

Associate Degree Programs and Certificates



**Cuyamaca
College**



& Growing

ASSOCIATE DEGREE PROGRAMS & CERTIFICATES

| Program | Associate Degree | Certificate of Achievement | Certificate of Proficiency | Program | Associate Degree | Certificate of Achievement | Certificate of Proficiency |
|---|------------------|----------------------------|----------------------------|---|------------------|----------------------------|----------------------------|
| ACCOUNTING | | | | ELEMENTARY EDUCATION | ◆ | | |
| Accounting | ◆ | ◆ | | ENGINEERING | | | |
| Bookkeeping | | ◆ | | Civil Engineering | ◆ | ◆ | ◆ |
| ART | | | | Electrical & Computer Engineering | ◆ | ◆ | ◆ |
| Drawing and Painting | ◆ | | | Mechanical & Aerospace Engineering | ◆ | ◆ | ◆ |
| Graphic Design (Transfer) | ◆ | | | ENGLISH | ◆ | ◆ | |
| AUTOMOTIVE TECHNOLOGY | ◆ | ◆ | | ENTREPRENEURSHIP-SMALL BUSINESS MANAGEMENT | ◆ | ◆ | |
| Advanced Engine Performance and Emissions | | ◆ | | ENVIRONMENTAL HEALTH AND SAFETY TECHNOLOGY | | | |
| ASEP | ◆ | | | Environmental Management | ◆ | | |
| ASSET | ◆ | | | Environmental Technician | | ◆ | |
| Brakes and Front-End | | ◆ | | Occupational Safety and Health (OSH) Management | ◆ | | |
| Engine Performance and Drive Train | | ◆ | | Occupational Safety and Health (OSH) Technician | | ◆ | |
| BIOLOGICAL SCIENCES | ◆ | | | EXERCISE SCIENCE | ◆ | | |
| BUSINESS | | | | Recreational Leadership-School-Based Programs | | | ◆ |
| Business Administration | ◆ | ◆ | | GENERAL MAJOR | ◆ | | |
| Business Data Management | ◆ | ◆ | | GRAPHIC DESIGN | ◆ | ◆ | |
| Business-General | ◆ | ◆ | | Digital Photography | | | ◆ |
| Database Administration | | | ◆ | Web Graphics | | | ◆ |
| BUSINESS OFFICE TECHNOLOGY | ◆ | ◆ | | HISTORY | ◆ | | |
| Administrative Assistant | ◆ | ◆ | | MANAGEMENT | ◆ | ◆ | |
| Executive Assistant | ◆ | ◆ | | MATHEMATICS | ◆ | ◆ | |
| Office Assistant Level I | | | ◆ | MUSIC EDUCATION | ◆ | | |
| Office Assistant Level II | | | ◆ | ORNAMENTAL HORTICULTURE | | | |
| Office Professional | | | ◆ | Arboriculture | ◆ | ◆ | ◆ |
| Office Software Specialist Level I | | | ◆ | Floristry | ◆ | ◆ | ◆ |
| Office Software Specialist Level II | | | ◆ | Golf Course and Sports Turf Management | ◆ | ◆ | ◆ |
| CADD TECHNOLOGY | | | | Irrigation Technology | ◆ | ◆ | ◆ |
| Building Design Industry | ◆ | ◆ | | Landscape Design | ◆ | ◆ | ◆ |
| Manufacturing Industry | ◆ | ◆ | | Landscape Technology | ◆ | ◆ | ◆ |
| CHEMISTRY | ◆ | | | Nursery Technology | ◆ | ◆ | ◆ |
| CHILD DEVELOPMENT | | | | PARALEGAL STUDIES | ◆ | | |
| Infants and Toddlers | ◆ | ◆ | | PHYSICAL SCIENCE | ◆ | | |
| Preschool Children | ◆ | ◆ | | PHYSICS | ◆ | | |
| School Age Child Care | ◆ | ◆ | | REAL ESTATE | ◆ | ◆ | ◆ |
| Early Childhood Intervention | | | ◆ | Escrow | | ◆ | |
| Recreational Leadership-Outdoor Programs | | | ◆ | SOCIAL WORK | ◆ | | |
| COMMUNICATION | ◆ | | | SPANISH | ◆ | ◆ | |
| COMPUTATIONAL SCIENCE | ◆ | ◆ | | SURVEYING | ◆ | ◆ | |
| COMPUTER AND INFORMATION SCIENCE | | | | UNIVERSITY TRANSFER STUDIES | ◆ | | |
| Computer Network Administration | ◆ | ◆ | | WATER/WASTEWATER TECHNOLOGY | | | |
| Telecommunications Networking Technology | ◆ | | | Cross Connection Control Systems | ◆ | ◆ | ◆ |
| Telecommunications Networking Technician | | ◆ | | Water Distribution Systems | ◆ | ◆ | ◆ |
| Web Development | ◆ | ◆ | | Water Treatment Plant Operator | ◆ | ◆ | ◆ |
| Cisco Systems | | | ◆ | Wastewater Collection Systems | ◆ | ◆ | ◆ |
| Computer Programming | | | ◆ | Wastewater Treatment Operator | ◆ | ◆ | ◆ |
| Network Servicing Technology | | | ◆ | | | | |
| Operating Systems | | | ◆ | | | | |
| Telecommunications Servicing Technology | | | ◆ | | | | |
| Web Design | | | ◆ | | | | |
| Web Programming | | | ◆ | | | | |
| Web Server Management | | | ◆ | | | | |

NOTE: Course choices for transfer and the Associate Degree may differ between Cuyamaca and Grossmont Colleges. Each college strongly recommends that students visit the Counseling Centers for specific information if they plan to attend both campuses.

ACCOUNTING (Major Code: 50020)

This degree program is designed to prepare students to enter the workforce as accounting technicians or tax technicians. The curriculum is supported by related business courses and a strong general education program for students interested in qualifying for responsible positions in accounting. **Designed for a two-year degree or certificate only. Students interested in pursuing a bachelor's degree in accounting should consult the catalog of the transfer institution for specific requirements.**

CAREER OPPORTUNITIES

- *Auditor
- *Budgeter
- *Bank Examiner
- Bookkeeper
- *Cost Accountant
- *Certified Accountant
- *Controller
- Credit Card Clerk
- Securities Clerk
- *Systems Analyst
- *Tax Specialist/Accountant
- *Treasurer

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|---|-------|
| BUS 120 | Financial Accounting | 4 |
| BUS 121 | Managerial Accounting | 4 |
| BUS 122 | Intermediate Accounting | 4 |
| BUS 124 | Auditing | 3 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| BUS 128 | Business Communication | 3 |
| BUS 150 | Individual Income Tax Accounting | 3 |
| BUS 162 | Analysis of Financial Statements | 3 |
| BUS 176 | Computerized Accounting Applications | 2 |
| CIS 110 | Principles of Information Systems | 4 |
| | Total Required | 33 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Accounting. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

BOOKKEEPING CERTIFICATE (Major Code: 50024)

This certificate is for students who need very specific training in the area of bookkeeping/accounting, either to obtain the necessary skills for an entry level office position, or to provide technical competence for advancement within the office environment. The certificate does not require completion of the "core" curriculum; it may be completed during two semesters of concentrated study.

Certificate Requirements:

| Course | Title | Units |
|-------------|---------------------------------------|-------|
| BOT 123-125 | Comprehensive Excel Levels I-III | 3 |
| BUS 109 | Elementary Accounting | 3 |
| or | | |
| BUS 120 | Financial Accounting | 4 |
| BUS 121 | Managerial Accounting | 4 |
| BUS 128 | Business Communication | 3 |
| BUS 129 | Payroll Accounting and Business Taxes | 2 |
| BUS 176 | Computerized Accounting Applications | 2 |
| CIS 105 | Introduction to Computing | 3 |
| | Total Required | 20-21 |

NOTE: BUS 109 may be taken instead of BUS 120 for the Bookkeeping Certificate only.

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Bookkeeping. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

ART

I. ART–DRAWING AND PAINTING (Major Code: 53044)

This degree program is designed to provide a fundamental background in the two-dimensional studio arts, emphasizing both technique and aesthetic awareness. Students will develop their ability to control line, value, shape, color, perspective and composition in various mediums. The major provides preparation for transfer to a four-year college in fine art or a vocational area related to art. The curriculum consists of courses in both studio techniques and art history.

CAREER OPPORTUNITIES

- *Advertising Specialist
- Antique Dealer
- *Art Conservator
- *Art Therapist
- Arts Administration
- Cartoonist
- *Curator
- Display Manager
- *Fashion Designer
- Gallery Owner
- Illustrator
- Independent Artist
- *Interior Design
- Jewelry Designer
- Museum Technician
- Painter
- Police Artist
- Set Designer
- *Teacher/Professor

*Bachelor Degree or higher required

Associate in Arts Degree Requirements:

| Course | Title | Units |
|---------|---|-------|
| ART 120 | Two-Dimensional Design | 3 |
| ART 121 | Painting I | 3 |
| ART 124 | Drawing I | 3 |
| ART 125 | Drawing II | 3 |
| ART 140 | History of Western Art I: Prehistoric to 1250 A.D. | 3 |
| ART 141 | History of Western Art II: 1250 A.D. to Present Time | 3 |
| ART 230 | Figure Drawing I | 3 |
| GD 105 | Fundamentals of Digital Media | 3 |
| | | 24 |

Select six (6) units from the following:

| | | |
|-------------------------------------|--|----|
| ART 129* | Three-Dimensional Design | 3 |
| ART 135 | Watercolor I | 3 |
| ART 145 | Contemporary Art History: 1945-Present | 3 |
| ART 220 | Painting II | 3 |
| ART 231 | Figure Drawing II | 3 |
| GD 126ABCD | Photoshop Digital Imaging | 3 |
| GD 225 | Digital Illustration | 3 |
| | | 6 |
| Total Required | | 30 |
| Plus General Education Requirements | | |

Recommended Electives:

FREN 120, HIST 105, HUM 155, RELG 120

*Offered at Grossmont College

II. ART–GRAPHIC DESIGN (Transfer)

(Major Code: 53050)

This degree program emphasizes aesthetics, design and craft using manual and digital mediums. Students will develop their ability to think spatially in two and three dimensions and to use creative problem-solving techniques using images and letter forms. Students will develop a professional portfolio for placement at a four-year university.

Designed for students interested in pursuing a Bachelor's degree in Graphic Design. Students should consult the catalog of the transfer institution for specific requirements. Students interested in pursuing the entry level, two-year associate degree or certificate in Graphic Design should refer to the "Graphic Design" program.

CAREER OPPORTUNITIES

- *Advertising Director
- Advertising
- *Art Director
- Desktop Publishing
- Display Designer
- Graphic Designer
- Illustrator
- *Marketing Director
- Multimedia
- Package Designer
- Web Page Designer

*Bachelor Degree or higher required

Associate in Arts Degree Requirements:

| Course | Title | Units |
|-------------------------------------|---|-------|
| ART 120 | Two-Dimensional Design | 3 |
| ART 121 | Painting I | 3 |
| ART 124 | Drawing I | 3 |
| ART 125 | Drawing II | 3 |
| ART 129* | Three-Dimensional Design | 3 |
| ART 140 | History of Western Art I: Prehistoric to 1250 A.D. | 3 |
| ART 141 | History of Western Art II: 1250 A.D. to Present Time | 3 |
| ART 230 | Figure Drawing I | 3 |
| GD 105 | Fundamentals of Digital Media | 3 |
| GD 110 | Graphic Design Principles | 3 |
| GD 125 | Typography | 3 |
| Total Required | | 33 |
| Plus General Education Requirements | | |

Recommended Electives:

ART 150*, BUS 110, GD 230

*Offered at Grossmont College

AUTOMOTIVE TECHNOLOGY

The automotive technology curriculum provides for entry level skills in the automotive field. The program is designed to impart in-depth technical skills as required in today's highly technical automotive field. Preparation for employment in the automotive and/or transportation trades, with upgrading and specialization skills for those currently employed will be stressed. Emphasizes practical experience in actual repairs under simulated shop conditions.

CAREER OPPORTUNITIES

Auto Electrician
Auto Parts Salesperson
Automotive Air Conditioning Technician
Brake and Front-End Technician
Computerized Engine Control Specialist
Engine Machinist
General Repair Technician
High Performance and Racing Specialist
Licensed Smog Technician
Manufacturer Service Engineer
Service Advisor
Service Manager
Technical Instructor
Technical Sales Representative
Transmission Technician
Tune-up Technician

I. AUTOMOTIVE TECHNOLOGY (Major Code: 51000)

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|--|----------|
| AUTO 120 | Engine Performance I - Mechanical and Ignition Systems | 5 |
| AUTO 121 | Emission Control License | 5 |
| AUTO 122 | Automotive Electrical Systems | 5 |
| AUTO 123 | Engine Performance II - Fuel Systems | 5 |
| AUTO 124 | Engine Performance III - Drivability | 5 |
| AUTO 180 | Automotive Service Advisor | 1 |
| AUTO 182 | Automotive Work Experience | 3 |
| | | <hr/> 29 |

Select two (2) of the following:

| | | |
|----------|--------------------------------------|--------------|
| AUTO 129 | Introduction to Alternative Fuels | 3.5 |
| AUTO 130 | Automotive Brakes and Brake License | 5 |
| AUTO 140 | Four-Wheel Alignment | 5 |
| AUTO 152 | Drive Train Systems | 4 |
| AUTO 160 | Air Conditioning and Heating Systems | 3 |
| AUTO 170 | Engine Overhaul | 5 |
| | | <hr/> 6.5-10 |

Select one (1) of the following:

| | | |
|----------|---|-----------|
| AUTO 127 | Advanced Automotive Electrical Systems | 5 |
| AUTO 135 | Advanced Brakes | 5 |
| AUTO 145 | Advanced Four-Wheel Alignment | 5 |
| AUTO 155 | Advanced Drive Train Systems | 4 |
| AUTO 165 | Advanced Air Conditioning and Heating Systems | 3 |
| AUTO 175 | Advanced Engine Overhaul | 5 |
| AUTO 176 | Engine Machining | 5 |
| | | <hr/> 3-5 |
| | Total Required | 38.5-44 |
| | Plus General Education Requirements | |

FOR ALL CLASSES: Students are required to provide their own hand tools as required. Students are also required to provide ANSI Z-87.1 (1979) eye protection.

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Automotive Technology. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. AUTOMOTIVE TECHNOLOGY-ADVANCED ENGINE PERFORMANCE AND EMISSIONS

(Major Code: 51006)

Certificate Requirements:

| Course | Title | Units |
|----------|--|----------|
| AUTO 120 | Engine Performance I - Mechanical and Ignition Systems | 5 |
| AUTO 121 | Emission Control License | 5 |
| AUTO 122 | Automotive Electrical Systems | 5 |
| AUTO 123 | Engine Performance II - Fuel Systems | 5 |
| AUTO 124 | Engine Performance III - Drivability | 5 |
| | Total Required | <hr/> 25 |

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Automotive Technology-Advanced Engine Performance and Emissions. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. AUTOMOTIVE TECHNOLOGY-ASEP

(Major Code: 51007)

The General Motors sponsored ASEP degree program offers a unique job training opportunity to those students who are accepted. Training includes all systems of the sponsoring manufacturers' automobiles. In addition, students will be required to further their studies in a sponsoring dealership as a paid (work experience) technician. Not offered as a certificate; all students must complete the general education requirements in addition to the requirements listed below. Candidates who successfully complete these requirements will be granted an Associate Degree.

NOTE:

- Grade point average of "C" (2.0) is required for the major.
- Students who test low in English, reading or math assessment scores (and are accepted into the program) will be required to take remedial courses in those areas in addition to the general education courses.
- Students who have previous college credit or an Associate Degree or higher may be exempt from all or part of the general education requirements. (Students should request an appointment with a counselor to have their General Education requirements evaluated.)

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|---|-------------|
| AUTO 121 | Emission Control License | 5 |
| AUTO 200 | ASEP–Orientation | 1 |
| AUTO 201 | ASEP–Electrical | 6 |
| AUTO 202 | ASEP–Brakes and Alignment | 7 |
| AUTO 203 | ASEP–Engine Repair | 4.5 |
| AUTO 204 | ASEP–Power Train | 7 |
| AUTO 205 | ASEP–Engine Performance and Air Conditioning | 7 |
| | | <u>37.5</u> |

Work Experience:

| | | |
|-----------|-------------------------------------|-------------|
| AUTO 206* | ASEP–Work Experience | 15 |
| | Total Required | <u>52.5</u> |
| | Plus General Education Requirements | |

*Must be repeated 5 times for a total of 15 units

IV. AUTOMOTIVE TECHNOLOGY–ASSET

(Major Code: 51005)

The Ford sponsored ASSET degree program offers a unique job training opportunity to those students who are accepted. Training includes all systems of the sponsoring manufacturers' automobiles. In addition, students will be required to further their studies in a sponsoring dealership as a paid (work experience) technician. Not offered as a certificate; all students must complete the general education requirements in addition to the requirements listed below. Candidates who successfully complete these requirements will be granted an Associate Degree.

NOTE:

- Grade point average of "C" (2.0) is required for the major.
- Students who test low in English, reading or math assessment scores (and are accepted into the program) will be required to take remedial courses in those areas in addition to the general education courses.
- Students who have previous college credit or an Associate Degree or higher may be exempt from all or part of the general education requirements. (Students should request an appointment with a counselor to have their General Education requirements evaluated.)

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|---|-------------|
| AUTO 121 | Emission Control License | 5 |
| AUTO 190 | ASSET–Orientation, PDI and Lubrication | 2 |
| AUTO 191 | ASSET–Brakes and Alignment | 7 |
| AUTO 192 | ASSET–Drive Train | 8 |
| AUTO 193 | ASSET–Engine Repair | 4.5 |
| AUTO 195 | ASSET–Electronic Engine Controls | 7 |
| AUTO 196 | ASSET–Electrical, Accessories and Air Conditioning | 5 |
| | | <u>38.5</u> |

Work Experience:

| | | |
|-----------|-------------------------------------|-------------|
| AUTO 197* | ASSET–Work Experience | 13 |
| | Total Required | <u>51.5</u> |
| | Plus General Education Requirements | |

*Must be repeated 5 times for a total of 13 units

**V. AUTOMOTIVE TECHNOLOGY–
BRAKES AND FRONT-END (Major Code: 51003)****Certificate Requirements:**

| Course | Title | Units |
|----------|-------------------------------------|-----------|
| AUTO 130 | Automotive Brakes and Brake License | 5 |
| AUTO 140 | Four-Wheel Alignment | 5 |
| AUTO 145 | Advanced Four-Wheel Alignment | 5 |
| AUTO 180 | Automotive Service Advisor | 1 |
| AUTO 182 | Automotive Work Experience | 3 |
| | Total Required | <u>19</u> |

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Automotive Technology–Brakes and Front-End. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

**VI. AUTOMOTIVE TECHNOLOGY–ENGINE
PERFORMANCE AND DRIVE TRAIN**

(Major Code: 51002)

Certificate Requirements:

| Course | Title | Units |
|----------|---|-----------|
| AUTO 120 | Engine Performance I - Mechanical and Ignition Systems | 5 |
| AUTO 152 | Drive Train Systems | 4 |
| AUTO 170 | Engine Overhaul | 5 |
| AUTO 180 | Automotive Service Advisor | 1 |
| AUTO 182 | Automotive Work Experience | 3 |
| | Total Required | <u>18</u> |

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Automotive Technology–Engine Performance and Drive Train. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

BIOLOGICAL SCIENCES

(Major Code: 59500)

This degree program is designed to provide a two-year transfer program with emphasis on the uniformity and diversity of life. The major fulfills the lower division requirements for majors in biology, dentistry, medicine, nursing, pharmacy, environmental health, microbiology and ecology.

CAREER OPPORTUNITIES

- *Aquatic Biologist
- *Athletic Trainer
- *Biologist
- *Biochemical Engineer
- Biological Technician
- Biomedical Equipment Technician
- Biotechnologist
- *Botanist
- Clinical Lab Technologist
- *Cytologist
- *Ecologist
- *Environmental Engineer
- Environmental Technician
- *Environmental Microbiologist
- Genetic Engineering Technician
- Greenhouse Assistant
- Laboratory Technician
- *Physical Therapist
- *Public Health Biologist
- Purification Technician
- Research Assistant
- Safety Specialist
- *Teacher
- Technical Writer
- Waste Management Technician

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|---|-------|
| BIO 210 | Biology II | 4 |
| BIO 215 | Statistics for Life Sciences | 3 |
| BIO 220 | Principles of Molecular, Cellular and Evolutionary Biology | 3 |
| BIO 221 | Principles of Molecular, Cellular and Evolutionary Biology Laboratory | 1 |
| CHEM 141 | General Chemistry I | 5 |
| CHEM 142 | General Chemistry II | 5 |
| CHEM 231 | Organic Chemistry I | 5 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| PHYC 130 | Fundamentals of Physics | 4 |
| PHYC 131 | Fundamentals of Physics | 4 |
| | Total Required | 39 |
| | Plus General Education Requirements | |

BUSINESS

I. BUSINESS ADMINISTRATION (Major Code: 50041)

This degree program is designed to give students who choose to work toward a bachelor's degree a well-balanced introduction to a professional career in business. Fulfills the lower division requirements for most majors in the School of Business Administration at San Diego State University and is typical of requirements at other four-year schools. For specific requirements, transfer students should consult the catalog of their selected institution.

CAREER OPPORTUNITIES

- *Advertising/Marketing Manager
- *Agricultural Marketing Specialist
- *Banker
- *Broker
- Consultant
- *Computer Operations Specialist
- Credit Investigator
- *Economic Forecaster
- *Financial Analyst
- *Hospital Administrator
- Import/Export Agent
- *Market Research Analyst
- *Personnel Manager
- Real Estate Broker/Agent
- Retail Manager
- *Securities Analyst/Trader

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|---|-------|
| BUS 120 | Financial Accounting | 4 |
| BUS 121 | Managerial Accounting | 4 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| BUS 128 | Business Communication | 3 |
| CIS 110 | Principles of Information Systems | 4 |
| ECON 120 | Principles of Macroeconomics | 3 |
| ECON 121 | Principles of Microeconomics | 3 |
| MATH 160 | Elementary Statistics | 3 |
| MATH 178 | Calculus for Business, Social and Behavioral Sciences | 4 |
| | Total Required | 31 |
| | Plus General Education Requirements | |

Recommended Electives:

BUS 146, 156

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Business Administration. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. BUSINESS–GENERAL (Major Code: 50010)

This degree program is designed to develop and foster those skills and understandings which can be utilized for employment in an increasingly challenging business environment. Provides students with a broad preparation for a career in business. Business courses are included which provide a solid background for future promotion in a chosen occupational area. Designed for students who do not plan to transfer to a four-year college or university.

CAREER OPPORTUNITIES

- Administrative Assistant
- Bookkeeper
- *Budget Consultant
- Buyer
- Conciliator
- *Credit Analyst
- Employment Interviewer
- *Hospital Administrator
- Sales Agent
- *Trust Officer

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| BUS 109 | Elementary Accounting | 3 |
| or | | |
| BUS 120 | Financial Accounting | 4 |
| BUS 110 | Introduction to Business | 3 |
| BUS 115 | Human Relations in Business | 3 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| BOT 110* | Business English and Communication | 3 |
| or | | |
| BUS 128 | Business Communication | 3 |
| BUS 146 | Marketing | 3 |
| BUS 152 | Business Mathematics | 2 |
| BUS 195 | Family Income Management | 3 |
| CIS 105 | Introduction to Computing | 3 |
| or | | |
| CIS 110 | Principles of Information Systems | 4 |
| ECON 120 | Principles of Macroeconomics | 3 |
| | Total Required | 29-31 |
| | Plus General Education Requirements | |

*Offered at Grossmont College

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Business–General. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. BUSINESS DATA MANAGEMENT

(Major Code: 50016)

This program prepares students for careers in business using information technology to organize and promote advanced business management policies. Students can also complete classes in preparation for the Microsoft Certified Database Administrator exams.

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-----------------------------------|--------------|
| BUS 128 | Business Communication | 3 |
| BUS 240 | SQL for Business Applications | 3 |
| BUS 242 | Data Mining | 3 |
| CIS 110 | Principles of Information Systems | 4 |
| CIS 140 | Databases | 3 |
| CIS 190 | Windows Operating System | 3 |
| CIS 240 | Advanced Databases | 3 |
| CIS 242 | Database Design | 3 |
| | | 25 |

Select one (1) from the following:

| | | |
|----------|-----------------------------|---|
| COMM 120 | Interpersonal Communication | 3 |
| COMM 122 | Public Speaking | 3 |
| | | 3 |

Select one (1) from the following:

| | | |
|------------|--|-------|
| CIS 216 | Active Server Pages | 3 |
| CIS 290 | Windows System Administration | 3 |
| CS 180ABCD | Introduction to Visual Basic Programming | 4 |
| | | 3-4 |
| | Total Required | 31-32 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Business Data Management. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

CERTIFICATE OF PROFICIENCY:

DATABASE ADMINISTRATION (Major Code: 57127)

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-------------------------------|--------------|
| BUS 240 | SQL for Business Applications | 3 |
| BUS 242 | Data Mining | 3 |
| CIS 140 | Databases | 3 |
| CIS 240 | Advanced Databases | 3 |
| CIS 242 | Database Design | 3 |
| | Total Required | 15 |

Students who complete the requirements above qualify for a Certificate of Proficiency in Database Administration. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

BUSINESS OFFICE TECHNOLOGY

I. BUSINESS OFFICE TECHNOLOGY (Major Code: 59501)

This degree program prepares students for employment in today's business offices which are technology intensive. The curriculum is also appropriate for those wishing to update current skills. Emphasis is on the computerized office and development into supervisory positions.

CAREER OPPORTUNITIES

Account Clerk
 Administrative Assistant
 Bank Teller
 Billing Clerk
 Bookkeeper
 Brokerage Clerk
 Computer Operator
 Court Clerk
 Customer Service Representative
 Executive Assistant
 Executive Secretary
 File Clerk
 General Office Clerk
 Hotel/Motel Desk Clerk
 Information Clerk
 Insurance Clerk
 Legal Secretary
 Loan/Credit Clerk
 Medical Secretary
 Office Manager
 Personnel Clerk
 Real Estate Clerk
 Secretary
 Word Processing Specialist

Associate in Science Degree Requirements:

| Course | Title | Units |
|-------------|---|--------------|
| BOT 100 | Basic Keyboarding | 1 |
| BOT 101AB | Keyboarding/Document Processing | 3 |
| BOT 102AB | Intermediate Keyboarding/Document Processing I-II | 3 |
| BOT 107 | Office Systems and Procedures | 2 |
| BOT 120-122 | Comprehensive Word Levels I-III | 3 |
| BUS 128 | Business Communication | 3 |
| CIS 105 | Introduction to Computing | 3 |
| or | | |
| CIS 110 | Principles of Information Systems | 4 |
| | | <u>18-19</u> |

Select at least six (6) units from the following:

| | | |
|-------------------------------------|--|----------|
| BOT 108 | Using Calculators to Solve Business Problems | 1 |
| BOT 123-125 | Comprehensive Excel Levels I-III | 3 |
| BUS 109 | Elementary Accounting | 3 |
| or | | |
| BUS 120 | Financial Accounting | 4 |
| BUS 156 | Principles of Management | 3 |
| BUS 157 | Principles of Leadership | 3 |
| BUS 176 | Computerized Accounting Applications | 2 |
| CIS 140 | Databases | 3 |
| | | <u>6</u> |
| Total Required | | 24-25 |
| Plus General Education Requirements | | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Business Office Technology. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. ADMINISTRATIVE ASSISTANT (Major Code: 50149)

Associate in Science Degree Requirements:

| Course | Title | Units |
|-------------|---|--------------|
| BOT 102AB | Intermediate Keyboarding/Document Processing I-II | 3 |
| BOT 104 | Filing and Records Management | 1 |
| BOT 107 | Office Systems and Procedures | 2 |
| BOT 108 | Using Calculators to Solve Business Problems | 1 |
| BOT 114 | Essential Word | 1 |
| or | | |
| BOT 120-122 | Comprehensive Word Levels I-III | 3 |
| BOT 115 | Essential Excel | 1 |
| or | | |
| BOT 123-125 | Comprehensive Excel Levels I-III | 3 |
| BOT 116 | Essential Access | 1 |
| or | | |
| BOT 126-128 | Comprehensive Access Levels I-III | 3 |
| BOT 117 | Essential PowerPoint | 1 |
| or | | |
| BOT 129-131 | Comprehensive PowerPoint Levels I-III | 3 |
| BOT 118 | Integrated Office Projects | 1 |
| BOT 223-225 | Office Work Experience | 1-3 |
| BUS 114 | Effective Job Search | 1 |
| BUS 128 | Business Communication | 3 |
| | | <u>17-27</u> |

Select at least three (3) units from the following:

| | | |
|-------------------------------------|---------------------------------------|----------|
| BOT 103ABC | Building Keyboarding Skill I, II, III | .5 |
| BOT 105 | Data Entry Skills | 1 |
| BOT 150 | Using Microsoft Publisher | 1 |
| BOT 151 | Using Microsoft Outlook | 1 |
| BUS 109 | Elementary Accounting | 3 |
| | | <u>3</u> |
| Total Required | | 20-30 |
| Plus General Education Requirements | | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Administrative Assistant. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. EXECUTIVE ASSISTANT (Major Code: 50150)

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|--|--------------|
| BOT 120-122 | Comprehensive Word Levels I-III | 3 |
| BOT 123-125 | Comprehensive Excel Levels I-III | 3 |
| BOT 126-128 | Comprehensive Access Levels I-III | 3 |
| or | | |
| CIS 140 | Databases | 3 |
| BOT 129-131 | Comprehensive PowerPoint Levels I-III | 3 |
| BOT 151 | Using Microsoft Outlook | 1 |
| BOT 201 | Advanced Keyboarding/Document Processing | 3 |
| BOT 203 | Office Project Coordination | 1 |
| BUS 128 | Business Communication | 3 |
| | | 20 |

Select at least three (3) units from the following:

| | | |
|---------|---|---|
| BUS 109 | Elementary Accounting | 3 |
| BUS 110 | Introduction to Business | 3 |
| BUS 115 | Human Relations in Business | 3 |
| BUS 120 | Financial Accounting | 4 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| | | 3 |

Select at least three (3) units from the following:

| | | |
|------------|--|----|
| BOT 103ABC | Building Keyboarding Skill I, II, III | .5 |
| BOT 150 | Using Microsoft Publisher | 1 |
| BOT 280ABC | Preparing for Performance Examinations in Microsoft Word | .5 |
| BOT 281ABC | Preparing for Performance Examinations in Microsoft Excel | .5 |
| BOT 282ABC | Preparing for Performance Examinations in Microsoft Access | .5 |
| BOT 283ABC | Preparing for Performance Examinations in Microsoft PowerPoint | .5 |
| CIS 240 | Advanced Databases | 3 |
| | | 3 |
| | Total Required | 26 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Executive Assistant. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

CERTIFICATES OF PROFICIENCY:

Students who complete the requirements below qualify for a Certificate of Proficiency in that area of emphasis. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

I. OFFICE ASSISTANT LEVEL I (Major Code: 57105)

Prepares beginning students for work in positions that require keyboarding skills, basic knowledge of filing, and basic computer skills. Designed for students with no prior computer training and who lack general office background and experience. Upon completion of the certificate, students will qualify for positions as data entry clerks or other entry level office clerical positions.

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---------------------------------|--------------|
| BOT 096 | Computer Basics for the Office | 1 |
| BOT 097 | Windows Basics for the Office | 1 |
| BOT 100 | Basic Keyboarding | 1 |
| BOT 101AB | Keyboarding/Document Processing | 3 |
| BOT 104 | Filing and Records Management | 1 |
| BOT 105 | Data Entry Skills | 1 |
| BUS 114 | Effective Job Search | 1 |
| | Total Required | 9 |

II. OFFICE ASSISTANT LEVEL II (Major Code: 57106)

Designed for students who have completed the Office Assistant Level I certificate or have the equivalent in keyboarding and computer skills. Prepares students for advancement in office careers in which knowledge of Microsoft Office applications is required.

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| BOT 102AB | Intermediate Keyboarding/Document Processing I-II | 3 |
| BOT 107 | Office Systems and Procedures | 2 |
| BOT 114 | Essential Word | 1 |
| BOT 115 | Essential Excel | 1 |
| BOT 116 | Essential Access | 1 |
| BOT 117 | Essential PowerPoint | 1 |
| | Total Required | 9 |

III. OFFICE PROFESSIONAL (Major Code: 57104)

Designed for entry-level positions in a broad spectrum of office environments. Utilizing a short-term, intensive format, students are provided with the basic skills necessary to be productive employees. The curriculum provides the foundation for further study and advancement in the clerical field, which is one of the largest employment areas in our information processing society.

Certificate Requirements:

| Course | Title | Units |
|-----------|---|--------------|
| BOT 100 | Basic Keyboarding | 1 |
| or | | |
| BOT 101AB | Keyboarding/Document Processing | 3 |
| or | | |
| BOT 102AB | Intermediate Keyboarding/Document Processing I-II | 3 |
| BOT 107 | Office Systems and Procedures | 2 |
| BOT 114 | Essential Word | 1 |
| BOT 115 | Essential Excel | 1 |
| BOT 223 | Office Work Experience | 1 |
| BUS 110 | Introduction to Business | 3 |
| BUS 128 | Business Communication | 3 |
| | Total Required | <u>12-14</u> |

IV. OFFICE SOFTWARE SPECIALIST LEVEL I

(Major Code: 57107)

This certificate is designed for students who are interested in working in an administrative support capacity that need working knowledge of word processing, electronic spreadsheet, database and presentation software. These courses may also be applied to the Office Assistant Level II certificate of proficiency. *All courses must be completed with a grade of "C" or better.*

Certificate Requirements:

| Course | Title | Units |
|-------------|---------------------------------------|------------|
| BOT 100 | Basic Keyboarding | 1 |
| BOT 114 | Essential Word | 1 |
| or | | |
| BOT 120-121 | Comprehensive Word, Levels I-II | 2 |
| BOT 115 | Essential Excel | 1 |
| or | | |
| BOT 123-124 | Comprehensive Excel, Levels I-II | 2 |
| BOT 116 | Essential Access | 1 |
| or | | |
| BOT 126-127 | Comprehensive Access, Levels I-II | 2 |
| BOT 117 | Essential PowerPoint | 1 |
| or | | |
| BOT 129-130 | Comprehensive PowerPoint, Levels I-II | <u>2</u> |
| | Total Required | <u>5-9</u> |

V. OFFICE SOFTWARE SPECIALIST LEVEL II

(Major Code: 57108)

This certificate is designed for students who are interested in working in an administrative support capacity that need working knowledge of word processing, electronic spreadsheet, database and presentation software as well as software integration techniques. Students who complete the certificate may continue taking courses to earn the Executive Assistant Certificate of Achievement. *All courses must be completed with a grade of "C" or better.*

Certificate Requirements:

| Course | Title | Units |
|-----------|------------------------------------|-----------|
| BOT 100 | Basic Keyboarding | 1 |
| BOT 118 | Integrated Office Projects | 1 |
| BOT 120 | Comprehensive Word, Level I | 1 |
| or | | |
| BOT 114 | Essential Word | 1 |
| BOT 121 | Comprehensive Word, Level II | 1 |
| BOT 122 | Comprehensive Word, Level III | 1 |
| BOT 123 | Comprehensive Excel, Level I | 1 |
| or | | |
| BOT 115 | Essential Excel | 1 |
| BOT 124 | Comprehensive Excel, Level II | 1 |
| BOT 125 | Comprehensive Excel, Level III | 1 |
| BOT 126 | Comprehensive Access, Level I | 1 |
| or | | |
| BOT 116 | Essential Access | 1 |
| BOT 127 | Comprehensive Access, Level II | 1 |
| BOT 129 | Comprehensive PowerPoint, Level I | 1 |
| or | | |
| BOT 117 | Essential PowerPoint | 1 |
| BOT 130 | Comprehensive PowerPoint, Level II | <u>1</u> |
| | Total Required | <u>12</u> |

CADD TECHNOLOGY

Occupational preparation in Computer Aided Drafting and Design is the primary purpose of the CADD Technology degree program. Students are required to complete two core courses and then to select from two potential career paths: Building Design Industry or Manufacturing Industry. Adherence to industrial practices and standards is stressed with problem solving in a simulated industrial environment. Lower division requirements for transfer to the Engineering Program at SDSU may also be met.

CAREER OPPORTUNITIES

CAD Technician in the field of Architecture and Civil, Electronic, Mechanical, Structural, and Surveying Engineering

Associate in Science Degree Requirements:

Core Curriculum

| Course | Title | Units |
|--------------|----------------------|----------|
| CADD 115 | Engineering Graphics | 3 |
| CADD 120ABCD | Basic CAD | 3 |
| | | <u>6</u> |

Areas of Emphasis:

A. BUILDING DESIGN INDUSTRY (Major Code: 53060)

| | | |
|----------|----------------------------|-----------|
| CADD 127 | Survey Drafting Technology | 3 |
| CADD 131 | Architectural AutoCAD | 3 |
| CADD 132 | 3D AutoCAD | 3 |
| CADD 133 | Architectural Revit | 3 |
| | | <u>12</u> |

Select two (2) of the following:

| | | |
|---------------|------------------------------|----------|
| CADD/ENGR 125 | 3D Parametric Solid Modeling | 3 |
| CADD 126 | Electronic Drafting | 3 |
| CADD 128 | Dimensioning and Tolerancing | 3 |
| | | <u>6</u> |

Total Required Including Core Classes 24
Plus General Education Requirements

B. MANUFACTURING INDUSTRY (Major Code: 53061)

| | | |
|---------------|------------------------------|----------|
| CADD/ENGR 125 | 3D Parametric Solid Modeling | 3 |
| CADD 126 | Electronic Drafting | 3 |
| CADD 128 | Dimensioning and Tolerancing | 3 |
| | | <u>9</u> |

Select two (2) of the following:

| | | |
|----------|----------------------------|----------|
| CADD 127 | Survey Drafting Technology | 3 |
| CADD 131 | Architectural AutoCAD | 3 |
| CADD 132 | 3D AutoCAD | 3 |
| CADD 133 | Architectural Revit | 3 |
| | | <u>6</u> |

Total Required Including Core Classes 21
Plus General Education Requirements

Certificate of Achievement

Students who complete only the courses required for the major including an area of emphasis qualify for a Certificate in CADD Technology in that area of emphasis. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

CHEMISTRY (Major Code: 59502)

The chemistry curriculum is designed to give students who choose to work toward a bachelor's degree a well-balanced, lower division program with a strong emphasis on fundamentals and problem solving. This major fulfills the lower division requirements (except for analytical chemistry) for chemistry majors and is typical of the requirements at four-year colleges and universities.

CAREER OPPORTUNITIES

Chemists work in a variety of fields, primarily those of the chemical, biotechnological, environmental, biomedical, pharmaceutical, electronics, forensic, agricultural and food industries. They usually work in analysis, research, development or production of materials. Management, marketing and teaching opportunities are also available.

*Agricultural Chemist
*Air Quality Control
*Analytical Chemist
*Biochemist
*Chemistry Teacher
*Dietician
*Environmental Technologist
 Fishery Specialist
*Food And Drug Inspector
*Forensic Specialist
 Laboratory Technician
*Materials Scientist
 Medical Technologist
*Microbiologist
*Organic Chemist
*Physician
*Polymer Chemist
 Sales Representative
 Sanitarian Technician

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|-------------------------------------|-----------|
| CHEM 141 | General Chemistry I | 5 |
| CHEM 142 | General Chemistry II | 5 |
| CHEM 231 | Organic Chemistry I | 5 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| PHYC 210 | Wave Motion and Modern Physics | 5 |
| | Total Required | <u>43</u> |
| | Plus General Education Requirements | |

NOTE:

- Students pursuing an emphasis in biochemistry should also take the following courses: BIO 210, 220, 221.
- Students who intend to enroll at UCSD should take MATH 285 and check with the Counseling Center regarding program options.

CHILD DEVELOPMENT

The child development curriculum is designed to prepare students for employment as teachers, directors and aides in preschools and child care centers, including infant/toddler and extended day facilities. Coursework meets the educational components of the Department of Social Services license regulations for child care programs. The degree meets the educational requirements of the Teacher, Master Teacher and Site Supervisor Child Development Permits. The courses are also appropriate for parents, administrators, health care professionals, and others working with children. Courses are designed to partially meet lower division course preparation for students planning a bachelor's degree in Child Development.

CAREER OPPORTUNITIES

- *Adoption Counselor
- Camping Guide
- Child Care Specialist
- *Child Psychologist
- Curriculum Development
- *Development Specialist (Child, Adolescent and Family)
- *Educational Consultant
- Infant/Toddler Teacher
- Outdoor Education Specialist
- Preschool Director
- Preschool Teacher
- Recreation Leader
- *Recreation Specialist
- School Age Child Care Teacher
- *Social Service Specialist
- Special Education Assistant – Children with Special Needs

*Bachelor Degree or higher required

I. CHILD DEVELOPMENT

The major consists of 27 units of core curriculum; remaining units are taken in an area of emphasis. Students must choose at least one area of emphasis. *All courses must be completed with a grade of "C" or better.*

Associate in Science Degree Requirements:

Core Curriculum

| Course | Title | Units |
|--------|---|-------|
| CD 123 | Introduction to Programs and Curriculum for Young Children | 3 |
| CD 125 | Child Growth and Development | 3 |
| CD 126 | Art for Child Development | 3 |
| CD 127 | Science and Mathematics for Child Development | 3 |
| CD 128 | Music and Movement for Child Development | 3 |
| CD 129 | Language and Literature for Child Development | 3 |
| CD 131 | Child, Family and Community | 3 |
| CD 134 | Health, Safety and Nutrition for Teachers of Young Children | 3 |
| CD 141 | Working with Children with Special Needs | 3 |
| | | 27 |

Areas of Emphasis:

A. INFANTS AND TODDLERS (Major Code: 55031)

| | | |
|--------|--|----|
| CD 124 | Infant and Toddler Development | 3 |
| CD 132 | Field Experience Seminar | 3 |
| CD 143 | Infant/Toddler Curriculum | 3 |
| CD 170 | Field Experience-Infants & Toddlers | 2 |
| | | 11 |
| | Total Required Including Core Classes Plus General Education Requirements | 38 |

B. PRESCHOOL CHILDREN (Major Code: 55030)

| | | |
|--------|--|----|
| CD 130 | Curriculum: Developmentally Appropriate Practices | 3 |
| CD 132 | Field Experience Seminar | 3 |
| CD 133 | Field Experience for Child Development | 2 |
| | | 8 |
| | Total Required Including Core Classes Plus General Education Requirements | 35 |

Recommended Electives and Continuing Education Units:

| | | |
|--------|--|---|
| CD 124 | Infant and Toddler Development | 3 |
| CD 135 | Parent-Child Interaction | 3 |
| CD 139 | Infant/Parent Development | 2 |
| CD 145 | Child Abuse and Family Violence in our Society | 3 |
| CD 157 | Food and Nutrition for Children | 3 |

Certificate of Achievement

Students who complete only the courses required for the major including an area of emphasis qualify for a Certificate in Child Development in that area of emphasis. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. SCHOOL AGE CHILD CARE (Major Code: 56032)

Designed to prepare students for employment in child care programs for elementary school age children. Certificate requirements meet the Title 22 licensing standards for teachers in school age child care programs. Some courses also meet prerequisites for students who wish to transfer to elementary education programs. *All courses must be completed with a grade of "C" or better.*

Associate in Science Degree Requirements:

| Course | Title | Units |
|--------|---|-------|
| CD 125 | Child Growth and Development | 3 |
| CD 131 | Child, Family and Community | 3 |
| CD 132 | Field Experience Seminar | 3 |
| CD 134 | Health, Safety and Nutrition for Teachers of Young Children | 3 |
| CD 148 | Curriculum for School Age Child Care | 3 |
| CD 149 | School Age Child Care Program Planning | 3 |
| CD 150 | Field Experience for School Age Child Care | 2 |
| | | 20 |

Select one (1) of the following:

| | | |
|----------|---|------------|
| CD 137 | Administration of Child Development Programs I | 3 |
| CD 141 | Working with Children with Special Needs | 3 |
| CD 145 | Child Abuse and Family Violence in our Society | 3 |
| CD 157 | Food and Nutrition for Children | 3 |
| ED 110 | Introduction to American Education | 3 |
| ES 253 | Physical Education in Elementary Schools | 3 |
| MATH 125 | Structure and Concepts of Elementary Mathematics I | 3 |
| MATH 126 | Structure and Concepts of Elementary Mathematics II | 3 |
| MUS 118 | Introduction to Music | 4 |
| | | <u>3-4</u> |
| | Total Required | 23-24 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in School Age Child Care. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

CERTIFICATES OF PROFICIENCY:**I. EARLY CHILDHOOD INTERVENTION**

(Major Code: 57128)

This certificate prepares students for entry-level positions and greater opportunities for advancement in the early childhood field. The certificate is designed to demonstrate an area of expertise in working with young children with special needs in typical early childhood programs and programs specifically designed for young children with special needs. *All courses must be completed with a grade of "C" or better.*

Career Opportunities

Students completing the certificate may find employment as an inclusion specialist, inclusion aide, or intervention assistant in a wide variety of programs serving young children with special needs. These programs include but are not limited to Head Start, State Preschools, special day classes, intervention programs, home visit programs, community-based programs such as park, recreation and camping programs, and faith-based early childhood programs.

Certificate Requirements:

| Course | Title | Units |
|---------|---|----------|
| CD 125* | Child Growth and Development | 3 |
| CD 134 | Health, Safety and Nutrition for Teachers of Young Children | 3 |
| CD 141 | Working with Children with Special Needs | 3 |
| | | <u>9</u> |

Select two (2) of the following:

| | | |
|---------|---|----------|
| CD 126* | Art for Child Development | 3 |
| CD 127* | Science and Mathematics for Child Development | 3 |
| CD 128* | Music and Movement for Child Development | 3 |
| CD 129* | Language and Literature for Child Development | 3 |
| CD 131* | Child, Family and Community | 3 |
| | | <u>6</u> |
| | Total Required | 15 |

*Meets the educational components of the Department of Social Services license regulations for child care programs.

Students who complete the requirements above qualify for a Certificate of Proficiency in Early Childhood Intervention. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. RECREATIONAL LEADERSHIP-**OUTDOOR PROGRAMS (Major Code: 57123)**

This certificate offers specific training for an entry-level position or for advancement in child care and outdoor programs for children and families. The certificate is designed to demonstrate an area of expertise that may be used to attain employment in outdoor recreational programs.

Career Opportunities

Students completing the certificate may find employment with schoolage child care programs and with public, private and commercial park and recreation agencies. They may work with agencies serving youth and families, and with leisure-related businesses and tourism agencies. Career opportunities include naturalists, outdoor education specialists, park interpreters, camping guides, arts and crafts leaders, and park and recreation class teachers and aides.

Certificate Requirements:

| Course | Title | Units |
|--------|--|-----------|
| CD 125 | Child Growth and Development | 3 |
| CD 157 | Food and Nutrition for Children | 3 |
| CD 200 | Introduction to Outdoor Education Programs | 1 |
| CD 201 | Creative Activities for Outdoor Programs | 1 |
| CD 202 | Field Experience for Recreational Leadership | 1 |
| ES 253 | Physical Education in Elementary Schools | 3 |
| ES 270 | Cooperative Games | 1 |
| | Total Required | <u>13</u> |

Students who complete the requirements above and hold a current First Aid/CPR certification qualify for a Certificate of Proficiency in Recreational Leadership-Outdoor Programs. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

COMMUNICATION (Major Code: 56004)

This degree program is designed to provide the student with a broad base of communication classes that will provide training for entry into occupations in which verbal skills are important. Major requirements for the four-year degree in Communication vary from institution to institution. Students should consult the catalog of the transfer institution for specific requirements.

CAREER OPPORTUNITIES

Advertising Assistant
Announcer
Arts Administrator
College Professor
Communication Consultant
Journalist
Lawyer
Lobbyist
Narrator
Personnel Trainer
Politician
Proofreader
Public Relations Assistant
Researcher
Sales Manager
Teacher/Instructor

Associate in Arts Degree Requirements:

| Course | Title | Units |
|----------|------------------------------------|-------|
| COMM 110 | Introduction to Mass Communication | 3 |
| COMM 120 | Interpersonal Communication | 3 |
| COMM 122 | Public Speaking | 3 |
| COMM 123 | Advanced Public Speaking | 3 |
| COMM 145 | Argumentation | 3 |
| | | 15 |

Select three (3) courses from the following:

| | | |
|-----------|---|----|
| COMM 124 | Intercultural Communication | 3 |
| COMM 128* | Global Communication | 3 |
| COMM 135 | Oral Interpretation: Analysis and Performance of Literature | 3 |
| COMM 136 | Readers Theatre | 3 |
| COMM 137 | Critical Thinking in Group Communication | 3 |
| COMM 144* | Interracial Communication | 3 |
| COMM 240A | Intercollegiate Forensics | 3 |
| COMM 240B | Intercollegiate Forensics | 3 |
| COMM 240C | Intercollegiate Forensics | 3 |
| COMM 240D | Intercollegiate Forensics | 3 |
| | | 9 |
| | Total Required | 24 |
| | Plus General Education Requirements | |

*Offered at Grossmont College

COMPUTATIONAL SCIENCE

(Major Code: 53130)

To meet the needs of the successful computer science, computational science or applied mathematics graduate, this degree program integrates the study of mathematical and computer sciences and prepares the student for immediate entry into a vocational field related to computer programming and/or further study in computer science, computational science or applied mathematics.

CAREER OPPORTUNITIES

*Actuary
*Computational Scientist
*Computer Engineer
*Mathematician
*Programmer Analyst
Semiconductor Technician
*Software Engineer
Software Technician
*Statistician
†Systems Analyst
*Systems Engineer
Technical Support Representative
*Bachelor Degree or higher required
†Bachelor Degree normally recommended

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|---|-------|
| CS 182 | Introduction to Java Programming | 4 |
| CS 282 | Intermediate Java Programming and Fundamental Data Structures | 4 |
| CS 289 | Computer Organization and Systems Programming | 4 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 245 | Discrete Mathematics | 3 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 284 | Linear Algebra | 3 |
| | | 27 |

Select one (1) of the following:

| | | |
|----------|---|-----|
| MATH 150 | Introduction to Computer Programming with FORTRAN | 3 |
| MATH 160 | Elementary Statistics | 3 |
| MATH 281 | Intermediate Calculus | 4 |
| | | 3-4 |

Select one (1) of the following sequences:

| | | |
|----------|-------------------------------------|-------|
| BIO 130* | General Biology I | 3 |
| BIO 131* | General Biology I Laboratory | 1 |
| BIO 210 | Biology II | 4 |
| | or | |
| CHEM 141 | General Chemistry I | 5 |
| CHEM 142 | General Chemistry II | 5 |
| | or | |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| PHYC 210 | Wave Motion and Modern Physics | 5 |
| | | 8-15 |
| | Total Required | 38-46 |
| | Plus General Education Requirements | |

*BIO 220 and 221 may be substituted for BIO 130 and 131

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Computational Science. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

COMPUTER AND INFORMATION SCIENCE

Students who wish to enroll in Microsoft applications (Word, Excel, PowerPoint) should refer to Business Office Technology.

CAREER OPPORTUNITIES

- Communications Specialist
- Computer Game Programmer
- Computer Graphics Designer
- Computer Hardware Specialist
- Computer Help Desk Technician
- Computer Maintenance Technician
- Computer Software Technician
- *Computer Systems Engineer
- *Computing Analyst
- Cyber Café Owner
- *Database Manager
- GIS (Geographic Information Systems) Specialist
- Information Specialist
- *Information Systems Programmer
- LAN/WAN Manager
- Manufacturer's Representative
- Multimedia Designer
- *Network Administrator
- *Network Analyst
- Network Consultant
- Network Control Technician
- Network Training and Support Specialist
- *Programmer Analyst
- Sales and Service
- *Scientific Programmer
- Software Consultant
- *Software Engineer/Designer
- *Systems Analyst
- *Systems Programmer
- Technical Support Representative
- *Telecommunications Programmer
- *Telecommunications Technician
- *Telecommunications Technical Engineer
- Training Specialist
- Virtual Reality Developer
- Web Master
- Web Page Designer
- *Bachelor Degree or higher required

Course Equivalencies:

The following Cuyamaca and Grossmont College courses are considered similar enough to be treated as equivalent. No Modification of Major forms will be required for the departments to accept these courses from our sister campus.

| Cuyamaca Course | Similar Grossmont Course | Cuyamaca Course | Similar Grossmont Course |
|-----------------|--------------------------|-----------------|--------------------------|
| BOT 120 | .CSIS 120 | CIS 191 | .CSIS 113 |
| BOT 120+121+122 | .CSIS 173 | CIS 201 | *CSIS 140 |
| BOT 121 | .CSIS 121 | CIS 211 | .CSIS 134 |
| BOT 122 | .CSIS 122 | CIS 215 | .CSIS 135 |
| BOT 123 | .CSIS 123 | CIS 221 | .CSIS 190 |
| BOT 123+124+125 | .CSIS 175 | CIS 230 | .CSIS 230 |
| BOT 124 | .CSIS 124 | CIS 240 | .CSIS 276 |
| BOT 125 | .CSIS 125 | CIS 270 | .CSIS 251 |
| BOT 126 | .CSIS 126 | CIS 291 | .CSIS 213 |
| BOT 127 | .CSIS 127 | CS 119 | .CSIS 119 |
| BOT 128 | .CSIS 128 | CS 180 | .CSIS 115 |
| BOT 129 | .CSIS 129 | CS 181 | .CSIS 296 |
| BOT 130 | .CSIS 130 | CS 182 | .CSIS 293 |
| BOT 131 | .CSIS 131 | CS 280 | .CSIS 155 |
| CIS 105 | .CSIS 172 | CS 281 | .CSIS 297 |
| CIS 110 | .CSIS 110 | CS 282 | .CSIS 294 |
| CIS 120 | .CSIS 114 | CS 289 | .CSIS 165 |
| CIS 140 | .CSIS 174 | GD 217 | .CSIS 217 |
| CIS 170A | .CSIS 151D | GD 222 | .CSIS 137 |
| CIS 190 | .CSIS 112 | | |

*Does not satisfy prerequisite to CIS 202

I. COMPUTER NETWORK ADMINISTRATION

(Major Code: 51134)

This degree program prepares students for careers in computer networking and related fields. Upon completion, students may find entry-level positions as network administrators, hardware technicians, data/voice/video cabling technicians, project managers, designers/estimators or as technical support personnel. Prepares students to work as team members in an information technology group which designs, evaluates, tests, installs and maintains corporate networks. Preparation for the following industry certifications: A+, Security+ and CCNA (Cisco Certified Network Associate).

Associate in Science Degree Requirements:

| Course | Title | Units |
|-----------|---|-------|
| CIS 120 | Computer Maintenance and A+ Certification | 3 |
| CIS 121 | Network Cabling Systems | 3 |
| CIS 140 | Databases | 3 |
| CIS 190 | Windows Operating System | 3 |
| CIS 191 | Linux Operating Systems | 3 |
| CIS 201 | Cisco Networking Academy I | 3 |
| CIS 202 | Cisco Networking Academy II | 3 |
| or | | |
| CIS 125 | Network+ Certification | 3 |
| CIS 263 | Fundamentals of Network Security | 3 |
| | | 24 |

Select one (1) of the following:

| | | |
|------------|--|-----|
| CIS 292 | UNIX Shell Programming | 2 |
| CS 119 | Program Design and Development | 3 |
| CS 180ABCD | Introduction to Visual Basic Programming | 4 |
| CS 182 | Introduction to Java Programming | 4 |
| | | 2-4 |

Select three (3) of the following:

| | | |
|-------------------------------------|---------------------------------|-------|
| CIS 203 | Cisco Networking Academy III | 3 |
| CIS 204 | Cisco Networking Academy IV | 3 |
| CIS 205 | Cisco Networking Academy V | 3 |
| CIS 212 | Introduction to Web Development | 3 |
| CIS 214 | Web Server Management | 3 |
| CIS 240 | Advanced Databases | 3 |
| CIS 262 | Fundamentals of Wireless LANs | 3 |
| CIS 290 | Windows System Administration | 3 |
| CIS 291 | Linux System Administration | 3 |
| | | 9 |
| Total Required | | 35-37 |
| Plus General Education Requirements | | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Computer Network Administration. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. TELECOMMUNICATIONS NETWORKING TECHNOLOGY (Major Code: 51143)

This degree program prepares students with the technical and management skills necessary to enter careers in design, application, installation, management, operation and/or maintenance of computer and telecommunications networking systems including convergent voice, data and video communications over IP networks. Graduates will have specific strengths in the building, testing, operation and maintenance of computer and telecommunications networking systems.

Associate in Science Degree Requirements:

| Course | Title | Units |
|-----------|---|-------|
| CIS 120 | Computer Maintenance and A+ Certification | 3 |
| CIS 121 | Network Cabling Systems | 3 |
| CIS 161 | Fundamentals of Telecommunications | 3 |
| CIS 162 | Network Diagramming Using MS Visio | 1 |
| CIS 190 | Windows Operating System | 3 |
| or | | |
| CIS 191 | Linux Operating Systems | 3 |
| CIS 201 | Cisco Networking Academy I | 3 |
| CIS 202 | Cisco Networking Academy II | 3 |
| or | | |
| CIS 125 | Network+ Certification | 3 |
| CIS 261 | Telecommunications and Convergence Technologies | 3 |
| CIS 262 | Fundamentals of Wireless LANs | 3 |
| CIS 263 | Fundamentals of Network Security | 3 |
| ENGR 270 | Digital Systems | 4 |
| ET 110 | Introduction to Basic Electronics | 4 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| | | 41 |

Select one (1) of the following:

| | | |
|------------|--|-------|
| CS 119 | Program Design and Development | 3 |
| CS 180ABCD | Introduction to Visual Basic Programming | 4 |
| CS 182 | Introduction to Java Programming | 4 |
| | | 3-4 |
| | Total Required | 44-45 |
| | Plus General Education Requirements | |

III. TELECOMMUNICATIONS NETWORKING TECHNICIAN (Major Code: 51144)

Certificate recipients will work in areas such as research, design, field service and technical support for telephone companies, low voltage cable installers, Internet service providers, cable and wireless communications companies, and communications equipment manufacturers.

Certificate Requirements:

| Course | Title | Units |
|-----------|---|-------|
| CIS 120 | Computer Maintenance and A+ Certification | 3 |
| CIS 121 | Network Cabling Systems | 3 |
| CIS 161 | Fundamentals of Telecommunications | 3 |
| CIS 162 | Network Diagramming Using MS Visio | 1 |
| CIS 190 | Windows Operating System | 3 |
| or | | |
| CIS 191 | Linux Operating Systems | 3 |
| CIS 201 | Cisco Networking Academy I | 3 |
| CIS 202 | Cisco Networking Academy II | 3 |
| or | | |
| CIS 125 | Network+ Certification | 3 |
| CIS 261 | Telecommunications and Convergence Technologies | 3 |
| CIS 262 | Fundamentals of Wireless LANs | 3 |
| CIS 263 | Fundamentals of Network Security | 3 |
| ET 110 | Introduction to Basic Electronics | 4 |
| | | 32 |

Select one (1) of the following:

| | | |
|------------|--|-------|
| CS 119 | Program Design and Development | 3 |
| CS 180ABCD | Introduction to Visual Basic Programming | 4 |
| CS 182 | Introduction to Java Programming | 4 |
| | | 3-4 |
| | Total Required | 35-36 |

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Telecommunications Networking Technician. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

IV. WEB DEVELOPMENT (Major Code: 51139)

This degree program provides students with practical experience creating websites and preparing them for entry-level positions as web designers, web programmers or web server administrators. The curriculum uses state of the art software and hardware typically found in the field of professional web development.

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|---------------------------------|-------|
| CIS 140 | Databases | 3 |
| CIS 211 | Web Markup Languages | 3 |
| CIS 212 | Introduction to Web Development | 3 |
| CIS 213 | Advanced Web Development | 3 |
| | | 12 |

Select two (2) of the following:

| | | |
|---------|-----------------------------------|-----|
| CIS 110 | Principles of Information Systems | 4 |
| CIS 190 | Windows Operating System | 3 |
| CIS 191 | Linux Operating Systems | 3 |
| CIS 214 | Web Server Management | 3 |
| CIS 290 | Windows System Administration | 3 |
| | | 6-7 |

Select two (2) of the following:

| | | |
|------------|--|-----|
| CIS 215 | JavaScript Programming | 3 |
| CIS 216 | Active Server Pages | 3 |
| CIS 219 | PHP/MySQL Dynamic Web-Based Applications | 3 |
| CS 119 | Program Design and Development | 3 |
| CS 180ABCD | Introduction to Visual Basic Programming | 4 |
| | | 6-7 |

Select three (3) of the following:

| | | |
|------------|--|-------|
| CIS 221 | Digital Video Editing and DVD Production | 3 |
| CIS 240 | Advanced Databases | 3 |
| CIS 267 | Directed Work Experience in CIS | 1-4 |
| GD 126ABCD | Photoshop Digital Imaging | 3 |
| GD 130 | Professional Business Practices | 3 |
| GD 210 | Professional Digital Photography I | 3 |
| GD 217 | Web Graphics | 3 |
| GD 222 | Flash Web Animation | 3 |
| GD 223 | Advanced Flash Web Animation | 3 |
| | | 7-10 |
| | Total Required | 31-36 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Web Development. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

CERTIFICATES OF PROFICIENCY:

These certificates offer specific training either for entry-level positions or to augment related programs such as Computer Network Administration, Web Development, Business Office Technology or Graphic Design. The certificates are designed to demonstrate a relatively narrow expertise or skill area that may be used to attain a computer industry "niche" job.

Students who complete the requirements below qualify for a Certificate of Proficiency in that area of emphasis. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

I. CISCO SYSTEMS (Major Code: 57114)**Certificate Requirements:**

| Course | Title | Units |
|---------|------------------------------|-------|
| CIS 201 | Cisco Networking Academy I | 3 |
| CIS 202 | Cisco Networking Academy II | 3 |
| CIS 203 | Cisco Networking Academy III | 3 |
| CIS 204 | Cisco Networking Academy IV | 3 |
| | Total Required | 12 |

II. COMPUTER PROGRAMMING (Major Code: 57115)**Certificate Requirements:**

| Course | Title | Units |
|------------|---|-------|
| CS 180ABCD | Introduction to Visual Basic Programming | 4 |
| CS 182 | Introduction to Java Programming | 4 |
| CS 280ABCD | Intermediate Visual Basic Programming | 4 |
| CS 282 | Intermediate Java Programming and Fundamental Data Structures | 4 |
| | Total Required | 16 |

III. NETWORK SERVICING TECHNOLOGY

(Major Code: 57117)

Certificate Requirements:

| Course | Title | Units |
|---------|---|-------|
| CIS 120 | Computer Maintenance and A+ Certification | 3 |
| CIS 121 | Network Cabling Systems | 3 |
| CIS 201 | Cisco Networking Academy I | 3 |
| CIS 202 | Cisco Networking Academy II | 3 |
| | or | |
| CIS 125 | Network+ Certification | 3 |
| | | 12 |

Select one (1) of the following:

| | | |
|---------|--------------------------|----|
| CIS 190 | Windows Operating System | 3 |
| CIS 191 | Linux Operating Systems | 3 |
| | | 3 |
| | Total Required | 15 |

IV. OPERATING SYSTEMS (Major Code: 57118)**Certificate Requirements:**

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-------------------------------|--------------|
| CIS 190 | Windows Operating System | 3 |
| CIS 191 | Linux Operating Systems | 3 |
| CIS 290 | Windows System Administration | 3 |
| CIS 291 | Linux System Administration | 3 |
| CIS 292 | UNIX Shell Programming | 2 |
| | Total Required | 14 |

V. TELECOMMUNICATIONS SERVICING TECHNOLOGY (Major Code: 57122)**Certificate Requirements:**

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| CIS 120 | Computer Maintenance and A+ Certification | 3 |
| CIS 121 | Network Cabling Systems | 3 |
| CIS 161 | Fundamentals of Telecommunications | 3 |
| CIS 201 | Cisco Networking Academy I | 3 |
| CIS 202 | Cisco Networking Academy II | 3 |
| or | | |
| CIS 125 | Network+ Certification | 3 |
| | Total Required | 15 |

VI. WEB DESIGN (Major Code: 57119)**Certificate Requirements:**

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---------------------------------|--------------|
| CIS 211 | Web Markup Languages | 3 |
| CIS 212 | Introduction to Web Development | 3 |
| CIS 213 | Advanced Web Development | 3 |
| | | 9 |

Select two (2) of the following:

| | | |
|------------|------------------------------------|----|
| CIS 215 | JavaScript Programming | 3 |
| GD 126ABCD | Photoshop Digital Imaging | 3 |
| GD 210 | Professional Digital Photography I | 3 |
| GD 217 | Web Graphics | 3 |
| GD 222 | Flash Web Animation | 3 |
| GD 223 | Advanced Flash Web Animation | 3 |
| | | 6 |
| | Total Required | 15 |

VII. WEB PROGRAMMING (Major Code: 57120)**Certificate Requirements:**

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|----------------------|--------------|
| CIS 140 | Databases | 3 |
| CIS 211 | Web Markup Languages | 3 |
| | | 6 |

Select three (3) of the following:

| | | |
|---------|--|-------|
| CIS 215 | JavaScript Programming | 3 |
| CIS 216 | Active Server Pages | 3 |
| CIS 219 | PHP/MySQL Dynamic Web-Based Applications | 3 |
| CIS 240 | Advanced Databases | 3 |
| CS 119 | Program Design and Development | 3 |
| and | | |
| CS 119L | Program Design and Development Lab | 1 |
| GD 223 | Advanced Flash Web Animation | 3 |
| | | 9-10 |
| | Total Required | 15-16 |

VIII. WEB SERVER MANAGEMENT (Major Code: 57121)**Certificate Requirements:**

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-------------------------------|--------------|
| CIS 191 | Linux Operating Systems | 3 |
| CIS 211 | Web Markup Languages | 3 |
| CIS 290 | Windows System Administration | 3 |
| | | 9 |

Select one (1) of the following:

| | | |
|---------|----------------------------|---|
| CIS 125 | Network+ Certification | 3 |
| CIS 201 | Cisco Networking Academy I | 3 |
| | | 3 |

Select one (1) of the following:

| | | |
|---------|--|----|
| CIS 215 | JavaScript Programming | 3 |
| CIS 216 | Active Server Pages | 3 |
| CIS 219 | PHP/MySQL Dynamic Web-Based Applications | 3 |
| | | 3 |
| | Total Required | 15 |

ELEMENTARY EDUCATION

(Major Code: 59504)

This degree program is designed to provide lower division preparation for transfer to San Diego State University as a Liberal Studies major. Students interested in transferring to another college or university should check the requirements of that institution.

Students who complete the program will receive an Associate Degree in Elementary Education and may request certification of lower division general education coursework required by the California State University system.

Because the program emphasizes a strong general education approach, it may be an appropriate major for a variety of career options. Students are encouraged to refer to the San Diego State University catalog and/or consult with an academic advisor before selecting the various options listed below.

CAREER OPPORTUNITIES

- *Administrator
 - Audiovisual Specialist
 - School Clerical Worker
 - *Counselor
 - *Educational Consultant
 - *Educational Psychologist
 - *Educational Therapist
 - *Educational Writer
 - Food Service
 - *Guidance Worker
 - *Librarian
 - Library Technician
 - *Social Psychologist
 - *Speech Pathologist/Audiologist
 - *Teacher
 - Teacher's Aide
 - Tutor
- *Bachelor Degree or higher required

Associate in Arts Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|--------------|--------------|
|---------------|--------------|--------------|

COMPOSITION, ORAL COMMUNICATION, AND LITERATURE

| | | |
|---|--|---|
| 1. Composition (minimum 6 units) | | |
| ENGL 120 and | College Composition and Reading | 3 |
| ENGL 124* or | Advanced Composition: Critical Reasoning and Writing | 3 |
| PHIL 125 or | Critical Thinking | 3 |
| PHIL 130 | Logic | 3 |
| 2. Communication (minimum 3 units) | | |
| COMM 120 | Interpersonal Communication | 3 |
| COMM 122 | Public Speaking | 3 |
| 3. Literature (minimum 3 units) | | |
| ENGL 122 | Introduction to Literature | 3 |
| ENGL 270 | World Literature I | 3 |
| ENGL 271 | World Literature II | 3 |

MATHEMATICS AND SCIENCES

| | | |
|---|---|-----|
| 4. Mathematics (minimum 7.5 units) | | |
| MATH 125 | Structure and Concepts of Elementary Mathematics I | 3 |
| MATH 126 | Structure and Concepts of Elementary Mathematics II | 3 |
| MATH 128 | Children's Mathematical Thinking | 1.5 |

| | | |
|---|--|---|
| 5. Biological Sciences (minimum 4 units) | | |
| BIO 128 or | Principles of Biology for Future Educators | 4 |
| BIO 130 and | General Biology I | 3 |
| BIO 131 | General Biology I Laboratory | 1 |

| | | |
|---|---------------|---|
| 6. Physical Sciences (minimum 3 units) | | |
| GEOL 104 | Earth Science | 3 |

SOCIAL SCIENCE AND HISTORY

| | | |
|--|--------------------------|---|
| 7. Global Perspective (minimum 3 units) | | |
| GEOG 106 | World Regional Geography | 3 |

| | | |
|---|-------------------------|---|
| 8. American Institutions (minimum 6 units) | | |
| HIST 108 and | Early American History | 3 |
| HIST 109 | Modern American History | 3 |
| <i>For other options, see a counselor</i> | | |

| | | |
|---|---------------------|---|
| 9. Civilizations (minimum 3 units) | | |
| HIST 100 | Early World History | 3 |

VISUAL AND PERFORMING ARTS/HUMANITIES

| | | |
|------------------------------------|---------------------------|---|
| 10. Music (minimum 4 units) | | |
| MUS 001 | Rudiments of Musicianship | 4 |
| MUS 118 | Introduction to Music | 4 |

| | | |
|---|------------------|---|
| 11. Art/Humanities (minimum 3 units) | | |
| ART 100 | Art Appreciation | 3 |

| | | |
|--|------------------------------|---|
| 12. Human Growth and Development (choose one option): | | |
| <u>Option I:</u> | | |
| CD 125 | Child Growth and Development | 3 |
| <u>Option II:</u> | | |
| PSY 120 and | Introductory Psychology | 3 |
| PSY 165 | Developmental Psychology | 3 |

| | | |
|---|--|--|
| 13. General Education/Humanities (choose one option): | | |
| <u>Option I:</u> 3rd semester of a foreign language: FREN 220, SPAN 220, ARBC 220 or ASL 220. | | |

Option II: If 3rd or 4th year foreign language in high school has been completed, choose 3 units from RELG 120, 130 or PHIL 140.

Option III: If 3rd or 4th year foreign language in high school has been completed, choose 1st semester of a *different* foreign language (FREN 120, SPAN 120, ARBC 120 or ASL 120.)

| | | |
|--|--|-----------|
| 14. Additional Requirements (minimum 6 units) | | |
| ES 253 | Physical Education in Elementary Schools | 3 |
| HED 120 | Personal Health and Lifestyles | 3 |
| ES Activity** | (At least two courses) | 2-3 |
| Total Required | | 59.5-65.5 |

*Preferred

**To fulfill a major requirement, all courses, including Exercise Science (ES) activity courses, must be taken for a letter grade. Courses taken for Credit/No Credit will not fulfill major requirements.

ENGINEERING

This degree program is designed to cover the first two years of a four-year program leading to the Bachelor's Degree in Engineering at most four-year colleges and universities. While the bachelor's degree is usually the minimum needed to practice as an engineer, the associate degree will permit an individual to find work in most engineering firms as an engineering aide. The certificate will permit an individual to work as an engineering technician.

CAREER OPPORTUNITIES

- * Aerospace Engineer
 - * Agricultural Engineer
 - * Architectural Engineer
 - * Biomedical Engineer
 - * CAD/CAM Engineer
 - * Chemical Engineer
 - * Civil Engineer
 - Civil Engineering Technician
 - * Computer Engineer
 - * Electrical Engineer
 - Electrical Engineering Technician
 - * Environmental Engineer
 - * Geological Engineer
 - * Industrial Engineer
 - Industrial Engineering Technician
 - * Manufacturing Engineer
 - * Marine Engineer
 - * Materials Engineer
 - * Mechanical Engineer
 - Mechanical Engineering Technician
 - * Mining Engineer
 - * Nuclear Engineer
 - * Petroleum Engineer
 - * Structural Engineer
 - * Systems Engineer
 - * Robotics Engineer
- * Bachelor's degree or higher required

I. CIVIL ENGINEERING (Major Code: 53132)

Associate in Science Degree Requirements:

| Course | Title | Units |
|-------------------------------------|--|-------|
| CHEM 141 | General Chemistry I | 5 |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| or | | |
| CADD 115 | Engineering Graphics | 3 |
| ENGR 119 | Basic Engineering CAD | 3 |
| or | | |
| CADD 120ABCD | Basic CAD | 3 |
| ENGR 120 | Engineering Computer Applications | 3 |
| ENGR 200 | Engineering Mechanics–Statics | 3 |
| ENGR 218 | Plane Surveying | 4 |
| or | | |
| SURV 218 | Plane Surveying | 4 |
| ENGR 220 | Engineering Mechanics–Dynamics | 3 |
| MATH 160 | Elementary Statistics | 3 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| MATH 285 | Differential Equations | 3 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| Total Required | | 52-53 |
| Plus General Education Requirements | | |

II. CIVIL ENGINEERING (Major Code: 53133)

Certificate Requirements:

| Course | Title | Units |
|----------------|--|-------|
| CADD 127 | Survey Drafting Technology | 3 |
| CHEM 141 | General Chemistry I | 5 |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| or | | |
| CADD 115 | Engineering Graphics | 3 |
| ENGR 119 | Basic Engineering CAD | 3 |
| or | | |
| CADD 120ABCD | Basic CAD | 3 |
| ENGR 120 | Engineering Computer Applications | 3 |
| ENGR 200 | Engineering Mechanics–Statics | 3 |
| ENGR 218 | Plane Surveying | 4 |
| or | | |
| SURV 218 | Plane Surveying | 4 |
| ENGR 220 | Engineering Mechanics–Dynamics | 3 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| PHYC 190 | Mechanics and Heat | 5 |
| Total Required | | 40-41 |

Certificate of Achievement

Students who complete the certificate requirements above qualify for a Certificate in Civil Engineering. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. ELECTRICAL AND COMPUTER ENGINEERING

(Major Code: 53134)

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|-------------------------------------|---|--------------|
| CHEM 141 | General Chemistry I | 5 |
| CS 181 | Introduction to C++ Programming | 4 |
| or | | |
| CS 182 | Introduction to Java Programming | 4 |
| CS 281 | Intermediate C++ Programming | 4 |
| or | | |
| CS 282 | Intermediate Java Programming and Fundamental Data Structures | 4 |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| or | | |
| CADD 115 | Engineering Graphics | 3 |
| ENGR 210 | Electric Circuits | 3 |
| ENGR 270 | Digital Systems | 4 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| MATH 284 | Linear Algebra | 3 |
| MATH 285 | Differential Equations | 3 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| Total Required | | 51-52 |
| Plus General Education Requirements | | |

IV. ELECTRICAL AND COMPUTER ENGINEERING

(Major Code: 53135)

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|----------------|--|--------------|
| CADD 126 | Electronic Drafting | 3 |
| CS 181 | Introduction to C++ Programming | 4 |
| or | | |
| CS 182 | Introduction to Java Programming | 4 |
| CS 281 | Intermediate C++ Programming | 4 |
| or | | |
| CS 282 | Intermediate Java Programming and Functional Data Structures | 4 |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| or | | |
| CADD 115 | Engineering Graphics | 3 |
| ENGR 119 | Basic Engineering CAD | 3 |
| or | | |
| CADD 120ABCD | Basic CAD | 3 |
| ENGR 210 | Electric Circuits | 3 |
| ENGR 270 | Digital Systems | 4 |
| ET 110 | Introduction to Basic Electronics | 4 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 284 | Linear Algebra | 3 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| Total Required | | 49-50 |

Certificate of Achievement

Students who complete the certificate requirements above qualify for a Certificate in Electrical and Computer Engineering. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

V. MECHANICAL AND AEROSPACE ENGINEERING

(Major Code: 53136)

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|-------------------------------------|--|--------------|
| CHEM 141 | General Chemistry I | 5 |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| or | | |
| CADD 115 | Engineering Graphics | 3 |
| ENGR 119 | Basic Engineering CAD | 3 |
| or | | |
| CADD 120ABCD | Basic CAD | 3 |
| ENGR 120 | Engineering Computer Applications | 3 |
| ENGR 200 | Engineering Mechanics–Statics | 3 |
| ENGR 210 | Electric Circuits | 3 |
| ENGR 220 | Engineering Mechanics–Dynamics | 3 |
| ENGR 260 | Engineering Materials | 3 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| MATH 285 | Differential Equations | 3 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| PHYC 210 | Wave Motion and Modern Physics | 5 |
| Total Required | | 56-57 |
| Plus General Education Requirements | | |

VI. MECHANICAL AND AEROSPACE ENGINEERING

(Major Code: 53137)

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|----------------|--|--------------|
| CHEM 141 | General Chemistry I | 5 |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| or | | |
| CADD 115 | Engineering Graphics | 3 |
| ENGR 119 | Basic Engineering CAD | 3 |
| or | | |
| CADD 120ABCD | Basic CAD | 3 |
| ENGR 120 | Engineering Computer Applications | 3 |
| ENGR 125 | 3D Parametric Solid Modeling | 3 |
| or | | |
| CADD 125 | 3D Parametric Solid Modeling | 3 |
| ENGR 200 | Engineering Mechanics–Statics | 3 |
| ENGR 220 | Engineering Mechanics–Dynamics | 3 |
| ENGR 260 | Engineering Materials | 3 |
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| PHYC 190 | Mechanics and Heat | 5 |
| Total Required | | 39-40 |

Certificate of Achievement

Students who complete the certificate requirements above qualify for a Certificate in Mechanical and Aerospace Engineering. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

ENGLISH (Major Code: 51037)

This major fulfills lower division requirements at most four-year colleges and universities and thus provides a broad-based foundation for transfer. For particular requirements, transfer students should consult the appropriate four-year college or university catalog.

The study of English gives lifelong pleasure to students in exploring and understanding how language works to express human ideas and feelings. English course work also helps people succeed in such diverse fields as teaching, writing, editing, journalism, advertising, public relations, law, film and video work, politics, business and medicine.

CAREER OPPORTUNITIES

- Actor/Actress
- * College English Professor
- * Copywriter
- * Editor
 - Fiction/Nonfiction Writer
 - Foreign Service Officer
- †Freelance Writer
- * Lawyer
- * Librarian
- * Media Planner
- * Museum Curator
- †Newscaster
- †Playwright
- * Publisher
- * Reporter
- * Researcher
- * Secondary School Teacher

- * Bachelor Degree or higher required
- †Bachelor Degree normally recommended

Associate in Arts Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| ENGL 120 | College Composition and Reading | 3 |
| ENGL 122 | Introduction to Literature | 3 |
| ENGL 124 | Advanced Composition: Critical Reasoning and Writing | 3 |
| ENGL 126 | Creative Writing | 3 |
| ENGL 270 | World Literature I | 3 |
| ENGL 271 | World Literature II | 3 |
| | | 18 |

Select two (2) of the following:

| | | |
|----------|------------------------|---|
| ENGL 221 | British Literature I | 3 |
| ENGL 222 | British Literature II | 3 |
| ENGL 231 | American Literature I | 3 |
| ENGL 232 | American Literature II | 3 |
| ENGL 275 | Literary Period | 3 |
| ENGL 276 | Major Author | 3 |
| ENGL 277 | Literary Theme | 3 |
| | | 6 |

Select one (1) of the following:

| | | |
|----------|--|---|
| ENGL 201 | Introduction to Images of Women in Literature | 3 |
| ENGL 202 | Introduction to Film as Literature | 3 |
| ENGL 207 | Romantic Fiction | 3 |
| ENGL 214 | Masterpieces of Drama | 3 |
| ENGL 217 | Fantasy and Science Fiction Survey | 3 |
| | | 3 |

Select one (1) of the following:

| | | |
|----------|-------------------------------------|----|
| ANTH 120 | Cultural Anthropology | 3 |
| HIST 100 | Early World History | 3 |
| HIST 101 | Modern World History | 3 |
| HIST 105 | Early Western Civilization | 3 |
| HIST 106 | Modern Western Civilization | 3 |
| HUM 120 | European Humanities | 3 |
| HUM 140 | American Humanities | 3 |
| HUM 155 | Mythology | 3 |
| PHIL 115 | History of Philosophy I | 3 |
| PHIL 117 | History of Philosophy II | 3 |
| RELG 215 | Introduction to the New Testament | 3 |
| | | 3 |
| | Total Required | 30 |
| | Plus General Education Requirements | |

Recommended Electives:

Students planning to transfer to four-year institutions to complete a bachelor's degree in English are STRONGLY urged to take the following courses, depending on the requirements at those schools:

| | |
|--|----|
| Two (2) sequential semesters of a single foreign language | 10 |
|--|----|

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in English. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

ENTREPRENEURSHIP—SMALL BUSINESS MANAGEMENT

(Major Code: 50047)

This curriculum provides a course of study for students who are interested in working toward an associate degree or certificate while developing an appreciation and understanding of the functional areas within the small business environment. This degree program provides a working knowledge of small business operations to both the prospective business person as well as the owner/manager of an existing business, and is co-sponsored by the Small Business Administration.

CAREER OPPORTUNITIES

Administrative Assistant
Assistant Manager
Bookkeeper
Small Business Owner/Manager

Associate in Science Degree Requirements:

| Course | Title | Units |
|-----------|--|-------|
| BUS 109 | Elementary Accounting | 3 |
| or | | |
| BUS 120 | Financial Accounting | 4 |
| BUS 110 | Introduction to Business | 3 |
| BUS 111 | Entrepreneurship: Starting and Developing a Business | 3 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| BUS 128 | Business Communication | 3 |
| | | 15-16 |

Select two (2) of the following:

| | | |
|---------|--|-----|
| BUS 112 | Entrepreneurship: Successful Marketing | 3 |
| BUS 141 | Entrepreneurship: Managing a New Business | 3 |
| BUS 146 | Marketing | 3 |
| BUS 156 | Principles of Management | 3 |
| BUS 176 | Computerized Accounting Applications | 2 |
| CIS 212 | Introduction to Web Development | 3 |
| | | 5-6 |

Select at least three (3) units from the following:

| | | |
|-----------|---|-------|
| BOT 095 | Keyboarding Skill Reinforcement | 1 |
| BOT 096 | Computer Basics for the Office | 1 |
| BOT 097 | Windows Basics for the Office | 1 |
| BOT 100 | Basic Keyboarding | 1 |
| BOT 101AB | Keyboarding/Document Processing | 1.5 |
| BOT 102AB | Intermediate Keyboarding/Document Processing I-II | 3 |
| BOT 114 | Essential Word | 1 |
| BOT 115 | Essential Excel | 1 |
| BOT 116 | Essential Access | 1 |
| BOT 117 | Essential PowerPoint | 1 |
| CIS 105 | Introduction to Computing | 3 |
| CIS 110 | Principles of Information Systems | 4 |
| | | 3 |
| | Total Required | 23-25 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Entrepreneurship—Small Business Management. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

ENVIRONMENTAL HEALTH AND SAFETY TECHNOLOGY

This degree and certificate program provides entry level skills as well as upgrading/refining existing skills of individuals employed in the field of Environmental Technology. The curriculum prepares students for transfer to four-year institutions in an Environmental Technology or related major. Courses are designed for students pursuing careers in Environmental Management and Occupational Safety and Health with an emphasis on training, regulatory compliance and program development, consulting, pollution prevention, recycling, remediation, conservation and program management.

CAREER OPPORTUNITIES

*Air Quality Engineer
Asbestos Materials Building Remover
Associate Toxic Waste Specialist
Chemical Handler
*Environmental Engineer
Environmental Hazardous Material Technician
Environmental Health and Safety Specialist
*Environmental Journalist
*Environmental Lawyer
Environmental Manager
*Environmental Protection Specialist
Environmental Research – Test Technician
Game or Fishery Technician
*Geologist
Health and Safety Technician
Industrial Hygiene Technician
Land Use and Planning Technician
Mold Remediation Technician
Occupational Health and Safety Technician
Pollution Control Technician
Recycling Coordinator
Risk Management Officer
Risk Management Technician
Safety Officer
Safety Specialist
*Soils Analyst
Solar Energy Installer
Wastewater Treatment Operator
Water Treatment Operator
*Bachelor Degree or higher required

I. ENVIRONMENTAL MANAGEMENT

(Major Code: 51046)

Associate in Science Degree Requirements:

| Course | Title | Units |
|-----------|---|--------------|
| BIO 112 | Contemporary Issues in Environmental Resources | 3 |
| BIO 130 | General Biology I | 3 |
| BIO 131 | General Biology I Laboratory | 1 |
| CHEM 115 | Fundamentals of Chemistry | 4 |
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 150 | Hazardous Waste Management Applications | 4 |
| ENVT 200 | Hazardous Materials Management (HMM) Applications | 4 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| ENVT 215 | Air Quality Management | 3 |
| ENVT 230 | Safety and Emergency Response | 4 |
| ENVT 240* | Cooperative Work Experience | 1-4 |
| | | <u>38-41</u> |

Select one (1) of the following:

| | | |
|----------|-------------------------------------|------------|
| CIS 110 | Principles of Information Systems | 4 |
| COMM 122 | Public Speaking | 3 |
| SPAN 120 | Spanish I | 5 |
| | | <u>3-5</u> |
| | Total Required | 41-46 |
| | Plus General Education Requirements | |

*Student must complete ENVT 100 to be eligible for this course

II. ENVIRONMENTAL TECHNICIAN

(Major Code: 51047)

Certificate Requirements:

| Course | Title | Units |
|-----------|---|--------------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 150 | Hazardous Waste Management Applications | 4 |
| ENVT 200 | Hazardous Materials Management (HMM) Applications | 4 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| ENVT 215 | Air Quality Management | 3 |
| ENVT 230 | Safety and Emergency Response | 4 |
| ENVT 240* | Cooperative Work Experience | 1-3 |
| | Total Required | <u>27-29</u> |

*Student must complete ENVT 100 to be eligible for this course

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Environmental Technician. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. OCCUPATIONAL SAFETY AND HEALTH**(OSH) MANAGEMENT** (Major Code: 51048)**Associate in Science Degree Requirements:**

| Course | Title | Units |
|-----------|---|--------------|
| BIO 130 | General Biology I | 3 |
| BIO 131 | General Biology I Laboratory | 1 |
| CHEM 115 | Fundamentals of Chemistry | 4 |
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 130 | Environmental/Occupational Health Effects of Hazardous Materials | 3 |
| ENVT 135 | General Industry Safety Standards | 3 |
| ENVT 145 | Construction Safety Standards | 3 |
| ENVT 200 | Hazardous Materials Management (HMM) Applications | 4 |
| ENVT 201 | Introduction to Industrial Hygiene and Occupational Health | 4 |
| ENVT 205 | Safety and Risk Management Administration | 4 |
| ENVT 230 | Safety and Emergency Response | 4 |
| ENVT 240* | Cooperative Work Experience | 1-4 |
| | | <u>38-41</u> |

Select one (1) of the following:

| | | |
|----------|-------------------------------------|------------|
| CIS 110 | Principles of Information Systems | 4 |
| COMM 122 | Public Speaking | 3 |
| SPAN 120 | Spanish I | 5 |
| | | <u>3-5</u> |
| | Total Required | 41-46 |
| | Plus General Education Requirements | |

*Student must complete ENVT 100 to be eligible for this course

IV. OCCUPATIONAL SAFETY AND HEALTH (OSH)**TECHNICIAN** (Major Code: 51049)**Certificate Requirements:**

| Course | Title | Units |
|-----------|---|--------------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 130 | Environmental/Occupational Health Effects of Hazardous Materials | 3 |
| ENVT 135 | General Industry Safety Standards | 3 |
| ENVT 200 | Hazardous Materials Management (HMM) Applications | 4 |
| ENVT 201 | Introduction to Industrial Hygiene and Occupational Health | 4 |
| ENVT 240* | Cooperative Work Experience | 1-4 |
| | | <u>19-22</u> |

Select two (2) of the following:

| | | |
|----------|---|------------|
| ENVT 145 | Construction Safety Standards | 3 |
| ENVT 205 | Safety and Risk Management Administration | 4 |
| ENVT 230 | Safety and Emergency Response | 4 |
| | | <u>7-8</u> |
| | Total Required | 26-30 |

*Student must complete ENVT 100 to be eligible for this course

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Occupational Safety and Health (OSH) Technician. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

EXERCISE SCIENCE (Major Code: 52001)

This degree program is designed to prepare students for a variety of careers including education, physical therapy, coaching, personal training and other allied health professions by providing classes oriented toward fitness, wellness and health promotion throughout the lifespan. The major also provides preparation for transfer to a four-year college in physical education, exercise physiology, kinesiology, nutrition or athletic training, as well as teacher credentialing programs.

CAREER OPPORTUNITIES

- Aerobics Instructor
- Athletics Coach
- *Athletics Trainer
- *Cardiovascular Rehabilitation
- *College Professor
- *Elementary School Teacher
- *Exercise Physiologist
- *Health Club Manager
- Personal Trainer
- *Physical Therapist/ Assistant
- *Registered Dietician
- *Secondary School Teacher
- *Teaching

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|-----------|--|-------|
| BIO 130 | General Biology I | 3 |
| BIO 131 | General Biology I Laboratory | 1 |
| BIO 140 | Human Anatomy | 5 |
| CHEM 115 | Fundamentals of Chemistry | 4 |
| COMM 122 | Public Speaking | 3 |
| ES 014ABC | Body Building | 1.5 |
| ES 250 | Introduction to Physical Education | 2 |
| ES 255 | Care and Prevention of Athletic Injuries | 3 |
| HED 158 | Nutrition for Athletes | 3 |
| PSY 120 | Introductory Psychology | 3 |
| SOC 120 | Introductory Sociology | 3 |
| | | 31.5 |

Select one (1) of the following:

| | | |
|----------|--|---|
| BIO 215 | Statistics for Life Sciences | 3 |
| MATH 160 | Elementary Statistics | 3 |
| PSY 215 | Statistics for the Behavioral Sciences | 3 |
| | | 3 |

Select two (2) of the following (fulfills the activity requirement for the Associate Degree):

| | | |
|-----------|-------------------------------------|---------|
| ES 001 | Adapted Physical Exercise | 1 |
| ES 009 | Aerobic Dance Exercise | 1 |
| ES 019ABC | Physical Fitness | 1.5 |
| ES 060ABC | Badminton | 1 |
| ES 076ABC | Tennis | 1 |
| ES 125ABC | Golf | 1 |
| ES 155ABC | Basketball | 1 |
| ES 170ABC | Soccer | 1 |
| ES 171ABC | Softball | 1 |
| ES 175ABC | Volleyball | 1 |
| | | 2-2.5 |
| | Total Required | 36.5-37 |
| | Plus General Education Requirements | |

CERTIFICATE OF PROFICIENCY:

RECREATIONAL LEADERSHIP-

SCHOOL-BASED PROGRAMS (Major Code: 57124)

This certificate offers specific training for an entry-level position or for advancement in child care and outdoor programs for children and families. It is designed to demonstrate an area of expertise that may be used to attain employment in areas of school-based recreation and fitness programs.

CAREER OPPORTUNITIES

The certificate is designed to prepare an individual for a position in an elementary or middle school, YMCA, recreation center, day or residential camp, or after school day care program. This is great "stepping-stone" training for anyone who wants to major in Exercise Science, Recreation Elementary Education or Child Development, providing the student with the expertise to enter the entry-level job market with knowledge of sound principles of fitness and developmentally appropriate recreation.

Certificate Requirements:

| Course | Title | Units |
|--------|--|-------|
| CD 125 | Child Growth and Development | 3 |
| CD 157 | Food and Nutrition for Children | 3 |
| ES 253 | Physical Education in Elementary Schools | 3 |
| ES 270 | Cooperative Games | 1 |
| ES 271 | Fitness Walking with Children | 1 |
| ES 272 | Issues in Childhood Obesity | 1 |
| ES 273 | Field Experience in School-Based Recreational Leadership | 1 |
| | Total Required | 13 |

Students who complete the requirements above and hold a current First Aid/CPR certification qualify for a Certificate of Proficiency in Recreational Leadership-School-Based Programs. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

GENERAL MAJOR

The primary purpose of the General Major is to meet the needs of students who have not decided on a specific career path or who wish to transfer to a four-year institution as an undeclared major while earning an associate degree. Outlined below are the requirements for the General Major degrees in both the Associate in Arts and Associate in Science.

GENERAL MAJOR FOR THE ASSOCIATE IN ARTS DEGREE (Major Code: 59301)

The program of study consists of 18 or more units in a single discipline or related discipline designed to meet the student's individual needs. Courses in which a "CR" has been earned may not be applied toward the above requirements. Students should consult a counselor for aid in developing this program of study.

The General Major might consist of courses in preparation for transfer to a specific major in another institution or groupings of general, occupational and technical courses which would best prepare students for employment.

GENERAL MAJOR FOR THE ASSOCIATE IN SCIENCE DEGREE (Major Code: 59302)

The program of study consists of 18 or more units in MATH 103 or higher and/or natural science courses. Courses in which a "CR" has been earned may not be applied toward the above requirement.

GRAPHIC DESIGN (Major Code: 50127)

Students in this degree program develop entry level skills in design aesthetics, typography, illustration, digital imaging, page layout, web design and professional business practices. Courses provide training with state of the art computer hardware and software used in the graphic design profession. Students develop a professional portfolio for job interviews.

Designed for a two-year degree or certificate only. Students interested in pursuing a bachelor's degree in Graphic Design should refer to "Art-Graphic Design (Transfer)." Students should also consult the catalog of the transfer institution for specific requirements.

CAREER OPPORTUNITIES

Graphic Designer
Illustrator
Web Page Designer
Technical Illustrator
Package Designer
Display Designer
Cartoonist
Desktop Publisher
*Advertising Director
*Art Director
*Marketing Director
Multimedia Designer

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|------------|---------------------------------|----------|
| ART 124 | Drawing I | 3 |
| CIS 212 | Introduction to Web Development | 3 |
| GD 105 | Fundamentals of Digital Media | 3 |
| GD 110 | Graphic Design Principles | 3 |
| GD 125 | Typography | 3 |
| GD 126ABCD | Photoshop Digital Imaging | 3 |
| GD 129 | Page Layout | 3 |
| GD 130 | Professional Business Practices | 3 |
| GD 225 | Digital Illustration | 3 |
| | | <hr/> 27 |

Select three (3) of the following:

| | | |
|---------|-------------------------------------|------------|
| ART 230 | Figure Drawing I | 3 |
| GD 210 | Professional Digital Photography I | 3 |
| GD 211 | Professional Digital Photography II | 3 |
| GD 217 | Web Graphics | 3 |
| GD 222 | Flash Web Animation | 3 |
| GD 223 | Advanced Flash Web Animation | 3 |
| GD 230 | Graphic Design Internship | 1-4 |
| | | <hr/> 7-10 |
| | Total Required | 34-37 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Graphic Design. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

CERTIFICATES OF PROFICIENCY:

These certificates offer specific training either for an entry-level position or to augment related programs such as Web Development or Graphic Design. The certificates are designed to demonstrate a relatively narrow expertise or skill area that may be used to attain a graphic design “niche” job.

Students who complete the requirements below qualify for a Certificate of Proficiency in that area of emphasis. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

I. DIGITAL PHOTOGRAPHY (Major Code: 57125)

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-------------------------------------|--------------|
| GD 110 | Graphic Design Principles | 3 |
| GD 126ABCD | Photoshop Digital Imaging | 3 |
| GD 130 | Professional Business Practices | 3 |
| GD 210 | Professional Digital Photography I | 3 |
| GD 211 | Professional Digital Photography II | 3 |
| | Total Required | <u>15</u> |

II. WEB GRAPHICS (Major Code: 57126)

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|------------------------------------|--------------|
| CIS 212 | Introduction to Web Development | 3 |
| GD 110 | Graphic Design Principles | 3 |
| GD 210 | Professional Digital Photography I | 3 |
| GD 217 | Web Graphics | 3 |
| GD 222 | Flash Web Animation | 3 |
| | Total Required | <u>15</u> |

HISTORY (Major Code: 54060)

This major prepares students to transfer to four-year institutions for continued study in the field of history. The degree program fulfills the lower division requirements for most majors in the History Department at San Diego State University and is typical of requirements at other four-year schools. For special requirements, transfer students should consult the catalog of the college or university of their choice. History classes provide useful background for students in such fields as history, education, political science and law.

CAREER OPPORTUNITIES

- *Anthropologist
- *Archaeologist
- Attorney
- *Cartographer
- *College History Professor
- *Historian
- *Intelligence Analyst
- *Journalist
- Legislative Assistant
- Politician
- *Research Historian
- *Secondary School Teacher
- Travel Advisor
- Technical Writer
- *Textbook Writer/Editor

*Bachelor Degree or higher required

Associate in Arts Degree Requirements:

Select twelve (12) units from any two (2) of the following sequences:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-----------------------------|--------------|
| HIST 100 | Early World History | |
| HIST 101 | Modern World History | 6 |
| HIST 105 | Early Western Civilization | |
| HIST 106 | Modern Western Civilization | 6 |
| HIST 108 | Early American History | |
| HIST 109 | Modern American History | 6 |
| | | <u>12</u> |

Select six (6) units from the following:

| | | |
|----------|---|----------|
| HIST 118 | U.S. History: Chicano/Chicana Perspectives I | 3 |
| HIST 119 | U.S. History: Chicano/Chicana Perspectives II | 3 |
| HIST 122 | Women in Early American History | 3 |
| HIST 123 | Women in Modern American History | 3 |
| HIST 124 | History of California | 3 |
| HIST 180 | U.S. History: Black Perspectives I | 3 |
| HIST 181 | U.S. History: Black Perspectives II | 3 |
| HIST 210 | Women in Western Civilization | 3 |
| | | <u>6</u> |

Foreign Language Requirement:

Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. NOTE: One year of a high school foreign language is equivalent to one semester of a college foreign language.

| | |
|-------------------------------------|----|
| Total Required | 33 |
| Plus General Education Requirements | |

Recommended Electives:

- ART 140, 141; ENGL 221, 222, 231, 232; GEOG 130; POSC 121, 124, 140; RELG 120, 130

MANAGEMENT (Major Code: 53047)

This degree program is designed to provide students with the skills necessary to be successful as a manager in today's demanding organizational climate. The curriculum is beneficial to men or women who aspire to a mid-level or higher management position in any type of organization including business, government and service organizations.

CAREER OPPORTUNITIES

- *Bank Officer
- Claim Adjuster
- †Computer Operations Supervisor
- *Director, Research and Development
- Employment Interviewer
- Financial Planner
- *Hospital Administrator
- Import-Export Agent
- Management Trainee
- †Management Consultant
- Office Manager
- Stock Broker
- *Teacher, College

*Bachelor Degree or higher required

†Bachelor Degree normally recommended

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|---|-------|
| BUS 115 | Human Relations in Business | 3 |
| BUS 120 | Financial Accounting | 4 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| BUS 128 | Business Communication | 3 |
| BUS 155 | Human Resources Management | 3 |
| BUS 156 | Principles of Management | 3 |
| COMM 122 | Public Speaking | 3 |
| | | 22 |

Select two (2) of the following:

| | | |
|-------------|--------------------------------------|-----|
| BOT 123-125 | Comprehensive Excel Levels I-III | 3 |
| BUS 176 | Computerized Accounting Applications | 2 |
| CIS 105 | Introduction to Computing | 3 |
| CIS 110 | Principles of Information Systems | 4 |
| | | 5-7 |

Select one (1) of the following:

| | | |
|----------|------------------------------|-----|
| BUS 110 | Introduction to Business | 3 |
| BUS 121 | Managerial Accounting | 4 |
| BUS 146 | Marketing | 3 |
| BUS 154 | Diversity in the Workplace | 3 |
| BUS 157 | Principles of Leadership | 3 |
| BUS 159 | Management Internship | 3 |
| BUS 195 | Family Income Management | 3 |
| ECON 120 | Principles of Macroeconomics | 3 |
| | | 3-4 |

Total Required 30-33
Plus General Education Requirements

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Management. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

MATHEMATICS (Major Code: 50035)

Since jobs requiring mathematical skills such as data analysis, problem solving, pattern recognition, statistics, and probability are growing at nearly double the rate of overall employment, the mathematics major may benefit both educationally and economically from developing and pursuing an interest in mathematics. Mathematical skills and statistical methods are employed regularly by researchers testing hypotheses, by workers applying quality control in manufacturing, and by informed citizens who must evaluate information from the media in tabular, graphical, and report form in order to reach solutions. This major offers a foundation in these necessary skills. The emphasis is to prepare students for transfer to a four-year institution and/or for career preparation in a vocational or professional field.

CAREER OPPORTUNITIES

- *Accountant
- *Actuary
- Air Traffic Controller
- *Auditor
- †Bank Officer
- *Budget Analyst
- Computer Operator
- *Computer Programmer
- †Cost Estimator
- †Credit and Collection Manager
- Data Processing Manager
- *Economist
- *Engineer
- *Financial Planner
- Insurance Agent/Broker
- Insurance Claim Examiner
- Laboratory Examiner
- Loan Officer
- *Market Research Analyst
- *Mathematician
- *Mathematics Teacher
- *Securities Trader
- Semiconductor Technician
- *Statistician
- *Systems Analyst
- Surveyor

*Bachelor Degree or higher required

†Bachelor Degree normally recommended

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|-----------------------------------|-------|
| MATH 180 | Analytic Geometry and Calculus I | 5 |
| MATH 280 | Analytic Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| MATH 284 | Linear Algebra | 3 |
| | | 16 |

Select one (1) of the following:

| | | |
|----------|------------------------|---|
| MATH 245 | Discrete Math | 3 |
| MATH 285 | Differential Equations | 3 |
| | | 3 |

Select one (1) of the following:

| | | |
|----------|-----------------------------------|-----|
| ENGR 120 | Engineering Computer Applications | 3 |
| MATH 160 | Elementary Statistics | 3 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| PHYC 210 | Wave Motion and Modern Physics | 5 |
| | | 3-5 |

Total Required 22-24
Plus General Education Requirements

(continued on next page)

Mathematics (continued)

Recommended Electives:

Students planning to transfer to a four-year institution to complete a bachelor's degree in Pure Mathematics, Applied Mathematics, or Statistics should emphasize in an applied discipline such as Accounting, Chemistry, Computer Science, Economics, Engineering, or Physics. In particular, transfer students are STRONGLY urged to elect the following Physics courses: PHYC 190, 200, 210. Students preparing for a vocational or professional career are strongly encouraged to emphasize in a vocational/professional discipline such as Business, Computer and Information Science, CADD Technology, Electronics Technology, or Environmental Technology.

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Mathematics. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

MUSIC EDUCATION (Major Code: 59404)

This degree program offers lower division preparation for students who want to pursue a bachelor's degree in music education and a California teaching credential in music. The primary emphasis is to prepare students for transfer to four-year music education programs.

CAREER OPPORTUNITIES

- *Arranger
- *Choral Director
- *Composer
- *Conductor
- Copyist
- *Critic
- Instrumentalist
- *Music Instructor/Professor
- *Music Librarian
- *Music Therapist
- Music Typographer
- Performer, Vocalist
- Radio Programmer
- Recording Company Representative
- *Teacher
- *Bachelor Degree or higher required

Associate in Arts Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|----------------------------------|--------------|
| MUS 105 | Music Theory and Practice I | 4 |
| MUS 106 | Music Theory and Practice II | 4 |
| MUS 110 | Great Music Listening | 3 |
| MUS 116 | Introduction to World Music | 3 |
| MUS 120 | Introduction to Music Technology | 3 |
| MUS 126 | Class Guitar I | 2 |
| MUS 132 | Class Piano I | 3 |
| MUS 133 | Class Piano II | 3 |
| MUS 170 | Class Voice | 2 |
| MUS 190 | Performance Studies | 1 |
| MUS 191 | Performance Studies | 1 |
| MUS 232 | Class Piano III | 3 |
| MUS 233 | Class Piano IV | 3 |
| MUS 290 | Performance Studies | 1 |
| MUS 291 | Performance Studies | 1 |
| | | 37 |

Select four (4) units from the following:

| | | |
|-------------------------------------|-----------------------------|----|
| MUS 108 | Instrumental Music Ensemble | 1 |
| MUS 109 | Instrumental Music Ensemble | 1 |
| MUS 136 | Chamber Singers | 1 |
| MUS 137 | Chamber Singers | 1 |
| MUS 156 | Jazz Ensemble | 1 |
| MUS 157 | Jazz Ensemble | 1 |
| MUS 158 | Chorus | 1 |
| MUS 159 | Chorus | 1 |
| MUS 208 | Instrumental Music Ensemble | 1 |
| MUS 209 | Instrumental Music Ensemble | 1 |
| MUS 236 | Chamber Singers | 1 |
| MUS 237 | Chamber Singers | 1 |
| MUS 256 | Jazz Ensemble | 1 |
| MUS 257 | Jazz Ensemble | 1 |
| MUS 258 | Chorus | 1 |
| MUS 259 | Chorus | 1 |
| Total Required | | 41 |
| Plus General Education Requirements | | |

ORNAMENTAL HORTICULTURE

This degree program provides for entry level skills, upgrading of existing skills, and preparation for further training. Designed for students interested in careers in nursery and greenhouse management, landscape design and construction, grounds management, retail nursery operations, irrigation system design, installation and maintenance of interior plantscaping, arboriculture and other related fields. Emphasis is on hands-on experience with student participation in labs. Students learn modern horticultural methods and procedures as well as the use of tools and equipment common to the field.

CAREER OPPORTUNITIES

- †Agricultural Inspector
- *Agricultural Researcher
- †Arboretum/Park Director
- Arboriculture Technician
- Botanical Illustrator
- †County/State Agricultural Advisor
- *Environmental Designer
- Floral Designer
- Flower Shop Manager
- Golf Course Superintendent
- Golf Course Worker
- Greenhouse Manager
- Grounds Maintenance Manager
- Grower/Production Manager
- †Horticultural Journalist
- Irrigation Consultant
- *Landscape Architect
- Landscape Design
- Landscape Technician
- Nursery/Garden Center Manager
- †Park Planner/Manager
- Plant Breeder/Propagator
- Sports Field Manager
- Turf Manager
- Water Auditor
- †Water Conservationist
- *Bachelor Degree or higher required.
- †Bachelor Degree normally recommended.

I. ARBORICULTURE (Major Code: 59515)

This major encompasses urban forestry, professional tree care and tree trimming. Students will learn care and pruning of landscape trees, palms and related plants as well as common fruit trees. Coursework includes skill development in tree climbing and pruning techniques, basic tree maintenance and principles of urban forestry. Graduates are employed by private tree care companies, public agencies or may be self-employed.

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|---|-------------|
| OH 120 | Fundamentals of Ornamental Horticulture | 3 |
| OH 130 | Plant Pest Control | 3 |
| OH 140 | Soils | 3 |
| OH 170 | Plant Materials: Trees and Shrubs | 3 |
| OH 260 | Arboriculture | 3 |
| OH 261 | Tree Surgery and Specialized Pruning Techniques | 1 |
| OH 262 | Arboriculture: Palms and Related Plants | 1 |
| OH 263 | Urban Forestry | 1 |
| OH 275 | Diagnosing Horticultural Problems | 1.5 |
| OH 290* | Cooperative Work Experience Education | 3 |
| | | <u>22.5</u> |

Select eleven (11) units from the following:

| | | |
|-------------------------------------|---|-----------|
| OH 102 | Xeriscape: Water Conservation in the Landscape | 2 |
| OH 172 | Introduction to Landscape Design | 3 |
| OH 235 | Principles of Landscape Irrigation | 4 |
| OH 276 | Horticultural Equipment Repair and Maintenance | 3 |
| OH 278 | Business Management for Ornamental Horticulture | 3 |
| SPAN 120 | Spanish I | 5 |
| | | <u>11</u> |
| Total Required | | 33.5 |
| Plus General Education Requirements | | |

*Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Arboriculture. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. FLORISTRY (Major Code: 59505)

This degree program is designed as an emphasis in the ornamental horticulture major for those individuals seeking careers in the floral industry, or to upgrade their existing skills and prepare for further training. Coursework is directed toward skills, concepts, and practices used in the commercial floral industry with an emphasis on hands-on training.

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|---|-----------|
| OH 114 | Floral Design I | 3 |
| OH 116 | Floral Design II | 3 |
| OH 117 | Wedding Design I | 3 |
| OH 120 | Fundamentals of Ornamental Horticulture | 3 |
| OH 180 | Plant Materials: Annuals and Perennials | 3 |
| OH 240 | Greenhouse Plant Production | 3 |
| OH 290* | Cooperative Work Experience Education | 3 |
| | | <u>21</u> |

Select one (1) of the following:

| | | |
|--------|----------------------------|----------|
| OH 118 | Special Occasion Floristry | 3 |
| OH 119 | Wedding Design II | 3 |
| | | <u>3</u> |

Select nine (9) units from the following:

| | | |
|-------------------------------------|--|----------|
| ART 120 | Two-Dimensional Design | 3 |
| ART 124 | Drawing I | 3 |
| ART 141 | History of Western Art II: 1250 A.D. to Present Time | 3 |
| OH 118** | Special Occasion Floristry | 3 |
| OH 119** | Wedding Design II | 3 |
| OH 121 | Plant Propagation | 3 |
| OH 140 | Soils | 3 |
| OH 170 | Plant Materials: Trees and Shrubs | 3 |
| OH 278 | Business Management for Ornamental Horticulture | 3 |
| | | <u>9</u> |
| Total Required | | 33 |
| Plus General Education Requirements | | |

* Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

** May not be used for credit as both an elective and as required in previous section

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Floristry. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. GOLF COURSE AND SPORTS TURF MANAGEMENT (Major Code: 53016)

Students in this major pursue careers as golf course superintendents or sports turf managers. The program is intended for those wishing to enter the field as well as those that desire upgrading of existing skills. Students may also transfer to a four-year degree program in agronomy, turf management or related field. Coursework is designed to study environmentally sound solutions for the efficient production and management of golf and sports turf.

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|--|-------|
| BUS 156 | Principles of Management | 3 |
| OH 120 | Fundamentals of Ornamental Horticulture | 3 |
| OH 130 | Plant Pest Control | 3 |
| OH 140 | Soils | 3 |
| OH 170 | Plant Materials: Trees and Shrubs | 3 |
| OH 174 | Turf and Ground Cover Management | 3 |
| OH 220 | Landscape Construction: Concrete and Masonry | 3 |
| OH 235 | Principles of Landscape Irrigation | 4 |
| OH 265 | Golf Course and Sports Turf Management | 3 |
| OH 276 | Horticultural Equipment Repair and Maintenance | 3 |
| OH 290* | Cooperative Work Experience Education | 5 |
| | Total Required | 36 |
| | Plus General Education Requirements | |

*Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Golf Course and Sports Turf Management. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

IV. IRRIGATION TECHNOLOGY (Major Code: 53011)

This specialized field focuses on the design, installation and management of landscape irrigation systems. The program is designed for entry level students, those seeking to upgrade existing skills, or those wishing to transfer to a four-year degree program at Cal Poly or other institution. The use of current design theory, installation techniques and management programs form the heart of the curriculum. Graduates are employed by landscape architects, irrigation consultants, landscape contractors, public agencies or are may be self-employed.

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|--|-------|
| OH 102 | Xeriscape: Water Conservation in the Landscape | 2 |
| OH 120 | Fundamentals of Ornamental Horticulture | 3 |
| OH 140 | Soils | 3 |
| OH 174 | Turf and Ground Cover Management | 3 |
| OH 221 | Landscape Construction: Irrigation and Carpentry | 3 |
| OH 235 | Principles of Landscape Irrigation | 4 |
| OH 238 | Irrigation System Design | 3 |
| OH 290* | Cooperative Work Experience Education | 3 |
| | | 24 |

Select nine (9) units from the following:

| | | |
|---------------|---|----|
| ENGR/SURV 218 | Plane Surveying | 4 |
| OH 130 | Plant Pest Control | 3 |
| OH 172 | Introduction to Landscape Design | 3 |
| OH 200** | Introduction to Computer Aided Landscape Design | 3 |
| OH 225 | Landscape Contracting | 3 |
| OH 276 | Horticultural Equipment Repair and Maintenance | 3 |
| SPAN 120 | Spanish I | 5 |
| | | 9 |
| | Total Required | 33 |
| | Plus General Education Requirements | |

*Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

**May also be offered at Southwestern College as LA 200

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Irrigation Technology. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

V. LANDSCAPE DESIGN (Major Code: 59516)

Courses in this major will provide students with a systematic, process oriented approach to landscape design for residential landscapes. Coursework is designed for entry level skills, upgrading of existing skills and for transfer to a four-year degree program. The curriculum is designed to investigate the current trends in landscape design with the technologies used in the construction of the projects. Graduates are employed by landscape architects, landscape contractors, public agencies or may be self-employed.

Associate in Science Degree Requirements:

| Course | Title | Units |
|-----------|---|-------|
| OH 102 | Xeriscape: Water Conservation in the Landscape | 2 |
| OH 170 | Plant Materials: Trees and Shrubs | 3 |
| OH 172 | Introduction to Landscape Design | 3 |
| OH 173 | Intermediate Landscape Design | 3 |
| OH 175 | Advanced Landscape Design | 3 |
| OH 180 | Plant Materials: Annuals and Perennials | 3 |
| OH 200* | Introduction to Computer Aided Landscape Design | 3 |
| OH 201** | Advanced Computer Aided Landscape Design | 3 |
| OH 220 | Landscape Construction: Concrete and Masonry | 3 |
| OH 235 | Principles of Landscape Irrigation | 4 |
| OH 278 | Business Management for Ornamental Horticulture | 3 |
| OH 290*** | Cooperative Work Experience Education | 3 |
| | Total Required | 36 |
| | Plus General Education Requirements | |

*May also be offered at Southwestern College as *LA 200*

**May also be offered at Southwestern College as *LA 201*

***Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Landscape Design. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

VI. LANDSCAPE TECHNOLOGY (Major Code: 53001)

Landscape installation and management forms the focus of this program. Students learn the latest methods, materials and techniques in the landscape industry. Students seeking careers in Landscape Technology are entering a challenging career field that requires knowledge of plant material, turfgrass, landscape and irrigation design, soils, pest control and landscape construction. A professional in the field has the opportunity to be involved in working with people as well as plants as the manager must direct and supervise employees, deal with clients and suppliers, and may become involved in professional organizations. Students entering the landscape industry, those already employed but seeking upgraded skills, and those wishing to transfer to Cal Poly or other four-year degree programs will benefit from the curriculum. Graduates are employed by landscape contractors, public agencies or are self-employed.

Associate in Science Degree Requirements:

| Course | Title | Units |
|---------|--|-----------|
| OH 120 | Fundamentals of Ornamental Horticulture | 3 |
| OH 130 | Plant Pest Control | 3 |
| OH 140 | Soils | 3 |
| OH 170 | Plant Materials: Trees and Shrubs | 3 |
| OH 172 | Introduction to Landscape Design | 3 |
| OH 180 | Plant Materials: Annuals and Perennials | 3 |
| OH 220 | Landscape Construction: Concrete and Masonry | 3 |
| OH 235 | Principles of Landscape Irrigation | 4 |
| OH 290* | Cooperative Work Experience Education | 3 |
| | | <u>28</u> |

Select five (5) units from the following:

| | | |
|----------|--|----------|
| OH 102 | Xeriscape: Water Conservation in the Landscape | 2 |
| OH 173 | Intermediate Landscape Design | 3 |
| OH 174 | Turf and Ground Cover Management | 3 |
| OH 221 | Landscape Construction: Irrigation and Carpentry | 3 |
| OH 225 | Landscape Contracting | 3 |
| OH 276 | Horticultural Equipment Repair and Maintenance | 3 |
| OH 278 | Business Management for Ornamental Horticulture | 3 |
| SPAN 120 | Spanish I | 5 |
| | | <u>5</u> |
| | Total Required | 33 |
| | Plus General Education Requirements | |

*Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Landscape Technology. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

VII. NURSERY TECHNOLOGY (Major Code: 53002)

Students enrolled in this major pursue careers in the wholesale production and retail sales of horticultural crops. Coursework will focus on plant propagation, greenhouse plant production, and horticultural practices related to production and sales of landscape and greenhouse plant material. Students entering the nursery industry, those already employed but seeking upgraded skills, and those wishing to transfer to Cal Poly or other four-year degree programs will benefit from the curriculum. Graduates are employed by wholesale and retail nurseries, public agencies or may be self employed.

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| OH 120 | Fundamentals of Ornamental Horticulture | 3 |
| OH 121 | Plant Propagation | 3 |
| OH 130 | Plant Pest Control | 3 |
| OH 140 | Soils | 3 |
| OH 170 | Plant Materials: Trees and Shrubs | 3 |
| OH 180 | Plant Materials: Annuals and Perennials | 3 |
| OH 240 | Greenhouse Plant Production | 3 |
| OH 290* | Cooperative Work Experience Education | 3 |
| | | 24 |

Select nine (9) units from the following:

| | | |
|----------|---|----|
| BIO 122 | Plant Structures and Functions | 4 |
| OH 114 | Floral Design I | 3 |
| OH 172 | Introduction to Landscape Design | 3 |
| OH 276 | Horticultural Equipment Repair and Maintenance | 3 |
| OH 278 | Business Management for Ornamental Horticulture | 3 |
| SPAN 120 | Spanish I | 5 |
| | | 9 |
| | Total Required | 33 |
| | Plus General Education Requirements | |

*Student must complete 6 units within the major at Cuyamaca College to be eligible for this course

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Nursery Technology. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

PARALEGAL STUDIES

(Major Code: 59507)

The legal profession has evolved, like the medical profession, into a profession of specialties. Based on this recent development, lawyers need qualified assistants to better help them provide legal services to their clients. Paralegals are trained, professional technicians able to provide this needed legal assistance.

This degree program is specifically designed to prepare and provide students with the analytical skills and written abilities necessary to assist attorneys in the practice of law. The technical curriculum goals and objectives emphasize three primary areas:

1. Legal Research, Analysis and Writing
2. Ethics and the Mechanics of Law
3. Cooperative Work Experience

The successful paralegal degree candidate will possess a broad educational background with an opportunity to gain specialized skills in specific areas of law. The large curriculum offering also allows practicing paralegals to attend college refresher or new skills development courses.

This program does not prepare students for law school or the practice of law.

CAREER OPPORTUNITIES

- Claim Examiner
- Compensation and Benefits Manager
- Compliance and Enforcement Inspector
- †Contract Consultant
- Forms and Procedures Specialist
- Freelance Paralegal
- *Labor Relations Specialist
- Law Clerk
- Legal Aide
- Legal Assistant
- Legal Research Assistant
- Legal Technician
- Occupational Safety and Health Worker
- †Paralegal
- Patent Agent
- Title Examiner

*Bachelor Degree or higher required

†Bachelor Degree normally recommended

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| BOT 120-122 | Comprehensive Word Levels I-III | 3 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| PARA 100 | Introduction to Paralegal Studies | 3 |
| PARA 110 | Civil Litigation Practice and Procedures | 3 |
| PARA 125 | Business Organization | 3 |
| PARA 130 | Legal Research and Writing | 3 |
| PARA 132 | Computer Assisted Legal Research (CALR) | 3 |
| | | 21 |

Select at least six (6) units from the following:

| | | |
|-----------|-------------------------------------|---------|
| PARA 120 | Administrative Law | 3 |
| PARA 135 | Bankruptcy Law | 1 |
| PARA 140 | Criminal Law and Procedures | 3 |
| PARA 145 | Estate Planning | 3 |
| PARA 150 | Family Law | 3 |
| PARA 155 | Insurance Law | 3 |
| PARA 160 | Personal Injury | 1 |
| PARA 165 | Probate Law | 3 |
| PARA 170 | Worker's Compensation | 1 |
| PARA 180 | Government and Public Contracts | 3 |
| PARA 250* | Internship | 1-3 |
| | | <hr/> 6 |
| | Total Required | 27 |
| | Plus General Education Requirements | |

Recommended Electives:

BUS 128, ENGL 120

*Student must complete 18 units within the major to be eligible for this course.

To fulfill G.E. requirements for the Paralegal Studies degree, select from the following:

AREA A—LANGUAGE AND RATIONALITY

(Minimum of 6 semester units)

This requirement is met by taking one course from each of the two areas:

1. Written Communication:

ENGL 110, 120

2. Oral Communication and Analytical Thinking:

COMM 120, 122, 137

MATH 103, 110, 120, 125, 150, 160, 170, 175, 176,
178, 180, 245, 280, 281, 284

PHIL 125, 130

PSY 215

AREA B—NATURAL SCIENCES

(Minimum of 4 semester units)

This requirement is met by taking a course that includes a laboratory (laboratory courses are underlined):

ANTH 130

ASTR 110, 112

BIO 112, 115, 122, 126, 128, 130, 131, 140, 152, 210, 220,
221

CHEM 115, 116, 120, 141

GEOG 120, 121

GEO 104, 110

OCEA 112, 113

PHYC 110, 120, 121, 130, 131, 190, 200, 210

AREA C—HUMANITIES

(Minimum of 3 semester units)

This requirement is met by taking one of the following courses:

ARAM 120, 121, 220

ARBC 120, 121, 145, 220, 221, 250, 251

ART 100, 120, 140, 141, 144, 145

ASL 120

COMM 124, 145

ENGL 122, 201, 202, 207, 214, 217, 221, 222, 231, 232,
270, 271, 275, 276, 277

FREN 120, 121, 220, 221, 250, 251

HIST 100, 101, 105, 106, 210

HUM 110, 120, 140, 155

MUS 110, 111, 114, 115, 116, 117

PHIL 110, 115, 117, 140, 160, 170

RELG 100, 120, 130, 140, 150, 200, 210, 215

SPAN 120, 120A & 120B*, 121, 141, 145, 220, 221, 250, 251

THTR 110, 120, 121

AREA D—SOCIAL AND BEHAVIORAL SCIENCES

(Minimum of 3 semester units)

This requirement is met by taking one of the following courses:

ANTH 120

CD 125

ECON 110, 120, 121

GEOG 106, 130

HED 120, 122, 201

HIST 108, 109, 114, 115, 118, 119, 122, 123, 124, 130,
131, 132, 180, 181

POSC 120, 121, 124, 130, 140

PSY 120, 125, 134, 138, 140, 165, 170, 220

SOC 120, 125, 130

ADDITIONAL REQUIREMENTS:

(Minimum 6 semester units)

This requirement is met by selecting two additional courses. The two courses must come from two different areas:

- Area B, Natural Sciences
- Area C, Humanities
- Area D, Social and Behavioral Sciences

*Will receive general education credit for SPAN 120B only after completion of SPAN 120A.

NOTE: General Education course choices for transfer and the Associate Degree may differ between Cuyamaca College and Grossmont College. Each college strongly recommends that students visit the Counseling Centers for specific information if they plan to attend both campuses.

(continued on next page)

Paralegal Studies (continued)

DEGREE REQUIREMENTS:

Cuyamaca College will confer the Degree of Associate in Science or Associate in Arts upon students who successfully complete the following requirements:

1. A minimum of 60 semester units of college work. English composition course credit: Students may receive credit for only one English composition course below transferable freshman composition (ENGL 120) toward degree requirements.
2. Competency Requirements
 - A. Completion of ENGL 110 with a grade of "C" or better, or a grade of "CR".
 - B. Completion of MATH 103 or a higher numbered mathematics class with a grade of "C" or better, or a grade of "CR" or completion of MDTP assessment placing into a class higher than MATH 103 or 110.
3. Exercise Science Degree Requirements
With the exception of the University Transfer Studies degree, two activity courses in exercise science are required for graduation from Cuyamaca College. These courses are marked with an asterisk in the "Course Descriptions" section.
 - A. If medical reasons necessitate exclusion from exercise science, a medical statement must be on file with the Admissions and Records Office. Adaptive exercise science classes are available.
 - B. Veterans who have completed at least one year of honorable active service will receive two units of credit for exercise science which will satisfy the activity requirement for graduation. To receive credit for military service, a DD-214 or appropriate military records must be submitted to the Admissions and Records Office.
4. Achievement of a "C" average (2.0 GPA) in all college work counted toward degree requirements.
5. A maximum of 12 "CR" semester units taken in regular course work at this institution may be counted toward the 60 semester units required for graduation but shall not be included as part of the requirements for the major.
6. A minimum of 12 semester units of Legal Specialty courses must be completed at Cuyamaca College.

*A grade of "CR" (Credit) represents a "C" grade or better. For more information regarding degree requirements, see "Transfer" section.

PHYSICAL SCIENCE (Major Code: 59508)

The physical science curriculum is designed to give students working toward a bachelor's degree a well-balanced, lower division program. Emphasizes fundamental concepts and problem solving. The degree requirements are typical of what other four-year colleges and universities require, and satisfy the requirements of San Diego State University.

CAREER OPPORTUNITIES

This major trains students for a wide variety of diverse professions such as teaching science, technical administration in industry and government, legal work with patents, scientific librarianship and scientific journalism.

- *Astronomer
- Cartographic Technician
- *Chemist
- Geodetic Technician
- *Geologist
- *Meteorologist
- Meteorological Technician
- *Oceanographer
- *Patent Lawyer
- *Physical Science Teacher
- Physical Science Technician
- *Physicist
- Range Technician
- Soil Conservation Technician

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|-------------------------------------|--------------|
| ASTR 110 | Descriptive Astronomy | 3 |
| CHEM 141 | General Chemistry I | 5 |
| CHEM 142 | General Chemistry II | 5 |
| CHEM 231 | Organic Chemistry I | 5 |
| GEOL 110 | General Geology | 3 |
| MATH 180 | Analytical Geometry and Calculus I | 5 |
| MATH 280 | Analytical Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| PHYC 210 | Wave Motion and Modern Physics | 5 |
| | Total Required | 49 |
| | Plus General Education Requirements | |

PHYSICS (Major Code: 59509)

Physics is the study of the relationship between matter and energy in the universe. The curriculum is designed to give students working toward a bachelor's degree a well-balanced, lower division program. Emphasizes fundamental concepts and problem solving. The degree requirements are typical of what other four-year colleges and universities require, and satisfy the requirements of San Diego State University.

CAREER OPPORTUNITIES

Air Pollution Operating Specialist
 *Astronomer
 *Astrophysicist
 *Biomedical Engineer
 *Biophysicist
 *Chemical Physicist
 Consumer Safety Officer
 *Cryogenic Engineer
 Electrician
 Food and Drug Inspector
 *Fusion Engineer
 *Geophysicist
 Government Claims Representative
 Health Program Representative
 *High Energy Physicist
 Laser Specialist
 *Metallurgist
 *Meteorologist
 *Nuclear Physicist
 *Physical Oceanographer
 *Physicist
 *Plasma Physicist
 Quality Control Technician
 *Quantum Physicist
 *Seismologist

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|-------------------------------------|-------|
| CHEM 141 | General Chemistry I | 5 |
| CHEM 142 | General Chemistry II | 5 |
| MATH 180 | Analytical Geometry and Calculus I | 5 |
| MATH 280 | Analytical Geometry and Calculus II | 4 |
| MATH 281 | Intermediate Calculus | 4 |
| PHYC 190 | Mechanics and Heat | 5 |
| PHYC 200 | Electricity and Magnetism | 5 |
| PHYC 210 | Wave Motion and Modern Physics | 5 |
| | Total Required | 38 |
| | Plus General Education Requirements | |

REAL ESTATE

I. REAL ESTATE (Major Code: 50043)

This degree program is designed to prepare students for employment in real estate or related fields. It also meets the educational requirements for the California Real Estate Broker's License and helps prepare both the salesperson and broker for the state examination. Most real estate classes also meet educational requirements for appraisal licensing.

CAREER OPPORTUNITIES

Agent
 †Appraiser
 Broker
 Builder/Developer
 *Economist
 Escrow Officer/Trust Manager
 Investor
 Lender/Financial Institution
 Property Manager
 Salesperson
 Title Officer

*Bachelor Degree or higher required

†Office of Real Estate Appraisal License required

Associate in Science Degree Requirements:

| Course | Title | Units |
|--------|---------------------------|-------|
| RE 190 | Real Estate Principles | 3 |
| RE 191 | Real Estate Practice | 3 |
| RE 192 | Real Estate Finance | 3 |
| RE 193 | Real Estate Legal Aspects | 3 |
| RE 194 | Real Estate Appraisal | 3 |
| | | 15 |

Select three (3) of the following including one Accounting or Economics course:

| | | |
|----------|---|------|
| BUS 110* | Introduction to Business | 3 |
| BUS 120 | Financial Accounting | 4 |
| ECON 110 | Economic Issues and Policies | 3 |
| | or | |
| ECON 120 | Principles of Macroeconomics | 3 |
| | or | |
| ECON 121 | Principles of Microeconomics | 3 |
| | or | |
| RE 197 | Real Estate Economics | 3 |
| RE 201 | Real Estate Property Management | 3 |
| RE 250* | Real Estate Internship | 1-4 |
| RE 294 | Advanced Real Estate Appraisal | 3 |
| | Elective (select one Elective from below) | 3 |
| | | 7-11 |

Electives:

| | | |
|---------|---|---|
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| RE 125 | Escrow Procedures I | 3 |
| RE 202* | Business Opportunities Sales | 3 |
| RE 204 | Real Estate Office Administration | 3 |
| RE 230* | Commercial Real Estate | 3 |
| RE 292 | Mortgage Loan Brokering and Lending | 3 |

Total Required 22-26
 Plus General Education Requirements

*Non-Department of Real Estate Licensing course

(continued on next page)

Real Estate (continued)

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Real Estate. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

BROKER'S LICENSE

Students may satisfy the California State Education requirement for a Broker's License by completing the following:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|--|--------------|
| RE 190 | Real Estate Principles | 3 |
| RE 191 | Real Estate Practice | 3 |
| RE 192 | Real Estate Finance | 3 |
| RE 193 | Real Estate Legal Aspects | 3 |
| RE 194 | Real Estate Appraisal | 3 |
| | One Accounting or Economics Course | 3 |
| | Electives* (select two electives from previous column) | 6 |
| | Total Required | 24 |

II. ESCROW (Major Code: 50045)

Certificate Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---------------------------|--------------|
| RE 125 | Escrow Procedures I | 3 |
| RE 126 | Escrow Procedures II | 3 |
| RE 127 | Escrow Procedures III | 3 |
| RE 190 | Real Estate Principles | 3 |
| RE 192 | Real Estate Finance | 3 |
| RE 193 | Real Estate Legal Aspects | 3 |
| | | 18 |

Select two (2) of the following:

| | | |
|----------|---|--------------|
| BUS 120 | Financial Accounting | 4 |
| BUS 121 | Managerial Accounting | 4 |
| BUS 125 | Business Law: Legal Environment of Business | 3 |
| ECON 120 | Principles of Macroeconomics | 3 |
| ECON 121 | Principles of Microeconomics | 3 |
| RE 191 | Real Estate Practice | 3 |
| RE 194 | Real Estate Appraisal | 3 |
| RE 197 | Real Estate Economics | 3 |
| RE 201 | Real Estate Property Management | 3 |
| RE 202 | Business Opportunities Sales | 3 |
| RE 204 | Real Estate Office Administration | 3 |
| | | 6-8 |
| | Total Required | 24-26 |

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Escrow. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

SOCIAL WORK (Major Code: 59355)

The Social Work program offers lower division preparation for students who want to pursue a bachelor's degree in social work. The primary emphasis of the program is to prepare students for transfer to four-year social work programs.

CAREER OPPORTUNITIES

- *Administration
- *Child Welfare
- Clinical:
 - *Counseling, Therapy
- Community Organizations:
 - *Advocacy, Politics, Education
- *Criminal Justice/Corrections
- *Developmental Disabilities
- *Gerontology
- *Health Care
- Occupational:
 - *Counseling
 - *Organizational Development
 - *Teaching
 - *Wellness Promotion
 - *Human Resources
- Public Welfare:
 - *Social Work
- *Research

*Bachelor degree or higher recommended

Associate in Arts Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|--|--------------|
| BIO 130 | General Biology I | 3 |
| ECON 110 | Economic Issues and Policies | 3 |
| or | | |
| ECON 120 | Principles of Macroeconomics | 3 |
| or | | |
| ECON 121 | Principles of Microeconomics | 3 |
| HED 120 | Personal Health and Lifestyles | 3 |
| MATH 160 | Elementary Statistics | 3 |
| or | | |
| PSY 215 | Statistics for the Behavioral Sciences | 3 |
| or | | |
| BIO 215 | Statistics for Life Sciences | 3 |
| PSY 120 | Introductory Psychology | 3 |
| SOC 120 | Introductory Sociology | 3 |
| SW 110 | Social Work Fields of Service | 3 |
| SW 120 | Introduction to Social Work | 3 |
| | Total Required | 24 |
| | Plus General Education Requirements | |

SPANISH (Major Code: 54049)

This degree program is designed to provide students with communicative skills in understanding, speaking, reading, and writing Spanish. It also gives students a greater understanding of Spanish culture and civilization, and prepares them for greater international and domestic career opportunities. For the suggested sequence of courses to be taken and/or assistance in transferring to a four-year institution, students should consult the Counseling Center or the Department of Foreign Languages.

CAREER OPPORTUNITIES

Bilingual Aide
 Border Patrol Officer
 Buyer
 Court Interpreter
 Counseling
 Customs Agent/Inspector
 Foreign Exchange Clerk
 *Foreign Student Advisor
 Interpreter
 *Journalist
 *Museum Curator
 *Physician
 *Scientific Linguist
 Tour Guide
 Tutor

*Bachelor Degree or higher required

Associate in Arts Degree Requirements:

| Course | Title | Units |
|------------|------------------------|-------|
| SPAN 120 | Spanish I | 5 |
| or | | |
| SPAN 120A | Spanish I | 2.5 |
| and | | |
| SPAN 120B | Spanish I | 2.5 |
| SPAN 121 | Spanish II | 5 |
| SPAN 220 | Spanish III | 5 |
| SPAN 221 | Spanish IV | 5 |
| SPAN 250 | Conversational Spanish | 3 |
| SPAN 251 | Conversational Spanish | 3 |
| | | 26 |

Select one (1) of the following:

| | | |
|----------|---|----|
| HIST 118 | U.S. History: Chicano/Chicana Perspectives I | 3 |
| HIST 119 | U.S. History: Chicano/Chicana Perspectives II | 3 |
| SPAN 141 | Spanish and Latin American Cultures | 3 |
| SPAN 145 | Hispanic Civilizations | 3 |
| | | 3 |
| | Total Required | 29 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Spanish. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

SURVEYING (Major Code: 53091)

This degree program prepares students to enter the civil engineering field. Competency in care and operation of field instruments, solution of problems in the laboratory, drafting of land survey maps and civil engineering plans, and application of studies to field practice are thoroughly explored.

CAREER OPPORTUNITIES

Geodetic Surveyor
 Geophysical Prospecting Surveyor
 Instruments Surveyor Assistant
 Land Surveyor
 Marine Surveyor
 Mine Surveyor
 Oil-Well Directional Surveyor

Associate in Science Degree Requirements:

| Course | Title | Units |
|--------------|--|-------|
| CADD 115 | Engineering Graphics | 3 |
| or | | |
| ENGR 100 | Introduction to Engineering and Engineering Graphics | 2 |
| CADD 120ABCD | Basic CAD | 3 |
| CADD 127 | Survey Drafting Technology | 3 |
| MATH 170 | Analytic Trigonometry | 3 |
| PHYC 110 | Introductory Physics | 4 |
| SURV 218 | Plane Surveying | 4 |
| or | | |
| ENGR 218 | Plane Surveying | 4 |
| SURV 220 | Boundary Control and Legal Principles | 3 |
| SURV 240 | Advanced Surveying | 4 |
| | Total Required | 26-27 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Surveying. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

UNIVERSITY TRANSFER STUDIES

This degree is designed for students who plan to transfer to the California State University or the University of California. To receive the University Studies Transfer Associate Degree, a student must complete ONE of four General Education transfer patterns: the CSU General Education Breadth, the Intersegmental General Education Transfer Curriculum (IGETC) for CSU or UC, **or** the Transfer Admission Guarantee (TAG) requirements for the University of California, San Diego. Although the degree recognizes the completion of lower division general education requirements, it does not guarantee admission to a four-year institution. Some majors and schools require a higher GPA than is necessary for the Associate Degree.

I. CSU General Education Breadth (Major Code: 58501)

To meet requirements of the CSU General Education Breadth program, students must:

1. Complete CSU General Education Breadth for Certification pattern (see Transfer Information and Degree Requirements).
2. Earn a grade of "C" or better (or CR) in 30 semester units of general education to include all courses in Area A and the Mathematical/Quantitative Reasoning course in Area B.
3. Complete a minimum of 60 degree applicable CSU transferable semester units.
4. Earn a cumulative GPA of 2.0 in all college coursework completed.
5. Meet Cuyamaca College residency requirements for graduation (see Admission Information).

II. Intersegmental General Education Transfer Curriculum (IGETC) for CSU (Major Code: 58502)

To meet requirements of the IGETC for CSU program, students must:

1. Complete the IGETC Certification pattern (see Transfer Information and Degree Requirements).
2. Earn a grade "C" or better (or CR) in all IGETC courses.
3. Complete a minimum of 60 degree applicable CSU transferable semester units.
4. Earn a cumulative GPA of 2.0 in all college coursework completed.
5. Meet Cuyamaca College residency requirements for graduation (see Admission Information).

III. Intersegmental General Education Transfer Curriculum (IGETC) for UC (Major Code: 58503)

To meet requirements of the IGETC for UC program, students must:

1. Complete the IGETC Certification pattern (see Transfer Information and Degree Requirements).
2. Earn a grade of "C" or better (or CR) in all IGETC courses.
3. Complete a minimum of 60 degree applicable UC transferable semester units.
4. Earn a cumulative GPA of 2.0 in all college coursework completed.
5. Meet Cuyamaca College residency requirements for graduation (see Admission Information).

IV. Transfer Admission Guarantee (TAG) Requirements for the University of California, San Diego (Major Code: 58504)

To meet requirements of the UCSD TAG program, students must:

1. Complete the TAG core requirements (see Transfer Information and Degree Requirements).
2. Complete a minimum of 60 degree applicable UC transferable semester units.
3. Meet minimum grade standards of the UCSD TAG agreement.
4. Meet Cuyamaca College residency requirements for graduation (see Admission Information).

It is **STRONGLY** recommended that lower division preparation for the major be completed at the community college prior to transfer and be incorporated into the 60 unit degree plan. Please meet with a counselor to determine lower division major preparation since requirements change and can be complex.

WATER/WASTEWATER TECHNOLOGY

This degree program is designed to prepare students for employment by municipal drinking water and wastewater treatment departments or industrial treatment facilities. Careers in Water/Wastewater Technology generally involve the administration, operation and maintenance of both drinking water and wastewater treatment facilities as well as distribution and collection systems.

CAREER OPPORTUNITIES

Backflow Program Manager
 *Chemist
 Construction Inspector
 Cross Connection Control Specialist
 Electronic Technician
 *Engineer, Civil
 *Engineer, Electrical
 Engineer Technician
 Equipment Maintenance Operator
 Field Operations Supervisor
 GIS/Mapping Specialist
 Inspector
 Instrumentation and Control Technician
 Instrumentation and Control Supervisor
 Laboratory Analyst
 Machinist
 Mechanical Systems Technician
 Meter Maintenance Technician
 Plant Operator
 Plant Process Control Electrician
 Plant Process Control Supervisor
 Recycled Water Inspector
 *Safety and Risk Manager
 Survey Technician
 Utility Worker
 Wastewater Plant Operator
 Wastewater Treatment Superintendent
 *Water Distribution Operator
 *Water Quality and Treatment Manager
 Water Systems Technician

*Bachelor Degree recommended

I. CROSS CONNECTION CONTROL SYSTEMS

(Major Code: 51063)

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|--|----------|
| WWTR 101 | Fundamentals of Water/Wastewater Technology | 3 |
| WWTR 102 | Calculations in Water/Wastewater Technology | 3 |
| WWTR 104 | Applied Hydraulics | 3 |
| WWTR 130 | Water Distribution Systems | 3 |
| WWTR 280 | Backflow Tester Training | 2 |
| WWTR 282 | Cross Connection Control Specialist | 3 |
| WWTR 284 | Cross Connection Control Specialist—Recycled Water | 3 |
| | | <hr/> 20 |

Select eight to ten (8-10) units from the following:

| | | |
|----------|---|------------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| WWTR 110 | Laboratory Analysis for Water/Wastewater | 3 |
| WWTR 290 | Cooperative Work Experience | 3 |
| | | <hr/> 8-10 |
| | Total Required | 28-30 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Cross Connection Control Systems. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

II. WATER DISTRIBUTION SYSTEMS

(Major Code: 51064)

Associate in Science Degree Requirements:

| Course | Title | Units |
|----------|--|----------|
| WWTR 101 | Fundamentals of Water/Wastewater Technology | 3 |
| WWTR 102 | Calculations in Water/Wastewater Technology | 3 |
| WWTR 104 | Applied Hydraulics | 3 |
| WWTR 106 | Introduction to Electrical and Instrumentation Processes | 3 |
| WWTR 130 | Water Distribution Systems | 3 |
| WWTR 134 | Mechanical Maintenance | 3 |
| WWTR 265 | Water Distribution Systems II | 3 |
| | | <hr/> 21 |

Select eight to nine (8-9) units from the following:

| | | |
|----------|---|-----------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| WWTR 112 | Basic Plant Operations: Water Treatment | 3 |
| WWTR 270 | Public Works Supervision | 3 |
| WWTR 280 | Backflow Tester Training | 2 |
| WWTR 282 | Cross Connection Control Specialist | 3 |
| WWTR 284 | Cross Connection Control Specialist—Recycled Water | 3 |
| WWTR 290 | Cooperative Work Experience | 3 |
| | | <hr/> 8-9 |
| | Total Required | 29-30 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Water Distribution Systems. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. WATER TREATMENT PLANT OPERATOR
(Major Code: 51060)

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|--|--------------|
| WWTR 101 | Fundamentals of Water/Wastewater Technology | 3 |
| WWTR 102 | Calculations in Water/Wastewater Technology | 3 |
| WWTR 104 | Applied Hydraulics | 3 |
| WWTR 106 | Introduction to Electrical and Instrumentation Processes | 3 |
| WWTR 110 | Laboratory Analysis for Water/Wastewater | 3 |
| WWTR 112 | Basic Plant Operations: Water Treatment | 3 |
| WWTR 117 | Advanced Plant Operations: Water Treatment | 3 |
| | | 21 |

Select one (1) of the following:

| | | |
|----------|--|---|
| WWTR 114 | Basic Plant Operations: Wastewater Treatment | 3 |
| WWTR 130 | Water Distribution Systems | 3 |
| WWTR 132 | Wastewater Collection Systems | 3 |
| WWTR 134 | Mechanical Maintenance | 3 |
| WWTR 270 | Public Works Supervision | 3 |
| WWTR 290 | Cooperative Work Experience | 3 |
| | | 3 |

Select two (2) of the following:

| | | |
|----------|---|-------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| WWTR 280 | Backflow Tester Training | 2 |
| WWTR 282 | Cross Connection Control Specialist | 3 |
| | | 5-8 |
| | Total Required | 29-32 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Water Treatment Plant Operator. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

IV. WASTEWATER COLLECTION SYSTEMS
(Major Code: 51065)

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|--|--------------|
| WWTR 101 | Fundamentals of Water/Wastewater Technology | 3 |
| WWTR 102 | Calculations in Water/Wastewater Technology | 3 |
| WWTR 104 | Applied Hydraulics | 3 |
| WWTR 106 | Introduction to Electrical and Instrumentation Processes | 3 |
| WWTR 132 | Wastewater Collection Systems | 3 |
| WWTR 134 | Mechanical Maintenance | 3 |
| WWTR 267 | Wastewater Collection Systems II | 3 |
| | | 21 |

Select eight to nine (8-9) units from the following:

| | | |
|----------|---|-------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| WWTR 114 | Basic Plant Operations: Wastewater Treatment | 3 |
| WWTR 270 | Public Works Supervision | 3 |
| WWTR 280 | Backflow Tester Training | 2 |
| WWTR 282 | Cross Connection Control Specialist | 3 |
| WWTR 284 | Cross Connection Control Specialist- Recycled Water | 3 |
| WWTR 290 | Cooperative Work Experience | 3 |
| | | 8-9 |
| | Total Required | 29-30 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Wastewater Collection Systems. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

V. WASTEWATER TREATMENT OPERATOR

(Major Code: 51061)

Associate in Science Degree Requirements:

| <i>Course</i> | <i>Title</i> | <i>Units</i> |
|---------------|---|--------------|
| WWTR 101 | Fundamentals of Water/Wastewater Technology | 3 |
| WWTR 102 | Calculations in Water/Wastewater Technology | 3 |
| WWTR 104 | Applied Hydraulics | 3 |
| WWTR 106 | Introduction to Electrical and Instrumentation Processes | 3 |
| WWTR 110 | Laboratory Analysis for Water/Wastewater | 3 |
| WWTR 114 | Basic Plant Operations: Wastewater Treatment | 3 |
| WWTR 120 | Advanced Plant Operations: Wastewater Treatment | 3 |
| | | 21 |

Select one (1) of the following:

| | | |
|----------|--|---|
| WWTR 112 | Basic Plant Operations: Water Treatment | 3 |
| WWTR 130 | Water Distribution Systems | 3 |
| WWTR 132 | Wastewater Collection Systems | 3 |
| WWTR 134 | Mechanical Maintenance | 3 |
| WWTR 270 | Public Works Supervision | 3 |
| WWTR 290 | Cooperative Work Experience | 3 |
| | | 3 |

Select two (2) of the following:

| | | |
|----------|---|-------|
| ENVT 100 | Introduction to Environmental and Occupational Safety and Health (OSH) Technology | 4 |
| ENVT 110 | Pollution Prevention | 3 |
| ENVT 210 | Industrial Wastewater and Stormwater Management | 4 |
| WWTR 280 | Backflow Tester Training | 2 |
| WWTR 282 | Cross Connection Control Specialist | 3 |
| | | 5-8 |
| | Total Required | 29-32 |
| | Plus General Education Requirements | |

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Wastewater Treatment Operator. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.