

ASSOCIATE DEGREE PROGRAMS & CERTIFICATES

Program	Associate Degree	Certificate	Program	Associate Degree	Certificate
ACCOUNTING			ENTREPRENEURSHIP–SMALL BUSINESS MANAGEMENT		
Accounting	❖	◆	❖	◆
Bookkeeping		◆			
ART			ENVIRONMENTAL TECHNOLOGY		
Drawing and Painting	❖		Environmental Management	❖	
Graphic Design (Transfer)	❖		Environmental Technician		◆
AUTOMOTIVE TECHNOLOGY	❖	◆	Occupational Safety and Health (OSH) Management	❖	
Advanced Engine Performance and Emissions		◆	Occupational Safety and Health (OSH) Technician		◆
ASEP	❖				
ASSET	❖		EXERCISE SCIENCE	❖	
Brakes and Front-End		◆			
Engine Performance and Drive Train		◆	GENERAL MAJOR	❖	
BIOLOGICAL SCIENCES	❖				
BUSINESS			GRAPHIC DESIGN	❖	◆
Business Administration	❖	◆	HISTORY	❖	
Business-General	❖	◆	LIBERAL ARTS	❖	
BUSINESS OFFICE TECHNOLOGY	❖	◆	MANAGEMENT	❖	◆
Administrative Assistant	❖	◆	MATHEMATICS	❖	◆
Executive Assistant	❖	◆	ORNAMENTAL HORTICULTURE		
Office Assistant Level I		◆	Arboriculture	❖	◆
Office Assistant Level II		◆	Floristry	❖	◆
Office Professional		◆	Golf Course and Sports Turf Management	❖	◆
CHEMISTRY	❖		Irrigation Technology	❖	◆
CHILD DEVELOPMENT			Landscape Design	❖	◆
Infants and Toddlers	❖	◆	Landscape Technology	❖	◆
Preschool Children	❖	◆	Nursery Technology	❖	◆
School Age Child Care	❖	◆	PARALEGAL STUDIES	❖	
COMPUTER AND INFORMATION SCIENCE			PHYSICAL SCIENCE	❖	
Computer Network Administration	❖	◆	PHYSICS	❖	
Web Development	❖	◆	REAL ESTATE	❖	◆
DRAFTING TECHNOLOGY	❖	◆	Escrow		◆
Technical Illustration Graphics		◆	SPANISH	❖	◆
ELEMENTARY EDUCATION	❖		SURVEYING	❖	◆
ENGINEERING			UNIVERSITY TRANSFER STUDIES	❖	
Aerospace Engineering		◆	(See "Transfer" section for degree information)		
Civil Engineering		◆			
Electrical Engineering		◆			
Mechanical Engineering		◆			
ENGLISH	❖	◆			

PLEASE 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)

The Accounting degree program is designed to prepare students to enter the workforce as accounting technicians or tax technicians. The accounting curriculum is supported by related business courses and a strong general education program for students interested in qualifying for responsible positions in accounting. **Program designed for 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)

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 the technical competence for advancement within the office environment. Certificate does not require completion of the "core" curriculum; 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)

The Art–Drawing and Painting 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.

This 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 220	Painting II	3
ART 231	Figure Drawing II	3
GD 126ABCD	Digital Imaging	3
GD 225ABCD	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)

The Art–Graphic Design 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	Beginning Graphic Design	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	Automotive Tune-up and Diagnosis	5
AUTO 121	Emission Control License	5
AUTO 122	Automotive Electrical Systems	5
AUTO 123	Computerized Engine Controls	5
AUTO 180	Automotive Service Advisor	1
AUTO 182	Automotive Work Experience	3
		<u>24</u>

Select three (3) of the following courses:

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
		<u>10.5-15</u>

Select one (1) of the following courses:

AUTO 124	Engine Driveability Laboratory	3
AUTO 125	Advanced Auto Tune-up and Diagnosis	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
		<u>3-5</u>
	Total Required	37.5 - 44
	Plus General Education Requirements	

FOR ALL CLASSES: Students are required to provide their own hand tools as required in each course. 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	Automotive Tune-up and Diagnosis	5
AUTO 121	Emission Control License	5
AUTO 122	Automotive Electrical Systems	5
AUTO 123	Computerized Engine Controls	5
		<u>20</u>

Select one (1) of the following courses:

AUTO 124	Engine Driveability Laboratory	3
AUTO 125	Advanced Auto Tune-up and Diagnosis	5
		<u>3-5</u>
	Total Required	23-25

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 Automotive Technology 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:

<i>Course</i>	<i>Title</i>	<i>Units</i>
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
		37.5

Work Experience:

AUTO 206*	ASEP – Work Experience	15
	Total Required	52.5
	Plus General Education Requirements	

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

IV. AUTOMOTIVE TECHNOLOGY – ASSET
(Major Code: 51005)

The Automotive Technology 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:

<i>Course</i>	<i>Title</i>	<i>Units</i>
AUTO 190	ASSET – Orientation, PDI and Lubrication	2
AUTO 191	ASSET – Brakes and Alignment	7
AUTO 192	ASSET – Power Train	7
AUTO 193	ASSET – Engine Repair	4.5
AUTO 194	ASSET – Tune-up and Emissions	7
AUTO 195	ASSET – Electronic Engine Controls	4.5
AUTO 196	ASSET – Electrical, Accessories and Air Conditioning	5
		37

Work Experience:

AUTO 197*	ASSET – Work Experience	15
	Total Required	52
	Plus General Education Requirements	

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

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

Certificate Requirements:

<i>Course</i>	<i>Title</i>	<i>Units</i>
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	19

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:

<i>Course</i>	<i>Title</i>	<i>Units</i>
AUTO 120	Automotive Tune-up and Diagnosis	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	18

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	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.

The program 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
BUS 127*	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.

CERTIFICATE OF PROFICIENCY**I. CALL CENTER CUSTOMER SERVICE REPRESENTATIVE** (Major Code: 57113)

Designed for students seeking jobs in the expanding telephone call center industry. Provides training as recommended by the Customer Service Training Program advisory committee. The curriculum provides the basic computing and critical thinking skills that employers in the telephone call center industry are looking for.

Certificate Requirements:

<i>Course</i>	<i>Title</i>	<i>Units</i>
BUS 105	Call Center Systems and Procedures	2
BUS 106	Providing Quality Service	2
BUS 128	Business Communication	3
CIS 105	Introduction to Computing	3
	Total Required	10

Students who complete the requirements above qualify for a Certificate of Proficiency in Call Center Customer Service Representative. 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 on the computerized office and development into supervisory positions.

CAREER OPPORTUNITIES

Account Clerk
 Administrative Assistant
 Bank Teller
 Billing Clerk
 Bookkeeper
 Brokerage Clerk
 Customer Service Representative
 File Clerk
 General Clerk
 Hotel/Motel Desk Clerk
 Information Clerk
 Insurance Clerk
 Library Assistant
 Loan/Credit Clerk
 Mail and Messenger Courier
 Office Manager
 Payroll Clerk
 Personnel Assistant
 Postal Clerk
 Secretary
 Teacher's Aide

Associate in Science Degree Requirements:

Course	Title	Units
BOT 100	Basic Keyboarding	1
BOT 101AB	Keyboarding/Document Processing	3
BOT 102	Intermediate Keyboarding/Document Processing	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
		18-19

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 140ABCD	Databases	3
		6
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 102	Intermediate Keyboarding/Document Processing	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
		17-27

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
		3
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 140ABCD	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 240ABCD	Advanced Databases	3
CIS 250ABCD	Advanced Spreadsheets	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 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:

<i>Course</i>	<i>Title</i>	<i>Units</i>
BOT 100	Basic Keyboarding	1
or		
BOT 101AB	Keyboarding/Document Processing	3
or		
BOT 102	Intermediate Keyboarding/Document Processing	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	12-14

II. 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

III. 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 102	Intermediate Keyboarding/Document Processing	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	<u>9</u>

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:

<i>Course</i>	<i>Title</i>	<i>Units</i>
CHEM 141	General Chemistry I	5
CHEM 142	General Chemistry II	5
CHEM 231	Organic Chemistry I	5
MATH 180	Analytic Geometry and Calculus	5
MATH 280	Analytic Geometry and Calculus	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. Course work meets the educational components of the Department of Social Services license regulations for child care programs. The degree meets the educational requirements of the Regular Children's Center Instructional Permit.

These 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
Child Care Specialist
- *Child Psychologist
Curriculum Development
- *Development Specialist (Child, Adolescent and Family)
- *Educational Consultant
Infant/Toddler Teacher
Preschool Director
Preschool Teacher
- *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

Major consists of 27 required units of core curriculum. Remaining units are taken in an area of emphasis. Students must choose at least one area of emphasis.

NOTE: All courses in the major 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 and Safety 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	Observation and Guidance for Child Development	2
CD 143	Infant/Toddler Curriculum	3
CD 170	Field Experience with Infants and Toddlers	2
		10
	Total Required Including Core Classes Plus General Education Requirements	37

B. PRESCHOOL CHILDREN (Major Code: 55030)

CD 130	Curriculum: Developmentally Appropriate Practices	3
CD 132	Observation and Guidance for Child Development	2
CD 133	Field Experience for Child Development	2
		7
	Total Required Including Core Classes Plus General Education Requirements	34

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: Detection, Intervention and Prevention	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.

NOTE: All courses in the major 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	Observation and Guidance for Child Development	2
CD 134	Health and Safety 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
		19

Select one (1) of the following courses:

CD 137	Administration of Child Development Programs	3
CD 141	Working with Children with Special Needs	3
CD 145	Child Abuse: Detection, Intervention and Prevention	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
		3-4
	Total Required	22-23
	Plus General Education Requirements	

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Child Development–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.

COMPUTER AND INFORMATION SCIENCE

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

CAREER OPPORTUNITIES

Administrative Assistant
 Communications Specialist
 Computer Game Programmer
 Computer Graphics Designer
 Computer Hardware Specialist
 Computer Help Desk Technician
 Computer Maintenance Technician
 Computer Operator
 Computer Peripheral Equipment Operator
 Computer Software Technician
 *Computer Systems Engineer
 *Computing Analyst
 Cyber Café Owner
 Data Entry Specialist
 Database Manager
 Desktop Publishing Specialist
 Financial Information Specialist
 GIS (Geographic Information Systems) Specialist
 Help Desk Service Provider
 Information Scientist
 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
 Online Publisher
 *Programmer Analyst
 Sales and Service
 *Scientific Programmer
 Software Consultant
 *Software Engineer/Designer
 *Systems Analyst
 *Systems Programmer
 Technical Support Representative
 Technician
 *Telecommunications Programmer
 Training Specialist
 Virtual Reality Developer
 Web Master
 Web Page Designer
 Word Processing Operator

*Bachelor Degree or higher required

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+, MCP (Microsoft Certified Professional) 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 140ABCD	Databases	3
CIS 190	Introduction to Windows Operating Systems	3
CIS 191	Introduction to UNIX Operating System	3
CIS 201	Cisco Networking Academy Semester I	3
CIS 202	Cisco Networking Academy Semester II	3
		<u>21</u>

Select one (1) of the following courses:

CIS 292	UNIX Shell Programming	2
CS 119	Program Design and Development	3
and		
CS 119L	Program Design and Development Lab	1
CS 180ABCD	Introduction to Visual Basic Programming	4
CS 182	Introduction to Java Programming	4
		<u>2-4</u>

Select three (3) of the following courses:

BUS 105	Call Center Systems and Procedures	2
CIS 203	Cisco Networking Academy Semester III	3
CIS 204	Cisco Networking Academy Semester IV	3
CIS 212	Web Publishing I	3
CIS 214	Web Server Management	3
CIS 240ABCD	Advanced Databases	3
CIS 290	Windows System Administration	3
CIS 291	UNIX System Administration	3
		<u>8-9</u>
	Total Required	31-34
	Plus General Education Requirements	

Certificate of Achievement

Students who complete only the major requirements listed 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. 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 current software and hardware typically found in the field of professional web development.

Associate in Science Degree Requirements:

Course	Title	Units
CIS 110	Principles of Information Systems	4
CIS 132	Introduction to the Internet	1.5
CIS 140ABCD	Databases	3
CIS 190	Introduction to Windows Operating Systems	3
CIS 211	Web Markup Languages	3
CIS 212	Web Publishing I	3
CIS 213	Web Publishing II	3
CIS 215	JavaScript Programming	3
CIS 216	Active Server Pages	3
CIS 297	CIS Capstone Project	1
CS 119	Program Design and Development	3
and		
CS 119L	Program Design and Development Lab	1
		<u>31.5</u>

Select three (3) of the following courses:

CIS 170ABCD	Computer Graphics	3
CIS 201	Cisco Networking Academy Semester I	3
CIS 214	Web Server Management	3
CIS 217	Web Graphics	3
CIS 221	Web Multimedia	3
CIS 222	Web Animation	3
CIS 240ABCD	Advanced Databases	3
CIS 252	Electronic Commerce	3
CIS 253	Electronic Marketing	3
CIS 290	Windows System Administration	3
CS 180ABCD	Introduction to Visual Basic Programming	4
CS 182	Introduction to Java Programming	4
		<u>9-11</u>
	Total Required	40.5-42.5
	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

The Computer and Information Science Certificates of Proficiency offer specific training, either for an entry-level position 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:**

<i>Course</i>	<i>Title</i>	<i>Units</i>
CIS 201	Cisco Networking Academy Semester I	3
CIS 202	Cisco Networking Academy Semester II	3
CIS 203	Cisco Networking Academy Semester III	3
CIS 204	Cisco Networking Academy Semester IV	3
	Total Required	12

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

<i>Course</i>	<i>Title</i>	<i>Units</i>
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. ELECTRONIC COMMERCE (Major Code: 57116)**Certificate Requirements:**

<i>Course</i>	<i>Title</i>	<i>Units</i>
BUS 111	Entrepreneurship: Starting and Developing a Business	3
BUS 125	Business Law: Legal Environment of Business	3
CIS 132	Introduction to the Internet	1.5
CIS 212	Web Publishing I	3
CIS 252	Electronic Commerce	3
CIS 253	Electronic Marketing	3
	Total Required	16.5

IV. NETWORK SERVICING TECHNOLOGY

(Major Code: 57117)

Certificate Requirements:

<i>Course</i>	<i>Title</i>	<i>Units</i>
BUS 105	Call Center Systems and Procedures	2
CIS 120	Computer Maintenance and A+ Certification	3
CIS 121	Network Cabling Systems	3
CIS 201	Cisco Networking Academy Semester I	3
CIS 202	Cisco Networking Academy Semester II	3
		14

Select one (1) of the following courses:

CIS 190	Introduction to Windows Operating Systems	3
CIS 191	Introduction to UNIX Operating System	3
		3
	Total Required	17

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

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

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

<i>Course</i>	<i>Title</i>	<i>Units</i>
CIS 132	Introduction to the Internet	1.5
CIS 211	Web Markup Languages	3
CIS 212	Web Publishing I	3
CIS 213	Web Publishing II	3
CIS 217	Web Graphics	3
		13.5

Select one (1) of the following courses:

CIS 215	JavaScript Programming	3
CIS 221	Web Multimedia	3
CIS 222	Web Animation	3
		3
	Total Required	16.5

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

Course	Title	Units
CIS 140ABCD	Databases	3
CIS 211	Web Markup Languages	3
CIS 215	JavaScript Programming	3
CIS 216	Active Server Pages	3
		12

Select one (1) of the following courses:

CIS 222	Web Animation	3
CIS 240ABCD	Advanced Databases	3
CS 119	Program Design and Development	3
and		
CS 119L	Program Design and Development Lab	1
CS 180ABCD	Introduction to Visual Basic Programming	4
CS 181	Introduction to C++ Programming	4
CS 182	Introduction to Java Programming	4
		3-4
	Total Required	15-16

VIII. WEB SERVER MANAGEMENT

(Major Code: 57121)

Certificate Requirements:

Course	Title	Units
CIS 201	Cisco Networking Academy Semester I	3
CIS 211	Web Markup Languages	3
CIS 214	Web Server Management	3
CIS 290	Windows System Administration	3
		12

Select one (1) of the following courses:

CIS 215	JavaScript Programming	3
CIS 216	Active Server Pages	3
		3
	Total Required	15

DRAFTING TECHNOLOGY**I. DRAFTING TECHNOLOGY** (Major Code: 53030)

Occupational preparation as a drafting technologist is the primary purpose of the Drafting Technology degree program. Designed to impart in-depth technical drafting and process skills required in the drafting departments of our modern industrial concerns. Adherence to industrial practices and standards is stressed with problem solving in a simulated industrial environment.

CAREER OPPORTUNITIES

Architectural Drafter
 Checker
 Computer-Aided Drafting (CAD)
 Copier
 Detail Drafter
 Drafter/Illustrator
 Drafting Trainee
 Electronics Drafter
 Marine Designer
 Mechanical Drafter
 Structural Drafter
 Tool and Die Designer

Associate in Science Degree Requirements:

Course	Title	Units
DTEC/ENGR 124	Basic Drafting	3
DTEC/ENGR 125	Intermediate Drafting – Graphics and Processes	3
DTEC 126	Electronic Drafting	3
DTEC 127	Survey Drafting Technology	3
DTEC 128	Dimensioning and Tolerancing	3
DTEC 129	Advanced Isometrics	3
DTEC 130ABCD	Basic AutoCAD	3
DTEC 132ABCD	3-D Advanced AutoCAD	3
	Total Required	24
	Plus General Education Requirements	

Recommended Elective:

DTEC 131ABCD

Certificate of Achievement

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

II. TECHNICAL ILLUSTRATION GRAPHICS

(Major Code: 50128)

The basic purpose of this certificate is to equip students with the skills to pictorialize three dimensional drawings, illustrations, graphs and visual aids needed in industry, publications and science. This area of graphics demands accuracy and versatility in communicating ideas of various media to achieve the maximum descriptive image for the consumer.

Students willing to learn the mechanical systems by which three dimensional drawings are made can produce very credible and convincing illustrations needed for service catalogs. Students will have entry-level job skills and basic business graphics knowledge needed in the real world of work.

Certificate Requirements:

Course	Title	Units
CIS 110	Principles of Information Systems	4
CIS 170ABCD	Computer Graphics	3
DTEC/ENGR 124	Basic Drafting	3
DTEC/ENGR 125	Intermediate Drafting – Graphics and Processes	3
DTEC 129	Advanced Isometrics	3
DTEC 130ABCD	Basic AutoCAD	3
	Total Required	19

Certificate of Achievement

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

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 course work 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:

Course	Title	Units
1. Composition (minimum 6 units)		
ENGL 120	College Composition and Reading	3
ENGL 124	Advanced Composition: Critical Reasoning and Writing	3
2. Communication (minimum 3 units)		
COMM 122	Public Speaking	3
3. Literature (minimum 3 units)		
ENGL 122	Introduction to Literature	3
4. Mathematics (minimum 6 units)		
MATH 125	Structure and Concepts of Elementary Mathematics I	3
MATH 126	Structure and Concepts of Elementary Mathematics II	3
5. Biological Sciences* (minimum 3 units)		
BIO 130	General Biology I	3
BIO 131	General Biology I Laboratory	1
6. Physical Sciences* (minimum 3 units)		
ASTR 110	Descriptive Astronomy	3
ASTR 112	General Astronomy Laboratory	1
CHEM 115	Fundamentals of Chemistry	4
GEOG 120	Elements of Physical Geography	3
GEOG 121	Physical Geography Laboratory	1
GEOL 110	General Geology	3
PHYC 110	Introductory Physics	4
7. Global Perspective (minimum 3 units)		
ANTH 120	Cultural Anthropology	3
GEOG 130	Human and Cultural Geography	3
SOC 120	Introductory Sociology	3
8. Human Growth and Development (minimum 6 units)		
PSY 120	Introductory Psychology	3
PSY 165	Developmental Psychology	3
or		
CD 125	Child Growth and Development	3

9. United States Organization (minimum 6 units)

HIST 108	Early American History	3
HIST 109	Modern American History	3

10. Values and Ethics (minimum 3 units)

PHIL 110	A General Introduction to Philosophy	3
PHIL 115	History of Philosophy I	3
PHIL 117	History of Philosophy II	3
PHIL 140	Problems in Ethics	3
RELG 120	World Religions	3
RELG 130	Scriptures of World Religions	3

11. Western Civilization (minimum 3 units)

HIST 100	Early World History	3
HIST 101	Modern World History	3
HIST 105	Early Western Civilization	3
HIST 106	Modern Western Civilization	3

12. Music (minimum 4 units)

MUS 118	Introduction to Music	4
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13. Art/Humanities (minimum 3 units)

ART 100	Art Appreciation	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
THTR 110	Introduction to Theatre	3

14. Additional Requirements (minimum 8-9 units)

HED 110	Essentials of Personal and Community Health	3
ES 253	Physical Education in Elementary Schools	3
ES Activity**	(At least two courses)	2-3
	Total Required	61-62

* An approved lab course must be included in (5) or (6).
 ** 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.

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. This may be completed at Cuyamaca College or San Diego State University. Please refer to "Graduation Requirements" in the SDSU catalog for further information.

ENGINEERING

This transfer program is designed to cover the first two years of a four-year program leading to the Bachelor's Degree in Engineering at San Diego State University or other universities and colleges.

CAREER OPPORTUNITIES

- *Aerospace Engineer
- Air Conditioning & Refrigeration Technician
- *Broadcast Engineer
- *CAD/CAM Engineer
- CAD/CAM Technician
- *Chemical Engineer
- *Civil Engineer
- Civil Engineering Technician
- *Computer Engineer
- Drafter (Junior/Senior)
- *Electrical/Electronics Engineer
- Electromechanical Technician
- *Environmental Engineer
- Field Service Technician
- *Industrial Engineer
- Industrial Engineering Technician
- *Manufacturing Engineer
- Manufacturing Engineering Technician
- *Metallurgical, Ceramic & Materials Engineer
- Mechanical Engineering Technician
- *Naval Engineer
- *Nuclear Engineer
- *Plastics Engineer
- *Project Architect
- *Radio Frequency Engineer
- *Sanitation Engineer
- *Structural Engineer
- *Systems Engineer
- *Robotics Engineer
- Robotics Technician

*Bachelor Degree or higher required

Engineering Certificate Transfer Program

This program is designed for the certificate only and may not be used as a major for an Associate Degree. Students who complete the requirements below qualify for a Certificate in Engineering. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

<i>Course</i>	<i>Title</i>	<i>Units</i>
CHEM 141	General Chemistry I	5
ENGR 120	Engineering Problem Analysis	3
ENGR 200	Engineering Mechanics–Statics	3
ENGR 210	Electric Circuits	3
ENGR 220	Engineering Mechanics–Dynamics	3
MATH 180	Analytic Geometry and Calculus	5
MATH 280	Analytic Geometry and Calculus	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

Plus the following courses depending on major:

I. AEROSPACE ENGINEERING (Major Code: 53112)		
ENGR/DTEC 124	Basic Drafting	3
ENGR 260	Engineering Materials	3
II. CIVIL ENGINEERING (Major Code: 53113)		
ENGR/DTEC 124	Basic Drafting	3
ENGR 218	Plane Surveying	4
ENGR 260	Engineering Materials	3
MATH 160	Elementary Statistics	3
III. ELECTRICAL ENGINEERING (Major Code: 53114)		
MATH 160	Elementary Statistics	3
IV. MECHANICAL ENGINEERING (Major Code: 53115)		
ENGR/DTEC 124	Basic Drafting	3
ENGR/DTEC 125	Intermediate Drafting – Graphics and Processes	3
ENGR 260	Engineering Materials	3

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:

Course	Title	Units
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 courses:

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 courses:

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

Select one (1) of the following courses:

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)

The Entrepreneurship 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 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 106	Providing Quality Service	2
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
		17-18

Select two (2) of the following courses:

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	Web Publishing I	3
CIS 252	Electronic Commerce	3
CIS 253	Electronic Marketing	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 102	Intermediate Keyboarding/Document Processing	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		25-27
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 TECHNOLOGY

This degree and certificate program provides entry level skills as well as the upgrading/refining of 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 training, compliance, consulting, pollution prevention, recycling, remediation, conservation and 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 Protection Specialist
Environmental Research – Test Technician
Game or Fishery Technician
*Geologist
Health and Safety Technician
Industrial Hygiene Technician
Land Use and Planning Technician
Occupational Health and Safety Technician
Pollution Control Technician
Recycling Coordinator
Risk Management Technician
*Safety Officer
*Soils Analyst
Solar Energy Installer
Waste 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 130	Environmental/Occupational Health Effects of Hazardous Materials	3
ENVT 150	Hazardous Waste Management Applications	4
ENVT 200	Hazardous Materials Management Applications	4
ENVT 230	Safety and Emergency Response	4
ENVT 240*	Cooperative Work Experience	1-4
		<u>34-37</u>

Select one (1) of the following courses:

CIS 110	Principles of Information Systems	4
COMM 122	Public Speaking	3
SPAN 120	Spanish I	5
		<u>3-5</u>
Total Required		37-42
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 130	Environmental/Occupational Health Effects of Hazardous Materials	3
ENVT 150	Hazardous Waste Management Applications	4
ENVT 200	Hazardous Materials Management Applications	4
ENVT 230	Safety and Emergency Response	4
ENVT 240*	Cooperative Work Experience	1-3
Total Required		<u>23-25</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
BIO 141	Human Physiology	3
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	Workplace Health and Safety	3
ENVT 200	Hazardous Materials Management Applications	4
ENVT 205	Safety and Risk Management Administration	4
ENVT 230	Safety and Emergency Response	4
ENVT 240*	Cooperative Work Experience	1-4
		<u>34-37</u>

Select one (1) of the following courses:

CIS 110	Principles of Information Systems	4
COMM 122	Public Speaking	3
SPAN 120	Spanish I	5
		<u>3-5</u>
Total Required		37-42
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	Workplace Health and Safety	3
ENVT 200	Hazardous Materials Management Applications	4
ENVT 205	Safety and Risk Management Administration	4
ENVT 230	Safety and Emergency Response	4
ENVT 240*	Cooperative Work Experience	1-4
Total Required		<u>23-26</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 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 courses:

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 courses (fulfills the activity requirement for the Associate Degree):

ES 001	Adapted Physical Exercise	1-1.5
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
		2-3
Total Required		36.5-37.5
Plus General Education Requirements		

*Offered at Grossmont College

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)

The Graphic Design degree program develops entry level abilities in design aesthetics, typography, illustration, digital imaging, page layout, web page design and professional business practices. Courses utilize current computer hardware and software used in the graphic design profession. Students will 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

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

*Bachelor Degree or higher required

Associate in Science Degree Requirements:

Course	Title	Units
ART 120	Two-Dimensional Design	3
ART 124	Drawing I	3
CIS 212	Web Publishing I	3
GD 105	Fundamentals of Digital Media	3
GD 110	Beginning Graphic Design	3
GD 125	Typography	3
GD 126ABCD	Digital Imaging	3
GD 129	Page Layout	3
GD 130	Professional Business Practices	3
GD 225ABCD	Digital Illustration	3
	Total Required	<u>30</u>
	Plus General Education Requirements	

Recommended Electives:

ART 129, 141, 150*; BUS 110; GD 230

*Offered at Grossmont College

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.

HISTORY (Major Code: 54060)

The History major prepares students to transfer to four-year institutions for continued study in the field of history. This 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:

Course	Title	Units
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	<u>6</u>
		12

Select six (6) units from the following:

HIST 118	U.S. History: The Chicano Experience I	3
HIST 119	U.S. History: The Chicano Experience 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 150	U.S. History: The Asian-American Experience I	3
HIST 151	U.S. History: The Asian-American Experience II	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	<u>3</u>
		6

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. 15

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

LIBERAL ARTS (Major Code: 59303)

This degree program is not intended to prepare students for entry into the Liberal Studies major at San Diego State University. Students seeking an Elementary Education Degree from SDSU should refer to the Elementary Education Associate Degree.

The Liberal Arts degree is designed to provide an excellent lower division, undergraduate preparation for pre-law and most Liberal Arts majors planning to transfer to four-year colleges and universities. Students who complete the program will be certified as completing all courses necessary for the lower division general education requirement at the California State University system.

Students are encouraged to refer to the catalog of their selected transfer institution and/or consult with an academic advisor before selecting the various options listed below.

CAREER OPPORTUNITIES

- *Audiology/Speech Pathologist
- †Broker
- †Buyer
- Campaign Worker
- *Career Counselor
- *Columnist
- *Copy Editor
- Customer Service Representative
- Interpreter
- Legislative Assistant
- Loan Officer
- Methods Analyst
- Public Affairs Manager
- *Reporter
- *Teacher
- Writer (Children's Books)

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

Associate in Arts Degree Requirements:

Course	Title	Units
1. Composition (minimum 6 units)		
ENGL 120	College Composition and Reading	3
ENGL 124	Advanced Composition: Critical Reasoning and Writing	3
2. Communication (minimum 3 units)		
COMM 122	Public Speaking	3
3. Literature (minimum 3 units)		
ENGL 122	Introduction to Literature	3
4. Mathematics (minimum 6 units)		
MATH 120 or higher (excluding 198, 199, 298, 299)		6
5. Biological Sciences* (minimum 3 units)		
ANTH 130	Introduction to Physical Anthropology	3
BIO 130	General Biology I	3
BIO 131	General Biology I Laboratory	1
6. Physical Sciences* (minimum 3 units)		
ASTR 110	Descriptive Astronomy	3
ASTR 112	General Astronomy Laboratory	1
GEOG 120	Elements of Physical Geography	3
GEOG 121	Physical Geography Laboratory	1
GEOG 110	General Geology	3
PHYC 110	Introductory Physics	4
PSC 110	Introduction to the Physical Sciences	3
7. Mathematics/Science Elective (minimum 3 units)		
ANTH 130	Introduction to Physical Anthropology	3
CHEM 115	Fundamentals of Chemistry	4
CHEM 141	General Chemistry I	5
MATH 160 or higher (excluding 198, 199, 298, 299)		3-5
8. Global Perspective (minimum 3 units)		
ANTH 120	Cultural Anthropology	3
GEOG 130	Human and Cultural Geography	3
9. Individual Perspective (minimum 3 units)		
PSY 120	Introductory Psychology	3
10. U.S. Organization (minimum 3 units)		
HIST 108	Early American History	3
HIST 109	Modern American History	3
HIST 118	U.S. History: The Chicano Experience I	3
HIST 119	U.S. History: The Chicano Experience II	3
POSC 121	Introduction to U.S. Government and Politics	3
11. Values and Ethics (minimum 3 units)		
PHIL 110	A General Introduction to Philosophy	3
PHIL 140	Problems in Ethics	3
RELG 120	World Religions	3
RELG 130	Scriptures of World Religions	3
12. Western Civilization (minimum 3 units)		
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
HIST 105	Early Western Civilization	3
HIST 106	Modern Western Civilization	3

13. Art (minimum 3 units)

ART 120	Two-Dimensional Design	3
ART 124	Drawing I	3

14. Music (minimum 3 units)

MUS 110	Great Music Listening	3
MUS 118	Introduction to Music	4

15. Language or Elective (minimum 3 units)

HUM 110	Principles of the Humanities	3
HUM 140	American Humanities	3
HUM 155	Mythology	3
Any foreign language course		3-5

16. Additional Requirements (minimum 5 units)

CIS 110	Principles of Information Systems	4
or		
CIS 105	Introduction to Computing	3
ES Activity†	(minimum of two courses)	2-3

† In order 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.

* An approved lab course must be included in (5) or (6).

MANAGEMENT (Major Code: 53047)

The Management 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 courses:

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 courses:

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:

<i>Course</i>	<i>Title</i>	<i>Units</i>
MATH 180	Analytic Geometry and Calculus	5
MATH 280	Analytic Geometry and Calculus	4
MATH 281	Intermediate Calculus	4
MATH 284	Linear Algebra	3
		16

Select one (1) of the following courses:

MATH 245	Discrete Math	3
MATH 285	Differential Equations	3
		3

Select one (1) of the following courses:

ENGR 120	Engineering Problem Analysis	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	

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, Drafting 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.

ORNAMENTAL HORTICULTURE

The Ornamental Horticulture degree program provides for entry level skills, upgrading of existing skills, as well as 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 and other related fields. Emphasis on hands-on experience with student participation in labs. Students will 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)

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:

BUS 111	Entrepreneurship: Starting and Developing a Business	3
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
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. Course work 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>3</u>
		21

Select one (1) of the following courses:

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
BUS 111	Entrepreneurship: Starting and Developing a Business	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
		<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)**Associate in Science Degree Requirements:**

<i>Course</i>	<i>Title</i>	<i>Units</i>
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	<u>36</u>
	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)**Associate in Science Degree Requirements:**

<i>Course</i>	<i>Title</i>	<i>Units</i>
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
		<u>24</u>

Select eight (8) units from the following:

DTEC/ENGR 124	Basic Drafting	3
ENGR 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
		<u>8</u>
	Total Required	32
	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 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)**Associate in Science Degree Requirements:**

<i>Course</i>	<i>Title</i>	<i>Units</i>
BUS 111	Entrepreneurship: Starting and Developing a Business	3
OH 170	Plant Materials: Trees and Shrubs	3
OH 172	Introduction to Landscape Design	3
OH 173	Intermediate Landscape Design	3
OH 180	Plant Materials: Annuals and Perennials	3
OH 200	Introduction to Computer-Aided Landscape Design	3
OH 220	Landscape Construction: Concrete and Masonry	3
OH 221	Landscape Construction: Irrigation and Carpentry	3
OH 225	Landscape Contracting	3
OH 235	Principles of Landscape Irrigation	4
OH 290*	Cooperative Work Experience Education	3
	Total Required	34
	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 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)**Associate in Science Degree Requirements:**

<i>Course</i>	<i>Title</i>	<i>Units</i>
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
		28

Select five (5) units from the following:

BUS 111	Entrepreneurship: Starting and Developing a Business	3
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
SPAN 120	Spanish I	5
		5
	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)**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
BUS 111	Entrepreneurship: Starting and Developing a Business	3
OH 114	Floral Design I	3
OH 172	Introduction to Landscape Design	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.

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.

The Paralegal Studies 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:

Course	Title	Units
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 250-252*	Internship	1-3
		19-21

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

PARA 120	Administrative Law	3
PARA 132	Computer Assisted Legal Research (CALR)	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
		6
Total Required		25-27
Plus General Education Requirements		

Recommended Electives:

BUS 128, ENGL 120

* Not required with proof of previous law office experience. Students 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 111, 120
2. **Oral Communication and Analytical Thinking:**
 COMM 120, 122
 MATH 103, 110, 120, 125, 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, 130, 131, 210, 220, 221
- CHEM 115, 141
- GEOG 120, 121
- GEOL 110
- 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, 220, 221, 250, 251
 ART 100, 120, 140, 141, 144
 ASL 120
 COMM 124
 ENGL 122, 201, 202, 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, 115, 116
 PHIL 110, 115, 117, 140, 160
 RELG 100, 120, 130, 140, 150, 200, 210, 215
 SPAN 120, 120A & 120B*, 121, 141, 145, 220, 221,
 250, 251
 THTR 110

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 130
 HED 110
 HIST 108, 109, 114, 115, 118, 119, 122, 123, 124,
 130, 131, 150, 151, 180, 181
 POSC 120, 121, 124, 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.

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 111 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".
3. Two activity courses in Exercise Science. These courses are marked with an asterisk in the "Course Descriptions" section of this catalog.
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

The physical science 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:

Course	Title	Units
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	5
MATH 280	Analytical Geometry and Calculus	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	5
MATH 280	Analytical Geometry and Calculus	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. Also meets the educational requirements for the California Real Estate Broker's License and helps prepare both the salesperson and the broker for the state examination.

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

†Bachelor Degree normally recommended

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
		<u>15</u>

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

BUS 110	Introduction to Business	3
BUS 120	Financial Accounting	4
ECON 120	Principles of Macroeconomics	3
RE 201	Real Estate Property Management	3
RE 250	Real Estate Internship	3
RE 294	Advanced Real Estate Appraisal	3
Elective* (select one elective from below)		3
		<u>9-10</u>

*Electives:

BUS 125	Business Law: Legal Environment of Business	3
DTEC 005	Introduction to the Building Codes	3
RE 125	Escrow Procedures I	3
RE 197	Real Estate Economics	3
RE 198	Real Estate Office Administration	3
RE 202	Business Opportunities Sales	3
RE 230	Commercial Real Estate	3

Total Required 24-25
 Plus General Education Requirements

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:

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
	One Accounting or Economics Course	3
	Electives* (select two electives from previous column)	<u>6</u>
	Total Required	<u>24</u>

II. ESCROW (Major Code: 50045)

Certificate Requirements:

Course	Title	Units
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
		<u>18</u>

Select two (2) of the following courses:

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 198	Real Estate Office Administration	3
RE 201	Real Estate Property Management	3
RE 202	Business Opportunities Sales	3
		<u>6-8</u>
	Total Required	<u>24-26</u>

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.

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 courses:

HIST 118	U.S. History: The Chicano Experience I	3
HIST 119	U.S. History: The Chicano Experience II	3
SPAN 141*	Spanish and Latin American Cultures	3
SPAN 145	Hispanic Civilizations	3
		3
	Total Required	29
	Plus General Education Requirements	

*Offered at Grossmont College

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
DTEC 127	Survey Drafting Technology	3
ENGR/DTEC 124	Basic Drafting	3
ENGR 218	Plane Surveying	4
ENGR 240	Advanced Surveying	4
MATH 110	Intermediate Algebra for Business, Mathematics, Science and Engineering	5
MATH 170	Analytic Trigonometry	3
PHYC 110	Introductory Physics	4
	Total Required	26
	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.