Principles of instrument operation and instrument specifications are considered in terms of setup and operation for optimum performance. Also considered are instrument and test circuit input/output characteristics as they affect measurements. (CSU) (Degree credit)

ELEC 158 F Video Systems: Principles and Servicing (3)

Prerequisite: ELEC 100 F DC/AC Theory

Three hours lecture and one hour lab per week. This course will provide the user and servicer of video equipment with basic understanding of the principles of operation, diagnostic and maintenance procedures, and proper interfacing of various video equipment making up a system. (CSU) (Degree credit)

ELEC 166 F Electronic Circuit Analysis (3)

Prerequisite: ELEC 101 F Electronic Devices and ELEC 056BF Electronic Mathematics

Three hours lecture per week. A study of electronics circuit analysis, including network theorems and circuit parameters. Practical applications will be stressed through the utilization of circuit analysis techniques applied to passive and active circuitry. (CSU) (Degree credit)

ELEC 172 F Introduction to Computers/Digital Logic (4)

Corequisite: ELEC 100 F DC/AC Theory

Three hours lecture and three hours lab per week. This course provides students with a basic knowledge of digital electronics and introductory computer system concepts. Topics covered will include basic computer and operating system concept, number systems, logic gates, analysis and design of combinational logic circuits using standard logic and programmable logic devices, and combinational functions such as adders, comparators, decoders, encoders, and parity generation and checking. Emphasis will be placed on learning how to troubleshoot digital circuits. (CSU) (Degree credit)

ELEC 173 F Digital/Microcomputer Theory (4)

Prerequisite: ELEC 172 F Introduction to Computers/Digital Logic.

Three hours lecture and three hours lab per week. This course provides the student with instruction in intermediate level concepts in digital electronics and microcomputers. Topics include flip flops, counters, shift registers, semiconductor memory, memory expansion techniques, computer bus structures, and sequential logic applications of programmable logic devices. (CSU) (Degree credit)

ELEC 174 F Microcomputer Systems and Troubleshooting I (4)

Prerequisite: ELEC 173 F Digital/Microcomputer Theory.

Three hours lecture and three hours lab per week. This course introduces students to basic microcomputer architecture, based on the IBM PC, and troubleshooting techniques. The Intel 8088 and 8086 microprocessors are studied in detail with an overview of the architecture of the entire family of Intel microprocessors also presented. Common industry software tools such as the assembler and debugger are introduced as aides in understanding the operation of the microprocessor and the personal computer. (CSU) (Degree credit)

ELEC 175 F Microcomputer Systems and Troubleshooting II (4)

Prerequisite: ELEC 174 F Microcomputer Systems and Troubleshooting I

Three hours lecture and three hours lab per week. An advanced course in microcomputer peripheral I/O interfacing and troubleshooting. Topics include I/O interfacing concepts and techniques, I/O port and controller integrated circuits, and microcomputer peripheral devices, such as disk drives, printers, keyboards, and analog-to-digital/digital-to-analog converters. Troubleshooting techniques include the use of diagnostic software and static stimulus testing. Microcomputer system installation, configuration, and maintenance also are covered. (CSU) (Degree credit)

ELEC 176 F Microcomputer Systems/A+ Certification Preparation (4)

Advisory: ELEC 174 F Microcomputer Systems and Troubleshooting I

Three hours lecture and three hours lab per week. This class is an introduction to microcomputer system architecture and organization and test taking preparation for A+ Certification. The class provides the student with a thorough background in the hardware and software aspects of microcomputer systems as well as hands-on and computer-based training leading to the computer industry nationally recognized A+ Certification credential. Timed, computer administered sample tests are used to increase the student's test taking ability and confidence in his/her knowledge. (CSU) (Degree credit)

ELEC 202 F Electronic Circuits and Systems (3)

Prerequisite: ELEC 101 F Electronic Devices.

Three hours lecture per week. An advanced course in electronics. The course will include electronic devices at low and RF frequencies, frequency response of devices and circuits, feedback theory and application, and analog integrated circuits, circuit stability and oscillation. A systems approach is used throughout this course intended for advanced technicians. (CSU) (Degree credit)

ELEC 202LF Electronic Circuits and Systems Laboratory (3)

Prerequisite: ELEC 101LF Electronic Devices Laboratory.

Corequisite: ELEC 202 F Electronic Circuits and Systems

Two hours lecture and four hours lab per week. An advanced laboratory course paralleling the material covered in ELEC 202 F Electronic Circuits and Systems. The student is given the opportunity to deal with more complex circuits composed of numerous devices in varied configurations. The student is given the opportunity to develop circuits on an individual basis and to perform varied troubleshooting techniques. (CSU) (Degree credit)

ELEC 203 F Electronic Circuits and Systems (3)

Prerequisite: ELEC 202 F Electronic Circuits and Systems

Three hours lecture per week. An advanced course in electronics systems, with emphasis on theory and application. The frequency response of circuits, systems, and active filters is developed. The theory and application of modulation, demodulation, RF transmission lines, antennas and other aspects of information transmission systems. (CSU) (Degree credit)

ELEC 203LF Electronic Circuits and Systems Laboratory (3)

Prerequisite: ELEC 101LF Electronic Devices Laboratory.

Corequisite: ELEC 203 F Electronic Circuits and Systems.

Two hours lecture and four hours lab per week. An advanced laboratory course paralleling the material covered in ELEC 203 F Electronic Circuits and Systems. The student is given the opportunity to deal with more complex circuits composed of numerous devices in varied configurations. The student is given the opportunity to develop circuits on an individual basis and to perform varied troubleshooting techniques. (CSU) (Degree credit)

Engineering

Curriculum leads to the **Associate in Science Degree**. This degree requires a minimum of 22 units chosen from the courses listed below.

Select 22 units from the courses listed below:

ENGR 101AF Surveying (4)
 ENGR 102 F Engineering Drawing (3)
 ENGR 105 F Engineering CAD (4)
 ENGR 201 F Statics (3)
 ENGR 203 F Electric Circuits (4)
 MATH 150AF Calculus (4)
 MATH 150BF Calculus (4)
 MATH 250AF Intermediate Calculus (4)
 MATH 250BF Intermediate Calculus (4)
 CHEM 111AF General Chemistry (5)
 CHEM 111BF General Chemistry (5)
 PHYS 221 F General Physics (4)
 PHYS 222 F General Physics (4)
 PHYS 223 F General Physics (4)

Engineering Courses

ENGR 101AF Surveying (4)

Corequisite: TECH 081 F Technical Mathematics I and DRAF 171 F Fundamentals of Drafting or one year high school drafting with a grade of "B" or better.

Three hours lecture and three hours laboratory per week. Principles and practices of measuring distances, directions and elevation. Study of errors, computation of areas, volumes and coordinates. Use and care of instruments and equipment. (CSU) (Degree credit)

ENGR 101BF Surveying (4)

Prerequisite: ENGR 101AF Surveying with a grade of "C" or better.

Three hours lecture and three hours laboratory per week. Application of surveying techniques to engineering and construction problems. Public and private land, route and topographic surveys. Introduction to photogrammetry, triangulation, level adjustments, and applications of astronomical observations. (CSU) (Degree credit)

ENGR 102F Engineering Drawing (3)

Prerequisite: Three years of college preparatory mathematics or MATH 040 F Intermediate Algebra and 030 F Plane Geometry with grades of "C" or better. Advisory: One year of high school mechanical drawing.

Three hours lecture and three hours laboratory per week. Lettering, geometry constructions, orthographic and pictorial drawing, auxiliary views, sectioning, dimensioning, and fasteners will be covered. (CSU) (UC) (Degree credit)

ENGR 105 F Engineering CAD (4)

Prerequisite: ENGR 102 F Engineering Drawing

Three hours lecture and three hours lab per week. This is an introductory course which utilizes the CAD system for engineering applications. The course incorporates elementary principles associated with the various menu and command structures in computer-assisted drafting to develop solutions to 2D and 3D design problems. Topics included are file management, layering, orthographic projection, dimensioning, line types and axonometric projection. (CSU) (UC) (Degree credit)

ENGR 201 F Statics (3) (CAN ENGR 8)

Prerequisite: MATH 150BF Calculus and PHYS 221 F General Physics with a grade of "C" or better

Three hours lecture per week. This course applies equilibrium conditions of force and moments to engineering problems. Algebraic and graphical methods are used. Topics include equilibrium of particles and rigid bodies, trusses, beams, levers, pulleys, centroids, friction, fluids and work principles. (CSU) (UC) (Degree credit)

ENGR 203 F Electric Circuits (4) (CAN ENGR 12)**(ENGR 203 F + 203LF = CAN ENGR 6)**Prerequisite: PHYS 222 F General Physics, MATH 150BF Calculus
Corequisite: ENGR 203LF Electric Circuits Lab

Four hours lecture per week. Introduction to the analysis of circuits under steady state and transient conditions using multiple methods including bode plots, phasors and sinusoidal signals, analysis of networks, magnetically coupled and polyphase circuits. (CSU) (UC) (Degree credit)

ENGR 203LF Electric Circuits Laboratory (1)**(ENGR 203 F + 203LF = CAN ENGR 6)**Prerequisite: PHYS 222 F General Physics, MATH 150BF Calculus
Corequisite: ENGR 203 F Electric Circuits

Three hours lab per week. Basic electrical measurement techniques and experimental investigation of simple circuits. Computer simulations of transient circuits. (CSU) (UC) (Degree credit)

English

Curriculum leads to the **Associate in Arts Degree**. This degree is designed to prepare students to read and write about literature critically and to understand key historical and generic influences in the production and reception of literature and other cultural texts. The degree requires 18 units chosen from the courses listed below:

Required Courses:

ENGL 102 F Introduction to Literature (3)

And one survey sequence (6 units) from the following:

ENGL 211 F and 212 F English Literature (3, 3) or
ENGL 221 F and 222 F American Literature (3, 3) or
ENGL 223 F and 224 F World Literature (3, 3)

And one course (3 units) from the following:

ENGL 203 F Introduction to Dramatic Literature (3)
ENGL 204 F Introduction to Poetry (3)
ENGL 207 F The Short Story (3)
ENGL 246 F The Novel (3)

Restricted Electives:

6 additional units from any of the above courses or the following:

ENGL 105 F Introduction to Creative Writing (3)
ENGL 205 F The Film: From the beginning to 1950 (3)
ENGL 206 F The Film: From 1950 to the Present (3)
ENGL 209 F Intermediate Creative Writing (3)
ENGL 214 F Contemporary Literature (3)
ENGL 218 F California Writers (3)
ENGL 234 F Introduction to Shakespeare (3)
ENGL 239 F Survey of Children's Literature (3)
ENGL 243 F Folklore and Mythology (3)
ENGL 245 F The Bible as Literature (3)
ENGL 248 F Science Fiction (3)
ENGL 249 F Survey of Chicano/a Literature (3)
ENGL 250 F Survey of African American Literature (3)
ENGL 251 F Survey of Native American Literature (3)
ENGL 252 F Women's Literature (3)
ENGL 254 F Intermediate Creative Writing: Poetry (3)
SPAN 205 F Introduction to Spanish Literature (3)
SPAN 206 F Introduction to Latin-American Literature (3)

Plus 6 additional units from the above or the following:

ENGL 105 F Introduction to Creative Writing (3)
ENGL 209 F Intermediate Creative Writing (3)
ENGL 205 F The Film: From the Beginning to 1950 (3)
ENGL 206 F The Film: From 1950 to the Present (3)
Foreign Language 203 F Intermediate (4)
Foreign Language 204 F Intermediate (4)
SPAN 205 F Introduction to Spanish Literature (3)
SPAN 206 F Introduction to Latin-American Literature (3)

English Courses

ENGL 039 F Basic Writing (4)

Credit/no credit only. Recommended: Concurrent enrollment in READ 056 F Developmental Reading

Four lecture hours per week. This course is designed for native speakers of English who require instruction in basic writing including such topics as: sentence and paragraph writing, literal comprehension, vocabulary development and study techniques. (Non-degree credit)

ENGL 059 F Developmental Writing (4)

Credit/no credit only. Prerequisite: Recommended score on the English Placement test or credit in ENGL 039 F Basic Writing. Advisory: Concurrent enrollment in READ 056 F Developmental Reading

Four lecture hours per week. This course is designed for native speakers of English who need to build basic English skills in writing, reading and thinking. It provides instruction in writing effective sentences, organization of ideas into paragraphs and essays, fundamentals of English, reading short essays, vocabulary building, basic critical thinking, and study skills. (Non-degree credit)

ENGL 060 F Preparation for College Writing (4)

Credit/no credit only. Prerequisite: Recommended score on the English Placement test or credit in ENGL 059 F Developmental Writing. Advisory: Concurrent enrollment in READ 096 F Preparation for College Reading

Four hours lecture per week. This course is designed to meet the needs of students who have not yet mastered the writing and editing skills necessary for college writing. Students will review English fundamentals, read and analyze professional essays, and write essays with the emphasis on exposition and critical thinking. (Degree credit)

ENGL 100 F College Writing (3) (CAN ENGL 2) (ENGL 100 F + ENGL 102 F = CAN ENGL SEQ A)

Prerequisite: Recommended score on the English Placement test or credit in ENGL 060 F Preparation for College Writing or credit in ESL 186 F Composition for Students of American English. Advisory: Concurrent enrollment in READ 142 F College Reading: Logical Analysis and Evaluation

Four hours lecture per week. This is a college level course in composition designed to develop reading, critical thinking, and writing strategies necessary for academic success. The emphasis is on reading and writing expository essays. The course includes research and documentation skills. (CSU) (UC Credit Limitation) (Degree credit)

ENGL 100HF Honors College Writing (3)

Prerequisite: Recommended score on the English Placement test or credit in ENGL 060 F Preparation for College Writing or credit in ESL 186 F Composition for Students of American English. Advisory: Concurrent enrollment in READ 142 F College Reading: Logical Analysis and Evaluation

Four hours lecture per week. This is a college level course in composition enhanced for honors students designed to develop critical thinking, and writing strategies, including research and documentation skills, necessary for academic success. The emphasis is on reading and writing expository essays. The course will be conducted as a seminar, and it will require a significant independent research project that uses correct documentation skills. (CSU) (UC Credit Limitation) (Degree credit)

ENGL 102 F Introduction to Literature (3) (CAN ENGL 4) (ENGL 100 F + ENGL 102 F = CAN ENGL SEQ A)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. A continuation of ENGL 100 F College Writing, this course uses literary works as content for reading and writing with emphasis on analytical and critical approaches to drama, poetry, and prose fiction. (CSU) (UC Credit Limitation) (Degree credit)

ENGL 102HF Honors Introduction to Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. A continuation of ENGL 100 F College Writing, this course uses literary works as content for reading and writing with emphasis on analytical and critical approaches to drama, poetry, and prose fiction. As an Honors section, this class will employ enhanced teaching methods such as a seminar approach, more researched based writing assignments, assignments calling for a higher level of critical thinking. The overall content and amount of work required in ENGL 102HF Honors will be the same as non-honors ENGL 102 F. (CSU) (UC Credit Limitation) (Degree credit)

ENGL 103 F Critical Reasoning and Writing (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. This course is designed to develop critical thinking, reading, and writing skills beyond the level achieved in ENGL 100 F College Writing. The course will focus on the development of logical reasoning and analytical and argumentative writing skills. (CSU) (UC Credit Limitation) (Degree credit)

ENGL 103HF Honors Critical Reasoning and Writing (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. This course is designed to develop critical thinking, reading, and writing skills beyond the level achieved in ENGL 100 F College Writing. The course will focus on the development of logical reasoning and analytical and argumentative writing skills. As an Honors section, this class will offer an enhanced approach to critical thinking, calling for students to take a more active role in the learning process. (CSU) (UC Credit Limitation) (Degree credit)

ENGL 104 F Critical Thinking and Writing about Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. This course will develop critical thinking, reading, and writing skills as they apply to the analysis of literature and literary criticism from diverse cultural sources and perspectives. There will be an emphasis on the techniques and principles of effective written argument as they apply to literature. (CSU) (UC) (Degree credit)

ENGL 105 F Introduction to Creative Writing (3) (CAN ENGL 6)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing. Advisory: ENGL 102 F Introduction to Literature. Letter grade or credit/no credit option.

Three hours lecture per week. Introduction to Creative Writing includes writing original fiction, drama, and poetry; study and application of forms, techniques, and literary elements of creative writing; and workshop experience which provides an opportunity for analyzing and critiquing student writing. (CSU) (UC) (Degree credit)

ENGL 201 F Intermediate College Writing

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. This course is designed to develop academic writing and critical thinking skills beyond the level achieved in English 100 F. The course will stress analysis and evaluation of courses, integration of a variety of rhetorical strategies, and research and documentation methods necessary for successful academic writing in essays, reports, critiques, exams, and research papers. Assignments are designed to address cross-curricular needs of students from a variety of majors.

ENGL 203 F Introduction to Dramatic Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing. Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature.

Three hours lecture per week. This course focuses on reading, critical analysis, discussion and evaluation of selected plays from classical tragedy and comedy to contemporary drama. (CSU) (UC) (Degree credit)

ENGL 204 F Introduction to Poetry (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. This course covers the reading and study of poems from ancient to modern times in English and in translation. Poets represented may include Blake, Dickinson, Donne, Eliot, Frost, Keats, Neruda, Paz, Shakespeare, Whitman, Yeats and Levertov. The focus of the course is on the analysis of poetic techniques and the interpretation of universal themes. (CSU) (UC) (Degree credit)

ENGL 205 F The Film: From the Beginning to 1950 (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. This course is designed to view, analyze and discuss films. A study of representative film masterpieces will reveal the evolution of moving pictures from their inception to the period just after World War II. The idea, values, concerns, and views reflected in the films are emphasized, and the artistic techniques employed are considered. (CSU) (UC) (Degree credit)

ENGL 206 F The Film: From 1950 to the Present (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. The course is designed to view, analyze and discuss films. A study of representative film masterpieces will reveal the evolution of moving pictures from 1950 to the present. (CSU) (UC) (Degree credit)

ENGL 207 F The Short Story (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. The course includes reading and discussion of selected short stories emphasizing analysis, interpretation, and evaluation. The course will focus on the short story as a genre and as a source of significant insight into the human condition. (CSU) (UC) (Degree credit)

ENGL 209 F Intermediate Creative Writing (3)

Prerequisite: A grade of "C" or better in ENGL 105 F Introduction to Creative Writing.

Advisory: ENGL 102 F Introduction to Literature or 200 F Analysis of Literature.

Letter grade or credit/no credit option.

Three hours lecture per week. Intermediate Creative Writing continues the study of writing original fiction, drama, and poetry and the study and application of forms, techniques, and literary elements of creative writing. Workshops and peer critiquing are emphasized. (CSU) (UC) (Degree credit)

ENGL 211 F English Literature to 1800 (3) (CAN ENGL 8) (ENGL 211 F + ENGL 212 F = CAN ENGL SEQ B)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. A survey of British literature from Anglo-Saxon times to 1800, the origins and development of the language are covered, as well as the historical backgrounds and literary trends. Readings from such writers as the author of the "Pearl Poet," Chaucer, Shakespeare, Donne, Milton, Swift, Pope, and Johnson introduce students to the writers and the literary heritage of the English-speaking world. (CSU) (UC) (Degree credit)

ENGL 212 F English Literature Since 1800 (3) (CAN ENGL 10) (ENGL 211 F + ENGL 212 F = CAN ENGL SEQ B)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. This survey of British literature from 1800 to the present emphasizes literary trends and historical backgrounds. Students will read and discuss fiction, poetry, drama, and prose from the Romantic, Victorian, Modern, and postmodern eras in Great Britain and other countries of the Empire and Commonwealth. (CSU) (UC) (Degree credit)

ENGL 214 F Contemporary Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. The course is a study of representative poetry, drama, and fiction, concentrating on — but not limited to — recognized world literary figures. The focus of the course is on each writer's view of contemporary society, our situation, and people's search for values; consideration is also given to the artistic techniques employed in each work. (CSU) (UC) (Degree credit)

ENGL 218 F California Writers (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. English 218 F is a survey of the historical and cultural development of the literature of California. This course emphasizes the literary, social, economic, multicultural and environmental contexts of the California writers studied. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ENGL 221 F American Literature to the Civil War (3) (CAN ENGL 14) (ENGL 221 F + ENGL 222 F = CAN ENGL SEQ C)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. A study of representative American writers from the beginnings through the Civil War, the course includes major writers such as Hawthorne, Poe, Melville, Emerson, Douglass, Thoreau, Dickinson, and Whitman. (CSU) (UC) (Degree credit)

ENGL 222 F American Literature from Civil War to Present (3) (CAN ENGL 16) (ENGL 221 F + ENGL 222 F = CAN ENGL SEQ C)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. A survey of representative 20th century American writers, the course includes major writers such as Wharton, O'Neill, Cather, Frost, Lewis, Hemingway, Fitzgerald, Faulkner, Steinbeck, Jeffers, Plath, Baldwin, and Updike. The emphasis is on the diversity of American subjects and styles. (CSU) (UC) (Degree credit)

ENGL 224 F World Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. World Literature is a study of the great masterpieces of world literature and the cultures and authors that produced them. The course will trace common themes and changing ideas from classical antiquity through the Renaissance, in the works of writers such as Homer, Aeschylus, Sophocles, Euripides, Dante, Boccaccio, Chaucer, Machiavelli, Montaigne, and Cervantes. (CSU) (UC) (Degree credit)

ENGL 225 F World Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. World Literature is a study of the great masterpieces of world literature and the cultures and authors that produced them. The course will trace common themes and changing ideas from the neoclassical period to the present in the works of writers such as Moliere, Voltaire, Goethe, Dickinson, Flaubert, Ibsen, Dostoevsky, Yeats, Camus, and Soyinka. (CSU) (UC) (Degree credit)

ENGL 234 F Introduction to Shakespeare (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. Introduction to Shakespeare is designed to introduce students to ten to twelve of the tragedies, comedies, and histories of William Shakespeare. Elizabethan context, genre, and critical analysis with regard to theme, poetic devices, plot and character development, and irony will be emphasized. (CSU) (UC) (Degree credit)

ENGL 239 F Survey of Children's Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. This course traces the historical and cultural development of children's literature throughout the world, from its multiple origins in the oral tradition to its contemporary emphasis on written excellence and pictorial artistry. The course focuses on comparative and critical approaches to the multicultural elements in nursery rhymes, poetry, fables, folk tales, myth, sacred literature, picture books, juvenile literature, and works of non-fiction, with emphasis on contemporary literature and the emergence of ethnic writers in children's literature. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ENGL 243 F Folklore and Mythology (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing. Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature. Letter grade or credit/no credit option.

Three hours lecture per week. This course is an introductory study of the folklore and mythology of representative cultures of the world through literature including such cultures as Greek, Norse, Babylonian, American Indian, European, Mexican, Hindu and Chinese. The course will include a comparative study of mythic elements and patterns with their modern parallels in both Eastern and Western civilizations. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ENGL 245 F The Bible as Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature. Letter grade or credit/no credit option.

Three hours lecture per week. Students will study the English Bible as literature, its literary forms and techniques. Readings and discussions emphasize analysis of such forms as short story, poetry, letters, dramatic and narrative prose, wisdom and didactic literature. (CSU) (UC) (Degree credit)

ENGL 246 F The Novel (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature. Letter grade or credit/no credit option.

Three hours lecture per week. This is a study of the novel as an art form, concentrating on — but not limited to — representative novels illustrating the richness of the form: its thematic and stylistic variety, its philosophical breadth, its historical development, and the like. Emphasis will be placed on developing the student's analytical skills. (CSU) (UC) (Degree credit)

ENGL 247 F Voices of America: Studies in Multicultural Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing.

Three hours lecture per week. The course is a study of multicultural literature, by both immigrant, and native American writers, which explores varied responses — ethnic, gender, and regional — in the cultural context of a diverse country. Students will critically examine a wide variety of literature that includes such genres as fiction, plays, essays, journals, autobiography, letters, tales, chants and other less traditional literary forms. The course is designed to enrich students' lives by exploring the multicultural literary resources of America. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ENGL 248 F Science Fiction (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. ENGL 248 F is a survey of science or speculative fiction. This course emphasizes the literary, social, economic, cultural and environmental contexts of the works studied and traces the development of the genre from early scientific romances through current developments in postmodern and cyberpunk fiction. (CSU) (UC) (Degree credit)

ENGL 249 F Survey of Chicano/a Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. This course offers students a survey of Chicano/a literature from its beginnings in the nineteenth century to the present day. It emphasizes the literary, historical, social, political and cultural context of Chicano/a fiction, poetry, theater and prose. Students can expect to read major literary classics as well as the works of previously less recognized writers. (CSU) (UC) (Degree credit)

ENGL 250 F Survey of African American Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. This course is a survey of literature by African American writers. It emphasizes the literary, social, economic and environmental context of the works studied and traces the development of African American writing from spirituals and other oral literatures through writing by contemporary African Americans writers in a variety of genres. (CSU) (UC) (Degree credit)

ENGL 251 F Survey of Native American Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: A grade of "C" or better in ENGL 102 F Introduction to Literature

Three hours lecture per week. A survey of Native American literary tradition from its beginnings as an oral tradition to contemporary works by representative authors. This course emphasizes the historical, cultural and literary context of work written by Native American authors in a variety of genres including poetry, fiction, autobiography, told-to autobiographies, oral tradition, folklore and mythology, speeches, and mixed genres. (CSU) (UC) (Degree credit)

ENGL 252 F Women's Literature (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: ENGL 102 F Introduction to Literature or ENGL 102HF Introduction to Literature Honors

Three hours lecture per week. English 252 F is a survey of literatures by women. This course examines traditional and non-traditional forms of women's writing from a variety of critical perspectives. The course focuses on analysis of literary texts both in terms of their aesthetic qualities and cultural contexts. (CSU) (UC) (Degree credit)

ENGL 254 F Intermediate Creative Writing: Poetry (3)

Prerequisite: A grade of "C" or better in ENGL 100 F College Writing or ENGL 100HF Honors College Writing

Advisory: ENGL 102 F Introduction to Literature or ENGL 102HF Introduction to Literature Honors

Three hours lecture per week. Continues the development of creative writing skills with an emphasis on poetry. Students will write original poetry; study forms, techniques, and literary elements of poetry including classical poetic forms and the free-verse tradition; study non-fiction essays related to the writing of poetry and poetics; and utilize creative writing workshops which provide an opportunity for analyzing and critiquing student writing. (CSU) (UC)

ENGL 280 F Language Arts Tutoring Practicum (3)

Prerequisite: A grade of "C" or better in ENGL 103 F Critical Reasoning and Writing or ENGL 103HF Honors Critical Reasoning and Writing or ENGL 104 F Critical Thinking and Writing About Literature

Two-hours lecture and three hours lab per week. The course provides training for students to acquire specific skills and techniques for tutoring in writing, and provides strong recommendation for future employment in Fullerton College's Writing Center. Supervised, "hands-on" tutoring lab hours are part of instruction. (CSU) (Degree credit)

ENGL 299 F Humanities Independent Study (1-1-1)

One-hour lecture or scheduled conference per week. For able students who wish to increase their knowledge of literature or language through individual study or research. Elective credit in the humanities area. Course may be taken three times for credit. (CSU) (UC review required) (Degree credit)

English as a Second Language (ESL)

ESL 025 F Basic English Grammar (3)

Credit/no credit only.

Three hours lecture per week. This course is designed to increase students' knowledge and usage of verb tenses, sentence structure, and other basic grammatical topics. It will develop grammatical accuracy in listening, speaking, reading and writing. (Non-degree credit)

ESL 035 F Intermediate English Grammar (3)

Credit/no credit only.

Three hours lecture per week. This course is designed to increase students' knowledge and usage of complex verb tenses and sentence structure. It will also develop grammatical competency in reading and writing. (Non-degree credit)

ESL 045 F Advanced English Grammar (3)

Credit/no credit only.

Three hours lecture per week. This course is designed to increase students' knowledge and usage of advanced English grammar, to improve grammatical accuracy in writing and to develop strong editing skills. (Non-degree credit)

ESL 036 F Basic Listening and Speaking (4)

Credit/no credit only.

Four hours lecture per week. This course is designed to improve beginning students' ability to speak and understand English in simple everyday and academic situations. It will provide practice in basic oral communication functions as well as beginning academic listening and speaking skills. (Non-degree credit)

ESL 046 F Intermediate Conversation (2)

Credit/no credit only.

Two hours lecture per week. This course is designed to improve students' ability to comprehend and communicate in English on a variety of everyday topics. Students will develop and practice techniques for greater composure and confidence in oral expression. (Non-degree credit)

ESL 056 F Advanced Conversation: Academic Topics (2)

Credit/no credit only.

Two hours lecture per week. This course is designed to improve advanced students' comprehension and oral communication in English on a broad range of academic subjects. (Non-degree credit)

ESL 038 F Fundamentals of American English Pronunciation (2)

Credit/no credit only.

Two hours lecture per week. This course is designed to develop basic pronunciation, to establish better oral control of language, and to build confidence in simple oral expression. (Non-degree credit)

ESL 048 F Intermediate American English Pronunciation (2)

Credit/no credit only.

Two hours lecture per week. This course is designed to develop intermediate pronunciation skills, to structure more style in oral language, and to build confidence in basic oral expression. (Non-degree credit)

ESL 058 F Advanced American English Pronunciation: Foreign Accent Reduction (2)

Credit/no credit only.

Two hours lecture per week. This course is designed to refine pronunciation, to reduce foreign accent, and to build confidence in complex oral expression. (Non-degree credit)

ESL 029 F Idiomatic Expressions for Students of ESL (2)

Credit/no credit only.

Two lecture hours per week. This course provides instruction in common American English idioms, phrasal verbs, slang and taboo terminology, proverbs, and other fixed expressions. Additional topics include context clues, dictionary use, relaxed speech, and cultural aspects of idiomatic expressions. The course is designed for high beginning to intermediate students of English as a second language (ESL). (Non-degree credit)

ESL 039 F Vocabulary Expansion Techniques for Students of ESL (2)

Credit/no credit only.

Two lecture hours per week. This course will provide instruction in vocabulary expansion principles and techniques for high beginning to intermediate students of English as a second language (ESL). Topics include context clues, word parts, mnemonic devices, word relationships, and dictionary use. Also emphasized are grammatical, collocational, and pragmatic restrictions on vocabulary. (Non-degree credit)

ESL 049 F Academic Vocabulary for Advanced Students of ESL (3)

Credit/no credit only.

Three lecture hours per week. This course provides instruction in academic vocabulary for advanced students of English as a second language (ESL). Emphasis is on the acquisition and consolidation of an expanded university-level vocabulary. Also presented is academic vocabulary learning principles and techniques including context clues, reference works, word parts, derivational forms, as well as grammatical and collocational restrictions on lexical items. (Non-degree credit)

ESL 047 F Academic Preparation for American English Students (2, 2)

Advisory: ESL skills evaluation

Credit/no credit only.

Two hours lecture per week. The course is designed to orient second language students to college life. The course includes information about academic vocabulary, academic textbooks, and college instructor expectations; instruction in exam taking and study skills; and explanation of cultural differences in relation to the college setting. Course may be taken twice for credit. (Non-degree credit)

ESL 050 F Occupational English (2)

Corequisite: Occupational programs as designated in the Schedule of Classes. Credit/no credit only.

Two hours lecture and one hour lab per week. This is an intensive course in English as a second language for students in vocational programs. The course emphasizes the development of basic listening, speaking, reading, and writing skills for successful completion of required classes in vocational certificate programs. The class will focus on aspects of employability and workplace culture. (Non-degree credit)

ESL 080 F Fundamental Listening, Speaking, Reading and Writing for Students of American English (4)

Prerequisite: ESL skills evaluation. Credit/no credit only.

Four hours lecture and one hour arranged lab per week. Designed for high-beginning students of English, this course provides practice in all four language skills — listening, speaking, reading, writing — with emphasis on listening comprehension, oral communication, basic reading skills, and basic grammar and writing skills. (Non-degree credit)

ESL 081 F Low Intermediate English for Non-Native Speakers of English (4)

Prerequisite: ESL skills evaluation or credit in ESL 080 F Fundamental Listening, Speaking, Reading and Writing for Students of American English. Credit/no credit only.

Four hours lecture and one arranged lab hour per week. This is a low intermediate integrated skills course designed to improve the reading, grammar, writing, listening comprehension, and speaking skills of non-native speakers with a basic command of English. (Non-degree credit)

ESL 082 F Intermediate Reading and Writing for Students of American English (4)

Prerequisite: ESL skills evaluation or credit in ESL 081 F Low Intermediate English for Non-Native Speakers of English. Credit/no credit only.

Four hours lecture and one arranged lab hour per week. Designed for intermediate students of English, this course provides practice in all four language skills — listening, speaking, reading, and writing — with special emphasis on reading and writing to develop critical thinking, reading comprehension, and writing skills at the paragraph level. (Non-degree credit)

ESL 083 F High Intermediate Reading and Writing for Students of American English (5)

Prerequisite: ESL skills evaluation or credit in ESL 082 F Intermediate Reading and Writing for Students of American English. Letter grade or credit/no credit option.

Five hours lecture and one hour arranged lab per week. This course is for high-intermediate students of English. It provides instruction in critical reading and expository paragraph development. Application of grammar concepts, sentence variety, and vocabulary development are emphasized. The course offers continuing practice in listening and speaking skills. (Non-degree credit)

ESL 184 F Low Advanced English for Non-Native Speakers of English (5)

Prerequisite: ESL skills evaluation or ESL 083 F Intermediate Reading and Writing for Students of American English with a grade of "C" or better. Letter grade or credit/no credit option.

Five hours lecture plus one hour arranged lab per week. This course is an advanced course designed to improve the reading, writing and grammar skills of non-native speakers with an advanced command of English. (CSU) (UC Credit Limitation) (Degree Credit)

ESL 185 F Advanced Reading and Writing for Students of American English (5)

Prerequisite: ESL skills evaluation or ESL 184 F Low Advanced English for Non-Native Speakers of English with a grade of "C" or better. Letter grade or credit/no credit option.

Five hours lecture plus one hour arranged lab per week. Designed for advanced students of English, this course primarily emphasizes critical reading and expository essay writing; the course promotes continued practice in listening comprehension and oral communication. (CSU) (UC Credit Limitation) (Degree credit)

ESL 186 F Composition for Students of American English (5)

Prerequisite: ESL skills evaluation or ESL 185 F Advanced Reading and Writing for Students of American English with a grade of "C" or better. Letter grade or credit/no credit option.

Five hours lecture per week. Designed to prepare advanced students for college level writing, this course provides a review of English fundamentals and practice in reading, critical thinking, expository essay writing, and basic research skills. The course also offers continued practice in special problems common to second language learners and promotes continued practice in listening comprehension and oral communication. (CSU) (UC Credit Limitation) (Degree credit)

Environmental Sciences & Technology

Environmental Science

The **Environmental Science Associate in Arts Degree** program requires a total of 18 units of which 8 units are in required courses. An additional 10 units may be chosen from the restricted electives listed below.

Required Courses (8)

- BIOL 274 F General Ecology (4)
 ENVS 105 F Environmental Biology (3)
 ENVS 105LF Environmental Biology Lab (1)

Restricted Electives (10)

- AJ 100 F Introduction to Law Enforcement (3)
 CHEM 111AF General Chemistry (5)
 CHEM 111BF General Chemistry (5)
 ESC 190 F Environmental Geology (3)
 GEOG 102 F Physical Geography (3) or
 SOC 101 F Introduction to Sociology (3)
 GEOG 170 F Urban Geography: Introduction to the City (3) or
 SOC 102 F Social Problems (3)
 PSY 101 F General Psychology (3)
 ECON 101 F Principles of Economics — Micro (3)

Environmental Science Courses

ENVS 105 F Environmental Biology (3)

Environmental Biology introduces the student to the basic principles of organismal biology. These principles then are used to assess today's complex environmental issues. The ultimate concerns in environmental controversies inevitably involve biological processes on the ecological, organismal and cellular level. This course explores how human-caused environmental changes disrupt the normal conduct of the planet's biological systems. Core biological principles include: the philosophy of science, photosynthesis, aerobic respiration, genetic resources, protein synthesis, taxonomy of life, evolutionary principles, ecological structures, wildlife management, and human health. The core topics will be treated in a framework of the following environmental issues: loss of species, human population growth, air pollution, water pollution, energy use, resource consumption, and hazardous chemicals. (CSU) (UC) (Degree credit)

ENVS 105LF Environmental Biology Laboratory (1)

Corequisite: ENVS 105 F Environmental Biology.

One hour of lecture and three hours of laboratory or field study per week for eight weeks or the equivalent. Using experimental and investigative approaches, this course is designed to teach students biological principles and scientific methods of inquiry. Topics will include: development and critique of experimental designs using the scientific method of inquiry; an experimental study of the effects of acid rain on plants; basic concepts in photosynthesis, nutrient cycling, cell division, primary productivity, energy flow, competition, and reproductive strategies in ecosystems; field discovery and analysis of ecological structures in estuarine and arid ecosystems; plant anatomy and functional morphology; plant and animal physiological adaptations; behavioral adaptations; field identification of native and introduced plants and animals; transect distribution analyses; and impact of water distribution systems on wilderness ecosystems. Mathematical tools are accessed in support of data analyses, and "what if" scenarios. The student will submit experimental and investigative findings in a conventional scientific written format. (CSU) (UC) (Degree credit)

ENVS 126 F Natural History of California (3)

Corequisite: ENVS 126FF Natural History of California Field Lecture

Three hours lecture per week. This course is designed to acquaint students with the diversity of California's natural geographic, biologic, and geologic regions. After introductory units on basic ecology and basic geology, each of the natural regions of the state is discussed with an emphasis on the common, conspicuous, or unique plants, animals, and geological features. (CSU) (UC) (Degree credit)

ENVS 126FF Natural History of California Field Lecture (2)

Corequisite: ENVS 126 F Natural History of California

Two hours of lecture per week. This course is designed to accompany ENVS 126 F Natural History of California, and consists of two weekend field trips involving overnight camping. Regions are selected that illustrate California's remarkable diversity. One field trip, emphasizing mountain habitats, is taken to a selected site in the Sierra Nevada or one of the local mountain ranges. The other trip, emphasizing a desert experience, is taken to a site in the local desert such as Anza Borrego Desert State Park, Joshua Tree National Monument, or the Eastern Mojave Natural Area. (CSU) (UC) (Degree credit)

ENVS 194 F Internship in Environmental Sciences/ Newport Bay (2)

Two hours lecture or equivalent per week. The course includes field trips, teaching demonstrations and group activities. This course introduces the basic ecology of estuaries, natural history of marine and terrestrial animals and plants, cultural history of local native Americans, and the environmental importance of coastal wetlands. Students will follow experienced naturalists to learn about habitat restoration, scientific sampling, and/or interpretative techniques in the field. When mastery of selected topics has been achieved, students will design teaching materials and serve as naturalists/tour guides at Newport Bay. (CSU) (Degree Credit)

ENVS 196 F Regional Field Studies/Life Sciences (1-2)

One or two hours of lecture per week or equivalent. Classes are conducted in the short course format, and require participation in fieldwork in a selected biological community in southwestern United States, Mexico, or Costa Rica. Field studies are designed to develop a strong foundation in ecological facts and principles. Emphasis is placed on identifying and studying ecological issues through careful observation, data collection and analysis. Students are trained in various field study techniques and the use of science instruments. Topics include autecological and synecological studies of biological communities, monitoring abiotic factors, field identification of flora and fauna, and human impact on the study area. (CSU) (Degree credit)

ENVS 197 F Internship in Environmental Sciences/ Environmental Concerns (2)

Two hours lecture, teaching demonstrations and small group discussions per week or equivalent. Students will be assisted in selecting and developing teaching modules in defined areas of environmental science or related topics. Students will gain expertise in their selected topics with guidance from the instructor. Students will then serve as teaching interns in K-6 classrooms by presenting teaching modules to specific grade level(s) of choice in area schools within the North Orange County Community College District. (CSU) (Degree credit)

ENVS 198AF Desert Field Natural History (1)

One hour of lecture per week or equivalent. This course involves lecture and field study of desert ecological principles and concepts in selected areas within California's desert ecosystems. Lectures will provide an overview of field natural history concepts, including identification of plants and animals, adaptations to xeric environments and ecological interrelationships. Students are trained in various field study techniques and in the use of specific scientific equipment. Field trips are required. (CSU) (Degree credit)

ENVS 198CF Geology and Marine Biology of the Channel Islands (2)

This course involves lecture and field study of geological and marine biological processes and features in the Channel Islands region of Southern California. Lectures will examine how to recognize key geologic landforms and marine habitats in the field. Particular attention will be focused on the relationship between geology and the marine life. Students are trained in various field study techniques and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ENVS 198DF Baja California Field Studies (2)

Two hours of lecture per week or equivalent. This course involves lecture and on-site field study of the ecology and biogeography of selected biological communities in Baja California, Mexico. Lectures will cover an introduction to the natural history and unique adaptations of native plants and animals occurring in coastal inter-tidal, desert and riparian habitats. Impacts of humans on these communities will be observed. Lectures will prepare students for planning and executing field projects using appropriate scientific methods and instrumentation. A camping field trip to Baja California is required. Students will arrange personal transportation. (CSU) (Degree credit)

ENVS 198E F Marine Biology of Baja California (2)

Two hours of lecture per week or equivalent. This course involves lecture and field study of the marine biology of Baja California. Lectures will examine the particular physical and biological features that structure this unique marine environment. The factors shaping the Gulf of California versus Pacific Coasts will be discussed, including the roles of tidal and wind-driven upwelling in dampening El Niño effects in the Gulf. Students are trained in various field study techniques, data analysis, and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

ENVS 198FF Marine Vertebrate Ecology of the Channel Islands (1)

One hour lecture per week or equivalent. This course involves lecture and field study of the ecology of marine mammals, seabirds, and fish in the Channel islands area. Lectures will examine the physical and biological features that structure the marine environment in the region, along with the adaptations and ecological relationships of marine vertebrates living there. Students are trained in various field study techniques, data analysis, and the use of scientific instruments. Field trips are required. (CSU) (Degree credit)

Environmental Technology

Curriculum leading to the **Environmental Technology (ET) Certificate** Program refers to the knowledge and skills that allow a person to work with hazardous materials in compliance with governmental regulations and at the same time protect human health and the environment. The **ET Certificate** is designed to be a one-year program that can either prepare students or upgrade working individuals with technician-level skills. This certificate requires completion of 35 units of which 32 units are in required courses. An additional 3 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken.

Required Courses (32 units)

BIOL	102 F Human Biology (3)
CHEM	101 F Introduction to Chemistry (5)
ENVS	105 F Environmental Biology (3)
ET	100 F Introduction to Environmental Technology (3)
ET	110 F Waste Stream Generation/Reduction/ Treatment (3)
ET	130 F Health Effects of Hazardous Materials (3)
ET	150 F Hazardous Waste Management Applications (4)
ET	200 F Hazardous Materials Management Applications (4)
ET	230 F Safety and Emergency Response (4)

Restricted Electives (3 units)

BUS	111 F Business Communication (3)
CIS	100 F Introduction to Personal Computers (3)
SPCH	100 F Public Speaking (4)

Recommended Electives

BUS	161 F Introduction to Business (3)
BUS	266 F Human Relations in Business (3)
CHEM	200 F Elementary Organic Chemistry (3)
ESC	100 F Physical Geology (3)
POSC	100 F American Government (3)
PSY	101 F General Psychology (3)

The curriculum leads to an **Associate in Science Degree** for employment as an Environmental Hazardous Materials Technician. The knowledge and skills gained in this program allow a person to work with hazardous materials in compliance with governmental regulations and at the same time protect human health and the environment. This program currently does not fulfill requirements for transfer to any four-year university. The degree requires 32 units of which 18 units are in required courses. An additional 14 units must be chosen from the restricted electives listed below.

Required Courses (18 units)

ET	110 F Waste Stream Generation/Reduction/ Treatment (3)
ET	130 F Health Effects of Hazardous Materials (3)
ET	150 F Hazardous Waste Management Applications (4)
ET	200 F Hazardous Materials Management Applications (4)
ET	230 F Safety and Emergency Response (4)

Restricted Electives (14 units)

BIOL	102 F Human Biology (3) or
BIOL	170 F Organismal Biology (5)
CHEM	101 F Introduction to Chemistry (5) or
CHEM	111AF General Chemistry (5) or
CHEM	200 F Elementary Organic Chemistry (3)
ET	100 F Introduction to Environmental Hazardous Materials Technology (3)
ENVS	105 F Environmental Biology (3)
BUS	111 F Business Communications (3) or
CIS	100 F Introduction to Personal Computers (3) or
SPCH	100 F Public Speaking (4)

*Environmental Technology Courses***ET 100 F Introduction to Environmental Technology (3)**

Three hours lecture per week. This course is designed to give the student a general overview of the environmental technology area. The history of pollution leading to current legislation, environmental effects of pollution, and an overview of the regulatory framework will be presented. Career opportunities in the areas of handling and management of hazardous substances will be discussed. (CSU) (Degree credit)

ET 110 F Waste Stream Generation/Reduction/Treatment (3)

Advisory: CHEM 101 F Introduction to Chemistry and MATH 020 F Elementary Algebra

Three hours lecture per week. The study of industrial processes and their generation of waste streams in seven selected industries: electroplating, metal finishing and printed circuit board production, oil refining and chemical production, general manufacturing, printing and graphic reproduction, agriculture, and consumer services. The course will center on various raw materials and chemicals used in industry, examining the changes that occur as they move through the industrial process, and understanding the material balance concept of inventory. Throughout the course, discussion of applicable regulations will be included, and the importance of waste minimization/treatment concepts will be stressed. Home hazardous waste generation and reduction will also be considered. (CSU) (Degree credit)

ET 130 F Health Effects of Hazardous Materials (3)

Prerequisite: BIOL 101 F General Biology

Three hours lecture per week. This course covers the acute and chronic health effects produced by exposure to chemical, physical, and biological agents. Emphasis will be placed on those hazardous materials commonly associated with industrial operations, waste disposal, and remediation sites. Topics will include routes of entry, toxic effects, risk evaluation, permissible exposure limits, medical surveillance, control methods for reducing exposure and understanding a Material Safety Data Sheet (MSDS). (CSU) (Degree credit)

ET 150 F Hazardous Waste Management Applications (4)

Prerequisite: ET 100 F Introduction to Environmental Technology and CHEM 101 F Introduction to Chemistry.

Three hours lecture and three hours laboratory per week. This course provides an overview of hazardous waste regulation with emphasis in generator compliance, site investigation and remediation, permitting, enforcement, and liability. The lecture portion of the course explains the hazardous waste regulatory framework, introduces the student to a wide variety and types of environmental resources available, and develops research skills in the hazardous waste area. The laboratory portion of the course complements the lectures by providing "hands on" application of the regulations at the technician level. Proper methods of preparing a hazardous waste manifest, labeling of storage containers, sampling and analysis, preparing a Phase I Environmental Audit, and selecting environmental consultants are among the many skills developed in the laboratory. (CSU) (Degree credit)

ET 200 F Hazardous Materials Management**Applications (4)**

Prerequisite: ET 100 F Introduction to Environmental Technology, ET 130 F Health Effects of Hazardous Materials, and CHEM 101 F Introduction to Chemistry.

Three hours lecture and three hours laboratory per week. A study of the requirements and applications of federal, state, and local laws and regulations relating to hazardous materials. The course will emphasize compliance with Department of Transportation, OSHA Hazard Communication, SARA Title II Right-To-Know, Underground Tank, Asbestos, Proposition 65, and Air Toxic Regulations. The lecture portion of the course will provide the student with an understanding of the legal framework of hazardous materials laws; the laboratory portion will focus on applications of these laws, such as: proper labeling, interpreting Material Safety Data Sheets (MSDS's), permitting and monitoring functions, as well as planning and reporting functions. (CSU) (Degree credit)

ET 230 F Safety and Emergency Response (4)

Prerequisite: ET 130 F Health Effects of Hazardous Materials.

Three hours lecture and three hours laboratory per week. This course is designed to provide students with "hands on" instruction in safety and emergency response to chemical and physical exposures in industrial and field settings. Topics include: hazard analysis, contingency planning, house keeping and safety practices including proper use and selection of PPE, site control and evaluation, handling drums and containers, field sampling and monitoring, proper use of instruments, incident response planning, emergency response including field exercises in the use of PAPR and SCBA, and an understanding of the ICS system. This course satisfies the requirements for generalized employee training under OSHA (1919.120). (CSU) (Degree credit)

Ethnic Studies

Curriculum leads to the **Associate in Arts Degree**. The Ethnic Studies AA Degree Program requires a total of 19 units of which 16 units are in required courses. An additional 3 units must be chosen from the restricted units listed below.

Required Courses (16 units)

- ETHS 101 F American Ethnic Studies (4)
- ETHS 129 F Introduction to African American Studies (3)
- ETHS 140 F Introduction to Chicano/Chicana Studies (3)
- ETHS 160 F History of Native Americans (3)
- ETHS 170 F Introduction to Asian American Studies (3)

Restricted Electives (3 units)

- ENGL 250 F Survey of Native American Literature (3)
- ENGL 251 F Survey of African American Literature (3)
- ETHS 118 F Introduction to Bilingual-Crossculturalism (3)
- ETHS 130 F History of African Americans in the United States (3)
- ETHS 141 F Chicano/Chicana History (3)
- ETHS 142 F The Chicano-a/Latino-a in Contemporary Society (3)
- HIST 160AF Asia: Basic Heritage (3) or
- HIST 160BF Modern China and Japan (3)
- HIST 162AF History of the Americas (3) or
- HIST 162BF History of the Americas (3)
- HIST 270 F Women in United States History (3)
- WMNS 100 F Introduction to Women's Studies (3)

Ethnic Studies Courses

ETHS 101 American Ethnic Studies (4)

Three hours lecture and two hours discussion per week. This course serves to broaden the ethnic and racial perspective of students interested in American culture and society. Utilizing an interdisciplinary approach that represents the disciplines of anthropology, sociology, psychology, political science, and history, as well as community resource people, the course offers an in-depth analysis of ethnic minorities in the United States. Emphasis is given to Indians, Black, Chicano, and Asian Americans, their relationships with each other and the rest of American society and government, past and present. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

ETHS 118 F Introduction to Bilingual-Crossculturalism (3)

Letter grade or credit/no credit option.

Three hours lecture and discussion per week. The course will acquaint the student with a conceptual framework needed to explore and develop a cultural consciousness and a set of practical skills required to function more effectively in the increasingly complex and cross-cultural environments of our contemporary communities, classrooms, offices and other workplaces. Special emphasis will be placed on how we cross linguistic, cultural and color lines and the possible tensions, conflicts/"clashes" which abound in a multiethnic state still struggling to become multicultural. (CSU) (Degree credit)

ETHS 129 F Introduction to African American Studies (3)

Three hours lecture per week. This survey course presents the student with an examination of the African American experience, and traces the role and contributions of Black people in the development of the United States. Included are such major topics as origins in Africa and the historical development of the Black community and culture as they evolved in the United States. An emphasis will be placed on the basic terms and references that give substance to Afro-American studies, as well as contemporary Black issues. (CSU) (UC) (Degree credit)

ETHS 130 F History of African Americans in the United States (3)

Three hours lecture per week. An introduction to the historical roots and characteristics of Black culture in the United States. This survey course will demonstrate how the historical process works while tracking the historical/factual base of the African American experience. (CSU) (UC) (Degree credit)

ETHS 140 F Introduction to Chicano/Chicana Studies (3)

Three hours lecture per week. This is an introductory level course designed to acquaint students with the most significant social, political, economic and historic aspects of the Chicano/Chicana experience in the United States. The course is interdisciplinary in nature and will critically analyze the societal context in which Chicanos/Chicanas have sought to maintain their culture. (CSU) (UC) (Degree credit)

ETHS 141 F Chicano/Chicana History (3)

Three hours lecture per week. This course provides the student with the social and cultural roots of the Chicana/Chicano. The class traces the origins of the Chicana/Chicano from their indigenous and Spanish beginnings to the present. An inter-disciplinary approach is used to develop the understanding of this human experience. (CSU) (UC) (Degree credit)

ETHS 142 F The Chicano-a/Latino-a in Contemporary Society (3)

Three hours lecture per week. This course will introduce the student to the contemporary characteristics and significant contributions of the Chicano-a/Latino-a community utilizing the models and paradigms developed within Chicano studies, viewed as an interdisciplinary area of study. The definitions of, and interrelationships among key concepts and/or terms such as a people, nationality, culture, ethnicity, class, race, gender, acculturation, assimilation, domination and liberation will be discussed. The intent is to impart specific information about Chicanos-as, introduce theory, define key concepts, discuss significant contemporary issues, and explore future implications. There will be comparisons and contrasts with other Hispanic/Latino-a groups in the United States. (CSU) (UC) (Degree credit)

ETHS 160 F History of the Native Americans (3)

Three hours lecture per week. A historical examination of the native peoples of the Americas from their early beginnings to the present. A socio-cultural approach is utilized to develop a better understanding of the first Americans. (CSU) (UC) (Degree credit)

ETHS 170 F Introduction to Asian American Studies (3)

Three hours lecture per week. This course serves as an introduction to Asian American Studies. The student will be studying the experiences of various Asian and Pacific Islander groups, utilizing the lens of race, class, gender and sexuality. This will be achieved using various disciplinary methods. Throughout the semester students will engage in community studies, critical theory on race, sociological methods, media studies and the arts to explore the rich and diverse Asian and Pacific Islander communities. The course will start with current immigration history and end with contemporary issues and topics within API communities, i.e. garment industry, sexuality, anti-Asian bias/violence, unionization, and gender stereotypes. The course will connect historical issues with contemporary phenomena. (CSU) (UC) (Degree credit)

ETHS 199 F Ethnic Studies Independent Study (1-1-1)

One-hour lecture or scheduled conference per week. This course is offered for students who wish to increase their knowledge of the Social Sciences through individual study and small group conferences. Students successfully completing this course will be awarded elective credit in the Social Sciences area. Course may be taken three times for credit. (CSU) (UC Credit Limitation depending upon course content; UC review required.) (Degree credit)

ETHS 299 F Ethnic Studies Independent Study (1-1-1)

One-hour lecture or scheduled conference per week. This course is offered for students who wish to increase their knowledge of the Social Sciences through individual study and small group conferences. Students successfully completing this course will be awarded elective credit in the Social Sciences area. Course may be taken three times for credit. (CSU) (UC review required.) (Degree credit)

ART 116 F Art History - Mexico (3)

(see Art)

ART 212 F Asian Art History (3)

(see Art)

ART 213 F Pre-Columbian Art (3)

(see Art)

MUS 117 F American Popular Music (3)

(see Music)

Family Studies

The **Family Studies Certificate** Program requires the completion of 21 units of which 12 units are in required courses. An additional 9 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken.

Required Courses (12 units)

CDFL	120 F Human Development: Early Years (3) or
CDFL	200 F Human Development: Adolescence (3)
CDFL	201 F Child in Home and Community (3)
CDFL	202 F Contemporary Family Living (3) or
PSY	101 F General Psychology (3) or
PSY	110 F Introduction to Applied Psychology (3)
PSY	139 F Developmental Psychology: Life Cycle (3) or
PSY	145 F Child Psychology (3) or
SOC	101 F Introduction to Sociology (3) or
SOC	275 F Marriage and Family (3)

Restricted Electives (6 units)**3 units from the following:**

CDFL	173 F The Process of Parenting (3)
PSY	120 F Human Sexuality (3)

3 units from the following:

- ANTH 102 F Cultural Anthropology (3)
 CDFL 140 F Infant Development and Relationships (3)
 CDFL 204 F Introduction to Special Education (3)
 SOC 102 F Social Problems (3)
 SOC 225 F Sociology of Women (3)

Students are encouraged to take additional electives from the following:

- PSY 143 F Developmental Psychology: Practicum (3)
 PSY 202 F Introduction to Experimental Psychology (3)
 PSY 222 F Abnormal Psychology (3)

CDFL 120 F Human Development: Early Years**CDFL 140 F Infant Development and Relationships****CDFL 200 F Human Development: Adolescence****CDFL 201 F Child in Home and Community****CDFL 202 F Contemporary Family Living****PSY 120 F Human Sexuality****PSY 139 F Developmental Psychology: Life Cycle****PSY 145 F Child Psychology****SOC 275 F Marriage and the Family**

Fashion Careers

Dressmaking-Alterations Certificate

The **Dressmaking-Alterations Certificate** Program requires the completion of 36 units of which 27 are in required courses. An additional 9 units must be chosen from the restricted electives listed below.

Required Courses (27 units)

- FASH 050 F Careers in Fashion (1)
 FASH 085 F Bridal and Special Occasion Wear (2)
 FASH 093 F Pattern Alteration and Fitting (2)
 FASH 107 F Apparel Analysis (3)
 FASH 108AF Flat Pattern Methods and Design (2)
 FASH 150 F Introduction to the Fashion Industry (3)
 FASH 152 F Ready-to-Wear Evaluation (3)
 FASH 188 F Apparel Production (2)
 FASH 201 F Clothing (2)
 FASH 205AF Tailoring (2)
 FASH 206 F Textiles (3)
 FASH 209AF Draping (2)

Restricted Electives (9 units)

- FASH 060 F Professional Image (2)
 FASH 101 F Clothing (2)
 FASH 108BF Flat Pattern Methods and Design (2)
 FASH 145 F Field Studies In Fashion (1)
 FASH 186 F Workroom Sketching (2-2)
 PSY 110 F Introduction to Applied Psychology (3)

Fashion Design

Curriculum leads to the **Associate in Arts Degree**. For employment in the apparel industry, either in clothing design for manufacturing or for custom work. The student should also complete the requirements for a Fashion Design Certificate. This program does not fulfill requirements for transfer to any four-year State university.

Complete 18 or more units from the following list:

- FASH 108BF Flat Pattern Methods and Design (2)
 FASH 150 F Introduction to the Fashion Industry (3)
 FASH 186 F Workroom Sketching (2)
 FASH 201 F Clothing (2)
 FASH 206 F Textiles (3)
 FASH 209AF Draping (2)
 FASH 242 F History of Costume (3)
 FASH 284AF Fashion Design (2)

Fashion Design Certificate

The **Fashion Design Certificate** Program requires the completion of 36 units of which 32 are in required courses. An additional 4 units must be chosen from the restricted electives listed below: A minimum grade of "C" is required for all courses.

Required Courses (32 units)

- FASH 050 F Careers In Fashion (1)
 FASH 093 F Pattern Alteration and Fitting (2)
 FASH 107 F Apparel Analysis (3)
 FASH 108AF Flat Pattern Methods and Design (2)
 FASH 108BF Flat Pattern Methods and Design (2)
 FASH 145 F Field Studies In Fashion (1)
 FASH 150 F Introduction to the Fashion Industry (3)
 FASH 186 F Workroom Sketching (2)
 FASH 188 F Apparel Production (2)
 FASH 190 F Pattern Grading (1)
 FASH 201 F Clothing (2)
 FASH 206 F Textiles (3)
 FASH 209AF Draping (2)
 FASH 242 F History of Costume (3)
 FASH 284AF Fashion Design (2)
 FASH 297 F Fashion Design Portfolio (1)

Restricted Electives (4 units)

ART	139 F Fashion Sketching (2)
ART	182 F Basic Drawing (3)
FASH	060 F Professional Image (2)
FASH	152 F Ready-to-Wear Evaluation (3)
FASH	183 F Fashion Marketing (3)
FASH	205AF Tailoring (2)
FASH	244 F Ethnic Costume (2)
FASH	284BF Fashion Design (2)
FASH	975 F Patternmaking: Collections (2)
FASH	299 F Fashion Industry Internship (1-4)

Fashion Design majors may also be interested in Theatrical Costuming.

Advanced Fashion Design Certificate

The **Advanced Fashion Design Certificate** Program requires that the student complete the Fashion Design Certificate plus 24 units of which 22 are in required courses. An additional two units must be chosen from the restricted electives listed below. A minimum grade of "C" is required for all courses.

Required Courses (22 units)

ART	119 F Design and Color for Non-art Majors (2)
ART	120 F Basic Visual Design Concepts (3)
ART	139 F Fashion Sketching (2)
ART	182 F Basic Drawing (3)
FASH	975 F Patternmaking: Collections (2)
FASH	088 F CAD for Apparel (2)
FASH	186 F Workroom Sketching (2)
FASH	209BF Draping (2)
FASH	284BF Fashion Design (2)
FASH	244 F Ethnic Costume (2)

Restricted Electives (2 units)

ART	186AF Beginning Life Drawing (2)
FASH	020 F Modeling (2)
FASH	080AF Designing and Sewing Leather (2)
FASH	088 F CAD for Apparel (2)
FASH	205AF or 205BF Tailoring (2)

Fashion Illustration

The **Fashion Illustration Certificate** Program requires the completion of 33 units of which 26 are from required courses. An additional 7 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required for all courses.

Required Courses (26 units)

ART	139 F Fashion Sketching (2)
ART	182 F Basic Drawing (3)
ART	183 F Representational Drawing (2)
ART	184 F Expressive Drawing (2)
ART	186AF Beginning Life Drawing (3)
ART	244 F Illustration (2)
FASH	107 F Apparel Analysis (3)
FASH	145 F Field Studies in Fashion (1)
FASH	150 F Introduction to Fashion Industry (3)
FASH	186 F Workroom Sketching (2)
FASH	242 F History of Costume (3)
FASH	297 F Fashion Design Portfolio (1)

Restricted Electives (7 units)

ART	144 F Fundamentals of Cartooning (2)
ART	186 F Intermediate/Advanced Life Drawing (3-3) (third and fourth semester)
ART	188 F Watercolor Painting (3-3)
FASH	050 F Careers In Fashion (1)
FASH	101 F Clothing (2)
FASH	201 F Clothing (2)

Fashion Journalism

Curriculum leads to the **Associate in Arts Degree** and/or employment in fashion journalism fields such as fashion magazines, trade magazines, promotion writing, radio and television program writer, advertising, and public relations. This degree requires completion of 18 units of which 15 units are in required courses. An additional 3 units must be chosen from the restricted electives listed below.

Required Courses (15 units)

FASH	150 F Introduction to the Fashion Industry (3)
FASH	183 F Fashion Marketing (3)
FASH	206 F Textiles (3)
FASH	250 F Fashion Promotion (3)
JOUR	101 F Reporting and Writing (3)

Restricted Electives (3 units)

FASH	107 F Apparel Analysis (3)
FASH	145 F Field Studies in Fashion (1)
FASH	242 F History of Costume (3)
JOUR	102 F Reporting & Writing (3)
JOUR	110 F Mass Media Survey (3)
JOUR	126 F Advertising Copy and Layout (3)
PHOT	101 F Introduction to Photography (3) or
PHOT	219 F Photojournalism (3)

Fashion Merchandising

Curriculum leads to the **Associate in Arts Degree** and/or employment in ready-to-wear industry, department store, specialty shops, and wholesale fashion showrooms. This degree requires completion of 18 units of which 15 units are in required courses. An additional 3 units must be chosen from the restricted electives listed below.

Required Courses (15 units)

FASH 107 F Apparel Analysis (3)
 FASH 150 F Introduction to Fashion Industry (3)
 FASH 152 F Ready-to-Wear Evaluation (3)
 FASH 206 F Textiles (3)
 FASH 220 F Retail Buying (3)

Restricted Electives (3 units)

ACCT 101AF Financial Accounting (4)
 BUS 132 F Principles of Import/Export (3)
 BUS 266 F Human Relations in Business (3)
 CIS 100 F Introduction to Personal Computer Applications (3)
 CIS 111 F Information Systems and Computer Programming (3)
 ECON 101 F Principles of Economics — Micro (3)
 FASH 183 F Fashion Marketing (3)
 FASH 242 F History of Costume (3)
 FASH 250 F Fashion Promotion (3)
 FASH 202 F Visual Merchandising (2)

The **Fashion Merchandising Certificate** requires the completion of 34 units of which 30 are in required courses. An additional 4 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required for all courses.

Required Courses (30 units)

BUS 162 F Business Economics (3)
 BUS 266 F Human Relations in Business (3)
 CIS 100 F Introduction to Personal Computers (3) or
 CIS 111 F Information Systems and Computer Programming (3)
 FASH 107 F Apparel Analysis (3)
 FASH 150 F Introduction to the Fashion Industry (3)
 FASH 152 F Ready-to-Wear Evaluation (3)
 FASH 183 F Fashion Marketing (3)
 FASH 206 F Textiles (3)
 FASH 220 F Retail Buying (3)
 FASH 250 F Fashion Promotion (3)

Restricted Electives (4 units)

FASH 060 F Professional Image (2)
 FASH 101 F Clothing (2) or
 FASH 201 F Clothing (2)
 FASH 145 F Field Studies in Fashion (1)
 FASH 202 F Visual Merchandising (2)
 FASH 242 F History of Costume (3)
 FASH 244 F Ethnic Costume (2)
 FASH 299 F Fashion Industry Internship (1)

Image Consultant Certificate

The **Image Consultant Certificate** Program requires the completion of 20 units of which 19 units are in required courses. An additional 1 unit must be chosen from the restricted electives listed below. The curriculum leads to a certificate that prepares students for a career as a wardrobe and color consultant. The demand for professional image consultants is quickly growing, and the program will prepare students for entry-level employment with major retailers, image consulting firms, or self-employment. A minimum grade of "C" is required for all courses.

Required Courses (19 units)

FASH 060 F Professional Image (2)
 FASH 107 F Apparel Analysis (3)
 FASH 150 F Introduction to Fashion Industry (3)
 FASH 183 F Fashion Marketing (3)
 FASH 186 F Workroom Sketching (2)
 FASH 206 F Textiles (3)
 FASH 250 F Fashion Promotion (3)

Restricted Electives (1 unit)

BUS 266 F Human Relations in Business (3)
 FASH 050 F Careers in Fashion (1)
 FASH 096 F Exploring a Home Based Business (2)
 FASH 145 F Field Studies in Fashion (1)
 IDES 130 F Applied Color and Design Theory (4)

Fashion Courses

FASH 010 F Clothing Construction Studio (1-1-1-1)

Corequisite: One semester of clothing construction. Credit/no credit only.

Three hours arranged laboratory per week. A student may pursue individual clothing construction projects under staff supervision during open laboratory hours. Sign up first week of school for flexible hours. Course may be taken four times for credit. (Non-degree credit)

FASH 020 F Modeling (2-2-2-2)

Two hours lecture for a total of thirty-two hours in each session. This course includes professional skills needed for men and women to enter a career in runway and print modeling. It will cover fashion show procedures and skills, professional makeup, posture enhancement, personal development, modeling for a photographer, developing a modeling portfolio, and working with agencies and contracts. Course may be taken four times for credit. (Non-degree credit)

FASH 030 F Industrial Sewing (2)

One-hour lecture and three hours laboratory per week. Students will be taught to use industrial sewing equipment for entry-level jobs in the apparel manufacturing industry. Instruction will accommodate students with limited English proficiency. (Non-degree credit)

FASH 045 F Swim and Active Wear (1-1)

Eight hours lecture and 24 hours laboratory. Students will learn the techniques needed to create commercial quality swimwear and active wear using both industrial and home equipment. Course may be taken twice for credit. (Degree credit)

FASH 050 F Careers in Fashion (1)

Letter grade or credit/no credit option.

Sixteen hours lecture per semester. This course is an introduction to a variety of career opportunities in designing or creating clothing. Personal qualities and skills needed for various career choices as well as the responsibilities, tools, and working environment will be covered for retailing, apparel manufacturing, couture, wardrobe consulting, theatrical, and entrepreneurial fields. (Degree credit)

FASH 060 F Professional Image (2)

Letter grade or credit/no credit option.

Two hours lecture per week. This course will teach students the skills needed to get a job, develop a strong work ethic, become a valuable employee, and how to dress in a professional manner. The subject areas covered are: time management, goal setting, interview skills, wardrobe planning, personal appearance for men and women, developing skills to work well with others, problem solving, professional etiquette, and self promotion. (Degree credit)

FASH 080AF Designing and Sewing Leather (2)

Prerequisite: FASH 101 F Clothing.

One-hour lecture and three hours lab per week. The student will learn the skills and techniques needed to design and sew fashionable apparel and accessories of leather and suede. (Non-degree credit)

FASH 080BF Designing and Sewing Leather (2)

Prerequisite: FASH 080AF Designing and Sewing Leather.

One-hour lecture and three hours lab per week. The student will learn the advanced specialized skills and techniques needed to design and sew fashionable apparel and accessories of leather and suede. (Non-degree credit)

FASH 085 F Bridal and Special Occasion Wear (2-2)

Prerequisite: FASH 201 F Clothing

One-hour lecture and three hours lab per week. This course covers specialized construction techniques used in the manipulation of fancy garment fabrics for bridal and special occasion wear. The resources for these fabrics, notions and embellishments used in the assembly of special occasion wear will also be included. Course may be taken twice for credit. (Degree credit)

FASH 087 F Sewing for Profit (2)

Prerequisite: FASH 101 F Clothing or two years of high school clothing construction.

One-hour lecture and three hours laboratory per week. This course provides an opportunity for the student to learn the basic principles of custom dressmaking and alterations as a business. Use of power-sewing machines will be studied. Pricing, customer relations, quality control, and professional pressing techniques will be included. (Degree credit)

FASH 088 F CAD for Apparel (2-2)

Advisory: FASH 108AF Flat Pattern Methods and Design, FASH 186 F Workroom Sketching, and ACG 104 F 2-D Computer Graphics and Paint for Macintosh.

One-hour lecture and three hours laboratory per week. Students will learn the basics of 2-D Microcomputer paint and design programs used in the garment industry for designing apparel and textiles, making patterns and markers, fashion illustrating. Course may be taken twice for credit. (Degree credit)

FASH 090 F Creative Serging: The Overlock Machine (2-2-2-2)

One-hour lecture and three hours lab per week. The course is designed for the student to learn the use and care of the modern serger machine. The focus is on the student learning to create an entire wardrobe quickly with the serger. The student will construct samples and garments of children's clothing, men's wear, swimwear and active wear, lingerie, and women's clothing for day and evening. Course may be taken four times for credit. (Degree credit)

FASH 093 F Pattern Alteration and Fitting (2-2)

Letter grade or credit/no credit option.

One-hour lecture and three hours laboratory per week. A class for dressmaking and design majors who need to make garment pieces fit each other and the body that wears them by altering a commercial pattern to body measurements and making a basic pattern to be used as a basic block for adjusting styles and designing clothing. Students enrolled in the second semester of FASH 093 F will have added opportunity to fit a variety of figures. Course may be taken twice for credit. (Degree credit)

FASH 096 F Exploring a Home-Based Business (2)

Two hours a week lecture. This course explores the feasibility of using skills to produce income at home, and investigates the organization and management needed for a home-based business. Personal, financial, and legal considerations are included. (Degree credit)

FASH 101 F Clothing (2-2)

Letter grade or credit/no credit option.

One-hour lecture and three hours laboratory per week. This course is designed for both beginner and experienced seamstress. This course will include custom and speed techniques for developing skills in clothing construction, various techniques for obtaining perfect fit of a garment plus professional methods for constructing clothes. Course may be taken twice for credit. (CSU) (Degree credit)

FASH 107 F Apparel Analysis (3) (CAN FCS 20)

Three hours lecture per week. This course will study the psychological and sociological significance of clothing and apply the principles and elements of design in the selection of clothing to enhance the individual. (CSU) (Degree credit)

FASH 108AF Flat Pattern Methods and Design (2)

Prerequisite: FASH 101 F Clothing or two years high school clothing construction Corequisite: FASH 050 F Careers in Fashion

One-hour lecture and three hours lab per week. Students will learn to design and make garments by apparel industry techniques by manipulating paper patterns, thereby translating a designer's sketch or concept into a saleable garment. (CSU) (Degree credit)

FASH 108BF Flat Pattern Methods and Design (2)

Prerequisite: FASH 108AF Flat Pattern Methods and Design.

One-hour lecture and three hours laboratory per week. Students will make patterns for apparel using basic techniques learned in FASH 108AF and adding more advanced concepts for creating wearable clothing. (CSU) (Degree credit)

FASH 108CF Flat Pattern Methods and Design (2)

Prerequisite: FASH 108BF Flat Pattern Methods and Design.

One-hour lecture and three hours laboratory per week. Students will develop patterns for fashion forward apparel using techniques learned in FASH 108BF, adding more advanced concepts. (CSU) (Degree credit)

FASH 145 F Field Studies in Fashion (1, 1)

A total of 18 hours. This course will acquaint students with the world of fashion through field trips to manufacturers, designers, the California Mart, different types of retail stores, museums, fashion publications and fashion shows. Course may be taken twice for credit. (CSU) (Degree credit)

FASH 150 F Introduction to the Fashion Industry (3)

Three hours lecture per week. The course explores four levels of the fashion industry including the development of fashion, fashion designers, apparel producers, retailers, and fiber and fabric producers. (CSU) (Degree credit)

FASH 152 F Ready-To-Wear Evaluation (3)

Three hours lecture per week. The student will learn to analyze and evaluate the construction, appearance, pricing, sizing and fit of ready-to-wear and of price and quality indicators for selected accessories. Terminology associated with construction, production, and apparel styles will be included. (CSU) (Degree credit)

FASH 183 F Fashion Marketing (3)

Prerequisite: FASH 150 F Introduction to the Fashion Industry.

Three hours lecture per week. The course will cover the principles behind consumer buying habits. Emphasis is placed on understanding consumer behavior of various socioeconomic and ethnic groups and how to market to them. (CSU) (Degree credit)

FASH 186 F Workroom Sketching (2-2)

Letter grade or credit/no credit option.

One-hour lecture and three hours studio/laboratory per week. This is a course in drawing techniques for garment workroom sketches. Emphasis is placed on developing skills in sketching garments with complete seam and embellishment details in the desired scale for use in the workroom of a manufacturer or custom shop. Drawing ability not necessary. Course may be taken twice for credit. (CSU) (Degree credit)

FASH 188 F Apparel Production (2)

Prerequisite: FASH 108AF Flat Pattern Methods and Design and FASH 050 F Careers in Fashion. Corequisite: FASH 297 F Fashion Design Portfolio.

One-hour lecture and three hours laboratory per week. This course provides an opportunity for students to become familiar with a major segments of the fashion industry. It will prepare students for a job as a design room assistant and includes layout and cutting techniques, power machines, professional pressing techniques, quality control, and production procedures, grading, sorting, and labeling. (CSU) (Degree credit)

FASH 190 F Pattern Grading (1)

Corequisite: FASH 108AF Flat Pattern Methods and Design

Nine hours of lecture and 27 hours of lab. Students learn to "size up" and "size down" a fashion pattern for all size ranges in missy, junior, children, and men's wear using industry techniques. (CSU) (Degree credit)

FASH 196 F International Fashion Studies (3)

Letter grade or credit/no credit option.

Forty hours of lecture before and during extended travel experiences to the major fashion centers of the world, plus ten hours of field trips. This course will introduce the international fashion industries of the world to the student of American fashion. Class members will tour selected fashion houses, textile mills, leading department stores, typical shops, and museums. Sixteen hours of lecture will precede departure to prepare the student for the travel experience. (CSU) (Degree credit)

FASH 199 F Fashion Independent Study (1-2, 1-2, 1-2)

Prerequisite: Completion of at least one semester in the area of study.

Three hours independent laboratory work per week per unit credit plus scheduled conferences with instructor. This course is designed for advanced students who wish to increase their knowledge of fashion through individual study. Projects must have instructor approval prior to enrollment. At the completion of the project, a written report is required. Students may enroll up to a maximum of three semesters. (CSU) (UC review required.) (Degree credit)

FASH 201 F Clothing (2-2)

Prerequisite: FASH 101 F Clothing with a grade of "C" or better or two years high school clothing construction.

One-hour lecture and three hours laboratory per week. This course develops advanced skills in clothing construction including custom couture techniques, the use of special fabrics such as plaids, lace, sheers, leather and pile fabrics, and methods of individualizing clothing with structural and applied designs such as piping, quilting, appliqué and beading. Course may be taken twice for credit. (CSU) (Degree credit)

FASH 202 F Visual Merchandising (2)

One-hour lecture and three hours laboratory per week. This course covers the role of display merchandising principles and design principles that are used to create retail displays. The care and handling of equipment will be discussed and demonstrated. Students will practice display techniques with windows and showcases and learn to develop a visual merchandising presentation. The students will be exposed to lectures and guest speakers on the topic of career opportunities in this field. (CSU) (Degree credit)

FASH 205AF Tailoring (2)

Prerequisite: FASH 201 F Clothing.

One-hour lecture and three hours laboratory per week. This course presents contemporary and traditional custom tailoring techniques applicable to women's and men's tailored garments such as suits and coats. (CSU) (Degree credit)

FASH 205BF Tailoring (2)

Prerequisite: FASH 205AF Tailoring.

One-hour lecture and three hours laboratory. This course presents contemporary and traditional custom tailoring techniques applicable to women's and men's tailored garments such as suits and coats. Students registered for FASH 205BF will construct a garment utilizing techniques they did not use in FASH 205AF. (CSU) (Degree credit)

FASH 206 F Textiles (3)

Three hours lecture per week. This course surveys and studies fabrics used in clothing and household goods, the production of fibers through fabric manufacturing and finishing. Use, care, and suitability for various end uses will be covered. (CSU) (UC) (Degree credit)

FASH 209AF Draping (2)

Prerequisite: FASH 108AF Flat Pattern Methods and Design and FASH 186 F Workroom Sketching.

One-hour lecture and three hours laboratory per week. The student will learn to manipulate fabrics on a dress form and create designs without the use of a drafted pattern. A variety of fabrics will be used in an exploration of the many possibilities of draping techniques. (CSU) (Degree credit)

FASH 209BF Draping (2)

Prerequisite: FASH 209AF Draping.

One-hour lecture and three hours laboratory per week. Students registered for FASH 209BF will be given more advanced assignments and work independently under the instructor's supervision. (CSU) (Degree credit)

FASH 220 F Retail Buying (3)

Three hours lecture/student project participation per week. This course offers a study of the principles of merchandise buying for resale in independent stores, major department stores, chain stores and centralized buying. The lectures will cover retail-buying principles for fashion merchandise, staples and soft merchandise lines. The lecture topics covered are: consumer motivation, merchandise planning and selection, sourcing, legal and trade regulation pricing, vendor relations, pricing analysis, classification systems, merchandise management and control. There will be field trips and guest lectures from major retailers to discuss career opportunities. (CSU) (Degree credit)

FASH 242 F History of Costume (3)

Three hours lecture per week. This course surveys the evolution of clothing styles through history from Egyptian to the contemporary period. Emphasis will be placed on the relation of recurring styles to contemporary fashion, the effect of social and political changes on clothing, and on clothing as a reflection of culture. (CSU) (Degree credit)

FASH 243 F Theatrical Costume Construction (2)

Corequisite: FASH 209AF Draping. Recommended: FASH 242 F History of Costume.

One-hour lecture and three hours laboratory per week. Recommended for Fashion Design and Theatre Arts majors. This course covers the techniques and procedures for constructing costumes for theatrical productions including garments, masks and accessories. (Not currently being offered — if interested, contact Division Office or see THEA 145 F Theatrical Costume in Theatre Arts.) (CSU) (UC) (Degree credit)

FASH 244 F Ethnic Costume (2)

Letter grade or credit/no credit option.

Total of 32 hours lecture. This course surveys clothing worn as the national dress and daily wear of the people in each of the developed and underdeveloped areas of the world. Emphasis is placed on its influence on contemporary fashion. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (Degree credit) (Transfers to Woodbury)

FASH 250 F Fashion Promotion (3)

Prerequisite: FASH 150 F Introduction to the Fashion Industry.

Three hours lecture per week. The course provides an overview of sales promotion activities of fashion retailers and manufacturers. Areas covered are advertising, publicity, coordinating fashions, and producing fashion shows. (CSU) (Degree credit)

FASH 284AF Fashion Design (2)

Corequisite: FASH 108AF Flat Pattern Methods and Design and FASH 206 F Textiles and FASH 186 F Workroom Sketching.

One-hour lecture and three hours laboratory per week. The students will learn the application of design principles to contemporary fashion for ready-to-wear and couture and how to make it salable. Class work will require garment sketching. Current fashion trends and resources for design ideas will be explored. (CSU) (Degree credit)

FASH 284BF Fashion Design (2)

Prerequisite: FASH 284AF Fashion Design.

One-hour lecture and three hours laboratory per week. This course covers design problems encountered in the various size ranges, style categories, and price ranges in designing seasonal lines and promotional groups in the manufacturing of apparel. Current fashion trends and resources of design ideas will be explored. (CSU) (Degree credit)

FASH 297 F Fashion Design Portfolio (1)

Prerequisite: FASH 108BF Flat Pattern Methods and Design and FASH 209AF Draping. Corequisite: FASH 188 F Apparel Production

Sixteen hours lecture. This course will prepare a student, who has completed the requirements for a Fashion Design Certificate or an AA degree, to begin seeking employment. Included are establishing a portfolio of designs, writing a resume, interview skills, finding job openings, follows up, salaries, and freelancing. (CSU) (Degree credit)

FASH 299 F Fashion Industry Internship (1-4)

Prerequisite: For Design Majors: FASH 108BF Flat Pattern Methods and Design and FASH 209AF Draping; FASH 188 F Apparel Production. For Merchandise Majors: FASH 150 F Introduction to Fashion; FASH 250 F Fashion Promotion; FASH 220 F Retail Buying.

One-hour lecture, five hours supervised experience per week for each unit of credit with a garment manufacturer or retailer or one of the related businesses in the fashion industry. Course may be taken three times for credit. (CSU) (UC review required.) (Degree credit)

FASH 975 F Patternmaking: Collections (2)

Prerequisite: FASH 108AF Flat Pattern Methods and Design and FASH 209AF Draping

One-hour lecture and three hours laboratory per week. Students will apply design principles to contemporary fashion by designing and producing a group of coordinated garments that will be included in a runway fashion show. (Degree credit)

FASH 976 F Advanced Patternmaking: Collections (2)

Prerequisite: FASH 975 F Patternmaking: Collections

One-hour lecture and three hours laboratory per week. Students continue to advance the skills learned in FASH 975 F using a variety of techniques not previously mastered. (Degree credit)

Foods

FOOD 060 F Foods for Fitness (2)

One-hour lecture and three hours laboratory per week. This course presents nutrition information to enhance knowledge about food choices. The principles of nutrition and food preparation are presented in a non-technical format. The students are able to apply the information to their personal fitness, diet, and health goals. The labs include the planning and preparation of meals that adhere to various dietary guidelines such as lower fat, cholesterol and sodium, calorie control and increased fiber. (Degree credit)

FOOD 070 F Nutrition Concepts and Food Preparation for Vegetarians (2)

One-hour lecture and three hours laboratory per week. This course is designed to develop a basic understanding of the vegetarian diet with practical applications in food preparation. Emphasis will be on the preparation of nutritious food for the lacto, lacto-ova vegetarian and vegan. (Non-degree credit)

FOOD 101AF Foods (3) (CAN FCS 8)

One-hour lecture and six hours laboratory per week. This course is designed to provide the student with a knowledge of the fundamental scientific principles involved in food preparation, as well as practical experience in applying these principles to a wide variety of foods representative of those consumed in the U.S. Emphasis is placed on developing skills in utilizing appropriate basic scientific methodology to study the components of food and food products; and on acquiring a knowledge of as well as applying generally accepted quality standards to such foods and food products. (CSU) (Degree credit)

FOOD 101BF Foods (3)

Prerequisite: FOOD 101AF Foods.

One-hour lecture and six hours laboratory per week. This course covers the planning and preparation of meals with emphasis upon gourmet foods, complex techniques, entertaining, and meal management. (CSU) (Degree credit)

FOOD 130 F Cultural Aspects of Foods (2)

One-hour lecture and three hours laboratory per week. This course examines food as an expression of cultural diversity. Students will investigate regional, ethnic, and religious influences on food choices and patterns. Preparation techniques and products from a variety of traditions will be explored. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (Degree credit)

SEE NUTRITION.

Foreign Language

Curriculum leads to the **Associate in Arts Degree**. This degree requires 18 units chosen from the courses listed below.

Required Courses

LANG 101 F Elementary I (5)
 LANG 102 F Elementary II (5)
 LANG 203 F Intermediate III (4)*or SPAN 201 F (5)
 LANG 204 F Intermediate IV (4)

Select remaining units from restricted electives listed below:

LANG 200 F Conversation (2)
 A second foreign language (any course from Level I through Level IV) (4-5)
 HIST 110AF Western Civilization (3)
 ENGL 102 F Introduction to Literature (3)
 ENGL 224 F World Literature (3)
 ENGL 225 F World Literature (3)
 PHIL 100 F Introduction to Philosophy (3)
 PHIL 105 F World Religions (3)
 SPAN 205 F Introduction to Spanish Literature (3)
 SPAN 206 F Introduction to Latin American Literature (3)

*Note: Native Spanish speakers should enroll in SPAN 201 and continue with SPAN 204 F. CSU and UC offer transfer credit for SPAN 203 F or SPAN 201 F, but not both. In the case of native Spanish speakers that follow the SPAN 201 F-SPAN 204 F sequence (9 units), the remaining units must be chosen from the restrictive electives listed.

French

FREN 101 F Elementary French I (5) (CAN FREN 2) (FREN 101 F + FREN 102 F = CAN FREN SEQ A)

Letter grade or credit/no credit option.

Five hours lecture per week plus one arranged lab hour per week. The course focuses on the four major skills of language learning — listening comprehension, speaking, reading and writing — and the grammar and vocabulary necessary to acquire these skills. Included is an introduction to customs, culture, and civilization of French-speaking countries. This course is conducted primarily in French. (CSU) (UC) (Degree credit)

**FREN 102 F Elementary French II (5) (CAN FREN 4)
(FREN 101 F + FREN 102 F = CAN FREN SEQ A)**

Prerequisite: FREN 101 F Elementary French I with a grade of "C" or better or one year of high school French with a grade of "C" or better Letter grade or credit/no credit option

Five hours lecture per week plus one arranged lab hour per week. The course continues to focus on the four major skills of language learning — listening comprehension, speaking, reading and writing — and the grammar and vocabulary necessary to acquire these skills. Included is an introduction to customs, culture, and civilization of French-speaking countries. This course is conducted primarily in French. (CSU) (UC) (Degree credit)

FREN 200 F Conversational French (2-2-2-2)

Prerequisite: FREN 102 F Elementary French II with a grade of "C" or better or two years high school French with a grade of "C" or better. Letter grade or credit/no credit option.

This course will focus on improving listening comprehension and speaking skills in simulated real-life situations within the framework of ACTFL Proficiency Guidelines. Reading, writing and cultural components will be included. This course may be taken concurrently with French 203 F and 204 F (preferably after FREN 203 F). Instruction will be in French. Course may be taken four times for credit. (CSU) (Degree credit)

**FREN 203 F Intermediate French III (4) (CAN FREN 8)
(FREN 203 F + FREN 204 F = CAN FREN SEQ B)**

Prerequisite: FREN 102 F Elementary French II with a grade of "C" or better or two years high school French with a grade of "C" or better. Letter grade or credit/no credit option.

Four hours of lecture per week. The course emphasizes the acquisition of an expanded vocabulary and grammatical information to develop speaking, reading and writing skills. New cultural, historic and literary material is introduced through lectures, reading and writing assignments. The course is conducted in French. (CSU) (UC) (Degree credit)

**FREN 204 F Intermediate French IV (4) (CAN FREN 10)
(FREN 203 F + FREN 204 F = CAN FREN SEQ B)**

Prerequisite: FREN 203 F Intermediate French III with a grade of "C" or better or three years high school French with a grade of "C" or better. Letter grade or credit/no credit option.

Four hours of lecture per week. The course emphasizes the mastery and application of all grammatical rules. It requires more advanced reading of modern and classical French, as well as a continued emphasis on oral and written expression. It is designed to help the student acquire a working knowledge of the language and to form the basis for advanced work in literature and science. Continued readings and discussions of French life and culture are an essential factor. (CSU) (UC) (Degree credit)

FREN 299 F French Independent Study (1-1-1)

Prerequisite: Four semesters of the language.

One-hour lecture or scheduled conference per week. For able students who wish to increase their knowledge of literature, culture, language, or composition through individual study or research. Elective credit in the humanities area. Course may be taken three times for credit. (CSU) (UC review required.) (Degree credit)

Geography

Curriculum leads to the **Associate in Arts Degree**. The Geography AA Degree Program requires a total of 19 units of which 16 units are in required courses. An additional 3 units must be chosen from the restricted units listed below.

Required Courses (16 units)

- GEOG 100 F Global Geography (3)
- GEOG 102 F Physical Geography (3)
- GEOG 102LF Physical Geography Lab (1)
- GEOG 120 F Global Environmental Problems (3)
- GEOG 160 F Cultural Geography (3)
- GEOG 281AF Introduction to Geographical Information Systems (course number change from GEOG 230) (3)

Restricted Electives (3 units)

- ANTH 101 F Physical Anthropology (3)
- ANTH 102 F Cultural Anthropology (3)
- ENVS 105 F Environmental Biology (3)
- ESC 100 F Physical Geology (3)
- GEOG 131 F Introduction to Desktop GIS (2)
- GEOG 241 F Basic Crime Mapping (3)
- GEOG 242 F Advanced Crime Mapping (3)
- GEOG 281BF Advanced GIS Applications (3)
- GEOG 295 F GIS Internship (1-5)
- SOC 102 F Social Problems (3)

Geography Courses

GEOG 100 F Global Geography (3)

Three hours lecture per week. This course is an overview of the world's geographical regions. It is an introduction to basic geographical concepts, as well as human and physical spatial patterns. The nature of global geography includes population dynamics and the social, political and economic organization of space. Fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

GEOG 100HF Honors Global Geography (3)

Three hours lecture per week. This course is an overview to the world's geographical regions enhanced for honors students. It is an introduction to basic geographical concepts, as well as human and physical spatial patterns. The nature of global geography includes population dynamics and the social, political and economic organization of space. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

GEOG 102 F Physical Geography (3) (CAN GEOG 2)

Three hours lecture per week. This course is an overview of the interrelationships, geographic patterns and basic physical processes that create the physical landscapes of the world. The study of geosystems involves the connections between the atmosphere, lithosphere, hydrosphere and biosphere. Topics covered include weather, climate, soils, natural vegetation and the forces and processes that modify the surface of the earth. Special emphasis is given to contemporary ecological problems. This course meets a physical science requirement at most four-year institutions. (CSU) (UC) (Degree credit)

GEOG 102LF Physical Geography Laboratory (1)

Corequisite: GEOG 102 F Physical Geography within the past three semesters.

Three hours laboratory/field study per week designed to supplement GEOG 102 F Physical Geography. This course examines the processes of weather and climate, the construction/destruction of the earth's land surface focusing on internal and external forces, and the evolution of associated flora and fauna. The course will emphasize the understanding of the spatial distributions of the earth's physical characteristics and the relative importance of natural and human induced environmental changes such as global warming, human land-use and resources acquisition, and the transformation and creation of human environments. (CSU) (UC) (Degree credit)

GEOG 120 F Global Environmental Problems (3)

Three hours lecture per week. This course is a geographical evaluation of society-nature relationships and the analysis of global environmental problems. The focus is on the spatial dimensions of global environmental crises as they relate to social, political and economic issues. Topics examine the historical evolution of environmental issues including population growth, agriculture and pesticides, climate change, forestry and fishing, energy, endangered species and appropriate development. (CSU) (UC) (Degree credit)

GEOG 131 F Introduction to Desktop GIS (2)

This course provides an introduction to concepts and the use of a Geographic Information System (GIS), and its role in analysis and decision-making. Various applications of GIS technology used in business, economics and government will also be presented. Specific topics and skills taught will include an understanding of GIS terminology, verification of data sources and accuracy, methods of data acquisition, conversion and input, requirements for metadata, working with spatial databases (map features and attribute tables), and spatial analysis (map overlays, buffers, networks). (CSU) (Degree Credit)

GEOG 160 F Cultural Geography (3) (CAN GEOG 4)

Three hours lecture and discussion per week. This course provides a study of variations in the world's cultural landscapes, focusing on spatial patterns of population growth and distribution, settlement and livelihoods in the context of social, religious and political belief systems. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

GEOG 170 F Urban Geography: Introduction to the City (3)

Three hours lecture and discussion per week. This course provides an analysis of variations in the urbanization process of great American and world cities. The focus will be on the city as a built environment. Topics will include historic evolution, patterns of distribution, internal spatial structures, urban systems and urban social issues. (CSU) (UC) (Degree credit)

GEOG 187 F Hawaii: A Land of Transition (3)

This intense regional course will examine the geographical influences that have affected the cultural development of the Hawaiian Islands. An interdisciplinary approach will be utilized. The class will span the time from early Polynesian migration to the present. Lectures, discussions, and laboratory assignments will focus on Hawaii as a microcosm of historical and cultural development and will serve as a conceptual model for other areas of the world. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

GEOG 199 F Geography Independent Study (1-1-1-1)

One-hour lecture or scheduled conference per week. This course is offered for students who wish to increase their knowledge of the Social Sciences through individual study and small group conferences. Students successfully completing this course will be awarded elective credit in the Social Sciences area. Course may be taken four times for credit. (CSU) (UC Credit Limitation depending upon course content) (UC review required.) (Degree credit)

GEOG 241 F Basic Crime Mapping (3)

This course provides an introduction to the basic concepts and use of a Geographic Information System (GIS) for crime mapping and analysis. Students will engage in hands-on training in GIS as it relates to Law Enforcement and Criminal Justice activities. Students will also be introduced to extensions of ArcView software such as Network Analyst and Tracking Analyst. These add-on modules extend the analytical capabilities of ArcView and allow input of routing and temporal map features to existing databases. Students will generate production quality maps, documents and reports for use in spatial analysis and decision-making. (CSU) (Degree Credit)

GEOG 242 F Advanced Crime Mapping (3)

This advanced course provides further study in crime mapping and analysis applications of Geographic Information Systems (GIS). Students will engage in expanded hands-on training in GIS as it relates to Law Enforcement and Criminal Justice activities and be introduced to 3D Analyst and Spatial Analyst add-on modules of ArcView software. These modules extend the analytical capabilities of ArcView and allow input of map features and conversion of feature themes from raster to vector. Spatial analysis will include neighborhood and zone analysis. 3D Analyst will include conversion of data to a three dimensional format for analysis of real world relationships that would be abstract in two dimensions. Students will produce professional quality documents and reports for use in spatial analysis and decision-making. (CSU) (Degree Credit)

GEOG 260 F Economic Geography (World and National Trade Relationships) (3)

Three hours lecture per week. The course consists of two parts. The first focuses on an analysis of resource capabilities and development of various parts of the world and the resulting trade relationships. The second part emphasizes United States resource distribution, transport networks, and internal trade ties. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

GEOG 281AF Introduction to Geographic Information Systems (3)

Three hours lecture per week. This course provides an introduction to concepts and use of Geographic Information Systems (GIS), and its role in geographic analysis and decision-making. This course will include an introduction to basic cartographic principles, maps, scales, coordinate systems and map projections. Varied applications and examples of GIS technology used in environmental science, business, government and social sciences will also be presented. Specific topics and skills taught will include an understanding of GIS terminology, raster and vector data structures, verification of data sources and accuracy, methods of data acquisition, conversion and input, requirements for metadata, working with spatial databases (map features and attribute tables), and spatial analysis (map overlays, buffers, networks). (CSU) (Degree credit)

GEOG 281BF Advanced GIS Applications (3)

Prerequisite: GEOG 281AF Introduction to Geographic Information Systems

This course provides an introduction to advanced applications of Geographic Information Systems (GIS) using ArcView. The course will provide hands on training in new plug in modules and extensions of ArcView. The course will also briefly review Avenue programming for customizing ArcView. The add-on modules extend the analytical capabilities of ArcView and allow input of map features and conversion of feature themes from raster to vector. Spatial analysis will include slope and aspect maps, neighborhood and zone analysis. Network Analyst will include problem-solving techniques for geographic networks (point to point routing) or closest points. 3D Analyst will include conversion of data to a three dimensional format for analysis of real world relationships that would be abstract in two dimensions. Use of ArcView software to produce professional quality documents for use in spatial analysis and decision-making. (CSU) (Degree credit)

GEOG 295 F GIS Internship (1-5)

A directed field study program whereby students will apply classroom instruction to real-world Geographic Information Systems (GIS) projects in the community. The student will be under the supervision of a faculty advisor from the college while participating in a short-term internship program in a business or government agency using GIS. Students should arrange for an advisor prior to enrolling in an internship. Students in internship programs will meet periodically with their advisor, complete interim reports and present a final report. (CSU) (Degree credit)

Geology

Curriculum leads to the **Associate in Arts Degree**. This degree requires 18 units of which 8 are in required courses; an additional 10 units must be chosen from the restricted electives listed below.

Required Courses (8 units)

ESC 100 F Physical Geology (3)
ESC 100LF Physical Geology Lab (1)
ESC 103 F Historical Geology (4)

Restricted Electives (10 units)

BIOL 170 F Organismal Biology (5) or
BIOL 266 F General Zoology (5)
CHEM 111AF General Chemistry (5)
CHEM 111BF General Chemistry (5)
ENGR 101AF Surveying (4)
ESC 104 F Geology of National Parks and Monuments (3)
ESC 190 F Environmental Geology (3)
MATH 150AF Calculus (4)
MATH 150BF Calculus (4)
MATH 250AF Intermediate Calculus (4)
MATH 250BF Linear Algebra and Differential Equations (4)
PHYS 205 F/206 F College Physics (4, 4) or
PHYS 221 F/222 F/223 F General Physics (4, 4, 4)

German

GERM 101 F Elementary German I (5) (CAN GERM 2) (GERM 101 F + GERM 102 F = CAN GERM SEQ A)

Letter grade or credit/no credit option.

Five hours lecture per week plus one arranged lab hour per week. The course focuses on the four major skills of language learning — listening comprehension, speaking, reading and writing — and the grammar and vocabulary necessary to acquire these skills. Included is an introduction to customs, culture, and civilization of German-speaking countries. This course is conducted primarily in German. (CSU) (UC) (Degree credit)

GERM 102 F Elementary German II (5) (CAN GERM 4) (GERM 101 F + GERM 102 F = CAN GERM SEQ A)

Prerequisite: GERM 101 F Elementary German I with a grade of "C" or better or one year of high school German with a grade of "C" or better. Letter grade or credit/no credit option.

Five hours lecture per week plus one arranged lab hour per week. The course continues to focus on the four major skills of language learning — listening comprehension, speaking, reading and writing — and the grammar and vocabulary necessary to acquire these skills. Included is an introduction to customs, culture, and civilization of German-speaking countries. This course is conducted primarily in German. (CSU) (UC) (Degree credit)

GERM 200 F Conversational German (2-2-2)

Prerequisite: GERM 102 F Elementary German II with a grade of "C" or better or two years high school German with a grade of "C" or better. Letter grade or credit/no credit option.

This course will focus on improving listening comprehension and speaking skills in simulated real-life situations within the framework of the ACTFL Proficiency Guide lines. Reading, writing and cultural components will be included. This course may be taken concurrently with GERM 203 F and 204 F. Instruction will be in German. Course may be taken four times for credit. (CSU) (Degree credit)

**GERM 203 F Intermediate German III (4)
(GERM 203 F + GERM 204 F = CAN GERM SEQ B)**

Prerequisite: GERM 102 F Elementary German II with a grade of "C" or better or two years high school German with a grade of "C" or better. Letter grade or credit/no credit option.

Four hours of lecture per week. The course emphasizes the acquisition of advanced skills in listening, speaking, reading, and writing. Students will be introduced to further elements of the culture, history, and geography of Germany through lectures, slides, films, dialogues and reading assignments. Instruction will be in German. (CSU) (UC) (Degree credit)

**GERM 204 F Intermediate German IV (4)
(GERM 203 F + GERM 204 F = CAN GERM SEQ B)**

Letter grade or credit/no credit option. Prerequisite: GERM 203 F Intermediate German III with a grade of "C" or better or three years high school German with a grade of "C" or better.

Four hours of lecture per week. The course emphasizes the acquisition of more advanced listening, speaking, reading, and writing. Students will be introduced to the further elements of culture, history and geography of Germany through lectures, slides, films, dialogues and reading assignments. Instruction will be in German. (CSU) (UC) (Degree credit)

GERM 299 F German Independent Study (1-1-1)

Prerequisite: Four semesters of the language.

One-hour lecture or scheduled conference per week. For able students who wish to increase their knowledge of literature, culture, or language through individual study or research. Elective credit in the humanities area. Course may be taken three times for credit. (CSU) (UC review required.) (Degree credit)

Health Education

HED 140 F Health Science (3)

Integrated lectures, discussions and videotapes are designed to study modern medical concepts. Lecture and discussion topics include personal responsibility, mental health, nutrition, weight control, exercise, sexuality, relationships, immunity, alcohol, tobacco, drugs, current health problems and health care services. Basic concepts will be presented from a holistic perspective to inform students of health issues that affect their individual lives and society. (CSU) (UC) (Degree credit)

HED 197 F Internship in Health Education (2)

One-hour lecture/small group discussion per week. Professionals from the biological sciences/allied health fields will be invited for informative discussions and to answer questions in their field. Students will be assisted in selecting an area of career interest within the biological, allied health and related science fields, and will be directed to locations that will be willing to provide internships. Students will gain experience in their selected areas of interest by working in a "hands-on" environment. (CSU) (Degree credit)

History

Curriculum leads to the **Associate in Arts Degree**. The History AA Degree Program requires a total of 18 units of which 6 units are in required courses. An additional 12 units must be chosen from the restricted units listed below.

Required Courses: (6 units)

- HIST 110 F and 111 F Western Civilization (3, 3) (formerly HIST 110AF and 110BF) or
- HIST 110HF and 111HF Honors Western Civilization (3, 3) or
- HIST 110F and 111HF or HIST 110HF and 111 F or
- HIST 112 F and 113 F World Civilizations (3, 3) or
- HIST 112HF and 113HF Honors World Civilizations (3,3) or
- HIST 112 F and 113HF or HIST 112HF and 113 F or
- HIST 160AF Asia: Basic Heritage (3) and
- HIST 160BF Modern China and Japan (3) or
- HIST 162AF and 162BF History of the Americas (3, 3) or
- HIST 270 F and 171 F History of the United States (3, 3) or
- HIST 170HF and 171HF Honors History of the United States

Restricted Electives (12 units)

3 Additional units from the above sequences or

- HIST 151 F Survey of British History (3)
- HIST 152 F Survey of British History (3)
- HIST 154 F Ancient Egypt (3)
- HIST 165 F Introduction to the Middle East (3)
- HIST 170 F Women in United States History (3)
- HIST 275 F History of California and the Pacific Coast (3)

Plus 9 additional units from:

ANTH	101 F	Physical Anthropology (3)
ANTH	102 F	Cultural Anthropology (3)
ECON	101 F	Principles of Economics — Micro (3)
ECON	102 F	Principles of Economics — Macro (3)
ETHS	101 F	American Ethnic Studies (3)
ETHS	130 F	History of African Americans in the United States (3)
ETHS	141 F	Chicano/Chicana History (3)
ETHS	160 F	History of the Native Americans (3)
GEOG	100 F	Global Geography (3)
GEOG	160 F	Cultural Geography (3)
PHIL	100 F	Introduction to Philosophy (3)
PHIL	105 F	World Religions (3)
PHIL	160 F	Introduction to Ethics (3)
PHIL	165 F	Business and Professional Ethics (3)
PHIL	170 F	Logic and Critical Thinking (3)
POSC	100 F	American Government (3)
POSC	215 F	Comparative Political Systems (3)
POSC	230 F	Introduction to International Relations (3)
PSY	101 F	General Psychology (3)
SOC	101 F	Introduction to Sociology (3)

*History Courses***HIST 110F Western Civilization (3) (CAN HIST 2)
(HIST 110F + HIST 111F = CAN HIST SEQ A)**

Letter grade or credit/no credit option.

Three hours lecture per week. This course is a study of western civilization from prehistoric times through the 16th century, e.g., Mesopotamian, Egyptian, Hebrew, Greek, Roman, Byzantine, Muslim, Medieval, Renaissance and Reformation societies. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

**HIST 110HF Honors Western Civilization (3)
(HIST 110F + HIST 111F = CAN HIST SEQ A)**

Three hours lecture and discussion per week. This course is a study of western civilization from prehistoric times through the 16th century, e.g., Mesopotamian, Egyptian, Hebrew, Greek, Roman, Byzantine, Muslim, Medieval, Renaissance and Reformation societies. As an honors section, this class will employ enhanced teaching methods such as a seminar approach, more research-based writing assignments, and assignments calling for a higher level of critical thinking. (CSU) (UC Credit Limitation) (Degree credit)

**HIST 111 F Western Civilization (3) (CAN HIST 4)
(HIST 110F + HIST 111F = CAN HIST SEQ A)**

Three hours lecture per week. This course is a continuation of 110 Western Civilization. It is a study of the development of Western Civilization from the sixteenth century to the present day, emphasizing the political, economic, religious, social, and cultural forces at work in the various geographic areas. (CSU) (UC) (Degree credit)

**HIST 111HF Honors Western Civilization (3)
(HIST 110F + HIST 111F = CAN HIST SEQ A)**

Three hours lecture and discussion per week. This course is a continuation of HIST 110 or 110H Western Civilization. It is a study of the development of Western Civilization from the sixteenth century to the present day, emphasizing the political, economic, religious, social, and cultural forces at work in the various geographic areas. As an honors section, this class will employ enhanced teaching methods such as a seminar approach, more research-based writing assignments, and assignments calling for a higher level of critical thinking. (CSU) (UC Credit Limitation) (Degree credit)

**HIST 112 F World Civilizations (3) (CANHIST 14)
(HIST 112 F + HIST 113 F = CAN HIST SEQ C)**

Letter grade or credit/no credit option.

Three hours lecture and discussion per week. This course is a survey of the development and interconnections among the civilizations of Europe, Africa, the Middle East, India, China, Japan and the Americas, from the earliest times to AD 1550. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

HIST 112HF Honors World Civilizations (3)

Letter grade or credit/no credit option.

Three hours lecture and discussion per week. This course is a survey of the development and interconnections among the civilizations of Europe, Africa, the Middle East, India, China, Japan and the Americas, from the earliest times to AD 1550. As an honors section, this class will employ enhanced teaching methods such as a seminar approach, more research-based writing assignments, and assignments calling for a higher level of critical thinking. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

**HIST 113 F World Civilizations (3) (CAN HIST 16)
(HIST 112 F + HIST 113 F = CAN HIST SEQ C)**

Letter grade or credit/no credit option.

Three hours lecture and discussion per week. This course is a survey of the development and interconnections among the civilizations of Europe, Africa, the Middle East, India, China, Japan and the Americas, from AD 1550 to the present. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

HIST 113HF Honors World Civilizations (3)

Letter grade or credit/no credit option.

Three hours lecture and discussion per week. This course is a survey of the development and interconnections among the civilizations of Europe, Africa, the Middle East, India, China, Japan and the Americas, from AD 1550 to the present. As an honors section, this class will employ enhanced teaching methods such as a seminar approach, more research-based writing assignments, and assignments calling for a higher level of critical thinking. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC Credit Limitation) (Degree credit)

HIST 127 F Survey of American History (3)

Three hours lecture per week. This course is a survey of American history from the colonial foundations to the present time. (CSU) (UC Credit Limitation. HIST 127 F combined with 170 F and HIST 171 F: maximum credit, 2 courses.) (Degree credit)

HIST 151 F Survey of British History (3)

Three hours lecture per week. A survey of British history from pre-historic times to 1714, emphasizing the contributions of Celts, Romans, Anglo-Saxons and Normans; the structure of society; the growth of monarchy, Common Law, Parliament and other governmental institutions; the development of architecture and literature; the role of the Church; and transformations brought by Reformation and Revolution during the Tudor-Stuart period. (CSU) (UC) (Degree credit)

HIST 152 F Survey of British History (3)

Three hours lecture per week. A survey of British history from 1714 to the present, emphasizing the role of prime ministers as well as monarchs; the development of foreign policy and naval power; the evolution of science, religion, education, literature, painting and architecture; the changes brought about by industrialization and two World Wars; the growth of the welfare state; and the rise and fall of the British empire. (CSU) (UC) (Degree credit)

HIST 154 F Ancient Egypt (3)

Letter grade or credit/no credit option.

Three hours lecture-discussion per week. This course surveys Egyptian politics, society, religion, and the arts from the Pre-dynastic period through Cleopatra. An introduction to hieroglyphs is included. (CSU) (UC) (Degree credit)

HIST 159 F The Ascent of Man (3)

Letter grade or credit/no credit option.

Three hours lecture per week. Students will demonstrate their knowledge of intellectual history, tracing the major events in the biological and cultural evolution of man. The course traces the development of science and art as expressions of the special gifts that characterize man and that have made him unique among the animal species. Emphasis is placed on the processes of thought and imagination that are involved in the various attempts made by man to analyze and understand the nature of the universe and of him. (Not currently being offered — if interested, contact Division Office.) (CSU) (UC) (Degree credit)

HIST 160AF Asia: Basic Heritage (3)

Three hours lecture per week. This course is a study of the historical developments of Asia's three great civilizations: India, China and Japan. Concentration will be on the traditional institutions shaped by the religious and philosophical concepts of these civilizations. Certain concepts in Hinduism, Buddhism, Confucianism, Taoism, and Shintoism will be studied as they affected major Asian historical developments. (CSU) (UC) (Degree credit)

HIST 160BF Modern China and Japan (3)

Letter grade or credit/no credit option.

Three hours lecture per week. This course is a study of the revolutionary changes that have taken place in basic Asian traditions and institutions. Focus will be on the efforts of the Chinese and the Japanese to replace traditional institutions with something "modern" in their response to the coming of the West to Asia and to the challenge of Western ideas. Examination will be made of the impact of such concepts as Capitalism, Democracy, Imperialism, Nationalism, and Communism on the traditional culture of these countries. (CSU) (UC) (Degree credit)

HIST 162AF History of the Americas (3)

Three hours lecture per week. This course is a survey of the history of the Western Hemisphere from its discovery to the wars of independence. Emphasis is placed upon the European inheritance, the interaction of this inheritance with the native and African cultures and the planting of colonial societies in the new world. Spanish America, Brazil, Canada, and the United States are compared as to their socio-cultural, economic, and political development during the colonial and independence periods. This course satisfies the State requirements in American History and Institutions. (CSU) (UC) (Degree credit)

HIST 162BF History of the Americas (3)

Three hours lecture per week. This course is a comparative study of the political, social and economic development of the independent nations of the Western Hemisphere from the wars of independence to the present. Emphasis is placed upon present international relations of these nations. This course satisfies the State requirements in American history and institutions. HIST 162AF not a prerequisite. (CSU) (UC) (Degree credit)

HIST 165 F Introduction to the Middle East (3)

Three hours lecture per week. This course is a historical development of the Middle East from the prophet Mohammed to the present, emphasizing the Islamic religion, art, philosophy, and key political and social conflicts of modern times. (CSU) (UC) (Degree credit)

HIST 170 F History of the United States (3) (CAN HIST 8) (HIST 170 F + HIST 171 F = CAN HIST SEQ B)

Three hours lecture per week. This course is a survey of American History from the colonial foundations to 1877. (CSU) (UC Credit Limitation; HIST 170 F or 170HF combined with HIST 127 F and HIST 171 F or HIST 171HF; maximum credit, 2 courses) (Degree credit)

HIST 170HF Honors History of the United States (3)

Three hours lecture per week. This course is a survey of American History from the colonial foundations to 1877. As an honors section, this class will employ enhanced teaching methods such as a seminar approach and more research-based writing assignments calling for a higher level of critical thinking. (CSU) (UC Credit Limitation; HIST 170 F or HIST 170HF combined with HIST 127 F and HIST 171 F or HIST 171HF; maximum credit, 2 courses) (Degree credit)

HIST 171 F History of the United States (3) (CAN HIST 10) (HIST 170 F + HIST 171 F = CAN HIST SEQ B)

Three hours lecture per week. This course is a survey of American History from 1877 to the present time. (CSU) (UC Credit Limitation; HIST 171 F or HIST 171HF combined with HIST 127 F and HIST 170 F or HIST 170HF; maximum credit, 2 courses) (Degree credit)

HIST 171HF Honors History of the United States (3)

Three hours lecture per week. This course is a survey of American History from 1877 to the present time. As an honors section, this class will employ enhanced teaching methods such as a seminar approach and more research-based writing assignments calling for a higher level of critical thinking. (CSU) (UC Credit Limitation; HIST 171 F or HIST 171HF combined with HIST 127 F and HIST 170 F or HIST 170HF; maximum credit, 2 courses) (Degree credit)

HIST 199 F History Independent Study (1-1-1-1)

One-hour lecture or scheduled conference per week. This course is offered for students who wish to increase their knowledge of the Social Sciences through individual study and small group conferences. Students successfully completing this course will be awarded elective credit in the Social Sciences area. Course may be taken four times for credit. (CSU) (UC Credit Limitation depending upon course content) (UC review required.) (Degree credit)

HIST 270 F Women in United States History (3)

Three hours lecture per week. This course focuses on women in American society from the colonial era to the present with emphasis on the social sphere of women, women's health, and the roles of women in wartime and peace and in such movements as antebellum reform, suffrage and feminism as well as the gender specific problems for women in the United States. This course fulfills the Multicultural Education Requirement for graduation. (CSU) (UC) (Degree credit)

HIST 275 F History of California and the Pacific Coast (3)

Three hours lecture per week. Economic, social, intellectual, and political history of California from the earliest times to the present. Special emphasis is placed upon the geography of the state and the 20th century development of Southern California. (CSU) (UC) (Degree credit)

Homemaking

Curriculum leads to the **Associate in Arts Degree** and preparation to manage a home efficiently, economically and intelligently; to appreciate the beauty in dress and home furnishings; to understand the importance of a harmonious family life as a background for development of normal, happy child life. Most courses are transferable, but no effort has been made to include university pre-major or lower-division requirements. This degree requires completion of 18 units of which 17 units are in required courses. An additional unit must be chosen from the restricted electives listed below.

Required Courses (17 units)

- CDFL 120 F Human Development: Early Years (3)
 CDFL 202 F Contemporary Family Living (3)
 FASH 101 F Clothing (2)
 FASH 107 F Apparel Analysis (3)
 FOOD 101AF Foods (3)
 IDES 100 F Fundamentals of Interior Design (3)

Restricted Electives (1 unit)

- CDFL 173 F Process of Parenting (3)
 FASH 201AF Clothing (2)
 FASH 206 F Textiles (3)
 NUTR 210 F Nutrition Today (3)

Horticulture

Greenhouse & Nursery Production Certificate

The **Greenhouse & Nursery Production Certificate** Program requires 30 units of which 12 units are in required courses. An additional 9 units must be chosen from restricted electives group A and at least 9 units from restricted electives group A or B.

Required Courses (12 units)

- HORT 160 F Plant Identification (Ornamental Trees) (3)
 HORT 161 F Plant Identification (Ornamental Shrubs) (3)
 HORT 164 F Plant Identification (Annuals, Perennials and Houseplants) (3)
 HORT 173 F Greenhouse and Nursery Production (3)

Restricted Electives — Group A (9 units)

- HORT 155 F Soils (3)
 HORT 156 F Fertilizers (3)
 HORT 174 F Plant Propagation (3)
 HORT 205 F Applied Entomology (3)

Restricted Electives — Group B (9 units)

- HORT 152 F Applied Botany (4)
 HORT 162 F Landscaping for Dry Climates (3)
 HORT 177 F Turfgrass Management (2)
 HORT 200 F Landscape Design (4)
 HORT 207 F Plant Pathology (3)

Landscape Design/Management Certificate

Curriculum leads to the **Associate in Science Degree** and/or employment in parks, golf courses, landscape contracting, and landscape gardening.

Complete 18 or more units from the following list:

- HORT 001 F Principles of Horticulture I (4)
 HORT 002 F Principles of Horticulture II (4)
 HORT 005 F Basic Landscape Plants (3)
 HORT 006 F Basic Landscape Plants (3)
 HORT 152 F Applied Botany (4) or
 BIOL 268 F General Botany (5)
 HORT 153 F Landscape Irrigation (3)
 HORT 155 F Soils (3)
 HORT 156 F Fertilizers (3)
 HORT 160 F Plant Identification (Ornamental Trees) (3)
 HORT 161 F Plant Identification (Ornamental Shrubs) (3)
 HORT 162 F Landscaping for Dry Climates (3)
 HORT 165 F Landscape Management (4)
 HORT 168 F Landscape Construction (3)
 HORT 177 F Turfgrass Management (3)
 HORT 200 F Landscape Design (3)
 HORT 215 F Diseases and Pests of Ornamental Plants (4)

The **Landscape Design/Management Certificate** Program requires completion of 30 units of which 16 units are in required courses. An additional 7 units must be chosen from restricted electives group A, and at least 7 units from restricted electives group B.

Required Courses (16 units)

HORT 005 F, 006 F Basic Landscape Plants (3, 3) or
 HORT 160 F, 161 F Plant Identification (3, 3) and
 HORT 153 F Landscape Irrigation (3)
 HORT 165 F Landscape Management (4) and/or
 HORT 200 F Landscape Design (3)
 HORT 177 F Turfgrass Management (3)

If both HORT 165 F and HORT 200 F are taken, select at least 5 units from A and at least 5 units of B.

Restricted Electives — Group A (7 units)

HORT 155 F Soils (3)
 HORT 156 F Fertilizers (3)
 HORT 168 F Landscape Construction (3)
 HORT 169LF Landscape Construction Lab (1)
 HORT 170 F Landscape Contracting (3)
 HORT 201 F Adv Landscape Design (3)
 HORT 215 F Diseases and Pests of Ornamental Plants (4)

Restricted Electives — Group B (7 units)

HORT 162 F Landscaping for Dry Climates (4)
 HORT 164 F Plant Identification
 (Annuals/Perennials/Houseplants) (3)
 HORT 185 F Arboriculture (2)
 HORT 205 F Applied Entomology (3)
 HORT 207 F Plant Pathology (4)

Landscape Horticulture Certificate

The **Landscape Horticulture Certificate** of Completion Program is intended for students who desire an intermediate certification in Horticulture. This certificate can be completed within a single school year. Courses used here can be applied toward the more advanced certificate of proficiency in horticulture. The **Landscape Horticulture Certificate** of Completion Program requires 17 units of which 7 units are in required courses. An additional 10 units must be chosen from restricted electives listed below.

Required Courses (7 units)

HORT 001 F Principles of Horticulture I (4) or
 HORT 002 F Principles of Horticulture II (4)

Plus

HORT 005 F Basic Landscape Plants (3) or
 HORT 006 F Basic Landscape Plants (3) or
 HORT 160 F Plant Identification (Ornamental Trees) (3) or
 HORT 161 F Plant Identification (Ornamental Shrubs) (3) or
 HORT 162 F Landscaping for Dry Climates (3) or
 HORT 164 F Plant Identification (Annuals, Perennials and Houseplants) (3)

Restricted Electives (10 units)

HORT 008AF Landscape Pruning Practices (1)
 HORT 008BF Basic Turf Care (1)
 HORT 008CF Home Pest Control (1)
 HORT 058 F Irrigation Controller Programming (2)
 HORT 153 F Landscape Irrigation (3)
 HORT 155 F Soils (3)
 HORT 156 F Fertilizers (3)
 HORT 157 F Irrigation Principles (3)
 HORT 165 F Landscape Management (4)
 HORT 168 F Landscape Construction (3)
 HORT 169LF Landscape Construction Laboratory (1)
 HORT 170 F Landscape Contracting (3)
 HORT 173 F Greenhouse and Nursery Production (3)
 HORT 174 F Plant Propagation (3)
 HORT 177 F Turfgrass Management (3)
 HORT 185 F Arboriculture (2)
 HORT 200 F Landscape Design (3)

Landscape Irrigation Certificate

The **Landscape Irrigation Certificate** Program requires 30 units of which 18 units are in required courses, and at least 6 additional units of restricted electives from group A, and at least 6 units of restricted electives from group B.

Required Courses (19 units)

HORT 153 F Landscape Irrigation (3)
 HORT 154 F Irrigation Design (3)
 HORT 155 F Soils (3)
 HORT 157 F Irrigation Principles (3)
 HORT 162 F Landscaping for Dry Climate (3)
 HORT 218 F Landscape Hydraulics (3)

Restricted Electives — Group A (6 units)

ACG 100 F Introduction to Computer Graphics for
 Macintosh (3)
 ARCH 113 F Architectural Drawing (3)
 CSTR 006 F Introduction to Residential Plumbing and
 Mechanical Systems (2)
 HORT 177 F Turfgrass Management (3)
 HORT 200 F Landscape Design (3)
 HORT 219 F CAD Applications in Horticulture (3)

Restricted Electives — Group B (6 units)

HORT 165 F Landscape Management (4)
 HORT 168 F Landscape Construction (3)
 HORT 169LF Landscape Construction Lab (1)
 HORT 170 F Landscape Contracting (3)
 HORT 201 F Adv Landscape Design (3)

Nursery Management

Curriculum leads to an **Associate in Arts Degree** and entry-level positions in retail and wholesale nurseries, parks departments, and landscape contracting.

Complete 18 units from the following list:

- HORT 001 F Principles of Horticulture I (4)
- HORT 002 F Principles of Horticulture II (4)
- HORT 152 F Applied Botany (4)
- HORT 153 F Landscape Irrigation (3)
- HORT 155 F Soils (3)
- HORT 156 F Fertilizers (3)
- HORT 160 F Plant Identification (Ornamental Trees) (3)
- HORT 161 F Plant Identification (Ornamental Shrubs) (3)
- HORT 162 F Landscaping for Dry Climates (3)
- HORT 164 F Plant Identification (Annuals, Perennials and Houseplants) (3)
- HORT 173 F Greenhouse and Nursery Production (3)
- HORT 174 F Plant Propagation (3)
- HORT 200 F Landscape Design (3)
- HORT 215 F Diseases and Pests of Ornamental Plants (4)

Ornamental Horticulture

Curriculum leads to the **Associate in Science Degree**. This degree requires completion of 21 units of which 9 units are in required courses. An additional 12 units must be chosen from the restricted electives listed below.

Required Courses (9 units)

- HORT 153 F Landscape Irrigation (3) or
- HORT 157 F Irrigation Principles (3)
- HORT 155 F Soils (3)
- HORT 160 F Plant Identification: Ornamental Trees (3) or
- HORT 161 F Plant Identification: Ornamental Shrubs (3) or
- HORT 162 F Landscaping for Dry Climates (3) or
- HORT 164 F Plant Identification: Annuals, Perennials, and Houseplants (3)

Restricted Electives (12 units)

- HORT 156 F Fertilizers (3)
- HORT 165 F Landscape Management (3)
- HORT 173 F Greenhouse and Nursery Production (3)
- HORT 174 F Plant Propagation (3)
- HORT 177 F Turfgrass Management (3)
- HORT 200 F Landscape Design (3)
- HORT 201 F Adv Landscape Design (3)
- HORT 219 F CAD Application in Horticulture (3)

The **Ornamental Horticulture Certificate** Program requires 30 units of which 9 units are in required courses. An additional 12 units must be chosen from restricted electives group A, and at least 9 units from restricted electives group A or B.

Required Courses (9 units)

- HORT 005 F, 006 F Basic Landscape Plants (3, 3) or
- HORT 160 F, 161 F Plant Identification (3, 3) and
- HORT 155 F Soils (3)

Restricted Electives — Group A (12 units)

- HORT 001 F Principles of Horticulture I (4)
- HORT 002 F Principles of Horticulture II (4)
- HORT 152 F Applied Botany (4)
- HORT 153 F Landscape Irrigation (3)
- HORT 156 F Fertilizers (3)
- HORT 164 F Plant Identification (Annuals, Perennials, and Houseplants) (3)
- HORT 173 F Greenhouse and Nursery Production (3)
- HORT 174 F Plant Propagation (3)
- HORT 177 F Turfgrass Management (3)
- HORT 200 F Landscape Design (3)
- HORT 205 F Applied Entomology (3)
- HORT 207 F Plant Pathology (3)
- HORT 215 F Diseases and Pests of Ornamental Plants (4)

Restricted Electives — Group B

- HORT 008AF Landscape Pruning Practices (1)
- HORT 008BF Basic Turf Care (1)
- HORT 008CF Home Pest Control (1)
- HORT 045 F Training Pest Control Professionals (3, 3)
- HORT 162 F Landscaping for Dry Climates (3)
- HORT 165 F Landscape Management (4)
- HORT 168 F Landscape Construction (3)
- HORT 170 F Landscape Contracting (3)
- HORT 185 F Arboriculture (2)
- HORT 201 F Advanced Landscape Design (3)

Pest Management Certificate

The **Pest Management Certificate** Program requires 30 units of which 6 are in required courses. An additional 8 units must be chosen from restricted electives group A, and at least 16 units from restricted electives group A or B.

Required Courses (6 units)

- HORT 205 F Applied Entomology (3)
- HORT 207 F Plant Pathology (3)

Restricted Electives — Group A

- HORT 001 F Principles of Horticulture I (4)
- HORT 002 F Principles of Horticulture II (4)
- HORT 005 F Basic Landscape Plants (3)
- HORT 006 F Basic Landscape Plants (3)
- HORT 045 F Training Pest Control Professionals (3)
- HORT 152 F Applied Botany (4)
- HORT 156 F Fertilizers (3)
- HORT 160 F Plant Identification (Ornamental Trees) (3)
- HORT 161 F Plant Identification (Ornamental Shrubs) (3)
- HORT 215 F Diseases and Pests of Ornamental Plants (4)

Restricted Electives — Group B

HORT 155 F Soils (3)
 HORT 165 F Landscape Management (4)
 HORT 177 F Turfgrass Management (3)
 HORT 185 F Arboriculture (2)
 HORT 200 F Landscape Design (3)

*Horticulture Courses***HORT 001 F Principles of Horticulture I (4)**

Three hours lecture and three hours laboratory per week. Identification and use of ornamental plants; culture of landscape plantings; survey of soil properties and fertilizers; morphology of leaves, flowers and fruit, and landscape design principles for basic horticultural skills in the gardening and nursery trade. (Degree credit)

HORT 002 F Principles of Horticulture II (4)

Three hours lecture and three hours laboratory per week. Plant propagation techniques; weed control in landscapes, plant disease control; responsible and safe use of pesticides and their alternatives and turf grass management techniques for basic horticulture skills in the gardening and nursery trade. (Degree credit)

HORT 005 F Basic Landscape Plants (3)

Three hours lecture per week. The identification and study of trees, shrubs, vines, tropical and herbaceous plant material of landscape value. Special emphasis is placed on fall-blooming as well as broadleaf and narrow-leaf plants. This course designed for non-majors, homeowners, and those engaged in the fields of landscaping and horticulture. Not open for transfer credit for majors in Ornamental Horticulture and Landscape Architecture as a substitute for HORT 160 F Plant Identification. (Degree credit)

HORT 006 F Basic Landscape Plants (3)

Three hours lecture per week. The identification and study of trees, shrubs, vines and herbaceous plant material of landscape value. Additional plants not covered in HORT 005 F, with special emphasis on spring-blooming deciduous plants. This course designed for non-majors, homeowners, and those engaged in the fields of landscaping and horticulture. Not open for transfer credit for majors in Ornamental Horticulture and Landscape Architecture as a substitute for HORT 161 F Plant Identification. (Degree credit)

HORT 008AF Landscape Pruning Practices (1)

Two hours of lecture and three hours laboratory per week for six weeks or the equivalent. Principles and practices used in pruning ornamental shrubs, trees, vines, herbaceous perennials, groundcovers and fruit trees found in residential and commercial landscapes will be covered. Special attention is given to appropriate plant use and maintenance. (Degree credit)

HORT 008BF Basic Turf Care (1)

Two hours lecture and three hours laboratory per week for six weeks or the equivalent. Fundamentals of lawn care for homeowners including planting, fertilization, irrigation, weed control, and pest control. Special techniques and equipment used for lawn renovation are also covered. (Degree credit)

HORT 008CF Home Pest Control (1)

Two hours lecture and three hours laboratory per week for six weeks or the equivalent. Fundamentals of pest control for homeowners including identification and control of weeds, insects, vertebrates, arachnids, mollusks and diseases. Special emphasis is given to integrated Pest Management as a home pest control technique. (Degree credit)

HORT 045 F Training Pest Control Professionals (3,3)

Three hours lecture per week. Designed to assist persons desiring to be licensed as Pest Control Advisers or Pest Control Operators or pesticide dealers. Instruction involves laws and regulations, pesticide safety, control of insects, mites, nematodes and other invertebrate pests, plant disease control, and plant growth regulators used in the landscaping business. California Department of Food and Agriculture continuing education hours are available for this course. Course may be taken twice for credit. (Degree credit)

HORT 046 F Pesticide Safety for Landscape Workers (2,2)

Two hours lecture per week. A course designed to teach pesticide safety to Spanish and English-speaking landscape workers. Students learn safe operations of application equipment, pesticide toxicity ratings, methods of exposure and pesticide labeling along with information about pest and disease life cycle and post host relationships. (Degree credit)

HORT 058 F Irrigation Controller Programming (2)

Three hours lecture and three hours laboratory per week for eight weeks or the equivalent. This course provides hands-on experience in which students will learn the fundamentals of programming irrigation controllers and the steps involved in programming some of the most popular irrigation controllers available in the industry. Practical situations will be used to show the applications of basic and advanced controller features. The course will also provide a review of various central control computer irrigation systems. Three field trips will be scheduled to give students the opportunity to examine central control systems as water management tools in large commercial and recreational areas. (Degree credit)

HORT 070 F Volunteer Naturalist Training (2.5)

Two hours lecture and one and one-half hour lab per week. A basic ecological course dealing specifically with the ecosystems represented in the wilderness parks and nature preserves of Orange County. Special emphasis will be placed on the natural history, geology and cultural history of our undeveloped areas. Training will also be given in the skills required to give nature tours in the parks. Assumes no science background. Weekly field trips required. (Degree credit)

HORT 075 Habitat Assessment and Restoration (2.5)

Two hours lecture and one and one-half hour lab per week. An eight week course designed to introduce students to the ecological theory, and practical application of a variety of habitat assessment, restoration and monitoring techniques. Scientific, social and legal aspects of restoration will be discussed. Training will emphasize habitat evaluation and restoration techniques used by industry, government agencies and environmental organizations. Weekly field trips will visit and assist in assessment and restoration projects.

HORT 152 F Applied Botany (4)

Three hours lecture and three hours laboratory per week. A course in applied botany covering the basic concepts in plant structure and functions. Includes the study of plant growth and development, horticultural practices, and an overview of horticulture as a science and art and an industry. Practical exercises and field trips are part of the laboratory work. (CSU) (Degree credit)

HORT 153 F Landscape Irrigation (3)

Two hours lecture and three hours laboratory per week. This course covers the principles and practices of installing basic irrigation systems. It includes the study of fittings, piping, valves, backflow preventers, controllers, and sprinklers; basic hydraulics, friction loss calculations and beginning irrigation design are also covered. (CSU) (Degree credit)

HORT 154 F Irrigation Design (3)

Prerequisite: HORT 153 F Landscape Irrigation.

Two hours lecture and three hours laboratory per week. This course covers the principles and practices of designing residential and small commercial irrigation systems. It includes the study of component selection, sprinkler spacing and location, hydraulic calculations, graphics presentation and current practices in water conservation in irrigation. Field trips and on-site analysis will be included as part of the laboratory. (CSU) (Degree credit)

HORT 155 F Soils (3) (CAN AG 14)

Two hours lecture and three hours laboratory per week. This course covers the following physical, chemical, and biological properties of soils: formation, texture, structure, compaction, stability and drainage, permeability and water-holding capacity, soil reaction, ionic exchange, organic matter, soil classification, water conservation, and soil conservation. (CSU) (UC) (Degree credit)

HORT 156 F Fertilizers (3)

Two hours lecture and three hours laboratory per week. This course covers the composition, value and use of fertilizers, soil correctives and soil amendments. Methods and techniques employed in detailed fertility analysis and horticultural suitability of soil media. Application equipment and fertilizer injection techniques. (CSU) (Degree credit)

HORT 157 F Irrigation Principles (3)

Prerequisite: HORT 153 F Landscape Irrigation.

Two hours lecture and three hours laboratory per week. This course covers the study and application of plant, soil and water relationships as they relate to irrigation. Sprinkler precipitation rates, soil infiltration rates and plant evapotranspiration rates are investigated to determine optimal irrigation, programming and efficient water usage. Laboratory hours will include field trips, lab investigations and on-site analysis. (CSU) (Degree credit)

HORT 160 F Plant Identification (Ornamental Trees) (3)

Three hours lecture per week. The study of broadleaf and conifer trees used in California landscapes, with special emphasis on identification. Recommended as a transfer course for majors in horticulture and landscape architecture. (CSU) (UC; HORT 160 and 161 maximum credit one course.) (Degree credit)

HORT 161 F Plant Identification (Ornamental Shrubs) (3)

Three hours lecture per week. The study of ornamental shrubs, ground covers, vines, tropical and herbaceous plant material used in California landscapes with special emphasis on identification. Recommended as a transfer course in the majors of horticulture and landscape architecture. (CSU) (UC; HORT 160 F and 161 F maximum credit one course.) (Degree credit)

HORT 162 F Landscaping for Dry Climates (3)

Advisory: HORT 200 F Landscape Design

Two hours lecture and three hours laboratory per week. A semester course covering the effects of Southern California environment upon plant selection, knowledge of the growth requirements of selected native and exotic species, and their proper usage in landscapes. Emphasis is placed upon functional values and aesthetic qualities of native and exotic drought-tolerant plants. Through development of the design process the student will create landscape plans and make site analysis evaluations using an inventory of appropriate native and drought-tolerant exotic species. Field trips are integrated as part of the laboratory projects, including one weekend trip, which is required of all students. (CSU) (Degree credit)

HORT 164 F Plant Identification (Annuals, Perennials, and Houseplants) (3)

Three hours lecture per week. This course covers the study of annuals, perennials, and houseplants used throughout California, with special emphasis on identification. It includes a comparison of the care requirements, culture and landscape usage for approximately 175 herbaceous ornamental plants. Recommended as a transfer course in the majors of horticulture and landscape architecture. (CSU) (Degree credit)

HORT 165 F Landscape Management (4)

Three hours lecture and three hours laboratory per week. New plantings and maintenance of existing plantings, including pruning, fertilization, pest control, lawn care, and landscape estimating. (CSU) (Degree credit)

HORT 168 F Landscape Construction (3)

Three hours lecture per week. Use and cost estimates of various landscape construction materials. Problems dealing with structure, grading, drainage, sprinklers, masonry, and electricity used in landscape construction. Course designed for students qualifying for the State Landscape Contractors Examination. (CSU) (Degree credit)

HORT 169LF Landscape Construction Laboratory (1)

Corequisite: HORT 168 F Landscape Construction

Three hours laboratory per week. Laboratory exercises in the use of wood, concrete, brick, blocks, and other materials of construction as they relate to structures, drainage, grading, utilities, and irrigation. (CSU) (Degree credit)

HORT 170 F Landscape Contracting (3)

Three hours lecture per week. This course covers the legal requirements and obligations of the landscape contractor, including contractor's law, lien rights, subcontractor regulations and employee labor law. It includes estimating and cost analysis for landscape trades. The course is directed toward preparing the student for passing the State Landscape Contractor's License Examination. (CSU) (Degree credit)

HORT 173 F Greenhouse and Nursery Production (3)

Two hours lecture and three hours laboratory per week. This course covers the current production methods used in producing greenhouse and nursery plants. Greenhouse and nursery facilities, and equipment will be covered along with business practices, computer applications, nursery automation and current irrigation systems. Recommended for students seeking careers in nursery-related trades. (CSU) (Degree credit)

HORT 174 F Plant Propagation (3)

Two hours lecture and three hours laboratory per week. This course covers the theoretical and commercial practices of plant propagation, including seeding and transplanting, preparation of cuttings, layering, division, budding and grafting, and micro propagation techniques. The use of plant hormones, plant physiology and genetic manipulation are discussed. (CSU) (Degree credit)

HORT 177 F Turf Grass Management (3)

Two hours lecture and three hours laboratory per week. Production, maintenance, and management of turf grasses. Laboratory and field experience in identification, planting, management practices, renovation, fertilization, and pest management methods. Valuable to individuals entering fields of landscape management, nursery management, and landscape architecture; also golf course managers, stadium and athletic field managers, park managers, and managers of memorial parks. (CSU) (Degree credit)

HORT 185 F Arboriculture (2)

One hour lecture and three hours laboratory per week. This course covers current practices in maintaining trees through correct pruning, cabling and cavity repair. In addition, tree growth characteristics, local codes and regulations and safety practices related to pruning are covered. This course prepares students for the Certified Arborists examination. (CSU) (Degree credit)

HORT 188 F Integrated Pest Management (2)

One and one-half hour lecture and one and one-half hour lab per week. A course, which provides students with a fundamental knowledge of integrated pest management. During the class, students learn to develop and implement pest control programs using cultural, biological and chemical methods. Emphasis will be placed on pest identification, pest monitoring and analysis of plant symptoms. (CSU) (Degree credit)

HORT 200 F Landscape Design (3)

Two hours lecture and two hours laboratory per week. Basic drafting techniques are taught combined with the principles of design leading to formal landscape drawings of homes. Includes the proper association of plant materials according to texture, color, mass, and cultural requirements. (CSU) (UC) (Degree credit)

HORT 201 F Advanced Landscape Design (3)

Prerequisite: HORT 200 F Landscape Design.

Two hours lecture-discussion and three hours laboratory per week. A continuation of graphics, plant usage, and design theory covered in HORT 200 F Landscape Design, with emphasis on hillside developments and commercial projects. A survey of historical development of landscape. Design of landscape structures (walls, patio overheads, steps, walkways, pools) with focus placed on the basic qualities of the construction materials. Elements of perspective drawings for project presentations. Detailed site analysis and evaluation of ecological factors. Field trips are part of laboratory, including one weekend trip required of all students. (CSU) (Degree credit)

HORT 205 F Applied Entomology (3)

Two hours lecture and three hours laboratory per week. Study of the principles of entomology including external anatomy and internal anatomy and physiology, insect relatives, and insect classification and identification. Concepts of insect pest management techniques will be included. An insect collection with proper identification to order and family will be required of all students with laboratory and field examination placing emphasis on identification and control. (CSU) (Degree credit)

HORT 207 F Plant Pathology (3)

Two hours lecture and three hours laboratory per week. An introductory study of the major plant diseases and their control. Fungi, bacteria, viruses, and nematodes causing diseases of economic crops throughout the U.S. are examined in the laboratory, greenhouse, and field. (CSU) (Degree credit)

HORT 215 F Diseases and Pests of Ornamental Plants (4)

Prerequisite: HORT 205 F Applied Entomology or HORT 207 F Plant Pathology.

Three hours lecture and three hours laboratory per week. Diagnosis and control of parasitic and non-parasitic disease problems in ornamental landscapes. Course also involves determination of insects, mites, and other pest problems affecting ornamental plantings and the methods employed in control. Laboratory and field trips will be utilized to observe various problems in production areas. Transfer credit to colleges offering similar courses. California Department of Food and Agriculture continuing education hours are available for this course. (CSU) (Degree credit)

HORT 218 F Landscape Hydraulics (3)

Prerequisite: HORT 153 F Landscape Irrigation and MATH 040 F Intermediate Algebra.

Two hours lecture and three hours laboratory per week. This course covers the principles of hydraulics related to open and closed piping systems, pipe and channel flow as applied to landscape irrigation and drainage system. It includes problems in water, storage, pumping system, surge and water hammer, fountains and ponds. (CSU) (Degree credit)

HORT 219 F CAD Applications in Horticulture (3)

Prerequisite: ACG 100 F Introduction to Computer Graphics for Macintosh, HORT 200 F Landscape Design or HORT 154 F Irrigation Design.

Two hours lecture, three hours laboratory per week. This course includes the use of computer aided drafting in the creation of landscape and irrigation designs. The use of syneol libraries, layered drawings, macros, and different drawing programs are included. Detail drawings, landscape and irrigation plans will be developed for actual site situations. (CSU) (Degree credit)

HORT 920 F Advanced CAD Applications in Horticulture (3, 3)

Letter grade or credit/no credit option. Prerequisite: HORT 219 F CAD Applications in Horticulture

Two hours lecture and three hours laboratory per week. This course covers the use of LandCADD computer aided drafting and design program in the creation of 2-D and 3-D landscape and irrigation designs. It also includes the use of customized plant and irrigation symbols, intelligent drawing blocks, cross-referenced drawings and paper space/model space. Detail drawings, complex irrigation and grading plans will be developed for actual site situations. Presentation 2-dimensional and 3-dimensional rendered drawings and animated walk-throughs are developed using advanced tools in LandCADD. Course may be taken twice for credit. (Degree credit)