Programs of Study

ACCOUNTING
See Business Administration

ADMINISTRATION OF JUSTICE
See also Criminal Justice

Campus Security Certificate of Completion
Total Units: 1

Required Courses:

Course Number	Title	Units
ADMJ B62	Campus Security Supervisor Course	1.0

Corrections Academy Certificate of Completion
Total Units: 7

Required Courses

Course Number	Title	Units
CADM B54	Corrections Officer Core Course	7.0

Juvenile Counselor Academy Certificate of Completion
Total Units: 6

Required Courses:

Course Number	Title	Units
CADM B57	Juvenile Institutions Officer Core Course	6.0

Peace Officers' Basic Academy (P.O.S.T.) Certificate of Completion
Total Units: 16

Required Courses:

Course Number	Title	Units
ADMJ B68	Peace Officers' Basic Academy (P.O.S.T.)	16.0

PC 832, Arrest and Control Techniques Certificate of Completion
Total Units: 2

Required Courses:

Course Number	Title	Units
ADMJ B60	PC 832, Arrest and Control Techniques	1.0

PC 832, Firearms Training Certificate of Completion
Total Units: 1.5

Required Courses:

Course Number	Title	Units
ADMJ B60	PC 832 Arrest & Control Techniques	1.0
ADMJ B61	Firearms Training	0.5

Public Safety Dispatcher Certificate of Completion
Total Units: 4

Required Courses:

Course Number	Title	Units
ADMJ B69	Public Safety Dispatcher	4.0

Special Topics Certificate of Completion
Total Units: 0.5 - 3 units

Required Courses:

Course Number	Title	Units
ADMJ B71	Special Topics	0.5 - 3.0

AGRICULTURE

Agriculture Business Management Certificate of Achievement
Total Units: 32

Required Courses:

Course Number	Title	Units
AGBS B2 or	Agricultural Economics	3.0
AGBS B52	Economics in Agriculture	
SOIL B1 or	Introduction to Soil Science	3.0
CRPS B1	Principles of Crop Production	
AGRI B1	Agriculture, Environment and Society	3.0
AGBS B6	Agricultural Sales and Promotion	3.0
CRPS B1	Principles of Crop Production	3.0
MCAG B1 or	Introduction to Agricultural Mechanics	3.0
COMS B5 or	Introduction to Microcomputer Applications using Microsoft Office 2007	
COMS B2	Introduction to Computer Information Systems	
AGRI B248ab	Cooperative Work Experience Education	3.0
CRPS B2 or	Forage Crops	3.0
NRES B1	Range Management	
ANSC B1 or	Introduction to Animal Science	3.0
ANSC B2 or	Beef Production	
ANSC B4 or	Dairy Production	
ANSC B10	Horse Production	
FORE B2 or	Natural Resources	3.0
FORE B1 or	Introduction to Forestry	
FORE B3 or	Wildlife Management	
FORE B5 or	Identification of California Wildlife	
FORE B6	Forestry Skills	
AGRI B49	Agriculture Leadership Training	2.0

Agricultural Business Management Associate in Arts Degree

The Agricultural Business Management major is made up of agriculture and agricultural business courses pertaining to the agriculture industry.

Many jobs in agriculture require training in business courses such as accounting, typing and salesmanship. With a combination of agriculture and business courses, many employment opportunities are available. Agriculture Business Management Associate in Arts Degree is recommended for students planning to transfer to a 4-year college.
Total Units: 20

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
AGBS B6	Agricultural Sales and Promotion	3.0

PROGRAMS OF STUDY

CRPS B1 or	Principles of Crop Production	3.0
FORE B1 or	Introduction to Forestry	
ANSC B1 or	Introduction to Animal Science	
ORNH B1	Introduction to Ornamental Horticulture	
MCAG B1 or	Introduction to Agricultural Mechanics	3.0
COMS B5 or	Introduction to Microcomputer Applications using Microsoft Office 2007	
COMS B2	Introduction to Computer Information Systems	
AGRI B49	Agriculture Leadership Training	2.0

Agricultural Business Management Associate in Science Degree
Total Units: 32

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
AGBS B6	Agricultural Sales and Promotion	3.0
CRPS B1	Principles of Crop Production	3.0
MCAG B1 or	Introduction to Agricultural Mechanics	3.0
COMS B5 or	Introduction to Microcomputer Applications using Microsoft Office 2007	
COMS B2	Introduction to Computer Information Systems	
AGRI B248ab	Cooperative Work Experience Education	3.0
CRPS B2 or	Forage Crops	3.0
NRES B1	Range Management	
ANSC B1 or	Introduction to Animal Science	3.0
ANSC B2 or	Beef Production	
ANSC B4 or	Dairy Production	
ANSC B10	Horse Production	
FORE B2 or	Natural Resources	3.0
FORE B1 or	Introduction to Forestry	
FORE B3 or	Wildlife Management	
FORE B5 or	Identification of California Wildlife	
FORE B6	Forestry Skills	
AGRI B49	Agriculture Leadership Training	2.0

Animal Science Certificate of Achievement
See also Preveterinary Medical Option and Registered Veterinary Technician.
Total Units: 30

Required Courses:

Course Number	Title	Units
AGRI B1	Agriculture, Environment and Society	3.0
ANSC B1	Introduction to Animal Science	3.0
AGRI B49	Agriculture Leadership Training	2.0

Select 22 units from the following courses:

Course Number	Title	Units
ANSC B2	Beef Production	3.0
ANSC B3	Sheep Production	3.0
ANSC B4	Dairy Production	3.0
ANSC B6	Applied Animal Nutrition	4.0
ANSC B7	Animal Diseases	3.0
ANSC B10	Horse Production	3.0
ANSC B11	Livestock Selection and Evaluation	3.0
ANSC B22	Animals and Society	3.0
ANSC B20	Companion Animal Care	4.0
MCAG B1	Introduction to Agricultural Mechanics	3.0

ANSC B60	Bovine Reproduction	2.0
ANSC B71	Diseases of Beef and Dairy Cattle	1.0
ANSC B72	Equine Health	1.0
ANSC B74	Equine Nutrition	1.0
ANSC B80	Introduction to Veterinary Technology	2.0
ANSC B82	Anatomy and Physiology of Domestic Animals	2.0
ANSC B84	Small Animal Diseases	1.5
ANSC B86	Pharmacology for Veterinary Technicians	1.5
ANSC B88	Surgery, Dental and Anesthesiology for Veterinary Technicians	1.5
ANSC B90	Emergency Medicine, Surgery/Nursing Procedures for Veterinary Technicians	2.0
ANSC B92	Clinical Pathology for Veterinary Technicians	2.0
ANSC B94	Caged Birds, Laboratory, and Exotic Animal Medicine	2.0
ANSC B96	Radiology, Ultrasound, and Diagnostic Imaging for Veterinary Technology	1.5
AGRI B248ab or	Cooperative Work Experience Education	3.0
AGRI B249ab	Cooperative Work Experience Education	

Animal Science Associate in Arts Degree
The Animal Science major prepares students for occupations in those areas of agriculture involving production of livestock. Both the scientific and practical aspects of the production of horse, beef, sheep, swine and dairy cattle are stressed in the courses.
Total Units: 23

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
AGRI B1	Agriculture, Environment and Society	3.0
ANSC B1	Introduction to Animal Science	3.0
ANSC B2 or	Beef Production	3.0
ANSC B3 or	Sheep Production	
ANSC B4 or	Dairy Production	
ANSC B10	Horse Production	
ANSC B6	Applied Animal Nutrition	3.0
ANSC B7	Animal Diseases	3.0
AGRI B49	Agriculture Leadership Training	2.0
MCAG B1 or	Introduction to Agricultural Mechanics	3.0
ANSC B11 or	Livestock Selection and Evaluation	
NRES B1	Range Management	

Animal Science Associate in Science Degree
Total Units: 29

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
AGRI B1	Agriculture, Environment and Society	3.0
ANSC B1	Introduction to Animal Science	3.0
MCAG B1	Introduction to Agricultural Mechanics	3.0
AGRI B248ab or	Cooperative Work Experience Education	3.0
AGRI B249ab	Cooperative Work Experience Education	
AGRI B49	Agriculture Leadership Training	2.0

Select 6 units from the following courses:

Course Number	Title	Units
ANSC B2	Beef Production	3.0
ANSC B3	Sheep Production	3.0
ANSC B4	Dairy Production	3.0
ANSC B10	Horse Production	3.0

Select 6 units from the following courses:

Course Number	Title	Units
ANSC B6	Applied Animal Nutrition	4.0
ANSC B7	Animal Diseases	3.0
ANSC B11	Livestock Selection & Evaluation	3.0
ANSC B20	Companion Animal Care	4.0
ANSC B60	Bovine Reproduction	2.0
ANSC B71	Diseases of Beef and Dairy Cattle	1.0
ANSC B72	Equine Health	1.0
ANSC B74	Equine Nutrition	1.0
ANSC B80	Introduction to Veterinary Technology	2.0
ANSC B82	Anatomy and Physiology of Domestic Animals	2.0
ANSC B84	Small Animal Diseases	1.5
ANSC B85	Large Animal Diseases	1.5
ANSC B86	Pharmacology for Veterinary Technicians	1.5
ANSC B88	Surgery, Dental and Anesthesiology for Veterinary Technicians	1.5
ANSC B90	Emergency Medicine, Surgery/Nursing Procedures for Veterinary Technicians	2.0
ANSC B92	Clinical Pathology for Veterinary Technicians	2.0
ANSC B94	Caged Birds, Laboratory, and Exotic Animal Medicine	2.0
ANSC B96	Radiology, Ultrasound, and Diagnostic Imaging for Veterinary Technology	1.5
NRES B1	Range Management	3.0

Environmental Horticulture Certificate of Achievement

The Certificate of Achievement in Environmental Horticulture is designed for the student desiring specialized training in order to enter the workforce in the least amount of time. See also Plant Science.
Total Units: 29

Required Courses:

Course Number	Title	Units
CRPS B3	Integrated Pest Management	3.0
ORNH B1	Introduction to Ornamental Horticulture	3.0
ORNH B2	Fundamentals of Nursery Management and Plant Production	3.0
ORNH B3	Landscape Installation and Maintenance	3.0
ORNH B4	Plant Propagation	3.0
ORNH B6	Ornamental Plant Identification - Ground Covers, Vines, and Dwarf Shrubs	3.0
ORNH B7	Ornamental Plant Identification - Large Shrubs, Small Trees, Large Trees & Palms	3.0
ORNH B8	Introduction to Landscape Design	3.0
AGRI B248ab or AGRI B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	3.0
AGRI B49	Agriculture Leadership Training	2.0

Environmental Horticulture Associate in Arts Degree

The Associate in Arts degree in Environmental Horticulture is designed for the student planning to transfer to a 4 year college or university. See also Plant Science.
Total Units: 21

Required Courses:

Course Number	Title	Units
SOIL B1	Introduction to Soil Science	3.0
CRPS B10	Plant Biology	4.0
ORNH B1	Introduction to Ornamental Horticulture	3.0
ORNH B4	Plant Propagation	3.0

ORNH B6	Ornamental Plant Identification - Ground Covers, Vines, and Dwarf Shrubs	3.0
ORNH B7	Ornamental Plant Identification - Large Shrubs, Small Trees, Large Trees & Palms	3.0
AGRI B49	Agriculture Leadership Training	2.0

Environmental Horticulture Associate in Science Degree

The Associate in Science degree in Environmental Horticulture is designed for the student desiring to enter the workforce after earning a 2 year degree. See Plant Science.
Total Units: 33

Required Courses:

Course Number	Title	Units
CRPS B3	Integrated Pest Management	3.0
CRPS B10	Plant Biology	4.0
ORNH B1	Introduction to Ornamental Horticulture	3.0
ORNH B2	Fundamentals of Nursery Management and Plant Production	3.0
ORNH B3	Landscape Installation and Maintenance	3.0
ORNH B4	Plant Propagation	3.0
ORNH B6	Ornamental Plant Identification - Ground Covers, Vines, and Dwarf Shrubs	3.0
ORNH B7	Ornamental Plant Identification - Large Shrubs, Small Trees, Large Trees and Palms	3.0
ORNH B8	Introduction to Landscape Design	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B49	Agriculture Leadership Training	2.0

Forestry Certificate of Achievement

Total Units: 36

Required Courses:

Course Number	Title	Units
AGBS B2 or AGBS B52	Agricultural Economics Economics in Agriculture	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
FORE B1	Introduction to Forestry	3.0
FORE B2	Natural Resources	3.0
FORE B6	Forestry Skills	3.0
MCAG B1	Introduction to Agricultural Mechanics	3.0
AGRI B248ab or AGRI B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	1.0
AGRI B49	Agriculture Leadership Training	2.0

Select 12 units from the following courses:

Course Number	Title	Units
FORE B3	Wildlife Management	3.0
FORE B4	Wildlife Law Enforcement	3.0
FORE B5	Identification of California Wildlife	3.0
FORE B7	Wildland Fire Management	3.0
CRPS B3	Integrated Pest Management	3.0
CRPS B10	Plant Biology	4.0
NRES B1	Range Management	3.0
NRES B2	Parks and Outdoor Recreation	3.0
BIOL B11	Concepts of Biology	4.0
COMS B2	Introduction to Computer Information Systems	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B37	Introduction to Geographic Information Systems	3.0

Forestry Associate in Arts Degree

The program provides a broad general experience in the arts and science to develop an individual with a well-rounded education, and a core of basic courses which furnish the student with a perspective of the scientific and professional area of forestry, natural resources, fisheries and wildlife. The pre-forestry, resource conservation and wildlife management program at Bakersfield College should conform to the recommended program as prescribed by the school to which the student wishes to transfer. Students planning to go to work after completing a 2-year degree should complete the A.S. degree and not the A.A. degree.

Total Units: 24

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
FORE B2	Natural Resources	3.0
FORE B6	Forestry Skills	3.0
FORE B1 or	Introduction to Forestry	3.0
FORE B3	Wildlife Management	
FORE B4 or	Wildlife Law Enforcement	3.0
FORE B5 or	Identification of California Wildlife	
FORE B7 or	Wildland Fire Management	
CRPS B3 or	Integrated Pest Management	
COMS B37 or	Introduction to Geographic Information Systems	
COMS B2 or	Introduction to Computer Information Systems	
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	
AGRI B248ab or	Cooperative Work Experience Education	1.0
AGRI B249ab	Cooperative Work Experience Education	
AGRI B49	Agriculture Leadership Training	2.0

Forestry Associate in Science Degree

Total Units: 34

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
CRPS B3	Integrated Pest Management	3.0
FORE B1	Introduction to Forestry	3.0
FORE B2	Natural Resources	3.0
FORE B6	Forestry Skills	3.0
MCAG B1	Introduction to Agricultural Mechanics	3.0
AGRI B248ab or	Cooperative Work Experience Education	1.0
AGRI B249ab	Cooperative Work Experience Education	
AGRI B49	Agriculture Leadership Training	2.0

Select 7 units from the following courses:

FORE B3	Wildlife Management	3.0
FORE B4	Wildlife Law Enforcement	3.0
FORE B5	Identification of California Wildlife	3.0
FORE B7	Wildland Fire Management	3.0
CRPS B10	Plant Biology	4.0
NRES B1	Range Management	3.0

NRES B2	Parks and outdoor Recreation	3.0
BIOL B11	Concepts of Biology	4.0
COMS B2	Introduction to Computer Information Systems	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B37	Introduction to Geographic Information Systems	3.0

Horticulture Associate in Arts Degree

The Horticulture major prepares students for general fruit farming, positions in sales as vineyard foremen, as field and plant representatives, and for work in related agriculture fields as well as for transferring to a four-year college.

Total Units: 24

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
CRPS B1	Principles of Crop Production	3.0
CRPS B10	Plant Biology	4.0
AGBS B6	Agriculture Sales and Promotion	3.0
MCAG B1 or	Introduction to Agricultural Mechanics	3.0
ORNH B4 or	Plant Propagation	
ORNH B6	Ornamental Plant Identification - Ground Covers, Vines, and Dwarf Shrubs	
AGRI B49	Agriculture Leadership Training	2.0

Plant Science Certificate of Achievement

See also Environmental Horticulture.

Total Units: 27

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
ORNH B4	Plant Propagation	3.0
CRPS B3	Integrated Pest Management	3.0

Horticulture Emphasis

Course Number	Title	Units
ORNH B2	Fundamentals of Nursery Management and Plant Production	3.0
ORNH B36	Beginning Floral Design	3.0
ORNH B3	Landscape Installation and Maintenance	3.0
ORNH B8	Introduction to Landscape Design	3.0

Crops Emphasis

Course Number	Title	Units
CRPS B1	Principles of Crop Production	3.0
CRPS B2	Forage Crops	3.0
CRPS B4	Vegetable Production	3.0
AGRI B248ab or	Cooperative Work Experience Education	3.0
AGRI B249ab	Cooperative Work Experience Education	

Plant Science Associate in Arts Degree

This program provides instruction in the planting, growing, harvesting, and marketing of field, forage, and vegetable crops as well as irrigated and range pasture crops. See also Environmental Horticulture.
Total Units: 22

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
CRPS B10	Plant Biology	4.0
ORNH B4	Plant Propagation	3.0

Horticulture Emphasis

Course Number	Title	Units
ORNH B6	Ornamental Plant Identification - Ground Covers, Vines, and Dwarf Shrubs	3.0
ORNH B7	Ornamental Plant Identification - Large Shrubs, Small Trees, Large Trees and Palms	3.0

Crops Emphasis

Course Number	Title	Units
CRPS B1	Principles of Crop Production	3.0
CRPS B2 or	Forage Crops	3.0
CRPS B4	Vegetable Production	

Plant Science Associate in Science Degree

See also Environmental Horticulture.
Total Units: 25-28

Required Courses:

Course Number	Title	Units
AGBS B2	Agricultural Economics	3.0
SOIL B1	Introduction to Soil Science	3.0
AGRI B1	Agriculture, Environment and Society	3.0
CRPS B10	Plant Biology	4.0
ORNH B4	Plant Propagation	3.0
CRPS B3	Integrated Pest Management	3.0

Horticulture Emphasis

Course Number	Title	Units
ORNH B2	Fundamentals of Nursery Management and Plant Production	3.0
ORNH B36 or	Beginning Floral Design	3.0
ORNH B3	Landscape Installation and Maintenance	3.0
ORNH B8	Introduction to Landscape Design	3.0

Crops Emphasis

Course Number	Title	Units
CRPS B1	Principles of Crop Production	3.0
CRPS B2	Forage Crops	3.0
CRPS B4	Vegetable Production	3.0

Pre-Veterinary Medicine Option

See Agriculture faculty advisor. The veterinarian diagnoses and treats diseases and disorders of animals; determines the nature of disease or injury and treats animals medically or surgically; performs autopsies to determine causes of death; gives advice on care and breeding of animals. Some engage in general practice, some become involved in research and development, while others are active in such fields as consultation, teaching, technical writing, sales or promotion of commercial products, or provide technical services for commercial firms. See also Animal Science.

Suggested Courses

Course Number	Title	Units
AGRI B248ab or	Cooperative Work Experience Education	3.0
AGRI B249ab	Cooperative Work Experience Education	
ANSC B1	Introduction to Animal Science	3.0
ANSC B6	Applied Animal Nutrition	4.0
ANSC B7	Animal Diseases	3.0
BIOL B3a	General Biology I	5.0
BIOL B3b	General Biology II	5.0
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry and Chemical Analysis	5.0
CHEM B18	Elementary Organic Chemistry	5.0
MATH B22	Elementary Probability and Statistics	5.0
PHYS B2a	General Physics-Mechanics and Heat	4.0
PHYS B2b	General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0

Registered Veterinary Technicans Option Certificate of Completion

Total Units: 17.5

Required Courses:

Course Number	Title	Units
ANSC B80	Introduction to Veterinary Technology	2.0
ANSC B82	Anatomy and Physiology of Domestic Animals	2.0
ANSC B84	Small Animal Diseases	1.5
ANSC B85	Large Animal Diseases	1.5
ANSC B86	Pharmacology for Veterinary Technicians	1.5
ANSC B88	Surgery, Dental and Anesthesiology for Veterinary Technicians	1.5
ANSC B90	Emergency Medicine, Surgery/Nursing Procedures for Veterinary Technicians	2.0
ANSC B92	Clinical Pathology for Veterinary Technicians	2.0
ANSC B94	Caged Birds, Laboratory, and Exotic Animal Medicine	2.0
ANSC B96	Radiology, Ultrasound, and Diagnostic Imaging for Veterinary Technology	1.5

AIR CONDITIONING, HEATING AND REFRIGERATION

Air Condition/Heating/Refrigeration Certificate of Completion

Total Units: 6

Required Courses:

Course Number	Title	Units
ACRF B54a	Air Conditioning and Refrigeration	3.0
ACRF B54b	Air Conditioning and Refrigeration	3.0

PROGRAMS OF STUDY

AMERICAN SIGN LANGUAGE

American Sign Language Associate in Arts Degree

The major in American Sign Language provides a linguistic and grammatical study of the language and an in-depth look into the culture of deaf people. Students should check with the receiving institution to ensure transferability of ASL courses as foreign language credit.

Total Units: 18

Required Courses:

Course Number	Title	Units
ASL B1	American Sign Language I	5.0
ASL B2	American Sign Language II	5.0
ASL B3	Advanced American Sign Language Part 1	5.0
ASL B4	Advanced American Sign Language Part 2	3.0

Other Suggested Courses

ASL B6	American Deaf Culture	3.0
ASL B7	Literature and Performance	3.0

ANIMAL SCIENCE

See Agriculture

ANTHROPOLOGY

Anthropology Associate in Arts Degree

The objective of this program is to prepare the student for upper-division study in anthropology at a four-year college or university. Anthropology focuses on the variety of human cultural patterns, both past and present, to create an awareness and understanding of the science of human behavior. Most graduates with a degree in anthropology are likely to pursue careers in teaching, government service, research, law, and business.

Total Units: 18

Required Courses:

Course Number	Title	Units
ANTH B1	Physical Anthropology	3.0
ANTH B2	Cultural Anthropology	3.0
ANTH B3	Introduction to Archaeology	3.0
ANTH B5	North American Indians	3.0
PSYC B1a	General Psychology	3.0
SOCI B1	Introduction to Sociology	3.0

APPRENTICESHIP PROGRAMS

Apprenticeship courses are designed for indentured apprentices under the Shelley-Maloney California Apprenticeship Standards Act. The Apprentice Agreement states that the student will supplement on-the-job training with related classroom instruction during each year of apprenticeship.

Apprentice classes meet three to eight hours per week and yield two to six units of credit. Joint Apprenticeship Committees administering each program are composed of representation from labor, management, California State Division of Apprenticeship Standards, and Bakersfield College. These committees adopt state approved standards for operation and assure equal opportunity for applicants. Related training in apprenticeable occupations, in addition to those listed below, may be offered as the need arises.

Information for entry into apprenticeship programs may be obtained from the college coordinator of apprenticeship training. Interested persons are encouraged to apply for any of these programs and may contact the BC Apprenticeship Department at 395-4408 for further information.

    Carpentry
    Electricians
    Operating Engineers
    Plumbers and Steamfitters
    Sheet Metal

Apprenticeship Associate Degree Program

	Units
Apprenticeship classes for duration of apprentice period (45 units maximum)	12-45
Work Experience (four semesters, maximum of 16 units)	4-16
Related technical subjects as recommended by JAC	0-6

In addition, students must comply with the requirements as shown in the catalog under Graduation Requirements. The departmental counselor can assist the student in planning for the A.A. degree.

Apprenticeship Certificate of Achievement Programs

	Units
Apprenticeship classes for duration of apprentice period	12-45
Work Experience	16

4-16 Electives (as recommended by JAC) to reach 30 units total (if needed).

ARCHITECTURE

Architectural CAD Certificate of Completion

Total Units: 15

Required Courses:

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0
INDR B20a	Computer Aided Drafting & Design CAD	3.0
ARCH B16	Digital Tools for Graphics Communication	3.0
ARCH B31	Architectural Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
ARCH B33	Architectural Computer Practice	3.0

Architectural Drafting Associate in Arts Degree

Total Units: 27.5

Required Courses:

Course Number	Title	Units
ARCH B1	Introduction to Architecture & Environmental Design	1.5
ARCH B6	Materials of Construction	3.0
ARCH B11	Introduction to Drawing, Perspective & Graphics	4.0
ARCH B12	Basic Graphics, Analysis & Communication Skills	4.0
ARCH B16	Digital Tools for Graphics Communication	3.0
ARCH B21	Architectural Design Fundamentals I	4.0
ARCH B31	Architectural Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
ARCH B33	Architectural Computer Practice	3.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0

Electives

Course Number	Title	Units
INDR B20a	Computer Aided Drafting & Design (CAD)	3.0
ARCH B55	Building Codes	3.0

Architecture/Architectural Drafting Associate in Science Degree

Total Units: 39.5

Required Courses:

Course Number	Title	Units
ARCH B1	Introduction to Architecture & Environmental Design	1.5
ARCH B6	Materials of Construction	3.0
ARCH B11	Introduction to Drawing, Perspective & Graphics	4.0
ARCH B12	Basic Graphics, Analysis & Communication Skills	4.0
ARCH B16	Digital Tools for Graphics Communication	3.0
ARCH B21	Architectural Design Fundamentals I	4.0
ARCH B22	Architectural Design Fundamentals II	4.0
ARCH B31	Architectural Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
ARCH B33	Architectural Computer Practice	3.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0
MATH B1a or MATH B6a	Precalculus I / Analytic Geometry and Calculus I	4.0
PHYS B2a	General Physics-Mechanics & Heat	4.0

Recommended Courses

Course Number	Title	Units
INDR B20a	Computer Aided Drafting & Design (CAD)	3.0

Suggested sequence of courses for Architecture/Architectural Drafting A.S. Degree

First Semester

Course Number	Title	Units
ARCH B1	Introduction to Architecture & Environmental Design	1.5
ARCH B11	Introduction to Drawing, Perspective & Graphics	4.0
ARCH B16	Digital Tools for Graphics Communication	3.0

Second Semester

Course Number	Title	Units
ARCH B6	Materials of Construction	3.0
ARCH B12	Basic Graphics, Analysis & Communication Skills	4.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0

Third Semester

Course Number	Title	Units
ARCH B21	Architectural Design Fundamentals I	4.0
ARCH B31	Architectural Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
PHYS B2a	General Physics-Mechanics & Heat	4.0

Fourth Semester

Course Number	Title	Units
ARCH B22	Architectural Design Fundamentals II	4.0
ARCH B33	Architectural Computer Practice	3.0

Suggested Transfer Programs for The College of Architecture & Environmental Design, California Polytechnic University, San Luis Obispo

The following curriculum is designed for students planning to transfer to the College of Architecture and Environmental Design at California State Polytechnic University, San Luis Obispo. The student is advised to keep a portfolio of *all* work done in all architectural classes, since the level of advanced standing is dependent upon an evaluation of this portfolio by faculty at Cal Poly, S.L.O. Entry as a transfer student to Cal Poly, S.L.O. is based upon a strong grade point average (G.P.A.), certification of general elective courses, including MATH B1b and MATH B6a, PHYS B2a and PHYS B2b and the architecture courses listed below for the Multi-Criteria Application (MCA) or supplemental information form.

In the College of Architecture and Environmental Design at Cal Poly SLO, there are five majors: Architecture, Architectural Engineering, Construction, City and Regional Planning, and Landscape Architecture. The Bachelor of Architecture and Bachelor of Landscape Architecture degrees are five-year programs. The other three majors are four-year degree programs. It is the exceptional student who is able to complete these programs in the allotted time. Many students find that it takes an additional year or two of study to complete any of the five programs listed. This may mean taking course work during the summer or spending an additional year at Bakersfield College and/or at Cal Poly SLO.

In addition, Cal Poly, SLO offers two graduate programs. The Master of Science in Architecture and the Master of City and Regional Planning for those students interested in advanced professional studies.

Recommended courses for Cal Poly, S.L.O. common to all five majors. Key courses for transfer to all five majors are shown in bold below: The courses with an asterisk (*) should be completed by the Fall semester prior to transferring.

Section One: Specific Coursework Requirements

*English Composition	ENGL B1a
*Critical Thinking	PHIL B7, B9, or
	ENGL B1b, B2, or
	COMM B5
*Speech	COMM B1
*Mathematics Requirement	See Major requirement(s)
	for each major.
Physics Requirement	See Major requirement(s)
	listed below for each major.

In addition the following areas must be completed or addressed as well:

Section Two:

*General Education (G.E. or IGETC) completion
(Certification of completion of General Education courses expected.)

Section Three:

*GPA - Students must accumulate a high GPA while at the community college to be competitive for transferability.

Section Four:

*Work Experience and extra-curricular activity participation:
Work experience related to the major of choice over the most recent 12 months.
Involvement in community service, arts, clubs and other extra-curricular activities during the last 12 months.

Listed below is the *additional specific coursework* required by each major for Section One. These courses should be completed prior to transferring to be competitive at entry.

Architecture

Course Number	Title	Units
MATH B1a	Precalculus I	4.0
MATH B6a	Analytic Geometry & Calculus I	4.0
PHYS B2a	General Physics-Mechanics and Heat	4.0
PHYS B2b	General Physics-Sound, Light, Electricity Magnetism, Modern Physics	4.0
ARCH B6	Materials of Construction	3.0
ARCH B11	Introduction to Drawing, Perspective and Graphics	4.0
ARCH B12	Basic Graphics, Analysis and Communication Skills	4.0
ARCH B16	Digital Tools for Graphics Communication	3.0
ARCH B31	Architectural Practice	3.0

Architectural Engineering

Course Number	Title	Units
MATH B6a	Analytic Geometry and Calculus I	4.0
MATH B6b	Analytic Geometry and Calculus II	4.0
MATH B6c	Calculus III	4.0
MATH B6d	Ordinary Differential Equations	3.0
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity & Magnetism	4.0
PHYS B4c	Optics and Modern Physics	4.0
CHEM B1a	General Chemistry	5.0
ARCH B1	Introduction to Architecture and Environmental Design	1.5
ARCH B6	Materials of Construction	3.0

ARCH B11	Introduction to Drawing, Perspective and Graphics	4.0
ARCH B12	Basic Graphics, Analysis and Communication Skills	4.0
ENGR B19c	Computer Programming for Science, Engineering and Technology	3.0
ENGR B24	Engineering Graphics and Descriptive Geometry	2.0
	Fine Arts	3.0
	Literature	3.0
	Philosophy	3.0
	History	3.0

Construction Management

Course Number	Title	Units
MATH B6a	Analytic Geometry and Calculus I	4.0
MATH B6b	Analytic Geometry and Calculus II	4.0
MATH B22	Elementary Probability and Statistics	5.0
PHYS B4a	Mechanics and Wave Motion	4.0
PHYS B4b	Heat, Electricity and Magnetism	4.0
BSAD B18	Business Law	3.0
ENGR B36	Engineering Mechanics - Statics	3.0
ENGR B45	Properties of Materials	3.0
ECON B1	Principles of Economics-Micro	3.0
ECON B2	Principles of Economics-Macro	3.0
ARCH B11	Introduction to Drawing, Perspective and Graphics	4.0
ARCH B12	Basic Graphics, Analysis and Communication Skills	4.0
ARCH B31	Architectural Practice	3.0
	Foreign Language	3.0
	Life Science	3.0
	Literature	3.0
	Philosophy	3.0
	Anthropology	3.0
	Political Science	3.0
	History	3.0
	Psychology	3.0

City & Regional Planning

Course Number	Title	Units
MATH B1a	Precalculus I	4.0
MATH B22	Elementary Probability & Statistics	5.0
GEOL B1a	Physical Geology	3.0
HLED B1	Principles of Health Education	3.0
ECON B1 or ECON B2	Principles of Economics-Micro Principles of Economics-Macro	3.0
ARCH B11	Introduction to Drawing, Perspective and Graphics	4.0
ARCH B12	Basic Graphics, Analysis and Communication Skills	4.0
ARCH B21	Architectural Design Fundamentals I	4.0
ARCH B22	Architectural Design Fundamentals II	4.0

Landscape Architecture

Course Number	Title	Units
MATH B1a	Precalculus I	4.0
MATH B22	Elementary Probability and Statistics	5.0
HLED B1	Principles of Health Education	3.0
ORNH B6 or	Ornamental Plant identification-Ground Covers, Vines, and Dwarf Shrubs	3.0
ORNH B7	Ornamental Plant Identification-Large Shrubs, Small Trees, Large Trees and Palms	

ARCH B11	Introduction to Drawing, Perspective and	
	Graphics	4.0
ARCH B12	Basic Graphics, Analysis and Communication	
	Skills	4.0
	Fine Arts	3.0
	Literature	3.0
	Philosophy	3.0
	Anthropology	3.0
	Economics	3.0
	Political Science	3.0
	History	3.0
	Psychology	3.0

Note: Consult the Cal Poly, San Luis Obispo catalog and web site for further detailed information about each major's individual transfer model for courses to be taken.

Listed below is the 2-year transfer program for those students who are entering college ready to take Precalculus I (MATH B1a) or calculus (MATH B6A) and English B1A. Cal Poly SLO requires two math courses in their General Education Breadth requirements.

Architecture
Recommended Courses for Transfer to California State Polytechnic University, S.L.O.

First Semester

Course Number	Title	Units
ARCH B1	Introduction to Architecture &	
	Environmental Design	1.5
ARCH B11	Introduction to Drawing, Perspective	
	& Graphics	4.0
ARCH B16	Digital Tools for Graphics Communication	3.0
MATH B1a	Precalculus I	4.0

Second Semester

Course Number	Title	Units
ARCH B6	Materials of Construction	3.0
ARCH B12	Basic Graphics, Analysis &	
	Communication Skills	4.0
INDR B11	Introduction to Computer Aided Drafting	
	& Design (CAD)	1.0

Third Semester

Course Number	Title	Units
ARCH B21	Architectural Design Fundamentals I	4.0
ARCH B31	Architecture Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
PHYS B2a	General Physics - Mechanics and Heat	4.0
MATH B6a	Analytic Geometry and Calculus I	4.0

Fourth Semester

Course Number	Title	Units
ARCH B22	Architectural Design Fundamentals II	4.0
ARCH B33	Architectural Computer Practice	3.0
PHYS B2b	General Physics - Sound, Light, Electricity	
	Magnetism, Modern Physics	4.0

Pre-Architecture
Those students entering Bakersfield College who have not completed three years of math in high school and are not ready to enter MATH B1a (Precalculus I) should plan on spending at least three years at Bakersfield College to complete the lower division requirements for the architecture major at Cal Poly, S.L.O. and an additional three and one-half to four years at Cal Poly, S.L.O. Listed below is the recommended 3-year program.

California State Polytechnic University, S.L.O.

First Semester

Course Number	Title	Units
ARCH B1	Introduction to Architecture &	
	Environmental Design	1.5
ARCH B11	Introduction to Drawing, Perspective	
	& Graphics	4.0
ARCH B16	Digital Tools for Graphics Communication	3.0
INDR B11	Introduction to Computer Aided Drafting	
	& Design (CAD)	1.0
MATH BD	Intermediate Algebra	4.0

Second Semester

Course Number	Title	Units
ARCH B6	Materials of Construction	3.0
ARCH B12	Basic Graphics, Analysis &	
	Communication Skills	4.0
INDR B20a	Computer Aided Drafting & Design	
	(CAD) (elective)	3.0
MATH B1a	Precalculus I	4.0

Third Semester

Course Number	Title	Units
ARCH B31	Architectural Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
MATH B1b	Precalculus II	4.0

Fourth Semester

Course Number	Title	Units
ARCH B33	Architectural Computer Practice	3.0
MATH B6a	Analytic Geometry & Calculus I	4.0

Fifth Semester

Course Number	Title	Units
ARCH B21	Architectural Design Fundamentals I	4.0
PHYS B2a	General Physics - Mechanics and Heat	4.0

Sixth Semester

Course Number	Title	Units
ARCH B22	Architectural Design Fundamentals II	4.0
PHYS B2b	General Physics - Sound, Light, Electricity,	4.0

Magnetism, Modern Physics

Cal Poly, Pomona
California State Polytechnic University, Pomona offers three undergraduate majors leading to the Bachelor of Science Degree in Architecture, Landscape Architecture, and Urban Planning. The student while attending Bakersfield College

should plan on taking the same basic Architecture program as for Cal Poly, San Luis Obispo. Substitute MATH B1a for MATH B6a and take only one Physics course, PHYS B2a. Entry into Cal Poly, Pomona is based on a strong G.P.A., the above Math and Physics courses, ENGL B1a, ENGL B2, COMM B1 and PHIL B7. These critical general education courses should be completed by the fall semester prior to the student applying for transfer. The student should take as many architecture courses as possible. A portfolio will be required for advanced placement into the architecture program. A Master's Degree is available in all three areas of study.

UC Berkeley

Students planning to transfer to the University of California, Berkeley should expect to take the following recommended courses. Berkeley has a 4-year curriculum leading to the B. A. Degree in the College of Environmental Design, with majors in Architecture Design, Landscape Architecture and City Regional Planning. A Master's Degree in Architecture, Landscape Architecture, or City Regional Planning would require an additional two years.

Recommended Courses for the University of California, Berkeley

Course Number	Title	Units
ARCH B11	Introduction to Drawing, Perspective & Graphics	4.0
ARCH B12	Basic Graphics, Analysis & Communication Skills	4.0
ARCH B21	Architectural Design Fundamentals I	4.0
ARCH B22	Architectural Design Fundamentals II	4.0
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0

Private Colleges and Universities

The following list are those private universities/colleges offering degrees in architecture within the State of California.

* California College of Arts and Crafts-San Francisco
* New School of Architecture-San Diego
* Southern California Institute of Architecture-Santa Monica
* University of Southern California-Los Angeles
* Woodbury University-Burbank

Students interested in one of the above programs offered at these campuses should consult with the individual dean of the college they are interested in as to entry requirements. UCLA offers an architectural graduate degree only.

ART

See also Digital Arts

Art Associate in Arts Degree

Total Units: 18

Required Courses:

Course Number	Title	Units
ART B2 or	Basic Drawing	3.0
ART B2ef	Figure Drawing	
ART B3ab	Basic Design	3.0
ART B1 or	Art Appreciation	3.0
ART B30a or	Ancient Mediterranean Art	
ART B30b or	Medieval Art	
ART B30c or	Renaissance Art	
ART B30d	Modern Art	

Electives: at least 9 units

ART B2, B4 Painting and Drawing Series
ART B7 Ceramic Series
ART B8 Jewelry Series
ART B9 Glass Design Series
ART B11, B12 Sculpture Series
ART B13 Beginning Printmaking
ART B17, B18 Photography Series
ART B20 to B25, B50 Computer Graphic Art Series
ART B30 Art History Series

AUTOMATED PRODUCTION AND MANUFACTURING PROCESSES TECHNOLOGY

See Manufacturing/Machine Technology

AUTOMOTIVE

Auto Brakes and Wheel Alignment Certificate of Achievement

This program develops student's knowledge and skills in automotive brake and suspension systems operation, trouble-shooting, maintenance, repair, and wheel alignment procedures.
Total Units: 24

Required Courses:

Course Number	Title	Units
AUTO B106	Automotive Brakes, Suspension, Steering and Alignment	9.0
AUTO B64a or	Automotive Electricity	2.0
AUTO B14	Automotive Tune-Up: Electrical and Ignitions (10.0)	
INDT B10 or Equivalent	Occupational Readiness	3.0

Electives: to equal at least 24 units

Course Number	Title	Units
AUTO B65a	Advanced Automotive Performance & Emissions	4.0
AUTO B2a or	Automotive Engine Overhaul	9.0
AUTO B75a &	Introduction to Engine Overhaul (3.0)	
AUTO B75b	Engine Repair Techniques (3.0)	
WELD B1ab	Introduction to the Welding Processes	3.0
WEXP B249	Cooperative Work Experience Education	1-4.0
INDT B275	Special Problems in Automtive	2-3.0

Auto Engine Overhaul Certificate of Achievement

This program develops student's knowledge and skills in the areas of automotive and light truck engine overhaul and machining procedures. Program includes instruction in theory of operation, diagnostic, and repair procedures.
Total Units: 24

Required Courses:
For Day Students:

Course Number	Title	Units
AUTO B2a	Automotive Engine Overhaul	9.0
AUTO B2b	Automotive Engines Machining	9.0
INDT B10 or Equivalent	Occupational Readiness	3.0

For Night Students:

Course Number	Title	Units
AUTO B75a	Introduction to Engine Overhaul	3.0
AUTO B75b	Engine Repair Techniques	3.0
AUTO B75c	Advanced Engine Overhaul	3.0
AUTO B75d	Advanced Engine Machining	3.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Electives: to equal at least 24 units

Course Number	Title	Units
AUTO B14	Automotive Tune-Up: Electrical and Ignitions	10.0
AUTO B64a	Automotive Electricity	2.0
AUTO B65a	Advanced Automotive Performance & Emissions	4.0
INDT B249ab	Cooperative Work Experience Education	4.0
INDT B275	Special Problems in Automotives	2-3.0
WELD B1ab	Introduction to the Welding Pocesses	3.0

Auto Tune-Up and Emission Systems Certificate of Achievement

This program develops student's knowledge and skills in the areas of automotive and light truck tune-up and emission control systems. Program includes instruction in theory of ignition, fuel, and computer control systems as well as emission test procedures and complete diagnostic and repair procedures.
Total Units: 26

Required Courses:

Course Number	Title	Units
AUTO B14	Automotive Tune-Up: Electrical and Ignitions	10.0
AUTO B15	Automotive Tune-Up: Fuel and Emissions	10.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Electives: to equal at least 26 units

Course Number	Title	Units
AUTO B59	Automotive Air Conditioning	3.0
AUTO B64b	Advanced Automotive Electronics	2.0
AUTO B65b	Enhanced Area Clean Air Car Course	4.0

AUTO B75a or	Introduction to Engine Overhaul	3.0
AUTO B2a	Automotive Engine Overhaul (9.0)	
ELET B1	Basic Electronics (DC and AC)	4.0
ENGL B1	Introductory Composition	4.0
WEXP B249	Cooperative Work Experience Education	1-4.0
INDT B275	Special Problems in Automtives	1-3.0

Automotive Power-Trains Certificate of Achievement

This program develops student's knowledge and skills in the areas of automotive and light truck standard and automotive transmissions, differential and drive train components. Program includes instruction in theory of operation, diagnostic and repair procedures as well as complete repair procedures.
Total Units: 24

Required Courses:

Course Number	Title	Units
AUTO B112	Automotive Transmissions and Gear Boxes	9.0
AUTO B14 or	Automotive Tune-Up: Electrical and Ignitions	10.0
AUTO B64a	Automotive Electricity (2.0)	
INDT B10 or Equivalent	Occupational Readiness	3.0

Electives: to equal at least 24 units

Course Number	Title	Units
AUTO B106	Automotive Brakes, Suspension, Steering and Alignment	9.0
AUTO B65a	Advanced Automotive Performance & Emissions	4.0
AUTO B2a or	Automotive Engine Overhaul	9.0
AUTO B75a	Introduction to Engine Overhaul	3.0
WEXP B249	Cooperative Work Experience Education	1-4.0
INDT B275	Special Problems in Automotive	2-3.0
WELD B74ab	TIG and MIG Welding	3.0

Basic Automotive Maintenance and Service Certificate of Completion
Total Units: 6

Required Courses:

Course Number	Title	Units
AUTO B90	Automotive Maintenance and Repair	6.0

Diesel and Heavy Equipment Technician Certificate of Completion
Total Units: 7

Required Courses:

Course Number	Title	Units
AUTO B50ab	Diesel & Heavy Equipment Technician Training	7.0

Industrial Technology, Automotive Option Associate in Science Degree
Total Units: 32

Select 32 units from the following courses:

Course Number	Title	Units
AUTO B2a	Automotive Engine Overhaul	9.0
AUTO B2b	Automotive Engines Machining	9.0

PROGRAMS OF STUDY

AUTO B106	Automotive Brakes, Suspension, Steering and Alignment	9.0
AUTO B112	Automotive Transmissions and Gear Boxes	9.0
AUTO B14	Automotive Tune-Up: Electrical and Ignitions	10.0
AUTO B15	Automotive Tune-Up: Fuel and Emissions	10.0
ELET B1	Basic Electronics (DC and AC)	4.0

BIOLOGY

See also Primary Care Associate

Biology is the study and application of principles of cell biology, ecology, evolution, genetics, anatomy and physiology as it relates to humans and other organisms. Laboratory and field trip activities emphasize the integrated and interdependent nature of living systems. Course work trains students to use observation and investigation to identify questions and pursue answers using the scientific method.

Graduates with biology degrees may pursue jobs in a variety of fields including; biochemistry, biotechnology, botany, ecology, entomology, genetics, health, immunology, medicine, molecular biology, oceanography, pharmacy, teaching, wildlife management, zoology and related clinical fields. Biology majors may choose to specialize in research based on a particular organism or an aspect of biology related to those listed above.

Candidates for an AS in Biology may select the emphasis that facilitates their interests most closely. The two areas of emphasis are General Biology and Human Biology.

Courses required for the General Biology emphasis include biology and chemistry courses necessary for transfer to 4 year institutions as a biology major, however numerous other courses as well as specialized requirements are necessary for specific institutions. Please refer to the Suggested Program information and check with a counselor concerning requirements for specific transfer institutions. Please note that some courses have prerequisites that should be taken in the appropriate order; it is essential to get counseling to facilitate a smooth pathway to transfer.

Courses required for the Human Biology emphasis include biology and chemistry courses necessary for transfer to allied health programs such as nursing, radiology and physician's assistant. Please refer to the Suggested Program information and check with a counselor concerning requirements for specific transfer institutions. Please note that some courses have prerequisites that should be taken in the appropriate order.

Biology Associate in Science Degree
Emphasis in General Biology
Total Units: 18

Required Courses:

Course Number	Title	Units
BIOL B3a	General Biology I	5.0
BIOL B3b	General Biology II	5.0
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry and Chemical Analysis	5.0

Electives:

Course Number	Title	Units
BIOL B16	General Microbiology	5.0
BIOL B21	Special Projects in Biology	1-2.0

Biology Associate in Science Degree
Emphasis in Human Biology
Total Units: 18

Required Courses:

Course Number	Title	Units
BIOL B32	Human Anatomy & Physiology I	4.0
BIOL B33	Human Anatomy & Physiology II	4.0
BIOL B16	General Microbiology	5.0

OR (the old series)

Course Number	Title	Units
BIOL B14	Human Anatomy	4.0
BIOL B15	Human Physiology	5.0
BIOL B16	General Microbiology	5.0

AND

Electives to equal at least 18 units:

Course Number	Title	Units
BIOL B21	Special Projects in Biology	1-2.0
BIOL B34	Pathophysiology	3.0
BIOL B255	Human Anatomy & Physiology Success Lab	0.5- 1.0
CHEM B2a	Introductory General Chemistry	4.0
CHEM B11	Principles of Inorganic, Organic and Biochemistry	5.0
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry and Chemical Analysis	5.0
MEDS B60	Medical Terminology	2-3.0
NUTR B10	Elementary Nutrition	3.0

Note: Students transferring to a 4-year institution for a B.S. in Biology generally take the CHEM B1a, B1b sequence. They should consult the university of their choice as to whether CHEM B8 and B9 should also be taken before transfer.

Note: Students transferring for a B.S. in Nursing should consult the university of choice as to which chemistry sequence meets transfer needs.

Suggested Program for Biology Majors

This suggested program meets all Intersegmental General Education Transfer Curriculum (IGETC) requirements. This program is a series of courses that community college students can use to satisfy lower-division general-education requirements at any California State University (CSU) or University of California (UC) campus. It will permit a student to transfer to a campus of the CSU or the UC system without the need, after transfer, to take additional lower-division general-education courses to satisfy campus general-education requirements. The program also meets or exceeds the minimum entrance requirements for most medical schools and other health professional programs. This program assumes you are academically prepared for university-level courses. Students requiring additional preparation in mathematics, reading or English will require at least one additional semester and should consult a counselor for advice.

First Semester

Course Number	Title	Units
BIOL B3a	General Biology I	5.0
CHEM B1a	General Chemistry	5.0
ENGL B1a	Expository Composition	4.0
	Art or Humanities Elective	3.0

Second Semester

Course Number	Title	Units
BIOL B3b	General Biology II	5.0
CHEM B1b	General Chemistry and Chemical Analysis	5.0
ENGL B2 or	Advanced Composition and Critical Thinking	5.0
PHIL B9	Critical Thinking and Advanced Composition (4.0)	

Third Semester

Course Number	Title	Units
MATH B6a	Analytic Geometry and Calculus I	4.0
PHYS B2a	General Physics-Mechanics and Heat	4.0
COMM B1	Public Speaking	3.0
	Art or Humanities elective	3.0
	Social or Behavioral Science elective	3.0

Fourth Semester

Course Number	Title	Units
MATH B6b	Analytic Geometry and Calculus II	4.0
PHYS B2b	General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0
	Art or Humanities elective	3.0
	Social or Behavioral Science elective	3.0

Note: Some UC campuses now require calculus-based physics for biology majors and other particular courses. If you are planning to transfer to a UC campus, contact their admissions office for advice.

Suggested Program for Nursing Majors (and Some other Allied Health Majors)

The following program of study for those interested in the RN degree encourages students to begin their science courses early and apply for the program during the fourth semester as they finish the General Education requirements. Science courses can be quite difficult; the suggested sequence of courses is recommended for students with the following assessment scores and life situations:

1. Reading: Level 5 or 6
2. Math: MATH BD (level 3) or transfer level (level 4 or higher)
3. Strong study skills and limited work hours per week

First Semester

Course Number	Title	Units
BIOL B32	Human Anatomy & Physiology I	4.0
MEDS B60	Medical Terminology	2-3.0
	Electives	

First or second semester should include

CHEM B11	Principles of Inorganic, Organic and Biochemistry	5.0

Second Semester

Course Number	Title	Units
BIOL B33	Human Anatomy & Physiology II	4.0
	Electives	

First or second semester should include

CHEM B11	Principles of Inorganic, Organic and Biochemistry	5.0

Third Semester

Course Number	Title	Units
BIOL B16	General Microbiology	5.0
	Electives	

Third or fourth semester should include:

NURS B100	Strategies for Success in a Nursing Program	2,0

Fourth Semester

Course Number	Title	Units
	Electives	

Third or fourth semester should include:

NURS B100	Strategies for Success in a Nursing Program	2.0

Note: General Education courses should be completed prior to the Nursing Program. The following are required but not specified as to timing or sequence: COMM B1, B2, or B3; ENGL B1a; MATH BA; SOCI B1 or ANTH B2; PSYC B1a; HIST B17a or other social science course, PHIL B12 or other humanities course (all 3 units)

Note: Students who intend to transfer to a four-year program in nursing should contact the transfer campus in order to satisfy additional requirements. In addition to the requirements for the BC Nursing Program, many nursing schools require nutrition, lifespan, pathophysiology, and statistics.

BUSINESS ADMINISTRATION

The Business Department strives to promote and enhance the economic development of the community; to provide for lifelong learning and academic excellence through course content, application, and technology; to serve diverse populations with a sense of worth and dignity; to establish work ethics relative to a positive work environment; to meet workforce needs through skills development, training, and personal growth; and to communicate a sense of vision and renewal through a creative utilization of productive and innovative resources.

Accounting Associate in Arts Degree
Total Units: 30.5

Required Courses:

Course Number	Title	Units
BSAD B53a	Introduction to Accounting 1	3.0
BSAD B53b	Introduction to Accounting 2	3.0
BSAD B54	Payroll Accounting	3.0
BSAD B55	Computer Accounting Applications	3.0
BSAD B40	Personal Finance	3.0
BSAD B51	Business Mathematics	3.0
BSAD B264	Ten-Key Proficiency	0.5
BSAD B18	Business Law	3.0
BSAD B20	Introduction to Business	3.0
BSAD B5	Human Relations/People Skills	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0

Note: BSAD B1 may be substituted for BSAD B53a and BSAD B53b.

Administrative Office Assistant

The Administrative Office programs are designed to provide the skills and competencies needed to become an efficient, productive member of an office support team. Courses are designed to help students learn to analyze and coordinate office duties and systems, develop proficiency in the use of integrated software, and improve oral and written communication. Emphasis is placed on non-technical as well as technical skills. Students have the option of completing certificates and/or a two-year degree program.

Office Assistant Certificate of Completion

This certificate prepares students as entry-level office support staff. Students are urged to continue beyond this Completion Certificate and earn a Certificate of Achievement or Associate of Arts Degree.

Upon completion of the following courses with at least a "C" grade in each course, the student will be awarded an Office Assistant Certificate of Completion.
Total Units: 11

Required Courses:

Course Number	Title	Units
BSAD B252abc	Computer Keyboarding, Parts 1-2-3	3.0
BSAD B287	Filing	1.5
BSAD B85/B285	Business English	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B264	Ten-Key Proficiency	0.5

Office Assistant Certificate of Achievement

An Office Assistant Certificate of Achievement increases the student's employability as office support staff. Students who have completed the Certificate of Completion courses can quickly upgrade to the Certificate of Achievement by completing the following courses with at least a "C" grade.
Total Units: 27.5

Required Courses:

Course Number	Title	Units
BSAD B252abc	Computer Keyboarding, Parts 1-2-3	3.0
BSAD B287	Filing	1.5
BSAD B85/B285	Business English	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B264	Ten-Key Proficiency	0.5
BSAD B53a	Introduction to Accounting	3.0
BSAD B5	Human Relations/People Skills	3.0
BSAD B88	Office Procedures	3.0
BSAD B253abc	Document Processing, Part 1-2-3	3.0
BSAD B280	Machine Transcription	1.5
BSAD B20	Introduction to Business	3.0

Administrative Office Assistant Associate in Arts Degree

Designed to prepare the student for employment as office support staff to assist managers, executives, and professionals.
Total Units: 30.5

Required Courses:

Course Number	Title	Units
BSAD B252abc	Computer Keyboarding, Parts 1-2-3	3.0
BSAD B253abc	Document Processing, Parts 1-2-3	3.0
BSAD B287	Filing	1.5
BSAD B85/B285	Business English	3.0
BSAD B88	Office Procedures	3.0
BSAD B5	Human Relations/People Skills	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B53a	Introduction to Accounting I	3.0
BSAD B264	Ten-Key Proficiency	0.5
BSAD B280	Machine Transcription	1.5
BSAD B20	Introduction to Business	3.0
BSAD B65	Principles of Organizational Communication	3.0

Bookkeeping Certificate of Achievement

The Bookkeeping program provides students with the knowledge and skills necessary for employment and growth in the accounting profession. Using the "language of business," accountants assemble and analyze, process, and communicate essential information about financial operations.

Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Bookkeeping Certificate of Achievement.
Total Units: 25.5

Required Courses:

Course Number	Title	Units
BSAD B53a	Introduction to Accounting 1	3.0
BSAD B53b	Introduction to Accounting 2	3.0
BSAD B54	Payroll Accounting	3.0
BSAD B55	Computer Accounting Applications	3.0
BSAD B51	Business Mathematics	3.0
BSAD B264	Ten-Key Proficiency	0.5
BSAD B252a	Computer Keyboarding, Part 1	1.0
BSAD B20	Introduction to Business	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B5	Human Relations/People Skills	3.0

Business Administration Associate in Arts Degree

The general purpose of the program in Business Administration at the university and state college is twofold. First, it is organized to help students to develop a broad understanding of our economy and our society in order to serve as a basis for responsible administrative and executive positions in business and government. Second, it offers the opportunity for students to acquire skills in specialized and professional types of employment.

Since requirements vary, the current catalog of the chosen college or university should be consulted for specific requirements of the School of Business Administration.

This suggested program will meet most of the lower division requirements at the California State colleges and universities as well as fulfilling the major requirements for the Associate in Arts Degree from Bakersfield College.
Total Units: 25 or 26

Required Courses:

Course Number	Title	Units
BSAD B1	Financial Accounting	4.0
BSAD B2	Managerial Accounting	4.0
COMS B5 or	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B2	Introduction to Computer Information Systems	
ECON B1	Principles of Economics-Micro	3.0
ECON B2	Principles of Economics-Macro	3.0
MATH B23 or	Finite Mathematics	3.0
MATH B2	Basic Functions and Calculus for Business (4)	
MATH B22	Elementary Probability and Statistics	5.0

Business Communication Certificate of Completion
Total Units: 12

Select 6 units from the following courses:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0
COMM B8	Small Group Communication	3.0
COMM B27	Intercollegiate Speech Competition Preparation	1-2.0
COMM B27L	Intercollegiate Speech Competition Laboratory	0.5-3.0

AND

Select 6 units from the following courses:

Course Number	Title	Units
BSAD B5	Human Relations/People Skills	3.0
BSAD B40	Personal Finance	3.0
BSAD B1	Financial Accounting	4.0
BSAD B2	Managerial Accounting	4.0
BSAD B18	Business Law	3.0
BSAD B20	Introduction to Business	3.0
BSAD B65	Principles of Organizational Communication	3.0
BSAD B61	Human Resources Management	3.0
BSAD B9	Fundamentals of Marketing	3.0

General Business Certificate of Completion

A Certificate of Completion in General Business will provide the student with broad-based knowledge and skills in business. These core classes provide the foundation for a variety of successful careers in business. Students must complete courses with at least a "C" grade.
Total Units: 12

Required Courses:

Course Number	Title	Units
BSAD B5	Human Relations/People Skills	3.0
BSAD B20	Introduction to Business	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B53a or	Introduction to Accounting 1	3.0
BSAD B1	Financial Accounting (4)	

General Management Certificate of Completion

The management curriculum is designed to provide the knowledge and skills necessary for success as a manager in today's demanding organizational climate. The program benefits the individual who aspires to a management position in any organization, including business, government or service organizations.

Upon completion of the following courses with at least a "C" grade in each course, the student will be awarded a General Management Certificate of Completion.
Total Units: 12

Required Courses:

Course Number	Title	Units
BSAD B61	Human Resources Management	3.0
BSAD B65	Principles of Organizational Communication	3.0
BSAD B5	Human Relations/People Skills	3.0
BSAD B43	Principles of Management	3.0

Marketing Certificate of Achievement

The Marketing Program provides students with knowledge, techniques, and perspectives relating to the principles and practice of marketing goods and services in a global economy.

BC's Marketing Program helps students develop a strong understanding of the techniques used in successful business marketing. That training starts with a strong emphasis on the relationship theory and practice in contemporary marketplaces. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Marketing Certificate of Achievement.
Total Units: 21

Required Courses:

Course Number	Title	Units
BSAD B20	Introduction to Business	3.0
BSAD B9	Fundamentals of Marketing	3.0
BSAD B85/B285 or	Business English	3.0
BSAD B65	Principles of Organizational Communication	
BSAD B90	Fundamentals of Retailing	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B5	Human Relations/People Skills	3.0
BSAD B53a or	Introduction to Accounting I	3.0
BSAD B1	Financial Accounting (4.0)	

Marketing Associate in Arts Degree

Total Units: 24

Required Courses:

Course Number	Title	Units
BSAD B20	Introduction to Business	3.0
BSAD B9	Fundamentals of Marketing	3.0
BSAD B90	Fundamentals of Retailing	3.0
BSAD B51 or	Business Mathematics	3.0
MATH B23	Finite Mathematics	
BSAD B53a &	Introduction to Accounting 1	3.0
BSAD B53b or	Introduction to Accounting 2	3.0
BSAD B1	Financial Accounting (4.0)	
BSAD B5	Human Relations/People Skills	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0

California Real Estate Certificate of Achievement

The Real Estate courses offered are recognized by the State of California and accepted as prerequisites for the students to sit for their licensing examinations. These courses are also available for continuing education credits. Upon completion of these courses, the students will have the knowledge to allow them to comply with real estate practice standards imposed by the Real Estate License Law and Commission rules for the State of California. Students have the option of completing certificate and/or two-year degree programs.

This certificate is approved by and operated in cooperation with the California Department of Real Estate and the California Association of Realtors. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Real Estate Certificate of Achievement.
Total Units: 24

Required Courses:
(Should be taken in listed order)

Course Number	Title	Units
BSAD B39	Principles of Real Estate	3.0
BSAD B74 or	Legal Aspects of Real Estate	3.0
BSAD B18	Business Law	
BSAD B75 or	Real Estate Economics	3.0
BSAD B1 or	Financial Accounting (4.0)	
BSAD B53a	Introduction to Accounting (3.0)	
BSAD B76	Real Estate Finance	3.0
BSAD B77	Basic Appraisal Principles	3.0
BSAD B78	Real Estate Practice	3.0
BSAD B20	Introduction to Business	3.0

Electives: at least 3 units

Course Number	Title	Units
BSAD B71	Escrow Procedures	3.0
BSAD B79	Real Estate Investment and Taxation	3.0
BSAD B80	Basic Appraisal Procedures	3.0
BSAD B43	Principles of Management	3.0
BSAD B72	Property Management	3.0
BSAD B248ab or	Cooperative Work Experience Education	1-4.0
BSAD B249ab	Cooperative Work Experience Education	
BSAD B73	Common Interest Developments (CIDs)	3.0
BSAD B81	Residential Sales Comparisons & Income Approaches	3.0

California Real Estate Associate in Arts Degree

Total Units: 24

Required Courses:

Course Number	Title	Units
BSAD B75 or	Real Estate Economics	3.0
BSAD B1 or	Financial Accounting	
BSAD B53a &	Introduction to Accounting 1 (3.0)	
BSAD B53b	Introduction to Accounting 2 (3.0)	
BSAD B39	Principles of Real Estate	3.0
BSAD B74 or	Legal Aspects of Real Estate	3.0
BSAD B18	Business Law	
BSAD B76	Real Estate Finance	3.0
BSAD B77	Basic Appraisal Principles	3.0
BSAD B78	Real Estate Practice	3.0
BSAD B20	Introduction to Business	3.0

Electives: at least 3 units

Course Number	Title	Units
BSAD B51	Business Mathematics	3.0
BSAD B264	Ten-Key Proficiency	0.5
BSAD B40	Personal Finance	3.0
BSAD B61	Human Resource Management	3.0
BSAD B71	Escrow Procedures	3.0
BSAD B73	Common Interest Developments (CIDs)	3.0
BSAD B81	Residential Sales Comparisons & Income Approaches	3.0

BSAD B79	Real Estate Investment and Taxation	3.0
BSAD B80	Basic Appraisal Procedures	3.0
BSAD B248ab or	Cooperative Work Experience Education	1-4.0
BSAD B249ab	Cooperative Work Experience Education	

Retail Management Certificate of Achievement

A Certificate of Achievement in Retail Management is designed to prepare students for entry-level employment. The Certificate will provide the student with broad-based knowledge and skills in retailing including grocery chains. This foundation can be built into many successful careers. The certificate is approved by members of the Western Association of Food Chains, all the major supermarket chains in the western 13 states. It encompasses several business essentials, including the "soft skills" of management and communication required for career success in the retail food industry. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Retail Management Certificate of Achievement.

Total Units: 30 or 31

Required Courses:

Course Number	Title	Units
COMM B1 or	Public Speaking	3.0
COMM B7	Organizational Communication	
BSAD B65	Principles of Organizational Communication	3.0
BSAD B51	Business Mathematics	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
BSAD B9	Fundamentals of Marketing	3.0
BSAD B43	Principles of Management	3.0
BSAD B53a or	Introduction to Accounting 1	3.0
BSAD B1	Financial Accounting (4.0)	
BSAD B90	Fundamentals of Retailing	3.0
BSAD B5	Human Relations/People Skills	3.0
BSAD B61	Human Resources Management	3.0

CABINETMAKING
See Woodworking

CHEMISTRY

Chemistry Associate in Science Degree
Total Units: 31

Required Courses:

Course Number	Title	Units
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry & Chemical Analysis	5.0
CHEM B18	Elementary Organic Chemistry	5.0
BIOL B3b or	*General Biology II	5.0
BIOL B16	General Microbiology	
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
COMS B2	Introduction to Computer Information Systems	3.0

Select 4 units:

PHYS B4a and	*Mechanics & Wave Motion	4.0
PHYS B4b	*Heat, Electricity & Magnetism	4.0
OR		
PHYS B2a and	General Physics-Mechanics & Heat	4.0

| PHYS B2b | General Physics-Sound, Light, Electricity, Magnetism, Modern Physics | 4.0 |

*Recommended courses

Electives

| PHYS B4c | Optics & Modern Physics | 4.0 |
| MATH B6c | Calculus III | 4.0 |

Suggested Program for Chemistry A.S. Degree

First Semester

Course Number	Title	Units
CHEM B1a	General Chemistry	5.0
MATH B6a	Analytic Geometry & Calculus I	4.0
COMS B2	Introduction to Computer Information Systems	3.0

Second Semester

Course Number	Title	Units
CHEM B1b	General Chemistry & Chemical Analysis	5.0
PHYS B4a	Mechanics & Wave Motion	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0

Third Semester

Course Number	Title	Units
CHEM B18	Elementary Organic Chemistry	5.0
MATH B6c	Calculus III	4.0
PHYS B4b or	*Heat, Electricity, & Magnetism	4.0
PHYS B2a	General Physics-Mechanics & Heat	

Fourth Semester

Course Number	Title	Units
PHYS B4c	Optics & Modern Physics	4.0
BIOL B16 or	General Microbiology	5.0
BIOL B3b	*General Biology II	

Note: BIOL B3b no longer has BIOL B3a as prerequisite.

UC Berkeley, CSU San Jose, CSU San Diego, CSU Fresno

The courses listed below are required for the above institutions and for most other four-year colleges and universities in order to transfer into the third year of a chemistry major program. Before planning a study list, the community college student should consult his/her counselor and study the catalog of the senior institution to which he/she intends to transfer.

The introductory courses in Physics (Physics B2a-B2b or B4a-B4c) and Chemistry (Chemistry B1a-B1b, B2a or B11) are designed to provide a foundation and understanding of the laws and principles of the physical world (matter and energy). These courses should be completed early in a student's academic program to insure greater success in subsequent courses.

PROGRAMS OF STUDY

Required Courses: 34 units

Course Number	Title	Units
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry & Chemical Analysis	5.0
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
MATH B6c	Calculus III	4.0
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0
PHYS B4c	Optics & Modern Physics	4.0

Recommended Courses

Course Number	Title	Units
MATH B6d	Ordinary Differential Equations	3.0
COMS B2	Introduction to Computer Information Systems	3.0

CHICANO(A)/LATINO(A) STUDIES

Chicano(a)/Latino(a) Studies is an interdisciplinary program designed to broaden the student's understanding about the history and cultural background (politics, literature, art) of a people expected to represent the majority population in the Southwestern United States within the next generation.

A Chicano(a)/Latino(a) Studies A.A. Degree will academically prepare students planning to enter professions such as law, medicine, teaching, criminal science, journalism, business and any other that requires a liberal arts education.
Total Units: 18

Required Courses:

Course Number	Title	Units
CHST/HIST B30a	Early Chicano History	3.0
CHST/HIST B30b	History of Chicanos in the Southwest	3.0
CHST/SOCI B36	Sociology of the Chicano	3.0
SPAN B1ab or	Elementary Spanish	5.0
SPAN B2ab or	Elementary Spanish	
SPAN B3 or	Intermediate Spanish (4.0)	
SPAN B4 or	Intermediate Spanish (4.0)	
SPAN B10	Spanish for Native Speakers (4.0)	

Electives: to equal at least 18 units

Course Number	Title	Units
CHST/HIST B33	Latin American History	3.0
CHST/ART B30e	Art of Latin America	3.0
SOCI B45	Minority Relations	3.0

CHILD DEVELOPMENT

Family Child Care Provider I Certificate of Completion
The Level I Certificate may be earned by students who complete the course Family Child Care Management with a grade of "C" or better.
Total Units: 1

Required Courses:

Course Number	Title	Units
CHDV B257a	Family & Child Care Management	1.0

Family Child Care Provider Level II Certificate of Completion
The Level II Certificate may be earned by students who satisfactorily complete the 14 units of coursework listed below with a grade of "C" or better. This coursework meets the requirement for the Child Development Associate Teacher Permit and also meets the child development requirement for a fully qualified teacher in a licensed preschool, child development center or school-age center.
Total Units: 14

Required Courses:

Course Number	Title	Units
CHDV B257a	Family & Child Care Management	1.0
CHDV B257b	Networking in Family Child Care	1.0
CHDV B20	Introduction to Child Growth and Development	3.0
CHDV B36	Developmentally Appropriate Curriculum	3.0
CHDV B40	Creative Art, Movement & Music Activities for Young Children	3.0
CHDV B42	Child, Family and Community	3.0

Early Childhood Education Employment Readiness Academy
The Early Childhood Education Employment Readiness Academy is a one semester program. The skills you will learn are: 1) how to use appropriate guidance, 2) how to plan and carry out learning activities for children, (3) how to work as a team member in a preschool or child care center, and 4) how to apply infant/child first aid/CPR. Upon completion of this program you will earn 12 child development units. You will meet the qualifications of a teacher in a licensed, private child care center or an Associate Teacher in a subsidized preschool or child care center. For further information contact Office of Career Development and Workforce Preparation at 395-4089.

CDA (Child Development Associate)
The CDA may be substituted for nine semester units of child development credit.

Child Development Assistant Teacher Certificate of Completion
The Certificate of Completion may be earned by students who satisfactorily complete the 6 units of coursework listed below with a grade of "C" or better. This coursework meets the requirements for the Child Development Assistant Teacher Permit.
Total Units: 6

Required Courses:

Course Number	Title	Units
CHDV B20	Introduction to Child Growth and Development	3.0
CHDV B36	Developmentally Appropriate Curriculum	3.0

Child Development Associate Teacher Certificate of Completion
The Certificate of Completion may be earned by students who satisfactorily complete the 12 units of coursework listed below with a grade of "C" or better. This coursework meets

the requirements for the Child Development Associate Teacher Permit. This coursework also meets the Child Development requirements for a fully qualified teacher in a licensed Preschool Child Development Center or School-Age Center.
Total Units: 12

Required Courses:

Course Number	Title	Units
CHDV B20	Introduction to Child Growth and Development	3.0
CHDV B36	Developmentally Appropriate Curriculum	3.0
CHDV B42	Child, Family and Community	3.0
CHDV B49	Child Health, Safety and Nutrition	3.0

Child Development Teacher Certificate of Achievement

The Certificate of Achievement may be earned by students who satisfactorily complete 24 units of coursework listed below with a grade of "C" or better. This coursework meets the Child Development requirements for the Child Development Teacher Permit. Students may apply for the Permit at the Kern County Superintendent of Schools, Office of Credentials, 636-4750 or 636-4751. Students must also meet the General Education requirement and Experience requirement in accordance with the California Commission on Teacher Credentialing.
Total Units: 24

Required Courses:

Course Number	Title	Units
CHDV B20	Introduction to Child Growth and Development	3.0
CHDV B36	Developmentally Appropriate Curriculum	3.0
CHDV B42	Child, Family and Community	3.0
CHDV B49	Child Health, Safety and Nutrition	3.0
CHDV B21	Child Growth and Development: Birth Through Adolescence	3.0
CHDV B40	Creative Art, Movement, & Music Activities For Young Children	3.0
CHDV B32	Anti-Bias/Multicultural Approach to Education of Young Children	2.0
CHDV B41a	Principles and Practices in Early Childhood Education	2.0
CHDV B41aL	Supervised Field Experience in Early Childhood Education	2.0

Child Development Master Teacher Certificates of Achievement

The Certificate of Achievement for Master Teacher may be earned by students who satisfactorily complete the required specialization courses listed below with a grade of "C" or better in addition to the courses required for the Child Development Teacher Certificate of Achievement.

Child Development Master Teacher: Infant Toddler Certificate of Achievement

Total Units: 33

Required Courses:
Completion of the Child Development Teacher Certificate of Achievement (24 units) and:

Course Number	Title	Units
CHDV B13c	Child Growth and Development: The Infant Toddler Years	3.0
CHDV B53a	Early Childhood Education: Adult Supervision	2.0
CHDV B44	Infant/Toddler Care and Development	2.0
CHDV B44L	Supervised field experience for Infant/Toddler Care and Development	2.0

Child Development Master Teacher: School Age Certificate of Achievement

Total Units: 32

Required Courses:
Completion of the Child Development Teacher Certificate of Achievement (24 units) and:

Course Number	Title	Units
CHDV B53a	Early Childhood Education: Adult Supervision	2.0
CHDV B21	Child Growth and Development: Birth Through Adolescence	3.0

And, select 3 units from the following courses:

Course Number	Title	Units
CHDV B68a	Ages and Stages of Development of the School Age Child	1.0
CHDV B68b	Curriculum I: School Age Child	1.0
CHDV B68c	Curriculum II: School Age Child	1.0
CHDV B68e	Discipline for School Age Children and Adolescents	1.0

Child Development Master Teacher: Preschool Programming Certificate of Achievement

Total Units: 32

Required Courses:
Completion of the Child Development Teacher Certificate of Achievement (24 units) and:

Course Number	Title	Units
CHDV B53a	Early Childhood Education: Adult Supervision	2.0
CHDV B41b	Principles and Practices in Early Childhood Education	2.0
CHDV B41bL	Supervised Field Experience in Early Childhood Education	2.0
CHDV B43	Techniques of Parent Education	2.0

Child Development Master Teacher: Special Education Certificate of Achievement

Total Units: 32

Required Courses:
Completion of the Child Development Teacher Certificate of Achievement (24 units) and:

Course Number	Title	Units
CHDV B53a	Early Childhood Education: Adult Supervision	2.0
CHDV B33	Survey of Special Education	3.0
CHDV B52	Care of Infants & Toddlers with Disabilities	3.0

Child Development and Family Relations Associate in Science Degree

This program is designed to train students to work in a variety of early childhood settings. The two-year program primarily serves students desiring an early childhood background, supervised student teaching experience and fulfillment of academic requirements for a Child Development Teacher Permit.
Total Units: 27

Required Courses:

Course Number	Title	Units
CHDV B36	Developmentally Appropriate Curriculum	3.0
CHDV B42	Child, Family and Community	3.0
CHDV B20	Introduction to Child Growth and Development	3.0
CHDV B21	Child Growth and Development: Birth Through Adolescence	3.0
CHDV B22	Observation & Assessment-Birth Through Adolescence	3.0
CHDV B40	Creative Art, Movement & Music Activities for Young Children	3.0
CHDV B49	Child Health, Safety and Nutrition	3.0
CHDV B32	Anti-Bias/Multicultural Approach to Education of Young Children	2.0
CHDV B41a	Principles and Practices in Early Childhood Education	2.0
CHDV B41aL	Supervised Field Experience in Early Childhood Education	2.0

Student Request for Credit by Examination - CHDV B41aL

A student who is unable to complete CHDV B41aL due to employment obligations and is not employed with an agency that has Early Childhood Mentor Teachers, may be eligible to challenge this course if they meet specific qualifications. Information and guidelines for completing the challenge process for this course may be accessed through the Family and Consumer Education Department.

Student Request for Credit by Examination - CHDV B41bL

A student who has successfully completed CHDV B41aL at a Bakersfield College or Early Childhood Mentor Teacher lab site but is unable to complete CHDV B41bL due to employment obligations may challenge this course if they meet specific qualifications. Information and guidelines for completing the challenge process for this course may be accessed through the Family and Consumer Education Department.

COMMUNICATION

Communication Certificate of Completion
Total Units: 12

Select 12 units from the following courses:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0
COMM B8	Small Group Communication	3.0
COMM B27	Intercollegiate Speech Competition Preparation	1-2.0
COMM B27L	Intercollegiate Speech Competition Laboratory	0.5-3.0

Business Communication Certificate of Completion
Total Units: 12

Select 6 units from the following courses:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0
COMM B8	Small Group Communication	3.0
COMM B27	Intercollegiate Speech Competition Preparation	1-2.0
COMM B27L	Intercollegiate Speech Competition Laboratory	0.5-3.0

AND

Select 6 units from the following courses:

Course Number	Title	Units
BSAD B5	Human Relations/People Skills	3.0
BSAD B40	Personal Finance	3.0
BSAD B1	Financial Accounting	4.0
BSAD B2	Managerial Accounting	4.0
BSAD B18	Business Law	3.0
BSAD B20	Introduction to Business	3.0
BSAD B65	Principles of Organizational Communication	3.0
BSAD B61	Human Resources Management	3.0
BSAD B9	Fundamentals of marketing	3.0

Communication Associate in Arts Degree
Designed to provide training in basic oral skills in formal and informal situations.
Total Units: 18

Select 18 units from the following courses:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0
COMM B6	Intercultural Communication	3.0
COMM B7	Organizational Communication	3.0
COMM B8	Small Group Communication	3.0
ENGL B35	Children's Literature and Storytelling	
COMM B27/B27L	Intercollegiate Speech Competition	3.0

COMPUTER GRAPHIC ARTS
See Digital Arts

COMPUTER STUDIES

Microcomputer Applications using Microsoft Office 2007 Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0

Computer Hardware Diagnostics Certificate of Completion
Total Units: 4

Required Courses:

Course Number	Title	Units
COMS B100	Computer Hardware Diagnostics	4.0

Microsoft Office Word 2007 Certificate of Completion
Total Units: 1.5

Required Courses:

Course Number	Title	Units
COMS B57a	Introduction to Microsoft Office Word 2007	1.5

Microsoft Office Excel 2007 Certificate of Completion
Total Units: 1.5

Required Courses:

Course Number	Title	Units
COMS B62a	Introduction to Microsoft Office Excel	1.5

Microsoft Office Access 2007 Certificate of Completion
Total Units: 1.5

Required Courses:

Course Number	Title	Units
COMS B68a	Introduction to Microsoft Office Access 2007	1.5

Microsoft Office Powerpoint 2007 Certificate of Completion
Total Units: 1.5

Required Courses:

Course Number	Title	Units
COMS B70a	Introduction to Microsoft Office Powerpoint	1.5

Networking Certificates of Completion

CompTIA Network+ Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
COMS B82	CompTIA Network+ (Networking Technologies)	3.0

Administering/Supporting Microsoft NT Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
COMS B91	MCSE Administering and Supporting Microsoft Server 2003	3.0

Microsoft Active Directory Services (MCSE 70-219 Exam Prep) Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
COMS B93	Microsoft Active Directory Services MCSE 70-219 Exam Prep)	3.0

CompTIA Linux+ Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
COMS B41	CompTIA Linux+	3.0

MCSE Internetworking with Microsoft TCP/IP Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
COMS B95	MCSE Internetworking with Microsoft TCP/IP	3.0

Computer Information Systems Certificate of Achievement
Designed for the student who plans to specialize in business computer applications. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Computer Information Systems Certificate of Achievement.
Total Units: Minimum of 36

Required Courses:

Course Number	Title	Units
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B3	Computer Concepts & Survival Skills	
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B10	Structured Program Design using Python	2.0
COMS B16	COBOL Programming Language	3.0
COMS B32	Programming with Visual Basic	3.0
COMS B34	SQL and Database Systems Design	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B82	CompTIA Network+ (Networking Technologies)	3.0
BSAD B1 or	Financial Accounting	4.0
BSAD B53a and	Introduction to Accounting (3)	
BSAD B20	Introduction to Business (3)	

Programming Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
COMS B14	Introduction to Programming with Java	3.0
COMS B25	Programming with C	3.0
COMS B35	OOP and Data Structures with C++	3.0
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c	Web Programming: JavaScript/CSS	3.0

Networking Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
COMS B41	CompTIA Linux+	3.0
COMS B91	MSCE Administering and Supporting Microsoft Server 2003	3.0
COMS B92	Windows 2000 Professional (MCSE 70-210 Exam Prep)	3.0
COMS B93	Microsoft Active Directory Services (MCSE 70-219 Exam Prep)	3.0
COMS B95	MCSE Internetworking with Microsoft TCP/IP	3.0
COMS B100	Computer Hardware Diagnostics	4.0

Business Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
BSAD B2	Managerial Accounting	4.0
BSAD B20	Introduction to Business	3.0
MATH B22	Elementary Probability and Statistics	5.0

Computer Information Systems Associate in Arts Degree

Designed for the student who plans to transfer to California State University system or private colleges as a Computer Information Systems, Management Information Systems, or Data Processing major. Provides an emphasis in business computer applications with a broad educational background.
Total Units: Minimum of 22

Required Courses:

Course Number	Title	Units
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B3 or	Computer Concepts & Survival Skills	
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	
COMS B10 or	Structured Program Design using Python	2.0
COMS B14	Introduction to Programming with Java (3.0)	
COMS B16 or	COBOL Programming Language	3.0
COMS B35	OOP and Data Structures with C++	
COMS B32	Programming with Visual Basic	3.0
BSAD B1	Financial Accounting	4.0
MATH B22 or	Elementary Probability and Statistics	5.0
PSYC B5	Elementary Statistics for the Behavioral and Social Sciences (4.0)	
COMS B34	SQL and Database Systems Design	3.0

Other Suggested Courses

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B10	Structured Program Design using Python	2.0
COMS B25	Programming with C	3.0
COMS B35	OOP and Data Structures with C++	3.0

COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B41	CompTIA Linux+	3.0
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c	Web Programming: JavaScript/CSS	3.0
COMS B82	CompTIA Network+ (Networking Technologies)	3.0
COMS B91	MCSE Administering and Supporting Microsoft Server 2003	3.0
COMS B93	Microsoft Active Directory Services (MCSE 70-219 Exam Prep)	3.0
COMS B95	MCSE Internetworking with Microsoft TCP/IP	3.0
MATH B2	Basic Functions and Calculus for Business	4.0
BSAD B2	Managerial Accounting	4.0
BSAD B20	Introduction to Business	3.0
ECON B1	Principles of Economics-Micro	3.0
ECON B2	Principles of Economics-Macro	3.0
BSAD B43	Principles of Organization and Management	3.0
BSAD B9	Fundamentals of Marketing	3.0
COMM B1	Public Speaking	3.0

Computer Information Systems Associate in Science Degree

Designed for the student who plans to specialize in business computer applications. The student will learn professional skills leading to employment and will gain a broad educational background. Provides a foundation for further studies in Computer Information Systems, Management Information Systems, or Data Processing.
Total Units: Minimum of 36

Required Courses:

Course Number	Title	Units
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B3	Computer Concepts & Survival Skills	
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B10	Structured Program Design using Python	2.0
COMS B16	COBOL Programming Language	3.0
COMS B32	Programming with Visual Basic	3.0
COMS B14 or	Introduction to Programming with Java	3.0
COMS B35	OOP and Data Structures with C++	
COMS B34	SQL and Database Systems Design	3.0
COMS B82	CompTIA Network+ (Networking Technologies)	3.0
BSAD B1	Financial Accounting	4.0

Programming Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
COMS B25	Programming with C	3.0
COMS B35	OOP and Data Structures with C++	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c	Web Programming: JavaScript/CSS	3.0

Networking Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
COMS B41	CompTIA Linux+	3.0
COMS B91	MCSE Administering and Supporting Microsoft Server 2003	3.0
COMS B93	Microsoft Active Directory Services (MCSE 70-219 Exam Prep)	3.0
COMS B95	MCSE Internetworking with Microsoft TCP/IP	3.0
COMS B100	Computer Hardware Diagnostics	4.0

Business Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
BSAD B2	Managerial Accounting	4.0
BSAD B20	Introduction to Business	3.0
ART B20	Introduction to Digital Arts	3.0

Other Suggested Courses

Course Number	Title	Units
MATH B2	Basic Functions and Calculus for Business	4.0
ECON B1	Principles of Economics-Micro	3.0
ECON B2	Principles of Economics-Macro	3.0
BSAD B43	Principles of Organization and Mgt.	3.0
BSAD B9	Fundamentals of Marketing	3.0
COMM B1	Public Speaking	3.0

Computer Science Certificate of Achievement

Designed for the student who plans to specialize in math, science, or engineering computer applications. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Computer Science Certificate of Achievement.
Total Units: Minimum of 36

Required Courses:

Course Number	Title	Units
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B3	Computer Concepts & Survival Skills	
COMS B10	Structured Program Design using Python	2.0
COMS B14	Introduction to Programming with Java	
COMS B25	Programming with C	3.0
COMS B32	Programming with Visual Basic	3.0
COMS B35	OOP and Data Structures with C++	3.0
COMS B82	CompTIA Network+ (Networking Technologies)	3.0
MATH B6a	Analytic Geometry and Calculus I	4.0

Electives: at least 12 units

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B14	Introduction to Programming with Java	3.0
COMS B16	COBOL Programming Language	3.0
COMS B34	SQL and Database Systems Design	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B41	CompTIA Linux+	3.0
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c	Web Programming: JavaScript/CSS	3.0

COMS B91	MCSE Administering and Supporting Microsoft Server 2003	3.0
COMS B93	Microsoft Active Directory Services (MCSE 70-219 Exam Prep)	3.0
COMS B95	MCSE Internetworking with Microsoft TCP/IP	3.0
COMS B100	Computer Hardware Diagnostics	4.0
MATH B22	Elementary Probability and Statistics	5.0

Computer Science Associate in Science Degree

Designed for the student who plans to transfer to California State University system or private colleges and to specialize in computer science, math, science, or engineering applications. Students will learn professional skills leading to employment and will gain a broad educational background.
Total Units: Minimum of 37

Required Courses:

Course Number	Title	Units
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B3	Computer Concepts & Survival Skills	
COMS B10	Structured Program Design using Python	2.0
COMS B25	Programming with C	3.0
MATH B6a	Analytic Geometry and Calculus I	4.0
MATH B6b	Analytic Geometry and Calculus II	4.0
MATH B6c	Calculus III	4.0
MATH B22	Elementary Probability and Statistics	5.0

Electives: at least 12 units

Course Number	Title	Units
COMS B14	Introduction to Programming with JAVA	3.0
COMS B32	Programming with Visual Basic	3.0
COMS B34	SQL and Database Systems Design	3.0
COMS B35	OOP and Data Structures with C++	3.0
COMS B41	CompTIA Linux+	3.0
COMS B82	CompTIA Network+ (Networking Technologies)	3.0
COMS B91	MCSE Administering and Supporting Microsoft Server 2003	3.0
COMS B92	Windows 2000 Professional (MCSE 70-210 Exam Prep)	3.0
COMS B93	Microsoft Active Directory Services (MCSE 70-219 Exam Prep)	3.0
COMS B95	MCSE Internetworking with Microsoft TCP/IP	3.0
COMS B100	Computer Hardware Diagnostics	4.0
MATH B6d	Ordinary Differential Equations	3.0
MATH B6e	Elementary Linear Algebra	3.0

Other Suggested Courses

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c	Web Programming: JavaScript/CSS	3.0
PHYS B2a	General Physics-Mechanics and Heat	4.0

PHYS B2b	General Physics-Sound, Light	
	Electricity, Magnetism, Modern Physics	4.0
PHIL B7	Introduction to Logic	3.0
ELET B1	Basic Electronics (DC and AC)	4.0

Geographic Information Systems (GIS) Certificate of Completion

Designed for students who plan to utilize GIS to display and analyze a variety of information that is geographically related. This certificate provides knowledge and skills for public and private sector applications of GIS technologies. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Geographic Information Systems (GIS) Certificate of Completion.
Total Units: Minimum of 17

Required Courses:

Course Number	Title	Units
COMS B32	Programming with Visual Basic	3.0
COMS B34	SQL and Database Systems Design	3.0
COMS B37	Introduction to Geographic Information	
	Systems (GIS)	3.0
COMS B77	Introduction to ArcGIS-1, an ERSI Authorized	
	Training Program	1.0
or equivalent		
GEOG B1	Physical Elements of Geography	3.0
GEOG B1L	Physical Geography Laboratory	1.0

Electives: at least 3 units

Course Number	Title	Units
ART B20	Introduction to Digital Arts	3.0
INDR B52	Geographic Information Systems (GIS)	3.0
MATH B22	Elementary Probability and Statistics	5.0

Web Development Certificate of Completion

Designed for the student who plans to specialize in creating Web sites. Upon completion of the following courses with at least a "C" grade in each course, a student will be awarded a Web Authoring Certificate of Completion.
Total Units: Minimum of 16

Required Courses:

Course Number	Title	Units
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c or	Web Programming: JavaScript/CSS	3.0
COMS B74e	Intermediate Web Development: Web	
	Authoring Tools (1.5)	
COMS B74f	Advanced Web Development: Web	
	Authoring Tools	
BSAD B91	E - Commerce	1.0
ART B20	Introduction to Digital Arts	3.0

Electives: at least 3 units

Course Number	Title	Units
ART B21	Graphic Design	3.0
ART B24	Digital Imaging	3.0
COMS B10	Structured Program Design using Python	2.0
COMS B14	Introduction to Programming with Java	3.0
COMS B32	Programming with Visual Basic	3.0

COMS B34	SQL and Database Systems Design	3.0
COMS B82	CompTIA Network+	
	(Networking Technologies)	3.0
BSAD B9	Fundamentals of Marketing	3.0

Web Development Certificate of Achievement

This program is designed for the student who plans to design, create and maintain Websites. The student will learn professional skills leading to employment and will gain a broad educational background, In addition, the program provides a foundation for further studies in this and other computer-related fields.
Total Units: Minimum of 32.5

Required Courses:

Course Number	Title	Units
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c or	Web Programming: JavaScript/CSS	3.0
COMS B74e	Intermediate Web Development: Web	
	Authoring Tools (1.5)	
COMS B75b or	Web Programming: Active Server Pages	3.0
COMS B75c	Web Programming: PHP	
COMS B101	Web Systems and Security	3.0
COMS B82	CompTIA Network+	
	(Networking Technologies)	3.0
ART B20	Introduction to Digital Arts	3.0
BSAD B91	E - Commerce	1.0
BSAD B65	Principles of Organizational Communication	3.0

Design Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
ART B21	Graphic Design	3.0
ART B22	Digital Illustration	3.0
ART B24	Digital Imaging	3.0
ART B25	Typography	3.0
COMS B76a	Web Design: Macromedia Flash	3.0
JRNL B1	Media and Society	3.0

Web Programming Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
COMS B10	Structured Program Design using Python	2.0
COMS B14	Introduction to Programming with Java	3.0
COMS B32	Programming with Visual Basic	3.0
COMS B34	SQL and Database Systems Design	3.0
COMS B79	Advanced Programming with Visual	
	Basic	3.0
COMS B76a	Web Design: Macromedia Flash	3.0

Cross-Discipline Emphasis -- Select 9 units from the following courses:
Any combination of 9 units from the above elective classes.

Web Development Associate in Science Degree

This program is designed for the student who plans to design, create and maintain Websites. The student will learn professional skills leading to employment and will gain a broad educational background, In addition, the program provides a foundation for further studies in this and other computer-related fields.

Total Units: Minimum of 26.5

Required Courses:

Course Number	Title	Units
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c or	Web Programming: JavaScript/CSS	3.0
COMS B74e	Intermediate Web Development: Web Authoring Tools (1.5)	
COMS B101	Web Systems and Security	3.0
COMS B82	CompTIA Network+ (Networking Technologies)	3.0
ART B20	Introduction to Digital Arts	3.0
BSAD B91	E - Commerce	1.0

Design Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
ART B21	Graphic Design	3.0
ART B22	Digital Illustration	3.0
ART B24	Digital Imaging	3.0
ART B25	Typography	3.0
COMS B76a	Web Design: Macromedia Flash	3.0
JRNL B1	Media and Society	3.0
COMS B76b	Web Design: Advanced Flash	1.5

Web Programming Emphasis -- Select 9 units from the following courses:

Course Number	Title	Units
COMS B10	Structured Program Design using Python	2.0
COMS B14	Introduction to Programming with Java	3.0
COMS B32	Programming with Visual Basic	3.0
COMS B34	SQL and Database Systems Design	3.0
COMS B75b	Web Programming: Active Server Pages	3.0
COMS B76a	Web Design: Macromedia Flash	3.0

Cross-Discipline Emphasis -- Select 9 units from the following courses:

Any combination of 9 units from the above elective classes.

CONSTRUCTION

Construction Technology Certificate of Achievement

Total Units: 32

Required Courses:

Course Number	Title	Units
ARCH B6	Materials of Construction	3.0
ARCH B55	Building Codes	3.0
CNST B1	Introduction to Construction	3.0
CNST B2	Blueprint Reading and Estimating	3.0
CNST B50a or	Residential Construction	6.0
CNST B50b	Residential Construction	
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Course Number	Title	Units
INDT B249ab	Cooperative Work Experience Education	6.0
WOOD B2	Furniture and Cabinetmaking	3.0

Electives:

Course Number	Title	Units
ARCH B56	Building and Related Codes	3.0
AUTO B1ab	Introduction to Automotive Technology	4.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
MATH B50	Modern College Arithmetic & Pre-Algebra	3.0
WELD B1a	Introduction to the Welding Process	1.5

Note: Students should consult with their counselors for best possible selections for their programs of study.

Industrial Technology, Construction Option Associate in Science Degree

Total Units: 30

Required Courses:

Course Number	Title	Units
ARCH B55	Building Codes	3.0
CNST B1	Introduction to Construction	3.0
CNST B2	Blueprint Reading and Estimating	3.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDT B10 or Equivalent	Occupational Readiness	3.0
WEXP B249 or	Cooperative Work Experience Education	8.0
CNST B50a and	Residential Construction (6.0)	
CNST B50b	Residential Construction (6.0)	
WOOD B2	Furniture and Cabinetmaking	3.0

Electives: to equal at least 30 units

Course Number	Title	Units
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
ARCH B56	Building and Related Codes	3.0

CORRECTIONAL ADMINISTRATION

Correctional Administration Associate in Arts Degree

This program includes classes that will guide students toward careers in law enforcement, the courts and the law, and state, local, and private corrections. These courses have been endorsed by the Joint Apprenticeship Committee of the California Department of Corrections, California Youth Authority, and the California Correctional Peace Officers Association.

Total Units: 24

Required Courses:

Course Number	Title	Units
CRIM B21	Introduction to Correctional Administration	3.0
CRIM B50	Criminal Justice Report Writing	3.0
CRIM B60	Legal Aspects of Corrections	3.0
CRIM B2	Criminal Law	3.0
CRIM B12	Forensic and Scientific Aspects of Evidence	3.0
CRIM B55	Special Topics in Criminal Justice	3.0

Electives: at least 6 units

Course Number	Title	Units
CRIM B22	Institutional Supervision and Treatment of the Offender	3.0
CRIM B23	Fundamentals of Interviewing & Counseling	3.0
CRIM B24	Probation, Parole & Community Corrections	3.0
CRIM B5	Community Relations	3.0
CRIM B8	Criminal Investigation	3.0
CRIM B9	Juvenile Justice System	3.0

CRIMINAL JUSTICE

Criminal Justice Certificate of Completion
Total Units: 15

Required Courses:

Course Number	Title	Units
CRIM B2	Criminal Law	3.0
CRIM B4	Constitutional Criminal Procedure	3.0
CRIM B8	Criminal Investigation	3.0
CRIM B9	Juvenile Justice System	3.0
CRIM B12	Forensic and Scientific Aspects of Evidence	3.0

OR

Course Number	Title	Units
CRIM B2	Criminal Law	3.0
CRIM B8	Criminal Investigation	3.0
CRIM B12	Forensic and Scientific Aspects of Evidence	3.0
CRIM B50	Criminal Justice Report Writing	3.0
CRIM B60	Legal Aspects of Corrections	3.0

Criminal Justice Associate in Arts Degree
This program includes classes that will guide students toward careers in law enforcement and policing, the courts and the law, and state, local, and private corrections.
Total Units: 24

Required Courses:

Course Number	Title	Units
CRIM B1	Introduction to Criminal Justice	3.0
CRIM B2	Criminal Law	3.0
CRIM B3	Introduction to Evidence	3.0
CRIM B4	Constitutional Criminal Procedure	3.0
CRIM B12	Forensic and Scientific Aspects of Evidence	3.0
CRIM B55	Special Topics in Criminal Justice	3.0

Electives: at least 6 units.

Course Number	Title	Units
CRIM B5	Community Relations	3.0
CRIM B8	Criminal Investigation	3.0
CRIM B9	Juvenile Justice System	3.0
CRIM B10	Organized Crime	3.0
CRIM B24	Probation, Parole & Community Corrections	3.0
CRIM B50	Criminal Justice Report Writing	3.0

CROP SCIENCE
See Agriculture

DIETETIC SERVICES
See Foods/Nutrition

DIGITAL ARTS

Digital Arts Certificate of Achievement
The program is designed to prepare students for entry level positions in various graphic art fields such as advertising, graphic design, illustration, and digital imaging. The core learned disciplines are the principles of design, an understanding of the visual elements, exposure to art and design history, conceptual visual problem solving, and the production of a graphic portfolio using established computer graphic software.
Total Units: 27

Required Courses:

Course Number	Title	Units
ART B1 or	Art Appreciation	3.0
ART B30a or	Ancient Mediterranean Art	
ART B30b or	Medieval Art	
ART B30c or	Renaissance Art	
ART B30d	Modern Art	
ART B2 or	Basic Drawing	3.0
ART B2ef	Figure Drawing	
ART B3ab	Basic Design	3.0
ART B20	Introduction to Digital Arts	3.0
ART B21	Graphic Design	3.0
ART B22	Digital Illustration	3.0
ART B23	Advertising Design	3.0
ART B25	Typography	3.0

Electives: at least 3 units

Course Number	Title	Units
ART B16	Introduction to Digital Photography	3.0
ART B17ab	Elementary Photography	3.0
ART B24	Digital Imaging	3.0
ART B50	3d Modeling and Illustration	3.0

Digital Arts Associate in Arts Degree
Total Units: 18

Required Courses:

Course Number	Title	Units
ART B20	Introduction to Digital Arts	3.0
ART B21	Graphic Design	3.0
ART B22	Digital Illustration	3.0
ART B23	Advertising Design	3.0
ART B25	Typography	3.0

Electives: at least 3 units

Course Number	Title	Units
ART B2	Basic Drawing	3.0
ART B2ef	Figure Drawing	
ART B3ab	Basic Design	3.0
ART B1 or	Art Appreciation	3.0
ART B30a or	Ancient Mediterranean Art	
ART B30b or	Medieval Art	
ART B30c or	Renaissance Art	
ART B30d	Modern Art	
ART B16	Introduction to Digital Photography	3.0
ART B17ab	Elementary Photography	3.0
ART B24	Digital Imaging	3.0
ART B50	3d Modeling and Illustration	3.0
ART B52	Professional Practice and Portfolio Development	3.0

ECONOMICS

Economics Associate in Arts Degree

The major in economics is designed for students interested in preparing for advanced degrees in Economics, Business, Law and for those students concerned with the economic behavior of consumers, businesses, and governments. Economics majors have a wide variety of career opportunities in business, law, journalism, education, politics, finance and banking, government, public and private overseas service, and labor leadership. Many economics majors go on to pursue graduate study in a related professional area, such as law, business, or public administration.
Total Units: 18

Required Courses:

Course Number	Title	Units
ECON B1	Principles of Economics-Micro	3.0
ECON B2	Principles of Economics-Macro	3.0
MATH B2	Basic Functions and Calculus for Business	4.0
MATH B22	Elementary Probability and Statistics	5.0
PSYC B6 or	Introduction to Behavioral Science Research	3.0
COMS B2	Introduction to Computer Information Systems	

Electives

Course Number	Title	Units
ENGL B1a	Expository Composition	4.0
PHIL B7	Introduction to Logic	3.0
HIST B17b	History of the U.S. Since 1877	3.0
POLS B1	American Government:	
	National, State and local	3.0
PSYC B1a	General Psychology	3.0
BSAD B1	Financial Accounting	4.0
BSAD B2	Managerial Accounting	4.0
COMM B1	Public Speaking	3.0
MATH B23	Finite Mathematics	3.0

ELECTRONICS TECHNOLOGY

Electronics Technology Certificate of Achievement
Total Units: 32

Required Courses:

Course Number	Title	Units
ELET B1	Basic Electronics (DC and AC)	4.0
ELET B9	Solid State Electronics	4.0
ELET B12	Digital Electronics and Microcontrollers	4.0
ELET B55	Electric Motors-Controls	4.0
ELET B56	Instrumentation & Process Control	3.0
ELET B62	Electronic Communication Systems	
	& Circuits	4.0
MFGT B5	Programmable Logic Controllers	3.0
MFGT B61	Advanced Programmable Logic Controllers	3.0
INDT B10 or	Occupational Readiness	3.0
Equivalent		

Industrial Technology, Electronics Option Associate in Science Degree
Total Units: 30

Required Courses:

Course Number	Title	Units
ELET B1	Basic Electronics (DC and AC)	4.0
ELET B9	Solid State Electronics	4.0
ELET B12	Digital Electronics and Microcontrollers	4.0
ELET B55	Electric Motors-Controls	4.0
ELET B56	Instrumentation & Process Control	3.0
ELET B62	Electronic Communication Systems	
	& Circuits	4.0
MFGT B5	Programmable Logic Controllers	3.0
MFGT B61	Advanced Programmable Logic Controllers	3.0

Electives: at least 1 unit

Course Number	Title	Units
INDR B11	Introduction to Computer Aided Drafting	
	and Design (CAD)	1.0
MFGT B50	Industrial Control Systems	3.0

EMERGENCY MEDICAL TECHNOLOGY

Emergency Medical Technician I Certificate of Completion

The Emergency Medical Technician (EMT-1) Program is a 152-hour certificate program which will prepare the student to perform basic emergency care as part of a mobile emergency care team. Upon successful completion of the course, students are certified by the Kern County Emergency Medical Services for a two-year period. Re-certification every two years is required to maintain EMT-1 status (see EMTC B50r course description).

Enrollment in the Emergency Medical Technology Program

Statement of Philosophy: All persons who are able to perform satisfactorily the responsibilities and tasks required in education and training program and in subsequent employment in the field should have an opportunity to succeed. It is recognized that the need to protect the safety and welfare of the student and the community is a primary consideration in the health occupations.

Enrollment Period: This course is offered each fall and spring semester.

Pre-Admission Requirements:
1. The student must be at least 18 years of age by the completion of the program.
2. The student must possess a current CPR card (American Heart Association Healthcare Provider).
3. MEDS B60 (3 units), Medical Terminology is highly recommended.

Physical Examination/Drug and Alcohol Screening/ Background Screening:

The student must be free from communicable diseases, infection, psychological disorders, and other conditions that would prevent the successful performance of the responsibilities and tasks required in the education and training program of the college. Any condition described above which is developed by the student after enrollment to the program may be considered sufficient cause for suspension from the program. If possible, such a student should be counseled to enter a more appropriate program. Costs of meeting health requirements are paid for by the student.

1. Physical Examinations - This exam, completed by a physician of the student's choice, will be required **after** enrollment into the program. The applicant must have a level of emotional and physical health necessary to meet program requirements.
2. Immunizations/health tests - As needed for acceptance in a clinical and training facility, and to protect the heath and welfare of the student and community. Immunization may include, but not limited to, Rubella and Hepatitis B. Tuberculosis screening is also required.
3. Drug and Alcohol Screening - As a condition of enrollment in the program, all students are required to submit to, and pass, a designated drug and alcohol screen. Students will be required to purchase uniforms, textbooks and selected equipment and provide transportation to off-campus sites for laboratory experience and pay current college fees.
4. Background Screening - As a condition of application in any Allied Health Program with a clinical laboratory component, students are required to submit to and pass a designated background check. These screenings are performed at the student's expense.

NOTE: Students with a misdemeanor and/or felony arrest or conviction may not receive certification or licensure from the State or County. Call Allied Health, 395-4284 for more information.

ENGINEERING

Engineering Associate in Science Degree
Total Units: 50

Required Courses:

Course Number	Title	Units
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
MATH B6c	Calculus III	4.0
MATH B6d	Ordinary Differential Equations	3.0
CHEM B1a	General Chemistry	5.0
ENGL B1a	Expository Composition	4.0
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0
PHYS B4c	Optics & Modern Physics	4.0
ENGR B17	Introduction to Electric Circuits	3.0
ENGR B24	Engineering Graphics & Descriptive Geometry	2.0
ENGR B36	Engineering Mechanics-Statics	3.0
ENGR B45	Properties of Materials	3.0

ENGR B19c	Computer Programming for Science, Engineering and Technology	3.0

University of California, California State University and Private Universities

People working in the field of engineering and related technical fields "bridge the gap' between scientific principles and the application of these principles to the needs of society. The field is quite diversified with exciting job opportunities for people with varied mathematical, scientific, and technical skills.

An engineer uses experience and judgment, as well as advanced training in engineering, science, and mathematics to formulate ideas and designs, and to determine standards, specifications, work orders and schedules so that projects can be economically beneficial to mankind. A Bachelor of Science Degree in Engineering is required. Many engineers earn Master's or Doctor's degrees.

Working together with a counselor or academic advisor, a student may develop a program of study leading to transfer into the upper division of a Bachelor's Degree program in Engineering. The programs which follow will help the student plan an appropriate program.

Bakersfield College offers all of the courses required for two full years of engineering education. Completion of these courses, called the "engineering core' prepares students for transfer at the junior level to the colleges and universities offering Bachelor's degrees in engineering. This is in accordance with the Summit Articulation Agreement of the Engineering Liaison Committee which states that "any students of a California Community College, with a stated major in engineering, who presents a transcript showing satisfactory completion of the engineering core program in lower division will be eligible to enroll in any four-year California university or college (which graduates engineers) with regular junior standing; and further, said student can complete an engineering program in four additional semesters (or six additional quarters) and obtain a Bachelor's Degree.

The engineering core curriculum is the basis for Transfer Admission Agreements between Bakersfield College and the engineering colleges at several universities including the University of California at Davis and Rensselaer Polytechnic Institute in Troy, New York. The following Bakersfield College courses are required to completely satisfy the engineering core program:

Course Number	Title	Units
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
MATH B6c	Calculus III	4.0
MATH B6d	Ordinary Differential Equations	3.0
CHEM B1a	General Chemistry	5.0
ENGL B1a	Expository Composition	4.0
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0

PHYS B4c   Optics & Modern Physics   4.0
ENGR B17   Introduction to Electric Circuits   3.0
ENGR B24   Engineering Graphics & Descriptive
                Geometry   2.0
ENGR B36   Engineering Mechanics-Statics   3.0
ENGR B45   Properties of Materials   3.0
ENGR B19c   Computer Programming for Science,
                Engineering & Technology   3.0

The following technical electives are highly recommended for all branches of engineering:

Course Number	Title	Units
MATH B6e	Elementary Linear Algebra	3.0
ENGR B47	Introduction to Engineering & Design	3.0
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0
CHEM B1b	General Chemistry & Chemical Analysis	5.0
ENGR B37	Engineering Mechanics - Dynamics	3.0

The following technical electives are recommended for the particular branches listed:

GEOL B1a	Physical Geology (geological petroleum)
MFGT B1a	Machine Tool Processes (manufacturing, industrial)
MFGT B2	Lathe Programming (manufacturing, industrial)
WELD B1a	Introduction to the Welding Processes (manufacturing, industrial)

Four-year colleges and universities neither require, nor recommend, that engineering majors complete lower division general education requirements prior to transfer. For students transferring to campuses of the University of California or to California Polytechnic University, San Luis Obispo, the following courses are recommended if they can be included in the student's schedule:

Course Number	Title
COMM B1	Public Speaking
PHIL B9	Critical Thinking and Advanced Composition

Two-year Engineering Program

The program shown below assumes satisfactory prior completion of the following:

a. high school mathematics through trigonometry and mathematical analysis; or MATH B1a and MATH B1b at Bakersfield College
b. one year of high school mechanical drawing or INDR B10 at Bakersfield College
c. one year of high school chemistry or CHEM B2a at Bakersfield College
d. eligibility for ENGL B1a

Students missing one of the requirements (b), (c), or (d) still may be able to complete the program within two years, as long as requirement (a) is met on entrance. Students completing the two-year program will not be able to earn

an A.S. Degree from Bakersfield College unless they have satisfied general education requirements with summer courses or courses taken prior to entering the program.

First Semester

Course Number	Title	Units
MATH B6a	Analytic Geometry & Calculus I	4.0
CHEM B1a	General Chemistry	5.0
ENGR B47	Introduction to Engineering & Design	3.0
ENGR B19c	Computer Programming for Science, Engineering & Technology (C)	3.0
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0

Second Semester

Course Number	Title	Units
MATH B6b	Analytic Geometry & Calculus II	4.0
CHEM B1b or	General Chemistry & Chemical Analysis	5.0
PHYS B4a	Mechanics & Wave Motion	4.0
ENGR B24	Engineering Graphics & Descriptive Geometry	2.0
ENGL B1a	Expository Composition	4.0

Third Semester

Course Number	Title	Units
MATH B6c	Calculus III	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0
ENGR B45	Properties of Materials	3.0
ENGL B1a	Expository Composition	4.0
ENGR B36	Engineering Mechanics - Statics	3.0

Fourth Semester

Course Number	Title	Units
MATH B6d	Ordinary Differential Equations	3.0
PHYS B4c	Optics & Modern Physics	4.0
ENGR B17	Introduction to Electric Circuits	3.0
	Technical Elective or General Education	3-5.0

Three-Year Pre-Engineering/Engineering Program

Those students who have not met the requirements for the two-year program will need more than four semesters to complete the engineering core program. The program shown below assumes only satisfactory completion of high school mathematics through intermediate algebra or MATH BD at Bakersfield College and eligibility for ENGL B1. It allows students to complete the general education requirements for the Associate in Science Degree while completing the engineering core program before transferring to a university as a junior. Students completing the A.S. Degree should select general education courses which will also satisfy university general education courses, and should understand that, while they will have completed more than 70 transferable units, the university will give them credit for satisfactory completion of all transferable courses but for only 70 units toward the Bachelor's degree.

PROGRAMS OF STUDY

First Semester

Course Number	Title	Units
MATH B1a	Precalculus I	4.0
ENGL B1	Introductory Composition	3-4.0
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting & Design (CADD)	1.0

Second Semester

Course Number	Title	Units
MATH B1b	Precalculus II	4.0
CHEM B2a	Introductory General Chemistry	4.0
ENGR B24	Engineering Graphics & Descriptive Geometry	2.0

Third Semester

Course Number	Title	Units
MATH B6a	Analytic Geometry & Calculus I	4.0
CHEM B1a	General Chemistry	5.0
ENGR B47	Introduction to Engineering & Design	3.0
ENGR B19c	Computer Programming for Science, Engineering & Technology (C)	3.0

Fourth Semester

Course Number	Title	Units
MATH B6b	Analytic Geometry & Calculus II	4.0
CHEM B1b or	General Chemistry & Chemical Analysis	5.0
CHEM B3	General Chemistry & Chemical Analysis for Engineers	3.0
PHYS B4a	Mechanics & Wave Motion	4.0

Note**:** CHEM B1b or CHEM B3 should be taken depending on major.

Fifth Semester

Course Number	Title	Units
MATH B6c	Calculus III	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0
ENGR B45	Properties of Materials	3.0
ENGL B1a	Expository Composition	4.0

Sixth Semester

Course Number	Title	Units
MATH B6d	Ordinary Differential Equations	3.0
PHYS B4c	Optics & Modern Physics	4.0
ENGR B36	Engineering Mechanics-Statics	3.0
ENGR B17	Introduction to Electric Circuits	3.0
MATH B6e	Elementary Linear Algebra	3.0

Engineering Technology Associate in Science Degree
Cal Poly Pomona; California State University, Sacramento; California State University, Long Beach

Engineering technologists and engineering technicians are members of a technical team that also includes scientists, engineers and craftsmen. The members of the technical team perform job functions that are complementary and sometimes overlapping. By virtue of their education, training

and interests, engineering technologists and engineering technicians are usually differentiated as follows:

An engineering technologist uses applied and basic training in mathematics, science, and engineering classes, engineering methods learned through classes and experience, and developed technical (hands-on) skills in direct support of engineering activities. A Bachelor of Science degree in Engineering Technology is required.

An engineering technician operates in a support role to aid in design, production, manufacturing, operations, and maintenance. Under professional direction, the engineering technician conducts tests, trouble shooting and analysis, and other similar projects, or carries out functions such as drafting, surveying, designing and technical sales. An Associate in Science degree or a Certificate of Engineering Technology is required.

Bakersfield College offers courses required for two years of engineering technology education. Completion of these courses, called the "engineering technology core' prepares students either for transfer to the colleges and universities offering bachelor's degrees in Engineering Technology, or for completion of an Associate in Science degree in Engineering Technology. A beginning engineering technology student should have completed high school mathematics through intermediate algebra or MATH BD at Bakersfield College, one year of high school drafting, and be eligible for ENGL B1.

The following courses are required to satisfy the engineering technology core and Associate in Science program:
Total Units: 40

Required Courses:

Course Number	Title	Units
ENGR B47	Introduction to Engineering and Design	3.0
ENGR B45	Properties of Materials	3.0
ENGR B24	Engineering Graphics and Descriptive Geometry	2.0
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
*CHEM B2a	Introductory General Chemistry	4.0
*PHYS B2a	General Physics-Mechanics and Heat	4.0
PHYS B2b	General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0
*MATH B6ab	Analytic Geometry and Calculus	8.0
ENGR B19c	Computer Programming for Science, Engineering and Technology (C)	3.0

*May be used to also fulfill general education requirements

In addition, seven or more units from the following approved programs and/or subject areas are to be selected. See counselor or advisor for specific courses.

Electronics/Electrical Technology; Construction Technology; Manufacturing Processes Technology; Welding/Fabrication; Industrial Drawing and Graphics.

ENGLISH

Studies in English provide preparation for the professions, government service, and politics. Career opportunities in English include teaching, journalism, publishing, advertising, and copywriting.

Students seeking an Associate Degree must take a writing course, either English B1 or B1a, and may take a literature class to fulfill the humanities requirement. Students seeking a Baccalaureate Degree should take English B1a and may take English B1b and other literature courses to fulfill specific General Education requirements. Students planning to major in English should take English B1a and B1b and at least two of the following: English B5a, B5b, B20a, B20b, B30a, B30b. Students planning to transfer to the University of California should consider English B2. For specific information, students should consult the catalog of the school to which they intend to transfer.

English Associate in Arts Degree
Total Units: 18

Required Courses:

Course Number	Title	Units
ENGL B1a	Expository Composition	4.0
ENGL B1b	Introduction to Types of Literature	3.0

Choose 6 units from the following:

Course Number	Title	Units
ENGL B5a	Survey of English Literature	3.0
ENGL B5b	Survey of English Literature	3.0
ENGL B30a	Survey of American Literature	3.0
ENGL B30b	Survey of American Literature	3.0

Electives: at least 5 units

ENGL B2	Advanced Composition & Critical Thinking	5.0
ENGL B10	Introduction to Shakespeare	3.0
ENGL B21	African-American Literature	3.0
ENGL B23	Women's Literature	3.0
ENGL B27	The Bible as Literature	3.0
ENGL B28	Classical Mythology	3.0
ENGL B35	Children's Literature and Storytelling	3.0
ENGL B41a	Introduction to Creative Writing	3.0

ENVIRONMENTAL HORTICULTURE
See Agriculture

FIRE TECHNOLOGY

Bakersfield College's Regional Fire Technology Academy (RFTA) was authorized by the California Fire Service Training and Education System (CFSTES) in 1980, with programs of study leading to Certified Fire Officer, Certified Chief Officer and Certified Fire Chief. RFTA sponsors many cooperative training programs with federal, state and local fire protection agencies.

Individuals may develop a program suitable to their career goals with the aid of a college counselor. Courses may lead to the achievement of specific career goals, immediate employment, an Associate Degree, or transfer credits that satisfy requirements for a Bachelor's Degree in Criminology, Police Science, Correctional Administration or Fire Technology.

Fire Safety Dispatcher Certificate of Completion
Total Units: 17

Required Courses:

Course Number	Title	Units
FIRE B67	Emergency Telecommunicator	3.0
FIRE B68	Emergency Medical Dispatch	3.0
FIRE B1	Fire Protection Organization	3.0
CRIM B1	Introduction to Criminal Justice	3.0
FIRE B85	*Special Topics	1.0
BSAD B85	Business English	3.0
BSAD B250	Quick Computer Keyboarding for Survival	1.0

*Incident Command (0.5 unit), and CPR (0.5 unit)

Fire Technology Certificate of Achievement
Total Units: 32

Required Courses:

Course Number	Title	Units
FIRE B1	Fire Protection Organization	3.0
FIRE B2 or	Personal Fire Safety & Emergency Action	3.0
FIRE B7	Building Construction for Fire Protection	
FIRE B3 or	Fire Command, Strategy, Tactics	3.0
FIRE B51b	Fire Command 1A (2.0)	
FIRE B4	Fire Behavior and Combustion	3.0
FIRE B5 or	Fire Prevention Technology	3.0
FIRE B51d &	Fire Prevention 1A (2.0)	
FIRE B51e	Fire Prevention 1B (2.0)	
FIRE B6	Fire Protection Equipment & Systems	3.0
FIRE B72h	Emergency Medical Technician 1	4.0

Required General Education Courses:

*ENGL B1 or	Introductory Composition	4.0
ENGL B1a	Expository Composition	
PSYC B1a or	General Psychology	3.0
SOCI B1	Introduction to Sociology	
COMM B1 or	Public Speaking	3.0
COMM B2 or	Interpersonal Communication	
COMM B4 or	Persuasive Communication	
COMM B8	Small Group Communication	

*ENGL B60 may be substituted for ENGL B1 or ENGL B1a for Fire Technology Certificate of Achievement only.

Note: FIRE B1 and B2 are waived for students who have a minimum of 2 years service as a paid, full-time firefighter. A G.P.A. of at least 2.0 is required in the certificate program. Of the 30 units required, a minimum of 12 units must be completed at Bakersfield College.

Fire Technology Associate in Arts Degree
Total Units: 22

Required Courses:

Course Number	Title	Units
FIRE B1	Fire Protection Organization	3.0
FIRE B2 or	Personal Fire Safety & Emergency Action	3.0
FIRE B7	Building Construction for Fire Protection	
FIRE B3	Fire Command, Strategy, Tactics	3.0
FIRE B4	Fire Behavior and Combustion	3.0
FIRE B5	Fire Prevention Technology	3.0
FIRE B6	Fire Protection Equipment & Systems	3.0
FIRE B72h	Emergency Medical Technician 1	4.0

Fire Technology Associate in Science Degree
Total Units: 32

Required Courses:

Course Number	Title	Units
FIRE B1	Fire Protection Organization	3.0
FIRE B2 or	Personal Fire Safety & Emergency Action	3.0
FIRE B7	Building Construction for Fire Protection	
FIRE B3	Fire Command, Strategy, Tactics	3.0
FIRE B4	Fire Behavior and Combustion	3.0
FIRE B5	Fire Prevention Technology	3.0
FIRE B6	Fire Protection Equipment & Systems	3.0
FIRE B72h	Emergency Medical Technician 1	4.0
FIRE B51a	Fire Management 1A	2.0
FIRE B51b	Fire Command 1A	2.0
FIRE B51d	Fire Prevention 1A	2.0
*FIRE B51c and	Fire Command 1B	2.0
*FIRE B51e or	Fire Prevention 1B	2.0
WEXP B248 or	Cooperative Work Experience	4.0
WEXP B249	Cooperative Work Experience (4.0)	

*Note: Students may substitute up to 4 units of work experience credit in place of FIRE B51c and/or FIRE B51e.

Wildland Fire Technology Associate in Science Degree
Total Units: 30

Required Courses:

Course Number	Title	Units
FIRE B25a	Wildland Fire Behavior	3.0
FIRE B25b	Wildland Firefighter Safety & Survival	3.0
FIRE B25c	Wildland Fire Operations	3.0
FIRE B25d	Wildland Public Information Officer, Prevention, & Investigation	3.0
FIRE B25e	Wildland Fire Logistics, Finance, & Planning	3.0

Electives: at least 15 units

FIRE B25f	Wildland Firefighter	4.0
FIRE B25g	Wildland Engine Firefighter	3.0
FIRE B25h	Wildland Fire Dispatching	3.0
FIRE B26a	Initial Attack Incident Commander Type 4 (ICT4) (S-200)	1.0
FIRE B26d	Interagency Incident Business Management (S-260)	1.0
FIRE B26e	Fire Operations in the Wildland Urban Interface (S-215)	1.5
FIRE B26g	Crew Boss (S-230)	1.5
FIRE B26k	Field Observer (S-244)	1.0
FIRE B26m	Display Processor (S-245)	0.5

FIRE B27a	Basic Incident Command System (I-200)	1.0
FIRE B27b	I-300 Intermediate Incident Command System (I-300)	1.5
FIRE B28b	L-280 Followership to Leadership	0.5

Chief Officer Certification (Nfpa Standard 1021)
Total Units: 22

Required Courses:

Course Number	Title	Units
FIRE B50a	Fire Command 2-Command Tactics at Major Fires	2.0
FIRE B50b	Fire Command 2b-Scene Management at Major Incidents	2.0
FIRE B50c	Fire Command 2c-High-Rise Fire Tactics	2.0
FIRE B50d	Fire Command 2d-Management of Large-Scale Disasters	2.0
FIRE B50e	Fire Command 2e-Wildland Fire Tactics	2.0
FIRE B50f	Fire Management 2a-Organizational Development and Human Relations	2.0
FIRE B50g	Fire Management 2b-Finance and Business Management for Chief Officers	2.0
FIRE B50h*	Fire Management 2c-Computer Application for the Fire Service	2.0
FIRE B50i	Fire Management 2d-Master Planning	2.0
FIRE B50j	Fire Management 2e-Staff Assignments and Line Functions	2.0
FIRE B50k*	Fire Investigation	2.0

*Courses are offered from State Fire Marshall's Office only.

Driver/Operator Certification
Total Units: 5

Required Courses:

Course Number	Title	Units
FIRE B59	Fire Service Hydraulics	2.0
FIRE B60	Driver/Operator Certification	3.0

Fire Inspector Certification
Total Units: 6

Required Courses:

Course Number	Title	Units
FIRE B51d	Fire Prevention 1A	2.0
FIRE B51e	Fire Prevention 1B	2.0
FIRE B51i	Fire Prevention 1C	2.0

For State Fire Marshall Office Certification, students must also meet prerequisite requirements: certified Firefighter II or completion 5 three-unit Fire Technology core courses and a minimum of 1 year experience as a paid, full-time firefighter or fire inspector.

Fire Officer Certification (Nfpa Standard 1021)
Total Units: 18

Required Courses:

Course Number	Title	Units
FIRE B51a	Fire Management 1a	2.0
FIRE B51b	Fire Command 1a	2.0
FIRE B51c	Fire Command 1b	2.0
FIRE B51d	Fire Prevention 1a	2.0
FIRE B51e	Fire Prevention 1b	2.0

FIRE B51f	Fire Investigation 1a	2.0
FIRE B51g	Fire Instructor 1a	2.0
FIRE B51h	Fire Instructor 1b	2.0
FIRE B51i	Fire Prevention 1c	2.0

Firefighter I Certification
Total Units: 12

Required Courses:

Course Number	Title	Units
FIRE B62	Fire Fighter I Academy	8.0
FIRE B72h	Emergency Medical Technician 1	4.0

Firefighter II Certification
Total Units: 6

Required Courses:

Course Number	Title	Units
FIRE B63	Fire Fighter II Academy	6.0

Hazardous Materials
Total Units: 8.5

Required Courses:

Course Number	Title	Units
FIRE B70a	Hazardous Material for First Responders (In-service Training)	1.0
FIRE B70b	First Responder 'Operational' Decontamination	0.5
FIRE B70c	Hazardous Materials Incident Commander/Scene Manager	1.0
FIRE B70d	Hazardous Materials Tech/Spec 1A: Basic Chemistry	1.0
FIRE B70e	Hazardous Materials Tech/Spec 1B: Applied Chemistry	1.0
FIRE B70f	Hazardous Materials Tech/Spec 1C: Incident Considerations	1.0
FIRE B70g	Hazardous Materials Tech/Spec 1D: Tactical Field Operations	1.0
FIRE B70h	Hazardous Materials Tech/Spec 1E: Special Mitigation Techniques	1.0
FIRE B70i	Hazardous Materials Tech/Spec 1F: Advanced Field Operations	1.0

Rescue And Life Safety
Total Units: 10.5

Required Courses:

Course Number	Title	Units
FIRE B72a	Heavy Duty Rescue 1	0.5
FIRE B72b	Heavy Duty Rescue 2	0.5
FIRE B72c	Heavy Duty Rescue 3	1.0
FIRE B72d	Swift Water Rescue	1.0
FIRE B72e	Advanced Swift Water Rescue	1.0
FIRE B72f	Auto Extrication	0.5
FIRE B72g	Aircraft Fire Protection and Rescue Procedures	1.0
FIRE B72h	Emergency Medical Technician 1	4.0
FIRE B72i	Emergency Medical Technician 1 Refresher	1.0

Specialized Training Programs
Total Units: 7-14

Required Courses:

Course Number	Title	Units
FIRE B74	Petroleum Fire Procedures	0.5
FIRE B75	Fire Fighting Techniques	0.5
FIRE B76	Fire Fighting Skills	3.0
FIRE B77	Advanced Structure Fire Training	0.5
FIRE B78	Advanced Officer Training	0.5
FIRE B79	Instructor Orientation	0.5
FIRE B81	Orientation to Fire Technology	0.5
FIRE B83	Topics in Incident Command System Part I	0.5-4.0
FIRE B84	Topics in Incident Command System Part II	0.5-4.0

Wildland Fire Control
Total Units: 4

Required Courses:

Course Number	Title	Units
FIRE B71a	Seasonal Firefighter Basic Training 1	2.0
FIRE B71b	Seasonal Firefighter Basic Training 2	1.5
FIRE B71e	Wildland Fire Behavior and Control	0.5

FOODS/NUTRITION

Child Nutrition Management Certificate of Achievement
Program emphasizes quality food production, production records, nutrition standards and student service in child nutrition programs including public and private schools, child-care centers and day-care centers.

A Certificate of Achievement may be earned by students who satisfactorily complete 24 units from the courses listed below with a minimum grade of "C" in all required courses. The Professional Management Development Program is also available from the National Restaurant Association.
Total Units: 24

Required Courses:

Course Number	Title	Units
FDSV B50	Introduction to the Foodservice Industry	2.0
FDSV B52	Foodservice Sanitation and Safety	2.0
FDSV B53 or	Basic Skills: Basic Foods	2.0
FDSV B55a &	Foodservice Production I (2.5)	
FDSV B55c &	Foodservice Production Laboratory (2.0)	
FDSV B66	Menu Design for Child Nutrition Programs (3.0)	
NUTR B10	Elementary Nutrition	3.0
FACE B248ab or	Cooperative Work Experience Education	2.0
FACE B249ab	Cooperative Work Experience Education	
ENGL	English Course	3.0
COMS	Computer Studies Course	1.0-3.0

Electives: to equal at least 24 units

Course Number	Title	Units
FDSV B55a	Foodservice Production I	2.5
FDSV B55b	Foodservice Production II	2.5
FDSV B55c	Foodservice Production Laboratory	2.0

FDSV B55d	Foodservice Production Laboratory	2.0
FDSV B57	Purchasing	3.0
FDSV B58	Supervisory Techniques	3.0
FDSV B59	Foodservice Production Management	3.0
FDSV B67	Child Nutrition Program Management	3.0
FDSV B70	Topics in Foodservice and Nutrition	.5-1.0

Child Nutrition Program Management Option Associate in Science Degree
Total Units: 30

Required Courses:

Course Number	Title	Units
FDSV B50	Introduction to the Foodservice Industry	2.0
FDSV B52	Foodservice Sanitation and Safety	2.0
FDSV B55a	Foodservice Production I	2.5
FDSV B55c	Foodservice Production Laboratory	2.0
FDSV B58	Supervisory Techniques	3.0
FDSV B66	Menu Design for Child Nutrition Programs	3.0
FDSV B67	Child Nutrition Program Management	3.0
NUTR B10	Elementary Nutrition	3.0
FACE B248ab or	Cooperative Work Experience Education	2.0
FACE B249ab	Cooperative Work Experience Education	
COMS	Computer Studies Course	1.0-3.0

Electives: to equal at least 30 units

Course Number	Title	Units
FDSV B55b	Foodservice Production II	2.5
FDSV B55d	Foodservice Production Laboratory	2.0
FDSV B57	Purchasing	3.0
FDSV B59	Foodservice Production Management	3.0
FDSV B60	Cost Control	3.0
FDSV B70	Topics in Foodservice and Nutrition	.5-1.0

Culinary Arts Certificate of Achievement
Program emphasizes quality food production and service in commercial and institutional foodservice operations. Course work includes practical training in the campus restaurant, the Renegade Room.

A Certificate of Achievement may be earned by students who satisfactorily complete 25 units from the courses listed below with a minimum grade of "C" in all required courses. The Professional Management Development Program is also available from the National Restaurant Association.
Total Units: 24.5

Required Courses:

Course Number	Title	Units
FDSV B50	Introduction to the Foodservice Industry	2.0
FDSV B51	Food & Nutrition Orientation	0.5
FDSV B52	Foodservice Sanitation and Safety	2.0
FDSV B55a	Foodservice Production I	2.5
FDSV B55b	Foodservice Production II	2.5
FDSV B55c	Foodservice Production Laboratory	2.0
FDSV B55d	Foodservice Production Laboratory	2.0
FDSV B55f	Fundamentals of Baking	2.0
NUTR B10	Elementary Nutrition	3.0
FDSV B57 or	Purchasing	3.0
FDSV B58	Foodservice Supervision	
FACE B248ab or	Cooperative Work Experience Education	2.0
FACE B249ab	Cooperative Work Experience Education	
COMS	Computer Studies Course	1.0-3.0

Culinary Arts Associate in Science Degree
Total Units: 31

Required Courses:

Course Number	Title	Units
FDSV B50	Introduction to the Foodservice Industry	2.0
FDSV B52	Foodservice Sanitation and Safety	2.0
FDSV B55a	Foodservice Production I	2.5
FDSV B55b	Foodservice Production II	2.5
FDSV B55c	Foodservice Production Laboratory	2.0
FDSV B55d	Foodservice Production Laboratory	2.0
NUTR B10	Elementary Nutrition	3.0
FDSV B57	Purchasing	3.0
FDSV B58	Supervision in the Hospitality Industry	3.0
FACE B248ab or	Cooperative Work Experience Education	2.0
FACE B249ab	Cooperative Work Experience Education Computer Application	3.0

Electives: at least 4 units

Course Number	Title	Units
FDSV B51	Food & Nutrition Orientation	0.5
FDSV B55f	Fundamentals of Baking	2.0
FDSV B59	Foodservice Production Management	3.0
FDSV B60	Cost Control for Foodservice Managers	3.0
FDSV B66	Menu Based Planning for Child Nutrition Programs	3.0
FDSV B70	Topics in Foodservice and Nutrition	1-2.0

Dietetic Services Certificate of Achievement
Program provides training for students planning employment in the foodservice department of a health care operation. Courses in this program meet State of California Department of Health Services certification requirements. Consult with a member of the Foods and Nutrition Program staff before scheduling courses in the program. At this time appropriate clinical field experience will be planned.

A Certificate of Achievement may be earned by students who satisfactorily complete 24.5 units from the courses listed below with a minimum grade of "C" in all required courses. The Professional Management Development Program is also available from the National Restaurant Association.
Total Units: 24.5

Required Courses:

Course Number	Title	Units
FDSV B50	Introduction to the Foodservice Industry	2.0
FDSV B52	Foodservice Sanitation and Safety	2.0
FDSV B55a	Foodservice Production I	2.5
FDSV B55c	Foodservice Production Laboratory	2.0
NUTR B10	Elementary Nutrition	3.0
FDSV B58	Foodservice Supervision	3.0
FDSV B59	Food Production Management	3.0
FDSV B64a	Clinical Work Experience in Health Care Facilities - Diet Therapy	2.0
FDSV B64b	Clinical Work Experience in Health Care Facilities - Management	2.0
NUTR B50	Nutrition and Diet Therapy	2.0
COMS	Computer Studies Course	1.0-3.0

Foodservice Management Option Associate in Science Degree
Total Units: 30

Required Courses:

Course Number	Title	Units
FDSV B50	Introduction to the Foodservice Industry	2.0
FDSV B52	Foodservice Sanitation and Safety	2.0
FDSV B55a	Foodservice Production I	2.5
FDSV B55c	Foodservice Production Laboratory	2.0
FDSV B57 or	Purchasing	3.0
FDSV B58	Foodservice Supervision	
NUTR B10	Elementary Nutrition	3.0
FACE B248ab or	Cooperative Work Experience Education	2.0
FACE B249ab	Cooperative Work Experience Education	
COMS	Computer Studies Course	1.0-3.0

Electives: to equal at least 30 units

Course Number	Title	Units
FDSV B55b	Foodservice Production II	2.5
FDSV B55d	Foodservice Production Laboratory	2.0
FDSV B55e	Advanced Foodservice Practicum	3.0
FDSV B57	Purchasing	3.0
FDSV B58	Supervisory Techniques	3.0
FDSV B59	Foodservice Production Management	3.0
FDSV B60	Cost Control	3.0
FDSV B70	Topics in Foodservice and Nutrition	.5-1.0
BSAD B53a	Introduction to Accounting I	3.0
BSAD B18	Business Law	3.0
BSAD B9	Fundamentals of Marketing	3.0

FORESTRY
See Agriculture

FRENCH

French Associate in Arts Degree
Total Units: 18

Required Courses:

Course Number	Title	Units
FREN B1	Elementary French	5.0
FREN B2	Elementary French	5.0
FREN B3	Intermediate French	4.0
FREN B4	Intermediate French	4.0

GEOLOGY

Geology Associate in Science Degree
Total Units: 28-29

Required Courses:

Course Number	Title	Units
GEOL B1a	Physical Geology	4.0
GEOL	Electives	7.0
CHEM B1a or	General Chemistry	5.0
CHEM B2a	Introductory General Chemistry (4.0)	
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
MATH B1b	Precalculus II	4.0

MATH BD or	Intermediate Algebra	4.0
COMS B12	Introduction to Programming with BASIC (3.0)	
PHYS B2a	General Physics-Mechanics & Heat	4.0

Suggested Program for Geology A.S. Degree

First Semester

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
GEOL B1a	Physical Geology	4.0
MATH BD	Intermediate Algebra	4.0

Second Semester

Course Number	Title	Units
MATH B1b	Precalculus II	4.0

Third Semester

Course Number	Title	Units
CHEM B2a	Introductory General Chemistry	4.0
COMS B12	Introduction to Programming with BASIC	3.0

Fourth Semester

Course Number	Title	Units
PHYS B2a	General Physics-Mechanics & Heat	4.0
GEOL	Elective	3.0
GEOL	Elective	2-3.0
	Elective	3.0

Suggested Electives

Course Number	Title	Units
ART B3cd	Three Dimensional Design	3.0
BSAD B5	Human Relations/People Skills	3.0

Suggested Transfer Program
Before planning a study list, the community college student should consult his/her counselor and study the catalog of the senior institution to which he/she wants to transfer.

UCLA

Course Number	Title	Units
GEOL B1a	Physical Geology	4.0
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry & Chemical Analysis	5.0
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
PHYS B2a	General Physics-Mechanics & Heat	4.0
PHYS B2b	General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0
BIOL B3a	General Biology I	5.0
BIOL B3b	General Biology II	5.0

San Diego State University

Course Number	Title	Units
GEOL B1a or	Physical Geology	4.0
GEOL B10	Introduction to Geology	3.0
GEOL B10L	Introduction to Geology Laboratory	1.0
GEOL B1b	Historical Geology	4.0
CHEM B1a	General Chemistry	5.0

CHEM B1b	General Chemistry & Chemical Analysis	5.0
BIOL B11	Concepts of Biology	4.0
MATH B6a	Analytic Geometry & Calculus I	4.0

Recommended Courses

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
MATH B6b	Analytic Geometry & Calculus II	4.0

HISTORY

The major in history is designed for students interested in gaining an understanding of our political, economic and social past. The major is an important part of the liberal arts program and can serve as preparation for graduate study in education, law, business, government and journalism. Many employers value the writing and thinking skills acquired by History majors. The knowledge gained in history is fundamental for an understanding of many of the other fields of learning.

Bakersfield College offers a wide variety of history courses in addition to those listed below. The student should select courses according to his/her area of specialization as well as the requirements of the college to which he/she plans to transfer. The student should also consult his/her counselor and the appropriate four-year college catalogs in determining an appropriate minor, foreign language requirements, and other core requirements.

History Associate in Arts Degree
Total Units: 18

Required Courses:

Course Number	Title	Units
HIST B4ab or	European Civilization	6.0
HIST B1 and	World History from the Origins of Civilizations to 1500 (3.0)	
HIST B2	History of the World Since 1500 (3.0)	

AND one of the following:

Course Number	Title	Units
HIST B17ab	History of the U.S.	6.0
HIST B20ab	African American History of the United States	6.0
HIST B30ab	Chicano History	6.0

AND any two of the following courses:

Course Number	Title	Units
ECON B2	Principles of Economics-Macro	3.0
HIST B25	Introduction to Women in American History	3.0
HIST B18	History of California	3.0
HIST B36	History of Native American Indians	3.0
GEOG B1	Introduction to Geography: Physical Elements	3.0
POLS B1	American Government: National, State and local	3.0
POLS B2	Comparative Government	3.0
POLS B3	International Politics	3.0

SOCI B1	Introduction to Sociology	3.0
HIST B3	Modern Global Societies	3.0
HIST B33	Latin American History	3.0
HIST B15	Civilizations of the Middle East	3.0

Recommended Courses

Course Number	Title	Units
ART B30abcd	Art History	12.0
ENGL B2	Advanced Composition and Critical Thinking	5.0
PHIL B6a	Introduction to Philosophy	3.0
PSYC B1a	General Psychology	3.0
ANTH B2	Cultural Anthropology	3.0

HORTICULTURE
See Agriculture

HUMAN SERVICES

Human Services Certificate of Completion
Total Units: 15

Required Courses:

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
ENGL B1	Introductory Composition	4.0
HMSV B40	Introduction to Human Services	3.0
HMSV B5	Human Services Internship	2.0
SOCI B1	Introduction to Sociology	3.0

Human Services Associate in Arts Degree

The major in Human Services provides the student with an academic background for entry-level positions in various human services agencies. It also prepares the student for upper-division work in human services and other behavioral sciences.
Total Units: 19

Required Courses:

Course Number	Title	Units
HMSV B40	Introduction to Human Services	3.0
SOCI B1	Introduction to Sociology	3.0
SOCI B45	Minority Relations	3.0
PSYC B1a	General Psychology	3.0
PSYC B40 or	Child Psychology and Development	3.0
CHDV B21	Child Growth and Development: Birth Through Adolescence	

Electives: Any combination of four units from the following course is required. Note: All units must be completed in agencies where assignment and supervision is approved by the Program Coordinator. Students wishing to enroll in HMSV B5 must have completed HMSV B40. A maximum of 2 units of internship are permitted in a given semester.

Course Number	Title	Units
HMSV B5	Human Services Internship	4.0

Human Services Associate in Science Degree

The major in Human Services provides the student with an academic background for entry-level positions in various human services agencies. It also prepares the student for upper-division work in human services and the other behavioral sciences.
Total Units: 30

Required Courses:

Course Number	Title	Units
HMSV B40	Introduction to Human Services	3.0
SOCI B1	Introduction to Sociology	3.0
SOCI B45	Minority Relations	3.0
PSYC B1a	General Psychology	3.0
PSYC B40 or	Child Psychology and Development	3.0
CHDV B21	Child Growth and Development: Birth Through Adolescence	

Any combination of four units from the following course is required. Note: All units must be completed in agencies where assignment and supervision is approved by the Program Coordinator. Students wishing to enroll in HMSV B5 must have completed HMSV B40. A maximum of 2 units of internship are permitted in a given semester.

Course Number	Title	Units
HMSV B5	Human Services Internship	4.0

Electives: at least 11 units

Course Number	Title	Units
ANTH B1	Physical Anthropology	3.0
ANTH B2	Cultural Anthropology	3.0
ANTH B5	North American Indians	3.0
PSYC B1b	Biological Psychology	3.0
PSYC B5	Elementary Statistics for the Behavioral and Social Sciences	4.0
PSYC B6	Introduction to Behavioral and Social Science Research	3.0
PSYC B20 or	Social Psychology	3.0
SOCI B20	Social Psychology	
PSYC B30	Human Sexuality	3.0
PSYC B31	Marriage	3.0
PSYC B33	Personal and Social Adjustment	3.0
PSYC B37	Psychology of Gender Roles	3.0
PSYC B45	Behavior Modification	3.0
SOCI B2	Problems of Modern Society	3.0
HMSV B5	Human Services Internship	1.4.0
SOCI B10	Topics in Sociology	0.5-2.0
SOCI B28	Women in the World	3.0
SOCI B36	Sociology of the Chicano	3.0
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B52a or	Introduction to the Microcomputer and Windows (1.5)	
	Any computer related course	
SPAN B1ab	Elementary Spanish	5.0
HMSV B2 or	Interpersonal & Group Process Skills for the Helping Occupations	3.0
PSYC B2	Interpersonal & Group Process Skills for the Helping Occupations	
HMSV B8 or	Introduction to Social Gerontology	3.0
GERO B8	Introduction to Social Gerontology	

COMS B2 and COMS B5 are recommended for the Human Services Program, but a maximum of 3 units of any computer-related course(s) needed for a specific career application will be accepted.

INDUSTRIAL DRAWING

AutoCad Certificate of Completion
Total Units: 8

Required Courses:

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
INDR B20b	Computer Aided Drafting and Design (CAD)	3.0

Industrial Drawing Associate in Arts Degree
Total Units: 20

Required Courses:

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
INDR B50	Process Piping	3.0
INDR B51	Electrical Design	3.0
INDR B52	Geographic Information Systems (GIS)	3.0
INDR B40	Parametric Modeling Fundamentals	3.0

Electives: at least 3 units

Course Number	Title	Units
ARCH B16	Digital Tools for Graphics Communication	3.0
INDR B20b	Computer Aided Drafting and Design (CAD)	3.0

Industrial Technology, Industrial Drawing Option Associate in Science Degree
Total Units: 30

Required Courses:

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
INDR B20b	Computer Aided Drafting and Design (CAD)	3.0
INDR B40	Parametric Modeling Fundamentals	3.0
INDR B50	Process Piping	3.0
MATH BD	Elementary Algebra	4.0
INDR B51	Electrical Design	3.0
INDR B52	Geographic Information Systems (GIS)	3.0

MFGT B1ab or	Machine Tool Processes	3.0
WOOD B2	Furniture and Cabinetmaking	
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0

Electives:

Course Number	Title	Units
ENGR B24	Engineering Graphics and Descriptive Geometry	2.0
WELD B1ab	Introduction to the Welding Processes	3.0
MFGT B50	Industrial Control Systems	3.0

Suggested Program for Industrial Technology Industrial Drawing Option Associate in Science Degree

First Semester

Course Number	Title	Units
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
MATH BD	Intermediate Algebra	4.0

Second Semester

Course Number	Title	Units
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
MATH BD	Elementary Algebra	4.0
INDR B50 or	Process Piping	3.0
INDR B52	Geographic Information Systems (GIS)	

Third Semester

Course Number	Title	Units
INDR B50 or	Process Piping	3.0
INDR B52	Geographic Information Systems (GIS)	
INDR B51	Electrical Design	3.0

Fourth Semester

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
	General Education	
INDR B40	Parametric Modeling Fundamentals	3.0

INDUSTRIAL TECHNOLOGY

Industrial Technology Certificate of Completion
Total Units: 15

Required Courses:

Course Number	Title	Units
MFGT B1ab	Machine Tool Processes	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDT B10	Occupational Readiness	3.0
WELD B1ab	Introduction to Welding Processes	3.0

Industrial Technology (General) Associate in Science Degree
Total Units: 30

Required Courses:

Course Number	Title	Units
MFGT B1ab	Machine Tool Processes	3.0
MFGT B50	Industrial Control Systems	3.0
MFGT B5	Programmable Logic Controllers	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
INDT B10	Occupational Readinesss	3.0
WELD B1ab	Introduction to the Welding Processes	3.0
COMS B12	Introduction to Programming with BASIC	3.0

Electives: at least 3 units

Course Number	Title	Units
INDR B20b	Computer Aided Drafting and Design (CAD)	3.0
MFGT B2	Lathe Programming	3.0
WOOD B2	Furniture and Cabinetmaking	3.0
AUTO B1ab	Introduction to Automotive Technology	4.0
CNST B1	Introduction to Construction	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
STDV B51	Job Search Strategies	1.0

JOURNALISM

Journalism Certificates
Journalism certificates emphasize occupational experience in specific areas of media. Any work experience units completed must reflect occupational experience in the appropriate media area. To ensure this, the journalism advisor will work with work experience students.

Advertising for Print and Online Media Certificate of Completion
Total Units: 13

Required Courses:

Course Number	Title	Units
JRNL B2	Beginning Reporting	3.0
ART B23	Advertising Design	3.0
*JRNL B27a	Newspaper Production/Reporters	3.0
JRNL B26	Newspaper Production/Editors	4.0

*JRNL B27e, Newspaper Production/Photographers, may be substituted for JRNL B27a with permission of journalism advisor.

Computer Graphics for Print and Online Media Certificate of Completion

Total Units: 17

Required Courses:

Course Number	Title	Units
ART B2	Basic Drawing	3.0
ART B21	Graphic Design	3.0
ART B22	Digital Illustration	3.0
*JRNL B27a	Newspaper Production/Reporters	6.0
WEXP B248 or	Cooperative Work Experience Education	2.0
WEXP B249	Cooperative Work Experience Education	

*JRNL B27a, 3 units, must be repeated twice for a total of 6 units.

Editorial Leadership Certificate of Completion

Total Units: 17

Required Courses:

Course Number	Title	Units
*JRNL B27a	Newspaper Production/Reporters	9.0
JRNL B26	Newspaper Production/Editors	8.0

*JRNL B27a, 3 units, must be repeated 3 times for a total of 9 units, or JRNL B27e, Newspaper Production/Photographers, 3 units, may be substituted, for a total of 9 units, with permission of journalism advisor.

News Reporting Certificate of Completion

Total Units: 17

Required Courses:

Course Number	Title	Units
JRNL B2	Beginning Reporting	3.0
JRNL B15	Press Photography	3.0
*JRNL B27a	Newspaper Production/Reporters	9.0
WEXP B248 or	Cooperative Work Experience Education	2.0
WEXP B249	Cooperative Work Experience Education	

*JRNL B27a, 3 units, must be repeated 3 times for a total of 9 units.

Online Media Certificate of Completion

Total Units: 17

Required Courses:

Course Number	Title	Units
*JRNL B2	Beginning Reporting	3.0
JRNL B27a	Newspaper Production/Reporters	3.0
JRNL B27e	Newspaper Production/Photographers	3.0
**JRNL B26	Newspaper Production/Editors	8.0

*COMS B74a Web Design: Macromedia Dreamweaver, 3 units, or COMS B74b Web Design: HTML & XML, 3 units, for a total of 3 units and/or WEXP B248 or WEXP B249, total of 3 units, may be substituted for JRNL B2 with permission of journalism advisor.

**JRNL B26 must be taken twice, 4 units each, with the student working as online publications editor.

Photojournalism Certificate of Completion

Total Units: 17

Required Courses:

Course Number	Title	Units
JRNL B2	Beginning Reporting	3.0
JRNL B15	Press Photography	3.0
*JRNL B27e	Newspaper Production/Photographers	9.0
WEXP B248 or	Cooperative Work Experience Education	2.0
WEXP B249	Cooperative Work Experience Education	

*JRNL B27e, 3 units, must be repeated 3 times for a total of 9 units.

Journalism Associate in Arts Degree

Designed to provide training for entry into newspaper and magazine journalism and photojournalism.
Total Units: 18

Required Courses:

Course Number	Title	Units
JRNL B1	Media and Society	3.0
JRNL B2	Beginning Reporting	3.0
JRNL B15	Press Photography	3.0

Select 9 units from the following courses:

JRNL B27a	Newspaper Production/Reporters	3-6.0
JRNL B27e	Newspaper Production/Photographers	3-6.0
JRNL B26	Newspaper Production/Editors	4.0

LIBERAL ARTS

Liberal Arts Associate in Arts Degree

The Liberal Arts major at BC is designed to provide students with the opportunity to earn an associate in arts degree in a broad area of study. The major is interdisciplinary and allows students to develop a variety of skills transferable to numerous occupations and fields of study. The major is intended to provide general knowledge and to develop the intellectual capacities, such as reasoning and judgment, as opposed to professional or vocational skills. This major is suitable for transfer students preparing for upper division study in a variety of fields in the liberal arts and for those students undecided as to major or further study. Students may satisfy requirements for the Liberal Arts major by completing one of the three options listed below. With any option selected, students must also complete all graduation requirements for Bakersfield College including a total of 60 degree applicable units with an overall grade point average of 2.00.

Select one of the following options:

1. Completion of 18 units in the Liberal Arts and Sciences beyond those used to satisfy Bakersfield College general education requirements. These courses must be designated as Liberal Arts and Sciences under the Bakersfield College Course Classification System (CCS); see course descriptions for specific designations. No course work may be double counted as meeting both BC General Education and major requirements.

   OR

2. Completion of the California State University General Education transfer requirements.

OR

3. Completion of the Intersegmental General Education Transfer Curriculum (IGETC).

CVHEC Liberal Arts Transfer Associate in Arts Degree

The CVHEC Transfer Associate Degree guarantees admission into any of the CVHEC universities that have approved the degree (as listed below). It is not a guarantee for impacted majors. Please see a counselor or consult the Transfer Center for specific requirements for impacted majors. This associate degree is not recommended for majors that require extensive lower division preparation. Consult your counselor or the Transfer Center.

Select one of the following options:

1. Option One. Guarantees admission to CSU Bakersfield, CSU Fresno and CSU Stanislaus, with a 2.4 gpa; Fresno Pacific University, University of the Pacific and UC Merced with a 2.8 gpa.
   a. Complete the Intersegmental General Education Transfer Curriculum (IGETC) with a "C" grade or better in each course.
   b. The remaining units may be selected from recommended lower division major preparation for the major at the approved CVHEC university of your choice.
   c. UC transferable elective units, if needed, to total 60 units for the CVHEC Transfer Associate Degree.
   d. Achieve a minimum 2.4 gpa for transfer to CSU Bakersfield, CSU Fresno or CSU Stanislaus; achieve a minimum 2.8 gpa for transfer to Fresno Pacific University, University of the Pacific, or UC Merced, and be in good standing at the last institution attended.
   e. At least 12 of the 60 units must be completed at Bakersfield College.

OR

2. Option Two. Guarantees admission to CSU Bakersfield, CSU Fresno, and CSU Stanislaus with a 2.4 gpa.
   a. Complete CSU General Education Breadth with a "C" grade or better in each course.
   b. The remaining units may be selected from recommended lower division major preparation for the major at the approved CVHEC university of your choice.
   c. CSU transferable elective units, if needed, to total 60 units for the CVHEC Transfer Associate degree.
   d. Achieve a minimum 2.4 gpa for transfer to CSU Bakersfield, CSU Fresno, or CSU Stanislaus.
   e. At least 12 of the 60 units must be completed at Bakersfield College.

Important Notes:
1. File an application to the university of your choice during the initial filing period for the semester you wish to transfer. The CVHEC website lists the filing periods for each campus: www.CollegeNext.org
2. All community college campus specific graduation requirements are waived for this transfer associate degree. Demonstrated competency in reading, writ-

ten expression, and mathematics is required if not met through general education coursework. Note: Students are encouraged to complete matriculation including the educational planning component so they will have early registration rights.
3. Students who achieve a 2.0-2.39 gpa will earn the CVHEC Transfer Associate Degree but will not be guaranteed admission to a CVHEC University.
4. Please consult with a community college counselor or an outreach counselor, at the university where you plan to transfer, to inquire about requirements for your major and/or impacted programs.

LIBERAL STUDIES

Liberal Studies Associate in Arts Degree

Courses listed are based on information available at the time of publication of this catalog for the Liberal Studies Major Credential Track at CSU Bakersfield and are intended for students who plan to obtain a multiple subjects teaching credential. Students are advised to see a counselor for the most current requirements for a Liberal Studies major at CSU Bakersfield. Students transferring to other colleges or universities are advised to consult the catalog of the school they plan to attend.
Total Units: 18

Select 18 units from the courses in Areas One through Ten:

AREA One: Language

Course Number	Title	Units
ENGL B1a	Expository Composition	4.0
ENGL B1b or	Introduction to Types of Literature	3.0
ENGL B21 or	African American Literature	
ENGL B23 or	Women's Literature	
ENGL B30a or	Survey of American Literature	
ENGL B30b or	Survey of American Literature	
ENGL B35	Children's Literature and Storytelling	
COMM B1	Public Speaking	3.0

AREA Two: Mathematics

Course Number	Title	Units
MATH B4a	Mathematics for Elementary School Teaching I	5.0

AREA Three: Sciences

Course Number	Title	Units
BIOL B11	Concepts of Biology	4.0
PHSC B12	General Physical Science	4.0
ERSC B10	Introduction to Earth Science	3.0
ERSC B10L	Earth Science Laboratory	1.0

AREA Four: Humanities and Social Sciences

Course Number	Title	Units
HIST B17a	History of the United States	3.0
POLS B1	American Government: National, State, and Local	3.0
HIST B18	History of California	3.0
HIST B1	World History from the Origins of Civilizations to 1500	3.0
GEOG B2	Human Geography	3.0

PHIL B7 or	Introduction to Logic	3.0
PHIL B9 or	Critical Thinking and Advanced Composition (4)	
COMM B5	Rhetoric and Argumentation	

AREA Five: Visual and Performing Arts

Course Number	Title	Units
ART B1 or	Art Appreciation	3.0
ART B2 or	Basic Drawing	
ART B30a or	Survey of World Art, Prehistory Through Islam	
ART B30b or	Survey of World Art, Non-Western Cultures and Medieval Europe	
ART B30c or	Survey of World Art, 14th Century Through 17th Century	
ART B30d or	Survey of World Art, 18th Century Through 20th Century	
MUSC B2 or	Basic Elements of Music	
MUSC B22 or	Music Appreciation	
THEA B1 or	Introduction to Acting	
THEA B20	Survey of Theatre and the Roots of Entertainment	

AREA Six: Health and Physical Education

Course Number	Title	Units
HLED B1	Principles of Health Education	3.0

AREA Seven: Human Development

Course Number	Title	Units
*PSYC B1a or	General Psychology	3.0
PSYC B40 or	Child Psychology & Development	3.0
CHDV B21	Child Growth & Development: Birth through Adolescence	3.0

*PSYC B1a is a prerequisite for PSYC B40.

AREA Eight: Ethnic, Gender, Cultural and Handicapped Perspectives
No course articulated.

AREA Nine: Technology

Course Number	Title	Units
COMS B2 or	Introduction to Computer Information Systems	3.0
COMS B3 or	Computer Concepts & Survival Skills	
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	

AREA Ten: Field Experience

Course Number	Title	Units
EDUC B24	Early Field Experience for Elementary Teachers	

MANAGEMENT
See Business Administration

MANUFACTURING/MACHINE TECHNOLOGY

Basic Machine Tool Operations-Lathe, Mill Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
MFGT B1a	Machine Tool Processes	1.5
MFGT B1b	Machine Tool Processes	1.5

Computer Numerical Control Programming Certificate of Completion
Total Units: 6

Required Courses:

Course Number	Title	Units
MFGT B2	Lathe Programming	3.0
MFGT B3	Mill Programming	3.0

Production Maintenance Certificate of Completion
Total Units: 16

Required Courses:

Course Number	Title	Units
MFGT B5	Programmable Logic Controllers	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
ELET B56	Instrumentation & Process Control	3.0
INDT B10	Occupational Readiness	3.0
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0

Programmable Logic Controllers (Basic PLC's) Certificate of Completion
Total Units: 3

Required Courses:

Course Number	Title	Units
MFGT B5	Programmable Logic Controllers	3.0

Control Systems Technology Certificate of Achievement
Total Units: 31

Required Courses:

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0
INDT B10	Occupational Readiness	3.0
MFGT B50	Industrial Control Systems	3.0
MFGT B5	Programmable Logic Controllers	3.0
MFGT B52	Industrial Fluid Power	3.0
TECM B52	Introduction to Technical Mathematics	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
ELET B55	Electric Motors -- Controls	4.0
ELET B56	Instrumentation and Process Control	3.0

Industrial Technology, Control Systems Technology Associate in Science Degree

Total Units: 37

Required Courses:

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications using Microsoft Office 2007	3.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting & Design (CAD)	1.0
INDT B10	Occupational Readiness	3.0
MFGT B50	Industrial Control Systems	3.0
MFGT B5	Programmable Logic Controllers	3.0
MFGT B52	Industrial Fluid Power	3.0
TECM B52	Introduction to Technical Mathematics	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
ELET B55	Electric Motors -- Controls	4.0
ELET B56	Instrumentation and Process Control	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
MFGT B61	Advanced Programmable Logic Controllers	3.0

Manufacturing Technology Certificate of Achievement

Total Units: 30

Required Courses:

Course Number	Title	Units
MFGT B1a	Machine Tool Processes	1.5
MFGT B1b	Machine Tool Processes	1.5
MFGT B2	Lathe Programming	3.0
MFGT B3	Mill Programming	3.0
MFGT B5	Programmable Logic Controllers	3.0
MFGT B50	Industrial Control Systems	3.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
ELET B1	Basic Electronics (DC and AC)	4.0
TECM B52 or MATH BA or equivalent	Introduction to Technical Mathematics Elementary Algebra	3.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Electives: at least 3 units

Course Number	Title	Units
MFGT B61	Advanced Programmable Logic Controllers	3.0
INDR B20a	Computer Aided Drafting and Design	3.0
WELD B54a	Blueprint Reading for Welders and Machinists	3.0
WELD B1ab	Introduction to the Welding Processes	3.0
INDT B249ab	Cooperative Work Experience Education	1.0
INDT B273	Special Problems in Machine Tool Metal Working	2-3.0
INDR B40	Parametric Modeling Fundamentals	3.0

Industrial Technology, Manufacturing Technology Option Associate in Science Degree

Total Units: 30

Required Courses:

Course Number	Title	Units
MFGT B1a	Machine Tool Processes	1.5
MFGT B1b	Machine Tool Processes	1.5
MFGT B2	Lathe Programming	3.0
MFGT B3	Mill Programming	3.0
MFGT B5	Programmable Logic Controllers	3.0
MFGT B50	Industrial Control Systems	3.0
MFGT B61	Advanced Programmable Logic Controllers	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
WELD B54a	Blueprint Reading for Welders and Machinists	3.0

Electives: at least 3 units

Course Number	Title	Units
ELET B55	Electric Motors - Controls	4.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
INDR B40	Parametric Modeling Fundamentals	3.0
INDT B273	Special Problems in Tool Metal Working	2-3.0
WELD B1ab	Introduction to the Welding Processes	3.0
WELD B53ab	Shielded Metal Arc Welding	3.0
WEXP B249	Cooperative Work Experience Education	1.0

MARKETING

See Business Administration

MATHEMATICS

Mathematics Associate in Arts Degree

Total Units: 18

Required Courses:

Course Number	Title	Units
MATH B6a	Analytic Geometry and Calculus I	4.0
MATH B6b	Analytic Geometry and Calculus II	4.0
MATH B6c	Calculus III	4.0
MATH B6d	Ordinary Differential Equations	3.0
MATH B6e	Elementary Linear Algebra	3.0

Recommended Courses

Course Number	Title	Units
PHIL B7	Introduction to Logic	3.0
PHYS B4a	Mechanics and Wave Motion	4.0
ENGR B19c	Computer Programming for Science, Engineering and Technology (C)	3.0
MATH B21	Special Projects in Mathematics (MAPLE *on-line*)	1.0
MATH B22	Elementary Probability and Statistics	5.0

MUSIC

Students who plan to major or minor in music should commit themselves to the highest possible level of proficiency in theory, piano, literature, group performance, and applied (individual) instruction in their performance area. Students should take the required courses in music and complete courses in general education for the transfer college of their choice. Elective courses will both enrich the student's background and balance weak areas of knowledge for later academic growth.

Music Associate in Arts Degree

Total Units: 23-27

Required Courses:

Course Number	Title	Units
MUSC B4ab	Elementary Theory	6.0
MUSC B5ab	Class Piano	2.0
MUSC B15ab	Ear Training and Sight Singing	2.0
MUSC B21ab	History of Music	6.0

Select one or both of the following courses:

Course Number	Title	Unit
MUSC B4c	Intermediate Theory-Tonal Counterpoint	3.0
MUSC B4d	Intermediate Theory-Contemporary Materials	3.0

Group Performance (Select one each semester)

Course Number	Title	Units
MUSC B10ad	Concert Band	8.0
MUSC B12ad	College Orchestra	8.0
MUSC B13ad	Jazz Ensemble	4.0
MUSC B14ad	College Choir	8.0

Other Suggested Courses

Course Number	Title	Units
MUSC B2	Basic Elements of Music	3.0
MUSC B5cd	Class Piano	2.0
MUSC B6ab	Class Voice	2.0
MUSC B6cd	Class Voice	2.0
MUSC B9ac	Class Guitar	3.0
MUSC B17ad	Chamber Singers	8.0
MUSC B20ma	Mariachi Ensemble	1.0
MUSC B20sd	Steel Drum Band	1.0
MUSC B22	Music Appreciation	3.0
MUSC B23	Appreciation of Jazz	3.0
MUSC B24	A Survey of World Music	3.0
MUSC B27	History of American Popular Music	3.0
MUSC B60ab	Concepts and Applications of Music Technology	6.0

NURSING

See also Emergency Medical Technician, Primary Care Associate, Radiologic Technology

Enrollment to Nursing Programs

I. Statement of philosophy concerning enrollment into Allied Health Programs:

All persons who are able to perform satisfactorily the responsibilities and tasks required in an education and training program and in subsequent employment in the field should have an opportunity to succeed. It is recognized that the need to protect the safety and welfare of the student and the community is a primary consideration in the health occupations.

II. Application Procedures

A. Determination of eligibility for enrollment: The student must meet educational and health requirements established for the program.

1. Educational Requirements

a. A high school diploma or equivalent is required for the Registered Nurse and Vocational Nurse Programs.

b. Meet specific program prerequisites.

2. Health Requirements

The student must be free from communicable diseases, infection, psychological disorders, and other conditions that would prevent the successful performance of the responsibilities and tasks required in the education and training program of the college. Any condition described above which is developed by the student after enrollment to the program may be considered sufficient cause for suspension from the program. If possible, such a student should be counseled to enter a more appropriate program. Costs of meeting the following requirements are paid by student.

a. Physical Examinations - This exam is to be completed AFTER the student receives notification of acceptance into the program. The applicant must have a level of emotional and physical health necessary to meet the essential technical standards.

b. Immunizations/health tests - As needed for acceptance in a clinical and training facility, and to protect the health and welfare of the student and community. Immunization may include, but not be limited to, rubella and Hepatitis B. Tuberculosis screening is also required.

c. Drug and Alcohol Screening - As a condition of acceptance to any Nursing Program with a laboratory component, all students are required to submit to, and pass, a designated drug and alcohol screen.

d. Background Screening - As a condition of application in any Allied Health Program with a clinical laboratory component, students are

required to submit to and pass a designated background check. These screenings are performed at the student's expense.

3. Eligibility for Enrollment.
   Applicants who have completed their application, have their high school and college transcripts on file, and have met the educational and health requirements will be designated as eligible for enrollment. Information regarding criteria for selection may be obtained in the Allied Health Office.
4. Students will be required to purchase uniforms, textbooks and selected equipment, provide transportation to off-campus clinical education sites and pay current college fees.

If a Nursing Program has more applicants for enrollment than space available, priority is provided to residents of the Kern Community College District.

NOTE: Students with a misdemeanor and/or felony arrest or conviction *may* not receive certification or licensure from the State or County. Call Allied Health, 395-4282 for more information.

Certified Nurse Assistant

The Certified Nurse Assistant (CNA) course prepares the student to provide services to those who need health care. The student will learn the role of the caregiver, the healthcare environment, healthcare safety, adult needs in health and illness and basic care giving skills. Students successfully completing both the Basic Patient Skills course and the laboratory component will be eligible to take the State of California, Certified Nurse Assistant examination. For enrollment in the Basic Patient Skills laboratory course, the student must meet health requirements. For more information, contact the Allied Health Department at 395-4281.

Students with a misdemeanor and/or felony record may not receive certification or licensure from the State or County - clarification can be provided by the Certified Nurse Assistant Coordinator.

Total Units: 5.5

Required Courses:

Course Number	Title	Units
MEDS B67	Basic Patient Skills	3.0
MEDS B67L	Basic Patient Skills Laboratory recommended)	2.5

Registered Nursing Associate in Science Degree

Nursing education prepares the graduate to provide services to those who need health care. As needs are varied so are educational programs, which may proceed from the simpler to the more complex in accordance with the career ladder concept. The progression reads: nursing assistant, licensed vocational nurse, registered nurse, and other nurses with Bachelor of Science, Master of Science, Doctorate in Nursing

and special certifications. The role of a new graduate is usually that of a staff nurse. With additional education, a nurse may advance to a position of supervisor, administrator, clinical specialist, educator, or researcher.

Curriculum Framework
The curriculum is based upon the following concepts which provide a framework for theory and practice at each level:
1. Utilization of the nursing process to assess, plan, implement, and evaluate nursing care.
2. Man as a bio-psycho-social-spiritual being.
3. The personal and professional development of the student to prepare for the role of a Registered Nurse.
4. The implementation of the roles of the student as a provider of care, manager of care and member of the profession.

Applying to the Associate Degree Program
General Information
1. This is a four-semester Associate Degree Nursing Program (ADN). Students must also complete all the Bakersfield College General Education Requirements for graduation in addition to the prerequisite courses.
2. Upon successful completion of the ADN Program, graduates are eligible to take the National Council Licensure Examination for licensure as a Registered Nurse.

Application Filing Periods
1. March 1 - March 31 for fall semester.
2. September 1 - September 30 for spring semester.
3. All application forms must be received in the Allied Health Office during the stated filing period. Forms received prior to these dates will be returned. Late forms will not be accepted.

Application Procedures
If you are a Bakersfield College student with no other college courses other than Bakersfield College courses:
1. Complete an application and submit to the Allied Health Department during the appropriate application periods.
2. Provide the program with either an official transcript from Bakersfield College, or you can print your unofficial transcript off the Web and submit it to the program.

If you have taken courses from any college other than Bakersfield College:
1. Apply for admission to Bakersfield College either in person at the Admissions and Records Office or by going on-line at www.bakersfieldcollege.edu, click on Admissions and Records and follow the directions under Enrolling.
2. **Please note -- this step takes anywhere from 10-12 weeks and must be completed prior to the end of the application period.**
   Have your transcripts evaluated by:
   a. Ordering an official copy of your transcripts from your previous college(s);
   b. Submit the official copy of your transcripts along with a form "Request for Evaluation." You can obtain this form from the Admissions and Records Office or

from the Admissions and Records web-page under Other Forms.

3. Once your transcripts have been evaluated and posted to your Bakersfield College transcripts, either order an official copy to be sent from the Admissions and Records Office or print your unofficial transcript and submit it to the Allied Health Office along with a completed program application.

Prerequisite Course Requirements

All prerequisites must be completed with a "C" grade or higher.

a. ENGL B1a (Expository Composition) 4 units at Bakersfield College or equivalent course at another accredited college.

b. MATH BA or B200A (Elementary Algebra) or higher, 3 units at Bakersfield College or an equivalent course at another accredited college, or two semesters of high school algebra. (If you met this requirement with high school algebra you must submit an official high school transcript and students still must satisfy the Math requirement for the Bakersfield College general education requirements.) For students starting BC in Fall 2009, MATH BD or higher is required to meet the graduation requirement for Math.

c. CHEM B11 or B2a or B1a (Chemistry) a minimum of 4 units is required at Bakersfield College or an equivalent course at another accredited college. (CSUB requires CHEM B11.)

d. The Anatomy and Physiology requirement can be met by either:
BIOL B32 (Anatomy & Physiology I) 4 units at Bakersfield College or equivalent course at another accredited college, and BIOL B33 (Anatomy & Physiology II) 4 units at Bakersfield College or equivalent course at another accredited college.
Or
BIOL B14 (Human Anatomy) 4 units at Bakersfield College or equivalent course at another accredited college and BIOL B15 (Human Physiology) at BC or equivalent course at another accredited college.

e. BIOL B16 (General Microbiology) 5 units at Bakersfield College or equivalent course at another accredited college.

f. Graduation from high school or equivalent education.

g. Overall cumulative GPA of 2.5 overall (without repeats or 'W'), minimum GPA of 3.0 in all English courses.

h. MEDS B60 Medical Terminology - highly recommended prior to BIOL B14 Human Anatomy.

i. Nurse Assistance course/certification - highly recommended.

j. NURS B100 Success Strategies in a Nursing Program, is recommended 1-2 semesters prior to entering the program.

General Education Requirements and Board of Registered Nursing Required Courses

1. The following courses are also required by the California Board of Registered Nursing (BRN) and to graduate from the Bakersfield College Associate Degree Nursing program. All BRN required courses must be completed with a "C" grade or better and it is suggested that most of them be completed prior to application to the program:
   a. *COMM B1 or B2 or B3
   b. PSYC B1a
   c. SOCI B1 or ANTH B2
   d. MATH BA/B200A or a minimum of 3 units in Mathematics, Logic or Computer Studies

   *COMM B1 is recommended for CSU nursing transfers.

2. The following courses are also required to graduate from the Bakersfield College Associate Degree Nursing Program and it is suggested that most of them be completed prior to applying to the program:
   a. HIST B17a or other social science course
   b. PHIL B12 or other humanities course
   c. STDV B1 or B201 (should be taken during the first semester of prerequisites)
   d. Students who complete the ADN program are exempt from the Health Education requirement.

Note: Equivalent courses taken at other accredited colleges must be verified by official transcripts. Requests for consideration of courses for equivalency must be made to the Bakersfield College Admissions and Records Office.

Associate Degree Nurse Program

Students entering the program in Spring 2007 or earlier will follow the program of study listed below. The following courses are taken after students have been formally enrolled in the ADN Program.

First Semester

Course Number	Title	Units
NURS B1	Nursing Fundamentals	3.0
NURS B1L	Nursing Fundamentals Laboratory	3.0
NURS B1g	Gerontological Nursing	1.0
NURS B1gL	Gerontological Nursing Laboratory	1.5
NURS B31ab	Basic Pharmacology	2.0
	TOTAL	10.5

Second Semester

Course Number	Title	Units
NURS B3a	Medical/Surgical Nursing	2.0
NURS B3aL	Medical/Surgical Nursing Laboratory	2.5
NURS B7	Parent/Newborn Nursing	1.5
NURS B7L	Parent/Newborn Nursing Laboratory	1.5
NURS B32	Advanced Pharmacology	2.0
	TOTAL	9.5

Third Semester

Course Number	Title	Units
NURS B3b	Medical/Surgical Nursing	2.0
NURS B3bL	Medical/Surgical Nursing Laboratory	2.0
NURS B6	Pediatric Nursing	1.5
NURS B6L	Pediatric Nursing Laboratory	1.5
NURS B8	Psychiatric/Mental Health Nursing	2.0
NURS B8L	Psychiatric/Mental Health Nursing Laboratory	1.5
	TOTAL	10.5

Fourth Semester

Course Number	Title	Units
NURS B9	Advanced Medical/Surgical Nursing	3.0
NURS B9L	Advanced Medical/Surgical Nursing Laboratory	5.0
NURS B10	Nursing Management/Leadership	1.5
	TOTAL	9.5

NOTE: The clinical components of all the above nursing courses are graded on a credit/no credit basis only.

Students entering the program in Fall 2007 or after will follow the program of study listed below.

First Semester

Course Number	Title	Units
NURS B20	Fundamentals of Nursing	4.0
NURS B21	Medical Surgical Nursing 1	5.0
NURS B22	Pharmacology	3.0
	TOTAL	12.0

Second Semester

Course Number	Title	Units
NURS B23	Medical Surgical Nursing 2	4.5
NURS B24	Obstetrics-Maternity Nursing	3.0
NURS B25	Mental Health-Psychiatric Nursing	3.5
	TOTAL	11.0

Third Semester

Course Number	Title	Units
NURS B26	Medical Surgical Nursing 3	5.5
NURS B27	Pediatric Nursing	3.5
	TOTAL	9.0

Fourth Semester

Course Number	Title	Units
NURS B28	Medical Surgical Nursing 4	7.0
NURS B29	Gerontology-Community Nursing	2.0
	TOTAL	9.0

ADN students are exempt from the maximum of three credit/no credit units which may be taken in a semester and from the maximum of 12 credit/no credit units which may be applied toward the AA and AS degrees at Bakersfield College.

Physical Examination Drug and Alcohol Screening/Background Screening
See Application to Nursing Programs.

Program Supply Information
Students will be required to purchase uniforms, textbooks and selected equipment, provide transportation to off-campus clinical education sites and pay current college fees. An estimated cost for books, uniforms, fees and required equipment for the first term of the Program is approximately $2,000. Second and third semesters usually only require registration fees and books. In addition to registration fees and books, the ADN fourth semester's expenses will include Program Completion activities, Program pin, Comprehensive Exam, and State Board licensure application and fees.

NOTE: Record of any misdemeanor and/or felony is subject to review by the Board of Registered Nursing before an R.N. license may be granted. Anyone who wishes clarification may contact the Board of Registered Nursing, 400 R Street, Suite 4030, Sacramento, CA 95814, (916) 322-3350.

Vocational Nursing Certificate of Achievement
Vocational Nursing at Bakersfield College is a three-semester *certificate* program. Upon successful completion of the Vocational Nurse program, graduates are eligible to take the National Council Licensure Examination for Practical Nurses for licensure as a Vocational Nurse.

Curriculum Framework
The curriculum is based upon the following concepts which provide a framework for theory and practice at each level:
1. Utilization of the nursing process to assess, plan, implement, and evaluate nursing care.
2. Man as a bio-psycho-social-spiritual being.
3. The personal and professional development of the student to prepare for the role of a Vocational Nurse.

Application Filing Period
One VN class is accepted to begin fall semester. Application forms are accepted in the Allied Health Division during the month of Februry. Application forms received prior to or after these dates will be returned.

Application Procedures
1. Submit a completed application form during the correct period. Forms may be obtained from the BC Allied Health Division or the Counseling Center located in the Student Services building on the main campus.
2. Provide proof of graduation from high school or equivalent education (GED).
3. Arrange for official copies of high school and college transcripts to be mailed directly to the Vocational Nursing Program, Bakersfield College, 1801 Panorama Drive, Bakersfield, CA 93305. Students attending BC must furnish a BC transcript.
4. Provide assessment scores if needed (see note below).
5. Students not admitted must complete program application forms each application filing period in order to remain on the waiting list.

Prerequisite Course Requirements
Students may *apply* for the Vocational Nursing Program while prerequisite courses are in progress, but must submit evidence of successful completion of all prerequisite courses prior to the start date of the enrollment semester.

1. The following courses must be completed with a minimum grade of "C."
   a. BIOL B18 (Essentials of Human Anatomy and Physiology) or equivalent course at another accredited college.
   b. PSYC B1a (General Psychology) or equivalent course at another accredited college.
   c. MATH BA/B200A (Elementary Algebra) or equivalent score on the BC assessment test or two semesters of

high school algebra. Assessment scores must be provided by the applicant prior to the application deadline.
2. Other prerequisite requirements:
   a. Eligibility for ENGL B1a on the current BC assessment test, or completion of ENGL B1 at BC with a 'C' or higher.
   b. Graduation from high school or equivalent education (GED).
   c. Computer Studies B52a or B57a (1.5 units) or documentation or statement of proficiency evaluated during the first semester.
   d. MEDS B60 (Medical Terminology) highly recommended.
   e. Nurse Assistant Certification highly recommended.
   f. Students must meet the minimum eligibility requirement as set forth in the prerequisite validation study. Students can request information regarding the Allied Health Office or view the information on the Internet at www2.bakersfieldcollege.edu/alliedhealth/.

Vocational Nursing Program
The following courses are taken after the student enters the Vocational Nursing program.

First Semester

Course Number	Title	Units
VNRS B1	Nursing Fundamentals	3.0
VNRS B1LV	Vocational Nursing Laboratory	6.0
VNRS B1g	Gerontological Nursing	1.0
VNRS B31ab	Basic Pharmacology	2.0
VNRS B75	Medical Surgical Nursing I	3.5
	Total	15.5

Second Semester

Course Number	Title	Units
VNRS B85	Medical Surgical Nursing II	2.5
VNRS B85LV	Medical-Surgical Nursing II - Laboratory	1.5
VNRS B86	Medical Surgical Nursing III	4.0
VNRS B86LV	Medical Surgical Nursing III - Laboratory	3.0
VNRS B6	Pediatric Nursing	1.5
VNRS B97LV	Pediatric Nursing - Laboratory	1.5
VNRS B50a	Advanced Pharmacology - Part A	0.5
	Total	14.5

Third Semester

Course Number	Title	Units
VNRS B95	Medical Surgical Nursing IV	4.0
VNRS B95LV	Medical Surgical Nursing IV - Laboratory	2.5
VNRS B96	Medical Surgical Nursing V	2.0
VNRS B96LV	Medical Surgical Nursing V - Laboratory	2.0
VNRS B7	Parent/Newborn Nursing	1.5
VNRS B87LV	Parent/Newborn Nursing - Laboratory	1.5
VNRS B50b	Advanced Pharmacology - Part B	0.5
	Total	14.0

NOTE: The clinical components of all vocational nursing courses are graded on a credit/no credit basis.

Vocational Nursing students are exempt from the maximum of three credit/no credit units which may be taken in a semester and from the maximum of 12 credit/no credit units which may be applied toward the AA and AS degrees at Bakersfield College.

Vocational nursing students who complete the VN program and are applying for a degree are exempt from the Health Education requirement.

Physical Examination/Drug and Alcohol Screening/ Background Screening
See Enrollment to Nursing Programs.

Program Supplies Information
Students will be required to purchase uniforms, textbooks and selected equipment, provide transportation to off-campus clinical education sites and pay current college fees. An estimated cost for books, uniforms, fees and required equipment for the first term of the Program is approximately $2,000. In addition to registration fees and books, the VN semester's expenses will include Program Completion activities, Program pin, Comprehensive Exam, and State Board licensure fees.

Note: Record of any misdemeanor and/or felony is subject to review by the Board of Vocational Nurse and Psychiatric Technician Examiners before a VN license may be granted. Anyone who wishes clarification may contact the Board of Vocational Nursing & Psychiatric Technicians 2535 Capitol Oaks Drive, Suite 205, Sacramento, CA 95833 (916) 263-7800.

LVN to Associate Degree Nurse Program
General Information
Vocational nurses who wish to complete requirements for eligibility for the registered nurse licensure examination as an Associate Degree Nurse will be considered for advanced placement. Admission to the LVN to Associate Degree Nurse Program in Nursing is dependent upon completion of all prerequisite requirements, and available space.

Application Filing Periods and Procedures
See Application Periods and Application Procedures, Associate Degree Nurse

Prerequisite Course Requirements
The prerequisite course requirements are the same as the Associate Degree Nursing Program . It is recommended that students audit NURS B3a. A current Vocational Nurse license must be presented for verification. It is highly recommended that the student actually practice as an LVN for at least one year before applying to the LVN-RN Program.

General Education Requirements
The General Education Requirements are the same as for the Associate Degree Nursing Program.

PROGRAMS OF STUDY

NOTE: Equivalent courses taken at other colleges must be verified by official transcripts. Requests for consideration of courses for equivalency must be made to the Bakersfield College Admissions and Records Office.

Required Nursing Courses
The following courses are taken after students have been formally enrolled for advanced placement in the ADN Program.

Third Semester

Course Number	Title	Units
NURS B3b	Medical/Surgical Nursing	2.0
NURS B3bL	Medical/Surgical Nursing Laboratory	2.0
NURS B8	Psychiatric/Mental Health Nursing	2.0
NURS B8L	Psychiatric/Mental Health Nursing Laboratory	1.5
NURS B32	Advanced Pharmacology	2.0
	TOTAL	9.5

Fourth Semester

Course Number	Title	Units
NURS B9	Advanced Medical/Surgical Nursing	3.0
NURS B9L	Advanced Medical/Surgical Nursing Laboratory	5.0
NURS B10	Nursing Management/Leadership	1.5
	TOTAL	9.5

Future Transfer Students
Students who plan to obtain their bachelor's degree in nursing at California State University, Bakersfield after completing the Bakersfield College ADN Program will need to take NUTR B10, MEDS B35, and PSYC B5 or MATH B22 prior to transfer. In addition, there may be other General Education courses required. Contact the Counseling Center for further information at 395-4421.

Physical Examination/Drug and Alcohol Screening/
Background Screening
See Enrollment to Nursing Programs

Program Supplies
Students will be required to purchase uniforms, textbooks and selected equipment, provide transportation to off-campus sites for laboratory experience, and pay current college fees. These costs total approximately $1,200. In addition to registration fees and books, the ADN's 4th semester expenses will include program completion activities, program pin, ATI test and State Board Application fees.

NOTE: Record of any misdemeanor and/or felony is subject to review by the Board of Registered Nursing before an R.N. license may be granted. Anyone who wishes clarification may contact the Board of Registered Nursing, 400 R Street, Suite 4030, Sacramento, CA 95814, (916) 322-3350.

LVN to Non-Degree Nurse (30 unit option)
Students seeking information regarding the 30-unit option preparation for the registered nurse licensing examination may receive further information from the Director of the Associate Degree Nursing Program.

Transfer Policy
1. Academic credit earned in regionally accredited institutions of higher education for comparable prelicensure courses will be accepted for transfer.
2. A student who has successfully completed nursing courses in an approved or accredited nursing program may be eligible to receive credit for equivalent courses within the Nursing Program curriculum.
3. Equivalency will be determined on the basis of catalog description, course outline content comparison, and hours distribution.
4. A challenge examination may be required when equivalency cannot be determined.

Challenge by Examination Policy
1. Challenge examinations are available for all courses in the nursing education curriculum. Students seeking challenge by examination credit will be counseled individually by the Director.
2. Challenge examination for credit based on previous education/experience must be requested by the student six weeks prior to the start of the semester in which the course is scheduled to be taught.

OFFICE TECHNOLOGY
See Business Administration

PHILOSOPHY

A major in philosophy has always been and continues to be one of the strongest traditional liberal arts majors in higher education. Some students major in Philosophy as a precursor to graduate work and academic careers, teaching and doing research in Philosophy and Education. Philosophy's emphasis on critical thinking, theories of knowledge, value and reality, truth, rational argument and proof make it an excellent pre-professional undergraduate major (e.g., for law, theology, medicine, business, computer science) or minor (e.g., for the natural, physical and social science and humanities majors).

Philosophy Associate in Arts Degree
Total Units: 18

Required Courses:

Course Number	Title	Units
PHIL B6a	Introduction to Philosophy	3.0
PHIL B7	Introduction to Logic	3.0
PHIL B10	Introduction to Ethics	3.0
PHIL B12	Ethics of Living and Dying	3.0
PHIL B14	Business and Social Responsibility	3.0
PHIL B37	Introduction to World Religions	3.0

Electives

Course Number	Title	Units
PHIL B9	Critical Thinking and Advanced Composition	4.0
PHIL B32	World Religions: East	3.0
PHIL B33	World Religions: West	3.0

PHYSICAL EDUCATION

Physical Education Associate in Arts

The major requirements for an Associate Degree in Physical Education may be satisfied by completing 22 units as outlined below.
Total Units: 23

Required Courses:

Course Number	Title	Units
HLED B1	Principles of Health Education	3.0
PHED B39a	Prevention and Care of Athletic Injuries	3.0
PHED B40	Introduction to Physical Education	3.0
PHED B41	Recreation Leadership	3.0
PHED B31	Standard First Aid	1.0
BIOL B18 or	Essentials of Human Anatomy and Physiology	4.0
BIOL B20	Human Biology	

Electives: at least 6 units

Select at least 6 units in Physical Education activity courses from a minimum of 3 different activities.

Other Suggested Courses:

Course Number	Title	Units
PHED B44a	Theory of Soccer I	1.0
PHED B44b	Theory of Soccer II	1.0

PHYSICS

Physics Associate in Science Degree
Total Units: 34

Required Courses:

Course Number	Title	Units
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0
PHYS B4c	Optics & Modern Physics	4.0
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry & Chemical Analysis	5.0
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
MATH B6c	Calculus III	4.0

All Four-Year Colleges and Universities

Before planning a study list, the community college student should consult a counselor and study the catalog of the senior institution to which he/she intends to transfer.

The introductory courses in Physics (Physics B2a-B2b or B4a-B4c) and Chemistry (Chemistry B1a-B1b, B2a) are designed to provide a foundation and understanding of the laws and principles of the physical world (matter and energy). These courses should be completed early in a student's academic program to insure greater success in subsequent courses.

Course Number	Title	Units
PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0
PHYS B4c	Optics & Modern Physics	4.0
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry & Chemical Analysis	5.0
MATH B6a	Analytic Geometry & Calculus I	4.0
MATH B6b	Analytic Geometry & Calculus II	4.0
MATH B6c	Calculus III	4.0
MATH B6d	Ordinary Differential Equations	3.0

Recommended Courses

Course Number	Title	Units
BIOL B3a	General Biology I	5.0
BIOL B11	Concepts of Biology	4.0

POLITICAL SCIENCE

Political Science Associate in Arts Degree

The majors in Political Science are designed for students interested in gaining an understanding of the structure and functions of governments. The majors are an important part of the liberal arts program and prepare students for further study and careers in education, law, business, government, international relations and journalism.

The student should select the major emphasis, and courses according to his/her area of specialization as well as the requirements of the college to which he/she plans to transfer. The student should also consult his/her counselor and the appropriate four-year college catalogs in determining an appropriate minor, foreign language requirements, and other requirements.
Total Units: 18

Required Courses:

Course Number	Title	Units
POLS B1	American Government: National, State and local	3.0
POLS B2 or	Comparative Government	3.0
POLS B3	International Politics	
POLS B12 or	State and Local Government	3.0
POLS B16	Vital Political Problems	
HIST B4ab or	European Civilization	6.0
HIST B17ab or	History of the U.S.	
HIST B20ab or	African American History of the US	
HIST B30ab	Chicano History	
ECON B2 or	Principles of Economics-Macro	3.0
PSYC B5 or	Elementary Statistics for the Behavioral and Social Sciences (4.0)	
MATH B22	Elementary Probability and Statistics (5.0)	

Political Science, Emphasis in Domestic Policy Associate in Arts Degree

Total Units: 18

Required Courses:

Course Number	Title	Units
POLS B1	American Government: National, State and local	3.0
POLS B12	State and Local Government	3.0
POLS B16	Vital Political Problems	3.0
HIST B17ab	History of the U.S.	6.0
ECON B2 or	Principles of Economics-Macro	3.0
PSYC B5 or	Elementary Statistics for the Behavioral and Social Sciences (4.0)	
MATH B22	Elementary Probability and Statistics (5.0)	

Electives

Course Number	Title	Units
ENGL B2	Advanced Composition & Critical Thinking	5.0
HIST B18	History of California	3.0
PSYC B1a	General Psychology	3.0
SOCI B1	Introduction to Sociology	3.0
PSYC B6	Introduction to Behavioral Science Research	3.0

Political Science, Emphasis in International Relations Associate in Arts Degree

Total Units: 18

Required Courses:

Course Number	Title	Units
POLS B1	American Government: National, State and local	3.0
POLS B2	Comparative Government	3.0
POLS B3	International Politics	3.0
HIST B4ab	European Civilization	6.0
ECON B2 or	Principles of Economics-Macro	3.0
PSYC B5 or	Elementary Statistics for the Behavioral and Social Sciences (4.0)	
MATH B22	Elementary Probability and Statistics (5.0)	

PRE-VETERINARY MEDICINE

See Agriculture

PRIMARY CARE ASSOCIATE
(Physician's Assistant)

Stanford University Medical Center administers a program to train individuals who function in association with physicians in the maintenance and delivery of primary health care to medically underserved communities.

Upon completion of the prerequisite pre-clinical program at Bakersfield College or other accredited institutions, students admitted to the program have 15 months of clinical experience coordinated through Stanford University Medical Center. Students participate in didactic course work full-time for the first quarter (3 months) at Stanford Medical Center in Palo Alto, California. Then they complete an equivalent of five days of didactic instruction each month (12 months) thereafter. All clinical experience occurs in an office practice preceptorship. Contact Counseling Department for further information.

Prerequisites:
Minimum requirements for application and admission include:
1. United States citizen or permanent visa.
2. 2. High School Diploma or equivalent.
3. A minimum of 18 months direct patient care experience.
4. Satisfactory completion of the following academic prerequisites or their equivalents.

General Education courses are required for the P.C.A. Program. It is recommended that an AA or AS degree at BC be completed prior to applying to the program.

The student must have a preceptor site established in order to complete the clinical experiences necessary for the program. Some assistance may be available in locating a preceptor.

Upon successful completion of the P.C.A. program. The graduate will sit for a certifying examination administered by the National Commission on Certification of Physician's Assistants. Passing this examination allows the Physician's Assistant to perform direct patient services under the supervision of primary care physicians certified by the California Board of Medical Quality Assurance.

Pre-Clinical Program Requirements
A minimum grade of "C" must be attained in each of these courses. Only work from a regionally accredited college can be accepted.

Algebra - Elementary. One year of high school math or MATH BA/B200a at Bakersfield College.

Anatomy (BIOL B14) and Physiology (BIOL B15) at Bakersfield College or equivalent. Must be at least 10-12 quarter units or 7-8 semester units.

Chemistry - Introductory. One year of high school chemistry or equivalent.

Cultural Anthropology or Sociology: ANTH B2, SOCI B1 at Bakersfield College, or another acceptable course.
English Composition - Freshman level: ENGL B1, ENGL B1a at Bakersfield College, or other acceptable course.

General Psychology - PSYC B1a at Bakersfield College or other acceptable course.

Microbiology with laboratory; BIOL B16 at Bakersfield College, or other acceptable course.

*American History and Institutions. See Graduation and General Education Section of this catalog.

*Computer Literacy - Two semester units. Must include experience at a terminal (COMS B2 or COMS B12) at Bakersfield College, or other acceptable course.

*Ethnic Studies - A course that reflects the experience of an American ethnic group.

*Humanities - One course from List A and one course from List B. (A) Literature, Philosophy (not Logic), or Western Civilization. (B) Art Appreciation, Music Appreciation, or Theatre Arts Appreciation.

*Physical Education - Four quarter courses or three semester courses.

*Speech - Public Speaking or interpersonal communication: COMM B1 or COMM B2 at Bakersfield College, or other acceptable course.

*These courses are required if candidate does not possess an A.A., A.S. or higher academic degree.

PSYCHOLOGY

Psychology Associate in Arts Degree

The major in psychology provides a study of the behavior of individuals and groups. The four-year degree in this major prepares the student for positions in research and teaching, counseling, and working in clinical settings.
Total Units: 19

Required Courses:

Course Number	Title	Units
PSYC B1a	General Psychology	3.0
PSYC B5	Elementary Statistics for the Behavioral and Social Sciences	4.0
PSYC B40	Child Psychology	3.0
SOCI B1	Introduction to Sociology	3.0
ANTH B2	Cultural Anthropology	3.0
PSYC B20 or	Social Psychology	3.0
PSYC B30 or	Human Sexuality	
PSYC B37 or	Psychology of Gender Roles	
PSYC B45 or	Behavior Modification	
PSYC B1b or	Biological Psychology	
PSYC B31 or	Marriage	
PSYC B33 or	Personal and Social Adjustment	
PSYC B8 or	Introduction to Social Gerontology	
PSYC B2 or	Interpersonal & Group Process Skills for the Helping Occupations	
PSYC B6	Introduction to Behavioral and Social Science Research	

RADIOLOGIC TECHNOLOGY

Radiologic Technology

Radiologic Technology is a health care profession whose practitioners work in hospitals, imaging centers, and private physicians' offices. The radiologic technologist (radiographer) is a member of the health care team who works directly with the patient and the physician performing a wide variety of diagnostic x-ray procedures. The role of the graduate radiographer may be that of staff radiographer, special imaging radiographer, supervisor, administrator or educator, depending upon the level of education and experience obtained.

The Bakersfield College Associate in Science Degree Radiologic Technology Program provides concurrent didactic and clinical education. The program is 24 months in length (excluding prerequisite coursework) and begins each year in June.

The program provides the theory, skill and experience necessary to apply for admission to the certification exam administered by the American Registry of Radiologic Technologists (ARRT); and for certification from the State of California, Department of Health Services as a Certified Radiologic Technologist (CRT). The student is also eligible to write the State Fluoroscopy Permit exam. Students must earn a minimum of "C" in all radiography and related general education courses, have met the State mandated curriculum and clinical hours and have met all clinical education competencies to be recommended for these examinations/certifications.

Radiologic Technology Program Mission and Goals

The mission of the Bakersfield College Radiologic Technology Program is to promote student success by providing quality instruction for graduates to competently practice radiography at the entry level.

The Program promotes its mission by preparing graduates to: 1) Succeed by the establishment of fair and informative educational practices; 2) maintain and promote professional ethics; 3) recognize and apply quality patient care of management in cooperation with the healthcare team; 4) maintain a safe environment for the patient, healthcare team and self; 5) apply the knowledge and skills of imaging principles to produce diagnostic radiographs; 6) effectively communicate, critically think and problem solve; 7) competently perform radiography procedures; and 8) receive an associate degree in radiologic technology and be eligible to write both the national certification exam administered by the ARRT and the California CRT exam.

Radiologic Technology Program Prerequisite Requirements

All prerequisite coursework must be completed prior to the start of the program. When there are more applicants for enrollment than space available, priority is provided to applicants with all prerequisite courses completed at the time of submitting an enrollment form.

The following courses must be completed with a "C" grade or higher (except where otherwise noted):

1. BIOL B18 (Essentials of Anatomy and Physiology)
   OR
   BIOL B32 (Human Anatomy and Physiology I) **and** BIOL B33 (Human Anatomy and Physiology II)
   OR
   BIOL B14 (Human Anatomy) **and** BIOL B15 (Human Physiology)
   OR
   equivalent course(s) at another accredited college.

2. MATH BD/B200D (Intermediate Algebra) at BC **OR** equivalent course at another accredited college or completion of high school Algebra 2 with a minimum grade of "B."
3. MEDS B60 (Medical Terminology - 3 units) at BC or equivalent course at another accredited college.
4. Eligibility for ENGL B1a as demonstrated by qualifying scores on the BC assessment tests; or completion of ENGL B1 at BC; or an equivalent course from another accredited college with a minimum grade of "C."
5. Graduation from high school or an equivalent education (GED/CHSPE).

Enrollment Procedures and Filing Period
Enrollment forms must be received by the Radiologic Technology Program Office during the month of February for the program scheduled to start in June.

Enrollment Procedures
1. Complete required prerequisite courses (see above).
2. Enrollment forms for the Radiologic Technology Program may be obtained in the Allied Health Division, Room 178 of the Math-Science Building, OR in the Counseling Center located in the Student Services building on the main campus.
3. Official transcripts for all high school and college coursework must also be submitted and mailed directly to Radiologic Technology Program, Bakersfield College, 1801 Panorama Drive, Bakersfield, CA 93305. All transcripts must be received during the application dates listed above. Students attending Bakersfield College may supply the program with either an unofficial transcript from Admissions and Records or provide a web display copy. Transcripts from other colleges must be official.
4. Students not enrolled must reapply for each program cycle to keep their file active. If the student does not reapply, the file will be destroyed.
5. If the Radiologic Technology Program has more applicants for enrollment than space available, priority is provided to residents of the Kern Community College District.

NOTE: Equivalent courses taken at other accredited colleges must be verified by *official* transcripts. Submit the official copy of your transcript along with the form "Request for Evaluation" to the college Admissions and Records Office. It is the student's responsibility to submit the completed equivalency information during the application filing period; therefore students are urged to complete this equivalency prior to the program enrollment period as this process takes significant time.

General Education Requirements
General education courses are required to graduate from the Bakersfield College Associate in Science Degree Radiologic Technology Program. It is suggested that most be completed

prior to program enrollment. Refer to the BC General Education and Graduation Requirements in this catalog for more information.

1. Educational Planning: It is recommended that students complete this component as they begin college coursework.
2. English - English B1 minimum required; English B1a recommended
3. Communication (Speech) - COMM B1, B2, B3 or B8
4. Social Science - History B17a or other Social Science* course
5. Behavioral Science - Psychology B1a recommended; or other Behavioral Science course
6. Humanities - Philosophy B12 recommended or other Humanities* course
7. Computer Science (3 units) - COMS B2 or COMS B5 or equivalent is *necessary* to meet program completion requirements.
8. Health Education - Students that successfully complete the Radiologic Technology Program are exempt from the Health Education requirement for graduation.
9. An individual who has previously received an associate degree or higher must meet the A.S. Degree requirements in Radiologic Technology.

Health Requirements and Screenings
1. A physical examination completed by a physician of the student's choice will be required after the students receive notification of enrollment into the program to demonstrate that a student meets the technical standards necessary to meet the objectives of the program. A copy of the *Essential Technical Standards* required for Radiologic Technologists may be obtained in the Allied Health Division Office located in the Math-Science building, room 178 or on the program website at www2.bakersfieldcollege.edu/alliedhealth.
2. As a condition of enrollment to the Radiologic Technology Program, all students are required to submit to and pass a designated drug and alcohol screen.
3. As a condition of enrollment in any Allied Health Program with a clinical component, students are required to submit to and pass a designated background check.
4. Immunizations/health tests are needed for acceptance in a clinical education center, and to protect the health and welfare of the student and community. Immunizations may include, but not be limited to, rubella, varicella, and Hepatitis B. Tuberculosis screening is also required.
5. The medical exams, drug/alcohol screens, background screen, immunizations and tests are performed at the expense of the student.

Program Supply Information

Students will be required to purchase uniforms, textbooks and selected equipment, provide transportation to off-campus clinical education centers and pay current college fees. Estimated costs for books, uniforms, fees and required equipment for the first year of the program are approximately $800-900. Subsequent semesters usually require college enrollment and other fees, books and course syllabi. Expenses for the last semester of enrollment also include the program pin and application fees for national and state licensure/registration examinations (approximately $350).

Licensure/Certification Eligibility

Record of any conviction, misdemeanor or felony, is subject to review by the American Registry of Radiologic Technologists (ARRT) before eligibilty for certification is granted. Individuals requiring clarification may contact the ARRT, 1225 Northland Drive, Mendota Heights, MN 55120, (651) 687-0048, or www.arrt.org.

Accreditation

Bakersfield College is accredited by the Western Association of Schools and Colleges. The Radiologic Technology Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, Illinois 60606-3182, (312) 704-5300 or www.jrcert.org. The program is also approved by the State of California, Department of Health Services, Radiologic Health Branch, P.O. Box 997414, MS-7610, Sacramento, CA , 95899-7414, (916) 327-5106 or www.dhs.ca.gov/rhb.

Associate Degree Radiologic Technology Program

The following courses are taken after students have been enrolled in the Radiologic Technology Program.

First Summer

Course Number	Title	Units
RADT B1a	Introduction to Radiologic Technology	2.0
RADT B1b	Patient Care	2.0
RADT B4a	Introduction to Clinical Education	1.5
	TOTAL	5.5

First Fall Semester

Course Number	Title	Units
RADT B2a	Radiographic Anatomy and Positioning 1	3.0
RADT B3a	Radiographic Principles 1	3.0
RADT B4b	Clinical Education 1	4.0
	General Education (if needed)	3.0
	TOTAL	10-13.0

First Spring Semester

Course Number	Title	Units
RADT B2b	Radiographic Anatomy and Positioning 2	3.0
RADT B3b	Radiographic Principles 2	3.0
RADT B6	Clinical Education 2	4.0
RADT B9c	Principles of Angiography	1.0
	TOTAL	11-14.0

Second Summer

Course Number	Title	Units
RADT B7	Clinical Education 3	6.5

Second Fall Semester

Course Number	Title	Units
RADT B2c	Radiographic Anatomy and Positioning 3	3.0
RADT B5	Radiation Physics	3.0
RADT B10	Clinical Education 4	6.5
RADT B30	Principles of Venipuncture	1.0
	General Education (if needed)	3.0
	TOTAL	13.5-16.5

Second Spring Semester

Course Number	Title	Units
RADT B9a	Sectional Anatomy for Medical Imaging	3.0
RADT B11	Radiographic Pathology	2.0
RADT B12	Radiobiology and Radiation Protection	2.0
RADT B13	Clinical Education 5	8.0
	TOTAL	15.0

Note: The clinical components of all radiologic technology courses are graded on a credit/no credit basis only.

Radiologic Technology students are exempt from the maximum of three credit/no credit units which may be taken in a semester and from the maximum of 12 credit/no credit units which may be applied toward the AS degree at Bakersfield College.

REAL ESTATE

See Business Administration

RECREATION

Students considering a major in recreation should consult the catalog of the four-year college to which they intend to transfer. Specific areas of concentration in the major will determine the lower-division courses required.

Course Number	Title	Units
PHED B41	Recreation Leadership	2.0
PHED B31	Standard First Aid	1.0

REGISTERED NURSING

See Nursing

SOCIOLOGY

Sociology Associate in Arts Degree

Sociology is the study of groups, institutions, social relationships, and social problems in contemporary society. The sociology major prepares for careers in law, social work, human services, urban development, law enforcement agencies, public service, counseling, mental health, teaching, and community service.
Total Units: 19

Required Courses:

Course Number	Title	Units
SOCI B1	Introduction to Sociology	3.0
SOCI B2	Problems in Modern Society	3.0
SOCI B20 or	Social Psychology	3.0
PSYC B20 or	Social Psychology	
PSYC B45 or	Behavior Modification	
SOCI B45 or	Minority Relations	
GERO B8 or	Introduction to Social Gerontology	
HMSV B8	Introduction to Social Gerontology	
PSYC B1a	General Psychology	3.0
ANTH B2	Cultural Anthropology	3.0
PSYC B5	Elementary Statistics for the Behavioral and Social Sciences	4.0

SPANISH

Spanish Associate in Arts Degree

Total Units: 18

Required Courses:

Course Number	Title	Units
SPAN B1ab	Elementary Spanish	5.0
SPAN B2ab	Elementary Spanish	5.0
SPAN B3	Intermediate Spanish	4.0
SPAN B4 or	Intermediate Spanish	4.0
SPAN B10	Spanish for Native Speakers	

SPEECH

See Communication

THEATRE ARTS

Theatre Arts Associate in Arts Degree

Students must comply with the requirements as shown in the catalog under graduation requirements. Counselors/Advisors will assist the student in planning for an Associate Degree.
Total Units: 21

Required Courses:

Course Number	Title	Units
THEA B2ab	Elements of Acting	6.0
THEA B3a	Applied Acting Problems	2.0
THEA B27	Acting Theatre Laboratory	6.0
THEA B28	Technical Theatre Laboratory	4.0
THEA B12a	Introduction to Shakespeare	3.0

Note: Theatre majors should enroll for at least one unit of THEA B27 or THEA B28 per semester.

Electives

Course Number	Title	Units
THEA B3b	Applied Acting Problems	2.0
THEA B31	Introduction to Film Studies	3.0
THEA B32	Contemporary Film Studies	3.0
THEA B35	Introduction to Theatre	1.0
ART B1	Art Appreciation	3.0
ART B2	Basic Drawing	3.0
WOOD B1	Beginning Hand Woodworking	3.0

VOCATIONAL NURSING

See Nursing

WELDING

Blueprint Reading and Layout for Welders Certificate of Completion

Total Units: 6

Required Courses:

Course Number	Title	Units
WELD B54a	Blueprint Reading and Layout for Welders	3.0
WELD B54b	Template Development and Layout for the Welder	3.0

Gas Metal Arc/Gas Tungsten Arc Welding/Flux Core Arc Welding Certificate of Completion

Total Units: 6 - 7.5

Required Courses:

Course Number	Title	Units
WELD B1ab	Introduction to the Welding Processes	3.0
WELD B53ab	Shielded Metal Arc Welding	3.0
WELD B74a	TIG Welding	1.5
OR		
WELD B90	General Welding	6.0

Shielded Metal Arc Welding Certificate of Completion

Total Units: 12

Required Courses:

Course Number	Title	Units
WELD B1ab &	Introduction to the Welding Processes	3.0
WELD B53ab &	Structured Plate Certification	3.0
WELD B54a &	Blueprint Reading for Welders and Machinists	3.0
WELD B54b	Template Development and Layout for the Welder	3.0
OR		
WELD B90	General Welding	12.0

Welding Certificate of Achievement

Total Units: 25.5

Required Courses:

Course Number	Title	Units
WELD B1ab	Introduction to the Welding Processes	3.0
WELD B53ab	Shielded Metal Arc Welding	3.0
WELD B55ab	Structural Plate Certification	3.0
WELD B55cd	ASME Pipe Certification	3.0
WELD B65ab	Welded Steel Structures	3.0
WELD B74ab	TIG and MIG Welding	3.0

Course Number	Title	Units
MFGT B1a	Machine Tool Processes	1.5
WELD B54a	Blueprint Reading for Welders & Machinists	3.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Industrial Technology, Welding Option Associate in Science Degree
Total Units: 37

Select from:

Course Number	Title	Units
WELD B1ab	Introduction to the Welding Processes	3.0
WELD B53ab	Shielded Metal Arc Welding	3.0
WELD B55ab	Structural Plate Certification	3.0
WELD B55cd	ASME Pipe Certification	3.0
WELD B74ab	TIG and MIG Welding	3.0
WELD B54a	Blueprint Reading for Welders & Machinists	3.0
WELD B54b	Template Development and Layout for the Welder	3.0
WELD B65ab	Welded Steel Structures	3.0
MFGT B1ab	Machine Tool Processes	3.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
MFGT B50	Industrial Control Systems	3.0
INDT B271	Special Problems in Welding	2-3.0
INDT B10 or Equivalent	Occupational Readiness	3.0

WOODWORKING/CABINETMAKING

Woodworking/Cabinetmaking Certificate of Completion
Total Units: 6

Select 6 units from the following courses:

Course Number	Title	Units
WOOD B1	Creative Woodworking	3.0
WOOD B2	Furniture and Cabinetmaking	3.0
WOOD B5	Intermediate Cabinetmaking	3.0

Cabinetmaking Certificate of Achievement
Total Units: 33

Required Courses:

Course Number	Title	Units
WOOD B1	Beginning Hand Woodworking	3.0
WOOD B2	Furniture and Cabinetmaking	3.0
CNST B1	Introduction to Construction	3.0
CNST B54a &	Cabinetmaking and Millwork	4.0
CNST B54b or	Cabinetmaking and Millwork	4.0
WOOD B5 &	Intermediate Cabinetmaking (3.0)	
WOOD B65a &	Advanced Cabinetmaking (3.0)	
WOOD B65b	Advanced Cabinetmaking (3.0)	
ENGL	Approved Course	4.0
MATH B50 or	Modern College Arithmetic & Pre-Algebra	3.0
Math Placement Assessment Level 2 or Above		
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Electives: to equal at least 33 units

Course Number	Title	Units
INDT B249ab	Cooperative Work Experience Education	1-4.0
INDT B274	Special Problems in Woodworking	2-3.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
FORE B2	Natural Resources	3.0
ENGL B1	Introductory Composition	4.0

Industrial Technology, Woodworking and Cabinetmaking Option Associate in Science Degree
Total Units: 29

Required Courses:

Course Number	Title	Units
WOOD B1	Creative Woodworking	3.0
WOOD B2	Furniture and Cabinetmaking	3.0
WOOD B5	Intermediate Cabinetmaking	3.0
WOOD B65a	Advanced Cabinetmaking	3.0
WOOD B65b	Advanced Cabinetmaking	3.0
FORE B1	Introduction to Forestry	3.0
INDR B11	Introduction to Computer Aided Drafting and Design (CAD)	1.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
CNST B1	Introduction to Construction	3.0
INDT B10 or Equivalent	Occupational Readiness	3.0

Suggested Electives

Course Number	Title	Units
FORE B2	Natural Resources	3.0
INDR B30b	Industrial Drawing	3.0
MFGT B1ab	Machine Tool Processes	3.0