

Programs of Study



Designed by BC digital arts student
Jodi Morgan

ACCOUNTING

See Business Education

ADMINISTRATION OF JUSTICE

See also Criminal Justice

Campus Security Certificate of Completion

Required Courses: 1 unit

Course Number	Title	Units
ADMJ B62	Campus Security	1.0

Corrections Academy Certificate of Completion

Required Courses: 11 units

Course Number	Title	Units
CADM B54	Corrections Academy	11.0

Juvenile Counselor Academy Certificate of Completion

Required Courses: 6 units

Course Number	Title	Units
CADM B57	Juvenile Counselor Academy	6.0

Peace Officers' Basic Academy (P.O.S.T.) Certificate of Completion

Required Courses: 16 units

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

Required Courses: 2 units

Course Number	Title	Units
ADMJ B60	PC 832, Arrest and Control Techniques	2.0

PC 832, Firearms Training Certificate of Completion

Required Courses: 1 unit

Course Number	Title	Units
ADMJ B61	Firearms Training	1.0

Public Safety Dispatcher Certificate of Completion

Required Courses: 4 units

Course Number	Title	Units
ADMJ B69	Public Safety Dispatcher	4.

Special Topics Certificate of Completion

Required Courses: 0.5 - 3 units

Course Number	Title	Units
ADMJ B71	Special Topics	0.5 - 3.0

AGRICULTURE

Agriculture Business Management Certificate of Achievement

Required Courses: 30 units

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
AGBS B6	Agricultural Sales and Communication	3.0
CRPS B1	Principles of Crop Production	3.0
MCAG B1 or AGBS B4 or COMS B5 or COMS B2	Introduction to Agricultural Mechanics Computer Application in Agriculture Introduction to Microcomputer Applications Introduction to Computer Information Systems	3.0
AGRI B248ab	Cooperative Work Experience Education	3.0
CRPS B2 or NRES B1	Forage Crops Range Management	3.0
ANSC B1 or ANSC B2 or ANSC B4 or ANSC B10	Introduction to Animal Science Beef Production Dairy Production Horse Production	3.0
FORE B2 or FORE B1 or FORE B3 or FORE B5 or FORE B6	Natural Resources Introduction to Forestry Wildlife Management Identification of California Wildlife Forestry Skills	3.0

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.

Required Courses: 18 units

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 Communication	3.0
CRPS B1 or FORE B1 or ANSC B1 or ORNH B1	Principles of Crop Production Introduction to Forestry Introduction to Animal Science Introduction to Ornamental Horticulture	3.0
MCAG B1 AGBS B4 or COMS B5 or COMS B2	Introduction to Agricultural Mechanics Computer Application in Agriculture Introduction to Microcomputer Applications Introduction to Computer Information Systems	3.0

PROGRAMS OF STUDY

Agricultural Business Management Associate in Science Degree

Required Courses: 30 units

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 Communication	3.0
CRPS B1	Principles of Crop Production	3.0
MCAG B1 or AGBS B4 or COMS B5 or COMS B2	Introduction to Agricultural Mechanics Computer Application in Agriculture Introduction to Microcomputer Applications Introduction to Computer Information Systems	3.0
AGRI B248ab	Cooperative Work Experience Education	3.0
CRPS B2 or NRES B1	Forage Crops Range Management	3.0
ANSC B1 or ANSC B2 or ANSC B4 or ANSC B10	Introduction to Animal Science Beef Production Dairy Production Horse Production	3.0
FORE B2 or FORE B1 or FORE B3 or FORE B5 or FORE B6	Natural Resources Introduction to Forestry Wildlife Management Identification of California Wildlife Forestry Skills	3.0

Animal Science Certificate of Achievement

See also Preveterinary Medical Option and Registered Veterinary Technician.

Required Courses: 30 units

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

Select 24 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	Livestock Diseases	3.0
ANSC B10	Horse Production	3.0
ANSC B11	Livestock Selection and Evaluation	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 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 AGRI B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	3.0

Animal Science Associate in Arts Degree

The Animal Science major prepares students for occupations in those areas of agriculture involving production of live-stock. Both the scientific and practical aspects of the production of horse, beef, sheep, swine and dairy cattle are stressed in the courses.

Required Courses: 18 units

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
ANSC B1	Introduction to Animal Science	3.0
ANSC B2 or ANSC B3 or ANSC B4 or ANSC B10	Beef Production Sheep Production Dairy Production Horse Production	3.0
MCAG B1 or ANSC B6 or ANSC B7 or ANSC B11 or NRES B1	Introduction to Agricultural Mechanics Applied Animal Nutrition Livestock Diseases Livestock Selection and Evaluation Range Management	3.0

Animal Science Associate in Science Degree

Required Courses: 30 units

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
ANSC B1	Introduction to Animal Science	3.0
MCAG B1	Introduction to Agricultural Mechanics	3.0
AGRI B248ab or AGRI B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	3.0

Select 6 units from the following courses:

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:

ANSC B6	Applied Animal Nutrition	4.0
ANSC B7	Livestock 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 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

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.

Required Courses: 27 units

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	3.0

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.

Required Courses: 19 units

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

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 also Plant Science.

Required Courses: 31 units

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

Forestry Certificate of Achievement

Required Courses: 34 units

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	1.0

Select 12 units from the following:

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	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.

Required Courses: 22 units

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 FORE B3	Introduction to Forestry Wildlife Management	3.0
FORE B4 or FORE B5 or FORE B7 or CRPS B3 or COMS B37 or	Wildlife Law Enforcement Identification of California Wildlife Wildland Fire Management Integrated Pest Management Introduction to Geographic Information Systems	3.0
COMS B2 or COMS B5	Introduction to Computer Information Systems Introduction to Microcomputer Applications	
AGRI B248ab or AGRI B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	1.0

Forestry Associate in Science Degree

Required Courses: 34 units

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 AGRI B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	1.0

Select 9 units from the following:

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	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.

Required Courses 22 units

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 Communication	3.0
MCAG B1 or ORNH B4 or ORNH B6	Introduction to Agricultural Mechanics Plant Propagation Ornamental Plant Identification - Ground Covers, Vines, and Dwarf Shrubs	3.0

Plant Science Certificate of Achievement

Note: Formerly called Crop Science.

See also Environmental Horticulture.

Required Courses: 27 units

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 or ORNH B3	Beginning Floral Design 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 AGRI B249ab or	Cooperative Work Experience Education Cooperative Work Experience Education	3.0

Plant Science Associate in Arts Degree

Note: Formerly called Crop Science

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.

Required Courses: 22-25 units

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 CRPS B4	Forage Crops Vegetable Production	3.0

Plant Science Associate in Science Degree

Note: Formerly called Crop Science.

See also Environmental Horticulture.

Required Courses: 28 - 31 units

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 ORNH B3	Beginning Floral Design 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 AGRI B249ab	Cooperative Work Experience Education	3.0
ANSC B1	Introduction to Animal Science	3.0
ANSC B6	Applied Animal Nutrition	4.0
ANSC B7	Livestock 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 Technical Option Certificate of Completion

Required Courses: 16 units

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 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

Required Courses: 6 units

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

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.

Required Courses: 18 units

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	Sign and Song	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.

Required Courses: 18 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 B1a	General Psychology	3.0
SOCI B1	Introduction to Sociology	3.0
	Elective-any Behavioral Science course	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 4-16 Electives (as recommended by JAC) to reach 30 units total (if needed).	16

ARCHITECTURE

Architectural CAD Certificate of Completion

Required Courses: 15 units

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

Required Courses: 27.5 units

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

Required Courses: 38.5 units

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 BC or MATH B1 or MATH B6a	Plane Trigonometry	3.0
MATH B1 or MATH B6a	Mathematical Analysis (4.0)	
MATH B6a	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 B1 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 B1	Mathematical Analysis	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 B19f or ENGR B19c	Computer Programming for Science, Engineering and Technology	3.0
ENGR B24	Computer Programming for Science, Engineering and Technology 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 B18a	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 B1	Mathematical Analysis	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 BC or MATH B1	Plane Trigonometry	3.0
MATH B1	Mathematical Analysis (4.0)	
MATH B22	Elementary Probability and Statistics	5.0
HLED B1	Principles of Health Education	3.0
ORNH B6 or ORNH B7	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 math analysis (MATH B1) 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 B1	Mathematical Analysis	4.0

Second Semester

Course Number	Title	Units
ARCH B6	Materials of Construction	3.0
ARCH B12	Basic Graphics, Analysis & Communication Skills	4.0
MATH B6a	Analytic Geometry and Calculus I	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

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 B1 (Math Analysis) 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 BC	Plane Trigonometry	3.0

Third Semester

Course Number	Title	Units
ARCH B31	Architecture Practice	3.0
ARCH B32	Architectural Computer Graphics	1.0
MATH B1	Mathematical Analysis	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, Magnetism, Modern Physics	4.0

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 BC (Trig) 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

Required Courses: 18 units

Course Number	Title	Units
ART B2ab or ART B2ef	Basic Drawing	3.0
ART B3ab	Figure Drawing	3.0
ART B1 or ART B30a or ART B30b or ART B30c or ART B30d	Basic Design	3.0
	Art Appreciation	3.0
	Ancient Mediterranean Art	
	Medieval Art	
	Renaissance Art	
	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 B13cd Beginning Printmaking: Intaglio and Monoprint
- 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 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.

Required Courses: 24 units

Course Number	Title	Units
AUTO B106	Automotive Brakes, Suspension, Steering and Alignment	9.0
AUTO B64a or AUTO B14	Automotive Electricity	2.0
	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 AUTO B75a & AUTO B75b	Automotive Engine Overhaul Introduction to Engine Overhaul (3.0) Engine Repair Techniques (3.0)	9.0
WELD B1ab	Introduction to the Welding Processes	3.0
WEXP B249ab	Cooperative Work Experience Education	1-4.0
INDT B275	Special Problems in Automtve	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.

Required Courses: 24 units

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 Pocesess	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.

Required Courses: 26 units

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	2.0
AUTO B64b	Advanced Automotive Electronics	2.0
AUTO B65b	Enhanced Area Clean Air Car Course	4.0
AUTO B75a or AUTO B2a	Introduction to Engine Overhaul Automotive Engine Overhaul (9.0)	3.0
ELET B1	Basic Electronics (DC and AC)	4.0
ENGL B1	Introductory Composition	4.0
WEXP B249ab	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.

Required Courses: 24 units

Course Number	Title	Units
AUTO B112	Automotive Transmissions and Gear Boxes	9.0
AUTO B14 or AUTO B64a	Automotive Tune-Up: Electrical and Ignitions Automotive Electricity (2.0)	10.0
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 AUTO B75a	Automotive Engine Overhaul Introduction to Engine Overhaul	9.0 3.0
WEXP B249ab	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

Required Courses: 12 units

Course Number	Title	Units
AUTO B90	Automotive Maintenance and Repair	12.0

Diesel and Heavy Equipment Technician Certificate of Completion

Required Courses: 12 units

Course Number	Title	Units
AUTO B80	Diesel & Heavy Equipment Technician Training	12.0

Industrial Technology Automotive Option Associate in Science Degree

Required Courses: 32 units

Select From:

Course Number	Title	Units
AUTO B2a	Automotive Engine Overhaul	9.0
AUTO B2b	Automotive Engines Machining	9.0
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 Associate in Science Degree

Biology is the study and application of principles of cytology, 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.

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.

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.

Required Courses: 18 units

Select 14-15 units from Category I or Category II, and 4 or more units from Category III.

Category I - Emphasis in General Biology (14-15 units)

Course Number	Title	Units
BIOL B3a and	General Biology I	5.0
BIOL B3b	General Biology II	5.0
And one of the following courses:		
BIOL B16 or	General Microbiology	5.0
*BIOL B14	Human Anatomy	4.0

OR

Category II - Emphasis in Human Biology (14-15 units)

Course Number	Title	Units
*BIOL B14	Human Anatomy	4.0
BIOL B15	Human Physiology	5.0
BIOL B16	General Microbiology	5.0
BIOL B3a	General Biology I	5.0

AND

Category III -- supporting Chemistry courses (4 or more units):

Course Number	Title	Units
CHEM B2a or	Introductory General Chemistry	4.0
CHEM B11	Principles of Inorganic, Organic and Biochemistry (5)	
CHEM B1a	General Chemistry	5.0
CHEM B1b	General Chemistry and Chemical Analysis	5.0
**CHEM B15	Principles of Inorganic Chemistry	4.0
**CHEM B16	Principles of Organic Chemistry and Biochemistry	3.0

*Note: BIOL B14 is not recommended for students transferring to a 4-year institution as a Biology major.

**Note: CHEM B15 and B16 have been replaced by CHEM B11.

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 B18 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

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 PHIL B9	Advanced Composition and Critical Thinking	5.0
	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. If you are planning to transfer to a UC campus, contact their admissions office for advice. If you are planning to transfer to a CSU campus, consider satisfying the art or humanities requirement by taking two courses from the following list: FREN B2, B3, B4; GERM B2, B3,

B4; or SPAN B2ab, B3, B4. These courses simultaneously satisfy the CSU language other than English and the arts and humanities requirements.

BUSINESS EDUCATION

Accounting Associate in Arts Degree

Required Courses: 31 units

Course Number	Title	Units
ACCT B53a	Introduction to Accounting 1	3.0
ACCT B53b	Introduction to Accounting 2	3.0
ACCT B54	Payroll Accounting	3.0
BSAD B10	Accounting on the Microcomputer	3.0
BUS B40	Personal Finance	3.0
BUS B51	Business Mathematics	3.0
BUS B64/B264	Ten-Key Proficiency	1.0
BSAD B18a	Business Law	3.0
BSAD B20	Introduction to Business	3.0
BUS B5	Human Relations/People Skills	3.0
COMS B5	Introduction to Microcomputer Applications	3.0

Note: BSAD B1a may be substituted for ACCT B53a and ACCT B53b.

Administrative Office Assistant Associate in Arts Degree

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

Required Courses: 30.5 units

Course Number	Title	Units
OFFT B252abc	Computer Keyboarding, Beginning, Parts 1-2-3	3.0
OFFT B253abc	Document Processing Using Word, Parts 1-2-3	3.0
OFFT B257	Filing	1.5
BUS B75/B275	Business English	3.0
OFFT B78	Office Procedures	3.0
BUS B3	Business Communication	3.0
BUS B5	Human Relations/People Skills	3.0
COMS B5 or COMS B52a &	Introduction to Microcomputer Applications and MS Windows (1.5)	3.0
COMS B62a &	Introduction to Spreadsheets with Excel (1.5)	
COMS B68a &	Introduction to Microsoft Access (1.0)	
COMS B70a	Introduction to Electronic Presentations with MS Powerpoint (1.0)	
COMS B73	Introduction to the Internet	1.5
ACCT B53a	Introduction to Accounting I	3.0
BUS B64/B264	Ten-Key Proficiency	1.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1-4.0
OFFT B280	Machine Transcription	1.5

Electives

Course Number	Title	Units
MGMT B62	Ethics in the Workplace	1.5
BSAD B18a	Business Law	3.0
BSAD B10	Accounting on the Microcomputer	3.0
BSAD B20	Introduction to Business	3.0
OFFT B280	Machine Transcription	1.5
BUS B51	Business Mathematics	3.0
WEXP B248ab or WEXP B249ab	Cooperative Work Experience Education	1-4.0

Bookkeeping Certificate of Achievement

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.

Required Courses: 24.5 units

Course Number	Title	Units
ACCT B53a	Introduction to Accounting 1	3.0
ACCT B53b	Introduction to Accounting 2	3.0
ACCT B54	Payroll Accounting	3.0
BSAD B10	Accounting on the Microcomputer	3.0
BUS B51	Business Mathematics	3.0
BUS B64/B264	Ten-Key Proficiency	1.0
MGMT B65b	Principles of Writing for Business/Public Organizations	1.0
OFFT B252abc	Computer Keyboarding, Part 1-2-3	3.0
BUS B75/B275	Business English	3.0
COMS B62a	Introduction to Spreadsheets with Excel	1.5

Electives

Course Number	Title	Units
BUS B40	Personal Finance	3.0
BUS B5	Human Relations/People Skills	3.0
COMS B5	Introduction to Microcomputer Applications	3.0
BUS B61	E Commerce	1.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1-4.0

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.

Required Courses: 25 or 26 units

Course Number	Title	Units
BSAD B1a	Financial Accounting	4.0
BSAD B1b	Managerial Accounting	4.0
COMS B2 or COMS B5	Introduction to Computer Information Systems	3.0
ECON B1	Introduction to Microcomputer Applications	3.0
ECON B2	Principles of Economics-Micro	3.0
MATH B2 or MATH B23	Principles of Economics-Macro	3.0
MATH B22	Basic Functions and Calculus for Business	4.0
MATH B23	Finite Mathematics (3.0)	4.0
MATH B22	Elementary Probability and Statistics	5.0

Electives

Course Number	Title	Units
BSAD B20	Introduction to Business	3.0
BSAD B18a	Business Law	3.0
BSAD B10	Accounting on the Microcomputer	3.0
BUS B5	Human Relations/People Skills	3.0
BUS B249ab	Cooperative Work Experience Education	1-4.0
BUS B249ab	Cooperative Work Experience Education	1-4.0

General Business Certificate of Achievement

A Certificate of Achievement in General Business will provide the student with broadly based knowledge and skills in the field of business. This foundation can be built into many successful careers in business upon completion of the following courses with at least a grade of “C.”

Required Courses: 24 units

Course Number	Title	Units
BUS B75/B275	Business English	3.0
BUS B51	Business Mathematics	3.0
BUS B64/B264	Ten-Key Proficiency	1.0
BUS B5	Human Relations/People Skills	3.0
BSAD B20	Introduction to Business	3.0
BUS B40	Personal Finance	3.0
OFFT B252a	Beginning Keyboarding, Part 1	1.0

Electives: at least 7 units

Course Number	Title	Units
ACCT B53a	Introduction to Accounting 1	3.0
MKTG B1	Fundamentals of Marketing	3.0
MGMT B43	Principles of Management	3.0
MGMT B75	Managing Cultural Diversity in the Workplace	3.0
BSAD B18a	Business Law	3.0
ECON B1	Principles of Economics-Micro	3.0
BUS B85	Virtual Enterprise	3.0

General Management Certificate of Completion

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. This Certificate will provide the graduate with key management and supervisory skills and has proven to be valuable in developing high-quality supervisors and managers.

Required Courses: 17 units

Course Number	Title	Units
MGMT B61	Human Resources Management	1.5
MGMT B60	Supervisory Training	2.0
MGMT B65a	Basic Principles of English for Business/Public Organizations	1.0
MGMT B65b	Principles of Writing for Business/Public	1.0
MGMT B65c	Organizational Communications	1.0
MGMT B62	Ethics in the Workplace	1.5
BUS B5	Human Relations/People Skills	3.0
MGMT B75	Managing Cultural Diversity in the Workplace	3.0
MGMT B54	Teams in the Workplace	1.5
MGMT B66	Case Studies in Management	1.0
MGMT B72	Introduction to Management	0.5

General Sales Certificate of Completion

Required Courses: 17 units

Course Number	Title	Units
BUS B51	Business Mathematics	3.0
BUS B5	Human Relations/People Skills	3.0
BUS B90	Job Readiness	3.0
BUS B75/275	Business English	3.0
MKTG B62	Fundamentals of Personal Selling	3.0
OFFT B252a	Computer Keyboarding, Beginning, Part 1	1.0
WEXP B249ab	Cooperative Work Experience Education Workplace	1-3.0

Marketing Certificate of Achievement

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.

Required Courses: 21 units

Course Number	Title	Units
BSAD B20	Introduction to Business	3.0
MKTG B1	Fundamentals of Marketing	3.0
BUS B51	Business Mathematics	3.0
BUS B75/B275 or MGMT B65a & MGMT B65b & MGMT B65c	Business English / Basic Principles of English For Business/ Public Organizations (1.0) / Principles of Writing for Business/ Public Organizations (1.0) / Organizational Communications (1.0)	3.0
MKTG B53a	Fundamentals of Retailing	3.0
MKTG B62	Fundamentals of Selling	3.0
COMS B5	Introduction to Microcomputer Applications	3.0

Electives:

Course Number	Title	Units
BUS B5	Human Relations/People Skills	3.0
ACCT B53a	Introduction to Accounting I	3.0
MGMT B43	Principles of Management	3.0
BUS B85	Virtual Enterprise	3.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1.0-4.0

Marketing Associate in Arts Degree

Required Courses: 27 units

Course Number	Title	Units
BSAD B20	Introduction to Business	3.0
MKTG B1	Fundamentals of Marketing	3.0
MKTG B53a	Fundamentals of Retailing	3.0
MKTG B62	Fundamentals of Selling	3.0
BUS B51 or MATH B23	Business Mathematics / Finite Mathematics	3.0
ACCT B53 & ACCT B53b or BSAD B1a	Introduction to Accounting 1 / Introduction to Accounting 2 / Financial Accounting (4.0)	3.0
BUS B5	Human Relations/People Skills	3.0
COMS B2 or COMS B5	Introduction to Computer Information Systems / Introduction to Microcomputer Applications	3.0

Electives:

Course Number	Title	Units
MGMT B43	Principles of Management	3.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1-4.0

Office Assistant I Certificate of Achievement

Upon completion of the following courses with at least a “C” grade in each course, the student will be awarded an Office Assistant I 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.

Required Courses: 19 or 20 units

Course Number	Title	Units
OFFT B252abc	Computer Keyboarding, Beginning, Part 1-2-3	3.0
OFFT B257	Filing	1.5
COMS B57a	Introduction to Microsoft Word for Windows	1.5
BUS B75/B275	Business English	3.0
COMS B5 or COMS B52a & COMS B62a & COMS B68a & COMS B70a	Introduction to Microcomputer Operations / Introduction to the Microcomputer and Windows (1.5) / Introduction to Spreadsheets with Excel (1.5) / Introduction to Microsoft Access (1.0) / Introduction to Electronic Presentation with Microsoft Powerpoint (1.0)	3.0
BUS B64/B264	Ten-Key Proficiency	1.0
ACCT B53a	Introduction to Accounting	3.0
BUS B5	Human Relations/People Skills	3.0

Office Assistant II Certificate of Achievement

An Office Assistant II 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.

Required Courses: 27.5 or 28.5units

Course Number	Title	Units
OFFT B252abc	Computer Keyboarding, Beginning, Part 1-2-3	3.0
OFFT B257	Filing	1.5
COMS B57a	Introduction to Microsoft Word for Windows	1.5
BUS B75/B275	Business English	3.0
COMS B5 or COMS B52a &	Introduction to Microcomputer Operations and Introduction to the Microcomputer and Windows (1.5)	3.0
COMS B62a & COMS B68a & COMS B70a	Introduction to Spreadsheets with Excel (1.5) Introduction to Microsoft Access (1.0) Introduction to Electronic Presentation with Microsoft Powerpoint (1.0)	
BUS B64/B264	Ten-Key Proficiency	1.0
ACCT B53a	Introduction to Accounting	3.0
BUS B5	Human Relations/People Skills	3.0
OFFT B78	Office Procedures	3.0
OFFT B253abc	Document Processing Using Word, Part 1-2-3	3.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1.0
OFFT B280	Machine Transcription	1.5

California Real Estate Certificate of Achievement

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.

Required Courses: 24 units

(Should be taken in listed order)

Course Number	Title	Units
REAL B39	Principles of Real Estate	3.0
REAL B60 or BSAD B18a	Legal Aspects of Real Estate Business Law	3.0
REAL B61 or BSAD B1a or ACCT B53a	Real Estate Economics Financial Accounting (4.0) Introduction to Accounting (3.0)	3.0
REAL B62	Real Estate Finance	3.0
REAL B63	Real Estate Appraisal	3.0
REAL B64	Real Estate Practice	3.0
BSAD B20	Introduction to Business	3.0

Electives: at least 3 units

Course Number	Title	Units
REAL B55	Escrow Procedures	3.0
REAL B65	Real Estate Investment and Taxation	3.0
REAL B68	Advanced Real Estate Appraisal	3.0
COMS B2	Introduction to Computer Information Systems	3.0
MKTG B62	Fundamentals of Personal Selling	3.0
MGMT B43	Principles of Management	3.0
REAL B57	Property Management	3.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1-4.0

California Real Estate Associate in Arts Degree

Required Courses: 24 units

Course Number	Title	Units
REAL B61 or BSAD B1a or ACCT B53a & ACCT B53b	Real Estate Economics Financial Accounting Introduction to Accounting (3.0) Introduction to Accounting (3.0)	3.0
REAL B39	Principles of Real Estate	3.0
REAL B60 or BSAD B18a	Legal Aspects of Real Estate Business Law	3.0
REAL B62	Real Estate Finance	3.0
REAL B63	Real Estate Appraisal	3.0
REAL B64	Real Estate Practice	3.0
BSAD B20	Introduction to Business	3.0

Electives: at least 3 units

Course Number	Title	Units
BUS B3	Business Communication	3.0
BUS B51	Business Mathematics	3.0
BUS B64/B264	Ten-Key Proficiency	1.0
MKTG B62	Fundamentals of Personal Selling	3.0
BUS B40	Personal Finance	3.0
MGMT B61	Human Resource Management	1.5
OFFT B252abc	Computer Keyboarding, Beginning, Parts 1-2-3	3.0
REAL B55	Escrow Procedures	3.0
REAL B58	Common Interest Developments (CIDs)	3.0
REAL B65	Real Estate Investment and Taxation	3.0
REAL B68	Advanced Real Estate Appraisal	3.0
BUS B248ab or BUS B249ab	Cooperative Work Experience Education	1-4.0
BUS B85	Virtual Enterprise	3.0

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 broadly based knowledge and skills in retail stores including grocery chains. This foundation can be built into many successful careers. The certificate is recognized by members of the Western Association of Food Chains, all the major supermarket chains in the western 13 states

Required Courses: 30 or 31 units

Course Number	Title	Units
BUS B3	Business Communication	3.0
MGMT B65a	Basic Principles of English for Business/Public Organizations	1.0
MGMT B65b	Principles of Writing for Business/Public Organizations	1.0
MGMT B65c	Organizational Communications	1.0
BUS B51	Business Mathematics	3.0
COMS B5	Introduction to Microcomputer Applications	3.0
MKTG B1	Fundamentals of Marketing	3.0
MGMT B43	Principles of Management	3.0
ACCT B53a or BSAD B1a	Introduction to Accounting 1 Financial Accounting (4.0)	3.0
MKTG B53a	Fundamentals of Retailing	3.0
BUS B5	Human Relations/People Skills	3.0
MGMT B41	Advanced Human Resources Management	1.5
MGMT B61	Human Resources Management	1.5

CABINETMAKING*See Woodworking***CHEMISTRY****Chemistry Associate in Science Degree***Required Courses: 31 units*

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 B16 or BIOL B3a or BIOL B11	*General Microbiology General Biology I Concepts of Biology (4.0)	5.0
MATH B1 or MATH B6a	Mathematical Analysis *Analytic Geometry & Calculus I	4.0
PHYS B4c or PHYS B2a & PHYS B2b	*Optics & Modern Physics General Physics-Mechanics & Heat General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0
COMS B12	Introduction to Programming with BASIC	3.0

*Recommended courses

Electives

PHYS B4a	Mechanics & Wave Motion	4.0
PHYS B4b	Heat, Electricity, & Magnetism	4.0

*Suggested Program for Chemistry A.S. Degree**First Semester*

Course Number	Title	Units
CHEM B1a or PHYS B2a	General Chemistry General Physics-Mechanics & Heat (4.0)	5.0
MATH B6a or MATH B1	Analytic Geometry & Calculus I Mathematical Analysis	4.0

Second Semester

Course Number	Title	Units
CHEM B1b	General Chemistry & Chemical Analysis	5.0
PHYS B4a PHYS B2b	Mechanics & Wave Motion General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0
MATH B6a or MATH B6b	Analytic Geometry & Calculus I 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	Heat, Electricity, & Magnetism	4.0

Fourth Semester

Course Number	Title	Units
PHYS B4c	Optics & Modern Physics	4.0
BIOL B16 or BIOL B3a or BIOL B3b or BIOL B11	General Microbiology General Biology I (5.0) General Biology II (5.0) Concepts of Biology (4.0)	5.0
COMS B12	Introduction to Programming with BASIC	3.0

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.

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 B12	Introduction to Programming with BASIC	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.

Required Courses: 18 units

Course Number	Title	Units
CHST/HIST B30a	Early Chicano History	3.0
CHST/HIST B30b	History of Chicanos in the Southwest	3.0
CHST/HIST B33	Latin American History	3.0
CHST/SOCI B36	Sociology of the Chicano	3.0
SOCI B45	Minority Relations	3.0
CHST/ART B30e	Art of Latin America	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.

Required Courses: 1 unit

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.

Required Courses: 14 units

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.

Required Courses: 6 units

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 Pre-school Child Development Center or School-Age Center.

Required Courses: 12 units

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.

Required Courses: 24 units

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 B13a	Child Growth and Development	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

Required Courses: 33 units

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

Required Courses: 32 units

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 B13b	Child Growth and Development: The School Age Child & Adolescent	3.0

Select 3 units from the following:

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

Required Courses: 32 units

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

Required Courses: 32 units

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 and 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.

Required Courses: 24 units

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 B49	Child Health, Safety and Nutrition	3.0
CHDV B13a	Child Growth and Development	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

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

Required Courses: 12 units

Select 12 units from the following:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B3	Business Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0
COMM B8	Small Group Communication	3.0
COMM B21	Oral Interpretation	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

Required Courses: 12 units

Select 6 units from the following:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B3	Business Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0

COMM B8	Small Group Communication	3.0
COMM B21	Oral Interpretation	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:

Course Number	Title	Units
BUS B3	Business Communication	3.0
BUS B5	Human Relations/People Skills	3.0
MGMT B65a	Basic Principles of English for Business/Public Organizations	1.0
MGMT B65b	Principles of Writing for business/Public Organizations	1.0
MGMT B65c	Organizational Communication	1.0
BSAD B20	Introduction to business	3.0
MGMT B41	Advanced Human Resources Management	1.5
MGMT B61	Human Resources Management	1.5
MGMT B60	Supervisory Training	2.0
MKTG B1	Fundamentals of marketing	3.0
MKTG B62	Fundamentals of Personal Selling	3.0
BSAD B1a	Financial Accounting	4.0
BSAD B18a	Business Law	3.0
BUS B248ab or BUS B249ab	Cooperative Work Experience	1.0-4.0

Communication Associate in Arts Degree

Designed to provide training in basic oral skills in formal and informal situations.

Required Courses: 18 units

Select 18 units from the following:

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMM B2	Interpersonal Communication	3.0
COMM B3	Business Communication	3.0
COMM B4	Persuasive Communication	3.0
COMM B5	Rhetoric and Argumentation	3.0
COMM B8	Small Group Communication	3.0
COMM B21 or ENGL B35	Oral Interpretation Children's Literature and Storytelling	3.0
COMM B27/B27L	Intercollegiate Speech Competition	3.0

COMPUTER GRAPHIC ARTS

See Digital Arts

COMPUTER STUDIES

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.

Required Courses: 35 units

Course Number	Title	Units
COMS B2	Introduction to Computer Information Systems	3.0
COMS B5	Introduction to Microcomputer Applications	3.0
COMS B10	Structured Program Design	1.5
COMS B16	COBOL Programming Language	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B34	Business Database Systems	3.0
COMS B36	Systems Analysis and Design	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
BSAD B1a or ACCT B53a and BSAD B20	Financial Accounting Introduction to Accounting (3) Introduction to Business (3)	4.0

Programming Emphasis -- Select 5.5 units

Course Number	Title	Units
COMS B12	Introduction to Programming with BASIC	3.0
COMS B14	Introduction to Programming with Java	3.0
COMS B25	Introduction to Programming with C	3.0
COMS B27	Introduction to Assembly Language	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
COMS B79	Advanced Programming with Visual Basic	3.0

Networking Emphasis -- Select 5.5 units

Course Number	Title	Units
COMS B41	Introduction to Linux	3.0
COMS B80	CNA/CNE Network Administration - Novell	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 5.5 units

Course Number	Title	Units
BSAD B1b	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.

Required Courses: 23 or 24 units

Course Number	Title	Units
COMS B2 or COMS B5	Introduction to Computer Information Systems	3.0
COMS B12 or COMS B14	Introduction to Programming with BASIC	3.0
COMS B16 or COMS B35	Introduction to Programming with Java	3.0
COMS B32	COBOL Programming Language	3.0
COMS B32	OOP and Data Structures with C++	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
BSAD B1a	Financial Accounting	4.0
MATH B22 or PSYC B5	Elementary Probability and Statistics	5.0
COMS B34	Elementary Statistics for the Behavioral and Social Sciences (4.0)	3.0
COMS B34	Business Database Systems	3.0

Other Suggested Courses

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications	3.0
COMS B10	Structured Program Design	1.5
COMS B25	Introduction to Programming with C	3.0
COMS B35	Introduction to Programming with C++	3.0
COMS B36	OOP and Data Structures with C++	3.0
COMS B37	Systems Analysis and Design	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B41	Introduction to Linux	3.0
COMS B74a	Advanced Programming with Visual BASIC	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 B79	Advanced Programming with Visual BASIC	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	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
MATH B2	Basic Functions and Calculus for Business	4.0
BSAD B1b	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

PROGRAMS OF STUDY

MGMT B43	Principles of Organization and Management	3.0
MKTG B1	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.

Required Courses: 35 units

Course Number	Title	Units
COMS B2	Introduction to Computer Information Systems	3.0
COMS B5	Introduction to Microcomputer Applications	3.0
COMS B10	Structured Program Design	1.5
COMS B16	COBOL Programming Language	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B14 or COMS B35	Introduction to Programming with Java OOP and Data Structures with C++	3.0
COMS B34	Business Database Systems	3.0
COMS B36	Systems Analysis and Design	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
BSAD B1a	Financial Accounting	4.0

Programming Emphasis -- Select 2.5 units

Course Number	Title	Units
COMS B12	Introduction to Programming with BASIC	3.0
COMS B25	Introduction to Programming with C	3.0
COMS B27	Introduction to Assembly Language	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
COMS B79	Advanced Programming with Visual BASIC	3.0

Networking Emphasis -- Select 2.5 units

Course Number	Title	Units
COMS B41	Introduction to Linux	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

Business Emphasis -- Select 2.5 units

Course Number	Title	Units
BSAD B1b	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
MGMT B43	Principles of Organization and Mgt.	3.0
MKTG B1	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.

Required Courses: 35 units

Course Number	Title	Units
COMS B2	Introduction to Computer Information Systems	3.0
COMS B10	Structured Program Design	1.5
COMS B12 or COMS B14	Introduction to Programming with BASIC	3.0
COMS B25	Introduction to Programming with C	3.0
COMS B27	Introduction to Assembly Language	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B35	OOP and Data Structures with C++	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
MATH B6a	Analytic Geometry and Calculus I	4.0

Electives: at least 9 units

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications	3.0
COMS B12	Introduction to Programming with BASIC	3.0
COMS B14	Introduction to Programming with Java	3.0
COMS B16	COBOL Programming Language	3.0
COMS B34	Business Database Systems	3.0
COMS B36	Systems Analysis and Design	3.0
COMS B37	Introduction to Geographic Information Systems (GIS)	3.0
COMS B41	Introduction to 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 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 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.

Required Courses: 36 units

Course Number	Title	Units
COMS B2	Introduction to Computer Information Systems	3.0
COMS B10	Structured Program Design	1.5
COMS B25	Introduction to 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 11.5 units

Course Number	Title	Units
COMS B12	Introduction to Programming with BASIC	3.0
COMS B14	Introduction to Programming with JAVA	3.0
COMS B27	Introduction to Assembly Language	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B34	Business Database Systems	3.0
COMS B35	OOP and Data Structures with C++	3.0
COMS B36	Systems Analysis and Design	3.0
COMS B41	Introduction to Linux	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	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	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.

Required Courses: 17 units

Course Number	Title	Units
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B34	Business Database Systems	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
COMS B36	Systems Analysis and Design	3.0
ART B20	Introduction to Digital Arts	3.0
INDR B52	Geographic Information Systems (GIS)	3.0
MATH B22	Elementary Probability and Statistics	5.0

Networking Certificates of Completion

Network Technologies Certificate of Completion

Required Courses: 3 units

Course Number	Title	Units
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0

Administering/Supporting Microsoft NT Certificate of Completion

Required Courses: 3 units

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

Windows 2000 Professional (MCSE 70-210 Exam Prep) Certificate of Completion

Required Courses: 3 units

COMS B92	Windows 2000 Professional (MCSE 70-210 Exam Prep)	3.0
----------	---------------------------------------------------	-----

Microsoft Active Directory Services (MCSE 70-219 Exam Prep) Certificate of Completion

Required Courses: 3 units

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

Introduction to Linux Certificate of Completion

Required Courses: 3 units

Course Number	Title	Units
COMS B41	Introduction to Linux	3.0

MCSE Internetworking with Microsoft TCP/IP Certificate of Completion

Required Courses: 3 units

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

Office Software Specialist Certificate of Completion

The office software specialist certificate is designed for the student who plans to specialize in office software. Upon completion of the following courses with at least a “C” grade in each course, a student will be awarded an Office Software Specialist Certificate of Completion.

Required Courses: 14-15.5 units

Course Number	Title	Units
COMS B52a	Introduction to the Microcomputer and Windows	1.5
COMS B5	Introduction to Microcomputer Applications	3.0
COMS B53 or COMS B57a & COMS B62a & COMS B68b	Intermediate Microcomputer Applications	3.0
COMS B57a & COMS B62a & COMS B68b	Introduction to Microsoft Word for Windows (1.5)	
COMS B62a & COMS B68b	Introduction to Spreadsheets with Excel (1.5)	
COMS B70	Intermediate Microsoft Access (1)	
COMS B70	Introduction to Electronic Presentations with Microsoft Powerpoint	1.0
COMS B73	Introduction to the Internet	1.5
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
MGMT B62 or BUS B5	Ethics in the Workplace	1.5
OFFT B252a	Human Relations/People Skills (3)	
OFFT B252a	Computer Keyboarding, Beginning, Part 1	1.0

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.

Required Courses: 17 units

Course Number	Title	Units
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c or COMS B74e	Web Programming: JavaScript/CSS	3.0
COMS B74e	Intermediate Web Development: Web Authoring Tools (1.5)	
COMS B74f	Advanced Web Development: Web Authoring Tools	
BUS B61	Electronic Commerce	1.0
MGMT B65a	Basic Principles of English for Business/Public Organizations	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	1.5
COMS B14	Introduction to Programming with Java	3.0
COMS B32	Programming in Windows Using Visual Basic	3.0
COMS B34	Business Database Systems	3.0
COMS B36	Systems Analysis and Design	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
MKTG B1	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.

Required Courses: 30.5 units

Course Number	Title	Units
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c or COMS B74e	Web Programming: JavaScript/CSS	3.0
COMS B74e	Intermediate Web Development: Web Authoring Tools (1.5)	
COMS B74f	Advanced Web Development: Web Authoring Tools	1.5
COMS B75a	Web Application Development: Database Driven Web Sites	1.5
COMS B101	Web Systems and Security	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
ART B20	Introduction to Digital Arts	3.0
BUS B61	E-Commerce	1.0
MGMT B65a	Basic Principles of English for Business/Public Organizations	1.0

Design Emphasis -- Select 9 units

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
COMS B76b	Web Design: Advanced Flash	1.5
JRNL B1	Media and Society	3.0

Web Programming Emphasis -- Select 9 units

Course Number	Title	Units
COMS B10	Structured Program Design	1.5
COMS B14	Introduction to Programming with Java	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B34	Business Database Systems	3.0
COMS B79	Advanced Programming with Visual Basic	3.0

COMS B75b	Web Programming: Active Server Pages	3.0
COMS B76a	Web Design: Macromedia Flash	3.0
COMS B76b	Web Design: Advanced Flash	1.5

Cross-Discipline Emphasis -- Select 9 units

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.

Required Courses: 29.5 units

Course Number	Title	Units
COMS B74a	Web Design: Macromedia Dreamweaver	3.0
COMS B74b	Web Design: HTML & XML	3.0
COMS B74c or COMS B74e	Web Programming: JavaScript/CSS	3.0
	Intermediate Web Development: Web Authoring Tools (1.5)	
COMS B74f	Advanced Web Development: Web Authoring Tools	1.5
COMS B75a	Web Application Development: Database Driven Web Sites	1.5
COMS B101	Web Systems and Security	3.0
COMS B82	MCSE/CNE Networking Technologies - Network+	3.0
ART B20	Introduction to Digital Arts	3.0
BUS B61	E-Commerce	1.0

Design Emphasis -- Select 9 units

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

Course Number	Title	Units
COMS B10	Structured Program Design	1.5
COMS B14	Introduction to Programming with Java	3.0
COMS B32	Programming in Windows Using Visual BASIC	3.0
COMS B34	Business Database Systems	3.0
COMS B79	Advanced Programming with Visual Basic	3.0
COMS B75b	Web Programming: Active Server Pages	3.0
COMS B76a	Web Design: Macromedia Flash	3.0
COMS B76b	Web Design: Advanced Flash	1.5

Cross-Discipline Emphasis -- Select 9 units

Any combination of 12 units from the above elective classes.

CONSTRUCTION

Construction Technology Certificate of Achievement

Required Courses: 32 units

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 CNST B50b	Residential Construction	6.0
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
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 B1	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

Required Courses: 30 units

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 B249ab or CNST B50a and CNST B50b	Cooperative Work Experience Education Residential Construction (6.0) Residential Construction (6.0)	8.0
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**

Corrections is the part of the criminal justice system responsible for juveniles and adults who have been charged with or convicted of a criminal offense. It involves working with the individual at the local, state, or federal level of government. Corrections professionals subscribe to the philosophy of protecting society and aiding in the rehabilitation of the offender. The Correctional Administration Program is designed to expose the student to different aspects of the correctional system. This pattern of coursework has been endorsed by the Joint Apprenticeship Committee of the California Department of Corrections, California Youth Authority, and the California Correctional Peace Officers Association as a program which would be of benefit to apprentices and correctional peace officers.

Required Courses: 21 units

Course Number	Title	Units
CRIM B21	Introduction to Correctional Administration	3.0
CRIM B22	Institutional Supervision and Treatment of the Offender	3.0
CRIM B23	Fundamentals of Interviewing and Counseling	3.0
CRIM B50	Criminal Justice Report Writing	3.0
CRIM B60	Legal Aspects of Corrections	3.0
CRIM B2	Criminal Law	3.0

Electives: at least 3 units

Course Number	Title	Units
CRIM B5	Community Relations	3.0
CRIM B9	Juvenile Procedures	3.0
CRIM B24	Fundamentals of Probation and Parole	3.0

CRIMINAL JUSTICE**Criminal Justice Associate in Arts Degree**

This program provides a course of study to prepare students for employment in private or public criminal justice agencies which are wide and varied. Note: Formerly called Administration of Justice.

Required Courses: 24 units

Course Number	Title	Units
CRIM B1	Introduction to Administration of Justice	3.0
CRIM B2	Criminal Law	3.0
CRIM B3	Introduction to Evidence	3.0
CRIM B4	Constitutional Criminal Procedure	3.0
CRIM B5	Community Relations	3.0
CRIM B12	Legal and Scientific Aspects of Evidence	3.0

Electives: at least 6 units.

Course Number	Title	Units
CRIM B8	Criminal Investigation	3.0
CRIM B9	Juvenile Procedures	3.0
CRIM B10	Organized Crime	3.0
CRIM B50	Criminal Justice Report Writing	3.0

Recommended for CSU

Course Number	Title	Units
CRIM B9	Juvenile Procedures	3.0
CRIM B12	Legal and Scientific Aspects of Evidence	3.0
PSYC B1a	General Psychology	3.0
SOCI B1	Introduction to Sociology	3.0

CROP SCIENCE

See Agriculture

DIETETIC SERVICES

See Foods/Nutrition

DIGITAL ARTS

Note: Formerly Computer Graphic 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.

Required Courses: 27 units

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 B2ab 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 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

Required Courses: 18 units

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 B2ab	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 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.

Required Courses: 18 units

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 B1a	Financial Accounting	4.0
BSAD B1b	Managerial Accounting	4.0
COMM B1	Public Speaking	3.0
MATH B23	Finite Mathematics	3.0

ELECTRONICS TECHNOLOGY

Electronics Technology Certificate of Achievement

Required Courses: 32 units

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	Introduction to 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

Required Courses: 30 units

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	Introduction to 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
MATH BC	Plane Trigonometry	3.0
MFGT B4	Computer Integrated Manufacturing	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 employ-

ment 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. Interested students must enroll through the Bakersfield College Admissions and Records Office.

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:

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 health 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.

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

Required Courses: 50 units

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 B19fc	Computer Programming for Science, Engineering & 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 B19fc	Computer Programming for Science, Engineering & Technology	3-3.0

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

Course Number	Title	Units
MATH B6e	Elementary Linear Algebra	3.0
ENGR B49	Engineering Analysis & Design	1.0
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:

- high school mathematics through trigonometry and mathematical analysis; or MATH BC and MATH B1 at Bakersfield College
- one year of high school mechanical drawing or INDR B10 at Bakersfield College
- one year of high school chemistry or CHEM B2a at Bakersfield College
- 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 B49	Engineering Analysis & Design	1.0
ENGR B19fc	Computer Programming for Science, Engineering & Technology	3-3.0
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.

First Semester

Course Number	Title	Units
MATH BC	Plane Trigonometry	3.0
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 B1	Mathematical Analysis	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 B49	Engineering Analysis & Design	1.0
ENGR B19fc	Computer Programming for Science, Engineering & Technology	3-3-3.

Fourth Semester

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

Required Courses: 40 units

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 B19f or	Computer Programming for Science, Engineering and Technology (Fortran)	3.0
ENGR B19c	Computer Programming for Science, Engineering and Technology (C)	

*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

Required Courses: 18 units

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:

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

ENVIRONMENTAL TECHNOLOGY

OSHA First Responder Awareness Level Certificate of Completion

Required Course: 3 units

Course Number	Title	Units
ENVT B1ab	Introduction to Environmental Technology	3.0

OSHA Hazardous Waste Operations & Emergency Response (HAZWOPER) 24 hour site Worker Certificate of Completion

Required Course: 1 unit

Course Number	Title	Units
ENVT B10a	Hazardous Materials Awareness and Safety	1.0

OSHA HAZWOPER 40 Hour Site Worker Certificate of Completion

Required Courses: 4 units

Course Number	Title	Units
ENVT B10a	Hazardous Materials Awareness and Safety	1.0
ENVT B10b	Spill Control and Emergency Response	1.5
ENVT B10c	Decision Making in Emergencies	1.5

Environmental Technology Certificate of Achievement

Environmental Technology refers to the knowledge and skills that enable a person to work with hazardous materials safely and in compliance with governmental regulations in order to protect human health and the environment.

Required Courses: 33 units

Course Number	Title	Units
ENVT B49 or CHEM B49	Applied Chemistry	4.0
ENVT B1ab	Introduction to Environmental Technology	3.0
ENVT B10a	Hazardous Materials Awareness and Safety	1.0
ENVT B10b	Spill Control and Emergency Response	1.5
ENVT B10c	Decision Making in Emergencies	1.5
ENVT B20	Hazardous Waste Generation, Reduction, and Treatment	3.0
ENVT B30	Health Effects of Hazardous Materials	3.0
ENVT B15a	Right-to-Know Laws	1.5
ENVT B15b	Transportation and Storage of Hazardous Materials	1.5
ENVT B15c	Air Quality Issues	1.0
ENVT B40a	Generator Requirements	1.5
ENVT B40b	Sampling and Analysis	1.5
ENVT B40c	Special Topics in Hazardous Waste Management	1.0
BIOL B18	Essentials of Anatomy and Physiology	4.0

Electives: at least 4 units

Course Number	Title	Units
COMM B1	Public Speaking	3.0
COMS B5	Introduction to Microcomputer Applications	3.0
MGMT B65a	Basic Principles of English for Business/ Public Organization	1.0
MGMT B65b	Principles of Writing for Business/ Public Organization	1.0
MGMT B65c	Organizational Communications	1.0

Environmental Technology Associate in Science Degree

Environmental Technology refers to the knowledge and skills that enable a person to work with hazardous materials safely and in compliance with governmental regulations in order to protect human health and the environment.

Required Courses: 33 units

Course Number	Title	Units
ENVT B49 or CHEM B49	Applied Chemistry	4.0
ENVT B1ab	Introduction to Environmental Technology	3.0
ENVT B10a	Hazardous Materials Awareness and Safety	1.0
ENVT B10b	Spill Control and Emergency Response	1.5
ENVT B10c	Decision Making in Emergencies	1.5
ENVT B20	Hazardous Waste Generation, Reduction, and Treatment	3.0
ENVT B30	Health Effects of Hazardous Materials	3.0
ENVT B15a	Right-to-Know Laws	1.5
ENVT B15b	Transportation and Storage of Hazardous Materials	1.5
ENVT B15c	Air Quality Issues	1.0
ENVT B40a	Generator Requirements	1.5
ENVT B40b	Sampling and Analysis	1.5
ENVT B40c	Special Topics in Hazardous Waste Management	1.0
BIOL B18	Essentials of Anatomy and Physiology	4.0

Electives: at least 4 units

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications	3.0
MGMT B65a	Basic Principles of English for Business/ Public Organization	1.0
MGMT B65b	Principles of Writing for Business/ Public Organization	1.0
MGMT B65c	Organizational Communications	1.0

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 Technology Certificate of Achievement

Required Courses: 32 units

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

Required General Education Courses:

*ENGL B1 or ENGL B1a	Introductory Composition Expository Composition	4.0
PSYC B1a or SOCI B1	General Psychology Introduction to Sociology	3.0
COMM B1	Public Speaking	3.0

*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. Elective Fire Technology courses or 6 units of fire service related cooperative work experience must be substituted for courses waived. 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

Required Courses: 22 units

Course Number	Title	Units
FIRE B1	Fire Protection Organization	3.0
FIRE B2 or FIRE B7	Personal Fire Safety & Emergency Action Building Construction for Fire Protection	3.0
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

Required Courses: 32 units

Course Number	Title	Units
FIRE B1	Fire Protection Organization	3.0
FIRE B2 or FIRE B7	Personal Fire Safety & Emergency Action Building Construction for Fire Protection	3.0
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 B51c	Fire Command 1B	2.0
FIRE B51d	Fire Prevention 1A	2.0
*FIRE B51e	Fire Prevention 1B	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

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

Chief Officer Certification (Nfpa Standard 1021)

Required Courses: 22 units

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

Required Courses: 5 units

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

Fire Inspector Certification

Required Courses: 6 units

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)

Required Courses: 18 units

Course Number	Title	Units
FIRE B51a	Fire Management 1a	2.0
FIRE B51b	Fire Command 1a	2.0

Firefighter I Certification

Required Courses: 12 units

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

Firefighter II Certification

Required Courses: 6 units

Course Number	Title	Units
FIRE B63	Fire Fighter II Academy	6.0

Hazardous Materials

Required Courses: 8.5 units

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

Required Courses: 10.5 units

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 Non-Ambulance Recertification	1.0

Specialized Training Programs

Required Courses: 7- 14 units

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

Required Courses: 4 units

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

Volunteer Firefighter Certification

Required Courses: 5.5 units

Course Number	Title	Units
FIRE B64a	Beginning Volunteer Firefighter	1.0
FIRE B64b	Advanced Volunteer Fire Fighter Certification	4.5

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.

Required Courses: 24 units

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

Required Courses: 30 units

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 FACE B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	2.0
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
MGMT B75	Managing Cultural Diversity in the Workplace	3.0

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.

Required Courses: 25 units

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 or FDSV B58	Purchasing Foodservice Supervision	3.0
FACE B248ab or FACE B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	2.0
COMS	Computer Studies Course	1.0-3.0

ENGL English Course 3.0

COMS Computer Studies Course 1.0-3.0

Culinary Arts Associate in Science Degree

Required Courses: 31 units

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 FACE B249ab	Cooperative Work Experience Education Computer Application	2.0 3.0

Electives: at least 4 units

Course Number	Title	Units
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.

Required Courses: 24.5 units

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

Foodservice Management Option Associate in Science Degree

Required Courses: 30 units

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 FDSV B58	Purchasing Foodservice Supervision	3.0
NUTR B10	Elementary Nutrition	3.0
FACE B248ab or FACE B249ab	Cooperative Work Experience Education Cooperative Work Experience Education	2.0
COMS	Computer Studies Course	1.0-3.0

Electives: at least 10.5 - 12.5 units

Course Number	Title	Units
FDSV B55b	Foodservice Production II	2.5
FDSV B55d	Foodservice Production Laboratory	2.0
FDSV B55e	danced 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
ACCT B53a	Introduction to Accounting I	3.0
BSAD B18a	Business Law	3.0
MGMT B48	Small Business Management	3.0
MGMT B75	Managing Cultural Diversity in the Workplace	3.0
MKTG B1	Fundamentals of Marketing	3.0

FORESTRY

See Agriculture

FRENCH

French Associate in Arts Degree

Required Courses: 18 units

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***Required Courses: 30-31 units*

Course Number	Title	Units
GEOL B1a	Physical Geology	4.0
GEOL	Electives	7.0
CHEM B1a or CHEM B2a	General Chemistry Introductory General Chemistry (4.0)	5.0
INDR B10	Introduction to Industrial Drawing & Graphics	1.0
MATH BC	Plane Trigonometry	3.0
MATH BD or COMS B12	Intermediate Algebra Introduction to Programming with BASIC (3.0)	4.0
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 BC	Plane Trigonometry	3.0

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
BUS 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 GEOL B10	Physical Geology Introduction to Geology	4.0 3.0
GEOL B10L	Introductory 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 requirements.

History Associate in Arts Degree*Required Courses: 18 units*

Course Number	Title	Units
HIST B4ab	European Civilization	6.0

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
HIST B2 and HIST B25	World History (3.0) Introduction to Women in American	6.0

History (3.0)

AND any two of the following courses:

Course Number	Title	Units
ECON B2	Principles of Economics-Macro	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	20 th Century History	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

Required Courses: 15 units

Course Number	Title	Units
COMS B5	Introduction to Microcomputer Applications	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.

Required Courses: 19 units

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 CHDV B13a	Child Psychology and Development Child Growth and Development	3.0

Electives: Any combination of four units from the follow-

ing 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.

Required Courses 30 units

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 CHDV B13a	Child Psychology and Development Child Growth and Development	3.0

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 SOCI B20	Social Psychology Social Psychology	3.0
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

Required Courses: 8 units

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

Required Courses: 18 units

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

Electives: at least 4 units

Course Number	Title	Units
INDR B16	Introduction to 3D Animation	1.0
INDR B20b	Computer Aided Drafting and Design (CAD)	3.0
INDR B30b	Industrial Drawing	3.0

Industrial Technology, Industrial Drawing Option Associate in Science Degree

Required Courses: 30 units

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 B30b	Industrial Drawing	3.0
INDR B50	Process Piping Drafting	3.0
MATH BC	Plane Trigonometry	3.0
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	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 B4	Computer Integrated Manufacturing	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
INDT B10 or	Occupational Readiness	3.0
	Equivalent	

Second Semester

Course Number	Title	Units
INDR B30b	Industrial Drawing	3.0
INDR B20a	Computer Aided Drafting and Design (CAD)	3.0
MATH BC	Plane Trigonometry	3.0
INDR B50 or	Process Piping Drafting	3.0
INDR B52	Geographic Information Systems (GIS)	

Third Semester

Course Number	Title	Units
INDR B50 or	Process Piping Drafting	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	3.0
	General Education	

INDUSTRIAL TECHNOLOGY

Industrial Technology Certificate of Completion

Required Courses: 17 units

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	3.0
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

Required Courses: 30 units

Course Number	Title	Units
MFGT B1ab	Machine Tool Processes	3.0
MFGT B4	Computer Integrated Manufacturing	3.0
MFGT B5	Introduction to 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 Readiness	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
ENVT B10a	Hazardous Materials Awareness and Safety	1.0
AUTO B1	Basic Auto	3.0
CNST B1	Introduction to Construction	3.0
COMS B5	Introduction to Microcomputer Applications	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

Required Courses: 16 units

Course Number	Title	Units
JRNL B2	Beginning Reporting	3.0
ART B23	Advertising Design	3.0
*JRNL B27a	News Reporting for Print & Online Media	3.0
JRNL B26	News management of Print & Online Media	4.0
**MGMT B48	Small Business Management	3.0

*JRNL B27e News Photography for Print & Online Media, may be substituted for JRNL B27a with permission of journalism advisor.

**MKTG B62 Fundamentals of Personal Selling, 3 units, or WEXP B248ab or WEXP B249ab, total of 3 units, may be substituted for

MGMT B48 with permission of journalism advisor.

Broadcast Media Certificate of Completion

Required Courses: 17 units

Course Number	Title	Units
JRNL B1	Media and Society	3.0
JRNL B2	Beginning Reporting	3.0
*JRNL B27a	News Reporting for Print & Online Media	3.0
JRNL B27e	News Photography for Print & Online Media	3.0
COMM B1	Public Speaking	3.0
WEXP B248ab or WEXP B249ab	Cooperative Work Experience Education	2.0

*Both JRNL B27a or JRNL B27e may be repeated for a total of 6 units between the 2 courses with permission of journalism advisor.

Computer Graphics for Print and Online Media Certificate of Completion

Required Courses: 17 units

Course Number	Title	Units
ART B2ab	Basic Drawing	3.0
ART B21	Graphic Design	3.0
ART B22	Digital Illustration	3.0
*JRNL B27a	News Reporting for Print & Online Media	6.0
WEXP B248ab or WEXP B249ab	Cooperative Work Experience Education	2.0

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

Editorial Leadership Certificate of Completion

Required Courses: 17 units

Course Number	Title	Units
*JRNL B27a	News Reporting for Print & Online Media	9.0
JRNL B26	News Management of Print & Online Media	8.0

*JRNL B27a, 3 units, must be repeated 3 times for a total of 9 units, or JRNL B27e, News Photography for Print and Online Media, 3 units, may be substituted, for a total of 9 units, with permission of journalism advisor.

News Reporting Certificate of Completion

Required Courses: 17 units

Course Number	Title	Units
JRNL B2	Beginning Reporting	3.0
JRNL B15	Press Photography	3.0
*JRNL B27a	News Reporting for Print & Online Media	9.0
WEXP B248ab or WEXP B249ab	Cooperative Work Experience Education	2.0

PROGRAMS OF STUDY

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

Online Media Certificate of Completion

Required Courses: 17 units

Course Number	Title	Units
*JRNL B2	Beginning Reporting	3.0
JRNL B27a	News Reporting for Print & Online Media	3.0
JRNL B27e	News Photography for Print & Online Media	3.0
**JRNL B26	News Management of Print & Online Media	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 B248ab or WEXP B249ab, 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

Required Courses: 17 units

Course Number	Title	Units
JRNL B2	Beginning Reporting	3.0
JRNL B15	Press Photography	3.0
*JRNL B27e	News Photography for Print & Online Media	9.0
WEXP B248ab or WEXP B249ab	Cooperative Work Experience Education	2.0

*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.

Required Courses: 19 units

Course Number	Title	Units
JRNL B1	Media and Society	3.0
JRNL B2	Beginning Reporting	3.0
JRNL B15	Press Photography	3.0
JRNL B26	News Management of Print & Online Media	4.0

Select 6 units from the following:

JRNL B27a	News Reporting for Print and Online Media	3-6.0
JRNL B27e	News Photography for Print and Online Media	3-6.0

LIBERAL ARTS

Liberal Arts Associate in Arts Degree

The Liberal Arts major at Bakersfield College 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, written 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 for the Liberal Studies major are under review at the state level and pending approval. 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. Due to ongoing and substantial changes in credential legislation and degree programs in the State of California, students are advised to see a counselor for the 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.

Required Courses: 18 units

Select 18 units from the following:

Course Number	Title	Units
ENGL B1a	Expository Composition	4.0

ENGL B1b or ENGL B21 or ENGL B23 or ENGL B30a or ENGL B30b or ENGL B35	Introduction to Types of Literature African American Literature Women’s Literature Survey of American Literature Survey of American Literature Children’s Literature and Storytelling	3.0
COMM B1 MATH B4a	Public Speaking Mathematics for Elementary School Teaching I	3.0 5.0
BIOL B11 PHSC B12 ERSC B12 HIST B17a POLB B1	Concepts of Biology General Physical Science Earth Science History of the United States American Government: National, State, and Local	4.0 4.0 4.0 3.0 3.0
HIST B18 HIST B2 GEOG B2 PHIL B7 or PHIL B9 or	History of California World History Human Geography Introduction to Logic Critical Thinking and Advanced Composition (4)	3.0 3.0 3.0 3.0
COMM B5 PSYC B1a or SOC B1 ANTH B2 or ECON B1 or ECON B2	Rhetoric and Argumentation General Psychology Introduction to Sociology Cultural Anthropology Principles of Economics - Micro Principles of Economics - Macro	3.0 3.0
ART B1 or ART B2ab or ART B30a or ART B30b or ART B30c or ART B30d or MUSC B2 or MUSC B22 or THEA B1 or THEA B20 or	Art Appreciation Basic Drawing Survey of World Art, Prehistory Through Islam Survey of World Art, Non-Western Cultures and Medieval Europe Survey of World Art, 14th Century Through 17th Century Survey of World Art, 18th Century Through 20th Century Basic Elements of Music Music Appreciation Introduction to Acting Survey of Theatre and the Roots of Entertainment	3.0 3.0 3.0 3.0
HLED B1 PSYC B40 COMS B2 or COMS B5 EDUC B24	Principles of Health Education Child Psychology & Development Introduction to Computer Information Systems Introduction to Microcomputer Applications Early Field Experience for Elementary Teachers	3.0 3.0 3.0 3.0 2.5

MANAGEMENT

See Business Education

PROGRAMS OF STUDY

MANUFACTURING TECHNOLOGY

Manufacturing Technology was formerly called Automated Production and Manufacturing Processes Technology.

Basic Machine Tool Operations-Lathe, Mill Certificate of Completion

Required Courses: 3 units

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

Required Courses: 6 units

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

Production Maintenance Certificate of Completion

Required Courses: 16 units

Course Number	Title	Units
MFGT B5	Introduction to 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	3.0

Programmable Logic Controllers (Basic PLC's) Certificate of Completion

Required Courses: 6 units

Course Number	Title	Units
MFGT B5	Introduction to Programmable Logic Controllers	3.0
MFGT B61	Advanced Programmable Logic Controllers	3.0

Manufacturing Technology Certificate of Achievement

Required Courses: 30 units

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 B4	Computer Integrated Manufacturing	3.0
MFGT B5	Introduction to Programmable Logic Controllers	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
ENGL B1	Introductory Composition	4.0

Industrial Technology Manufacturing Technology Option Associate in Science Degree

Required Courses: 30 units

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 B4	Computer Integrated Manufacturing	3.0
MFGT B5	Introduction to Programmable Logic Controllers	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
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 B249ab	Cooperative Work Experience Education	1.0

MARKETING

See Business Education

MATHEMATICS

Mathematics Associate in Arts Degree

Required Courses: 18 units

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 programming Language)	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

Required Courses: 23-27 units

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

Select one or both of the following

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 B16	Beginning Ear Training	1.0
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 health 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.
- 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.

Required Courses: 5.5 units

Course Number	Title	Units
MEDS B67	Basic Patient Skills	3.0
MEDS B67L	Basic Patient Skills Laboratory	2.5
MEDS B60	Medical Terminology (highly recommended)	
ACDV B66	Student Success Strategies (highly recommended)	

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. May 15 - June 15 for fall semester.
- 2. Month of September 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.
- 4. The implementation of the roles of the student as a provider of care, manager of care and member of the profession

Application Procedures

- 1. Enroll at Bakersfield College.
- 2. Obtain application form from the BC Allied Health Office in room MS 178 or by telephone, 395-4281.
- 3. Arrange for **official** copies of all college transcripts to be mailed directly to the Associate Degree Nursing Program, Bakersfield College, 1801 Panorama Dr., Bakersfield, CA 93305. Students attending BC must furnish a BC tran-

script.

4. Students not accepted must complete a program application form until admitted to the program.

Prerequisite Course Requirements

All prerequisite courses must be completed prior to the start of the program with a “C” grade or higher.

- a. MATH BA/B200A at BC or an equivalent course at another accredited college, or two semesters of high school algebra, with “C” grades or higher.
- b. CHEM B11 or CHEM B1a or CHEM B2a at BC or an equivalent course at another accredited college. (CHEM B11 is required by CSUB.)
- c. BIOL B14 Human Anatomy at BC or equivalent course at another accredited college.
- d. BIOL B15 Human Physiology at BC or equivalent course at another accredited college.
- e. BIOL B16 General Microbiology at BC or equivalent course at another accredited college.
- f. ENGL B1a at BC or equivalent course at another accredited college.
- g. Graduation from high school or equivalent education.
- h. Overall cumulative GPA of 2.5, minimum GPA of 3.0 in all biology courses (without repeats or ‘W’), minimum GPA of 3.0 in all English courses.
- i. MEDS B60 Medical Terminology - highly recommended prior to BIOL B14 Human Anatomy.
- j. Nurse Assistance course/certification - highly recommended.
- k. 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

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 nursing courses are graded on a credit/no credit basis only.

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
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 \$1,500.00. 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 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 February. 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.

Vocational Nursing Program

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

First Semester

Course Number	Title	Units
NURS B1	Nursing Fundamentals	3.0
VNRS B1LV	Vocational Nursing Laboratory	6.0
NURS B1g	Gerontological Nursing	1.0
NURS B3lab	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-Clinical Laboratory	1.5
VNRS B86	Medical Surgical Nursing III	4.0
VNRS B86LV	Medical Surgical Nursing III - Laboratory	3.0
VNRS B7	Parent/Newborn Nursing	1.5
VNRS B87LV	Maternal/Newborn Nursing	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	2.0
VNRS B6	Pediatric Nursing	1.5
VNRS B97LV	Pediatrics - Clinical 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
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 \$1,500. 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.

General Education Requirements

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

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

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 \$900. 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. One semester in residency will be required to attain degree status from the college.

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 Education

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

Required Courses: 18 units

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.

Required Courses: 23 units

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 B14 or BIOL B18 or BIOL B20	Human Anatomy Essentials of Human Anatomy and Physiology Human Biology	4.0

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

Required Courses: 34 units

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.

Required Courses: 18 units

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

Political Science, emphasis in International Relations Associate in Arts Degree

Required Courses: 18 units

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 PSYC B5 or MATH B22	Principles of Economics-Macro Elementary Statistics for the Behavioral and Social Sciences (4.0) Elementary Probability and Statistics (5.0)	3.0

Political Science, emphasis in Domestic Policy Associate in Arts Degree

Required Courses: 18 units

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 PSYC B5 or MATH B22	Principles of Economics-Macro Elementary Statistics for the Behavioral and Social Sciences (4.0) Elementary Probability and Statistics (5.0)	3.0

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

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. 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.

Minimum units required in discipline: 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 PSYC B30 or PSYC B37 or PSYC B45 or PSYC B1b or PSYC B31 or PSYC B33 or PSYC B8 or PSYC B2 or	Social Psychology Human Sexuality Psychology of Gender Roles Behavior Modification Biological Psychology Marriage Personal and Social Adjustment Introduction to Social Gerontology Interpersonal & Group Process Skills for the Helping Occupations	3.0

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 ap-

plicants 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 **OR** BIOL B14 **and** BIOL B15 at BC or equivalent course 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 (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 request an unofficial copy of their transcript to be sent to the program from the Admissions and Records Office. A display transcript from the college website is not acceptable.
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. Requests for consideration of course equivalency must be made by the student to the Bakersfield College Admissions and Records Office, (661) 395-4301. It is the student's responsibility to see that the equivalency is provided to the program within the enrollment filing period; therefore students are urged to complete

this equivalency prior to the program enrollment period as this process takes 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 - COMM B1 recommended; or COMM B2 or B3
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. 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

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.
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. 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.
4. The medical exams, screens, 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. Esti-

mated costs for books, uniforms, fees and required equipment for the first year of the program are approximately \$700-850. 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 eligibility for certification is granted. Individuals requiring clarification may contact the ARRT, 1225 Northland Drive, Mendota Heights, MN 55120, (651) 687-0048, or www.rrt.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 Education

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.

Required Courses: 19 units

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

Required Courses: 18 units

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.

Required Courses: 19 units

Course Number	Title	Units
THEA B2ab	Elements of Acting	6.0
THEA B3a	Applied Acting Problems	2.0
THEA B3b	Applied Acting Problems	2.0
THEA B27	Acting Theatre Laboratory	3.0
THEA B28	Technical Theatre Laboratory	3.0
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 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 B2ab	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

Required Courses: 6 units

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

Required Courses: 7.5 or 12 units

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	12.0

Shielded Metal Arc Welding Certificate of Completion

Required Courses: 12

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

Required Courses: 25.5 units

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
MFGT B1a	Machine Tool Processes	1.5
WELD B54a	Blueprint Reading for Welders & Machinists	3.0
MATH B50 or	Modern College Arithmetic & Pre-Algebra	3.0
Math Placement	Assessment Level 2 or above	

INDT B10 or Equivalent	Occupational Readiness	3.0
------------------------	------------------------	-----

Suggested Electives

Course Number	Title	Units
ENGL	Approved Course	4.0
INDR B10	Introduction to Industrial Drawing and Graphics	1.0
INDT B271	Special Problems in Welding	2-3.0
ELET B1	Basic Electronics (DC and AC)	4.0
WELD B55ef	API and Related Certification Testing	3.0
WELD B54b	Template Development and Layout for the Welder	3.0
ENVT B10a	Hazardous Materials Awareness and Safety	1.0
MFGT B4	Computer Integrated Manufacturing	3.0
INDR B11	Introduction to Computer Aided Drafting and Design	1.0
INDT B249ab	Cooperative Work Experience Education	1.0

Industrial Technology Welding Option Associate in Science Degree

Required Courses: 35-36 units

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
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 B4	Computer Integrated Manufacturing	3.0
ENVT B10a	Hazardous Materials Awareness and Safety	1.0
INDT B271	Special Problems in Welding	2-3.0
INDT B10 or Equivalent	Occupational Readiness	3.0

WOODWORKING/CABINETMAKING

Woodworking/Cabinetmaking Certificate of Completion

Required Courses: 6 units from list below

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

Required Courses: 33 units

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 B4a &	Cabinetmaking and Millwork	4.0
CNST B4b 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	Introduction to Industrial Technology	3.0
Equivalent		

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

Required Courses: 29 units

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	Occupational Readiness	3.0
Equivalent		

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