Section V

CURRICULAR PATTERNS
TRANSFER PROGRAMS

Each institution of higher education has its own requirements for admission, majors, and general education. Students should see a counselor, on a regular basis, to determine the courses needed to prepare for transfer to CSU, UC, or any private/independent university.

Students who plan to transfer to UC must complete IGETC or a campus-specific general education pattern in addition to the lower-division major requirements required by the campus they wish to attend.

Students who want to transfer to CSU must complete the CSU General Education requirements in addition to completion of the individual campus lower-division major requirements or in the near future, completion of the Lower-Division Transfer Pattern (LDTP). The latter is designed for those students who have declared a major, but haven’t yet decided on a school of transfer. Completion of the LDTP will guarantee admission to the CSU campus of their choice. Please see below for information on both options and be sure to see a counselor to obtain an SEP (Student Educational Plan).

1) MAJOR REQUIREMENTS 2010-2011
The 2010-11 major sheets will be available in the Transfer Center. Note that the following majors are for specific colleges and universities. Requirements for the same major at other institutions may be different. These are merely a few samples of the many majors available and represent, for the most part, those of nearby colleges and universities. Additional information and revised major sheets are available in the Transfer/Career Centers. See www.assist.org for the complete articulation information.

In developing a program it should be remembered that in addition to the requirements in the major, each student should complete the general education breadth requirements for the college chosen. Breadth requirements for all branches of the UC, CSU, and various independent colleges are available in the Transfer/Career Centers. Proper planning normally should enable students to satisfy the general education-breath requirements concurrently with the requirements for graduation form Riverside Community College District. See the associate degree requirements.

2) LOWER-DIVISION TRANSFER PATTERN (LDTP)
The Lower-Division Transfer Pattern (LDTP) project, sponsored by the California State University (CSU) and supported by the California Community Colleges, presents potential transfer students with the most direct path to a bachelor’s degree in the CSU system. The LDTP project provides a set of “road maps” for students to follow that will ensure appropriate academic preparation and that will decrease time to graduation once LDTP students enter the CSU. Students may enter into an LDTP agreement up to the time they have completed 45 transferable units. Students who elect to follow the LDTP will receive the highest priority for admission to a CSU campus.

“Highest priority for admission” is defined as a written guarantee of admission to a particular CSU campus and major, and it goes into effect when both the student and the CSU campus ratify an LDTP agreement. The guarantee is subject to satisfactory completion of the agreement requirements and to the campus’s ability to accommodate the student. Students will be asked to complete successfully a specified set of general education courses and major courses that will be common to all CSU campuses offering that major, and they will be asked to complete successfully an additional set of courses identified by the particular CSU campus named in the LDTP agreement. The coursework in the systemwide and campus-specific LDTP pattern will total at least 60 units, the number needed to transfer to CSU as an upper-division student. Through CSUMentor and ASSIST, students and counselors will be able to find road maps detailing coursework preparation by CSU campus and major.

2011-12 MAJOR REQUIREMENTS
ACCOUNTING
CSU San Bernardino
Accounting 1A, 1B; Business Administration 18A; Economics 7 or 7H, 8; Mathematics 5, 10, 11 or 1A; Mathematics 12 or 12H; Computer Information Systems 1A, 5, 17A, 20, 25
Cal Poly Pomona
Accounting 1A, 1B, or 38; Business Administration 18B; Computer Information Systems 1A or 3; Economics 7 or 7H, 8; English 1B or 1BH; Mathematics 5, 12 or 12H.

ADMINISTRATION OF JUSTICE/CRIMINAL JUSTICE
CSU Long Beach
Administration of Justice 1, Philosophy 11 or 32 /Math 32; Political Science 1; Psychology 1; Sociology 1
CSU San Bernardino
Administration of Justice 1, 3, 13; Mathematics 11 or 25
San Diego State University
Political Science 1; Sociology 1, 2; Math 12 or 12H

ANTHROPOLOGY
CSU Fullerton
Anthropology 1, 2, and 3 or 6
UC Riverside
Anthropology 1, 2, and 3 or 6; English 16
CSU San Bernardino
Anthropology 1, 2

ART
CSU Fullerton
Studio Emphasis: Art 1, 2, 17, 22 or 23, 24, 26, 40; Choose two from Art 15, 16, 20, 21, 30, 41; Photography 8, 9
UC Riverside
General Art Emphasis: Art 1, 2 or 10 and 17, 26
CSU San Bernardino
Art History Option: Art 1, 2, 5, 17, 22, 24, 36; Foreign Language 1, 2

BIOLOGY
CSU Fullerton
Biology 11, 12; Chemistry 1AB, 12AB; Mathematics 1A or 5; Physics 2AB
UC Riverside
Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Mathematics 1AB; Physics 4ABC or 2AB
CSU San Bernardino
Biology 2AB, 5, 11 or 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Mathematics 5 or 1A; Physics 2AB or 4ABC.
BOTANY

**Cal Poly Pomona**
- Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12A; Mathematics 5, 12 or 12H; Physics 2AB; English 1B; Microbiology 1; choose one from: Health Science 1, Psychology 1 or 2

**UC Riverside**
- Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Mathematics 1AB; Physics 2AB or 4ABC

**BUSINESS ADMINISTRATION**

**CSU Fullerton**
- Mathematics 1A or 5; Economics 7 or 7H, 8; Accounting 1B; Business Administration 18A

**Cal Poly Pomona**
- Economics 7 or 7H, 8; Mathematics 5, 12 or 12H; Business Administration 18B; Accounting 1A, 1B or 38; Computer Information Systems 1A or 3

**UC Riverside**
- Accounting 1AB; Business Administration 10; Computer Information Systems 1A; Economics 7 or 7H, 8; Mathematics 1A, 1B, 5, 12 or 12H

**CSU San Bernardino**
- Accounting 1A, 1B; Business Administration 18A; Computer Information Systems 1A; Economics 7 or 7H, 8; Mathematics 12 or 12H and 10 or 11 or 5 or 1A

**CHEMISTRY**

**CSU Fullerton**
- Chemistry 1A or 1AH or 1B or 1BH, 12AB; Mathematics 1ABC, 2, 3; Physics 4ABCD

**Cal Poly Pomona**
- Biology 11; Chemistry 1AB, 12A, 12B; Computer Information Systems 5; Mathematics 1AB, 2; Physics 4ABC

**UC Riverside**
- Chemistry 1A or 1AH, 1B or 1BH, 12AB; Mathematics 1ABC, 2; Physics 4ABCD

**CSU San Bernardino**
- Biology 11; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Mathematics 1ABC, 2, 3; Physics 4ABC

**COMMUNICATIONS**

**Cal Poly Pomona**
- Applied Digital Media 1; Communication Studies 1, 3, 12; Journalism 7; Journalism 12 or Photography 12; Mathematics 12 or 12H; Photography 8

**CSU San Bernardino**
- Communications Studies 6, 9 or 9H; Film, Television and Video 44; Journalism 2, 20

**CSU Fullerton**
- Print Journalism 1, 2, 7; Film, Television and Video 45

**COMPUTER INFORMATION SYSTEMS**

**Cal Poly Pomona**
- Computer Information Systems 1A or 3, (or Computer Application and Office Technology 3) 17A, 17B, 18A; Economics 7 or 7H, 8; Mathematics 12 or 12H; Business Administration 18B; Accounting 1A and 1B or 38

**COMPUTER SCIENCE**

**Cal Poly Pomona**
- Biology 1; Computer Information Systems 17A and 18C or 18A and 18C; Mathematics 1ABC, 3; Physics 4BC

**CSU San Bernardino**
- Biology 1 or 11; Computer Information Systems 5, 17A; Computer Science 6 or Mathematics 6; Mathematics 1AB; Physics 4ABC; one laboratory course from Biology, Chemistry, Geology or Physics

**DENTAL HYGIENE**

**USC**
- Anatomy and Physiology 2A, 2B; Biology 11; Chemistry 1AB, 1A or 1AH, 1B or 1BH; Communications Studies 1; English 1A or 1AH or 1B or 1BH; Microbiology 4; Psychology 1; Sociology 1

**Loma Linda University**
- English 1A or 1AH or 1B or 1BH; Communications Studies 1 or 1H, 9 or 9H; Microbiology 1; Anatomy and Physiology 2AB; Chemistry 2AB; Sociology 1; Kinesiology 4; Anthropology 1; Choose 14 units from: Art (lecture only); Foreign Language; History 1, 2, 4, 5; Literature; Philosophy; One transferable Mathematics class; Psychology 1

**ECONOMICS**

**CSU Fullerton**
- Mathematics 5 or 1A, Accounting 1B or Mathematics 1B; Economics 7 or 7H, 8

**Cal Poly Pomona**
- Economics 7 or 7H, 8; English 1B; Accounting 1A

**UC Riverside**
- Economics 7 or 7H, 8; Mathematics 1A, 1B

**CSU San Bernardino**
- Economics 7 or 7H, 8; Mathematics 5, 12 or 12H

**EDUCATION-TEACHING**

**ELEMENTARY OR SECONDARY**

Students desiring to teach in California public schools (K-12) must pursue a pattern of course work at RCCD suitable for transfer to a public or private university. Once a successful transfer has been made, students will follow a program leading to completion of baccalaureate degree requirements and preliminary teaching credential requirements defined by the California Commission on Teacher Credentialing. Information concerning the transfer requirements of various universities is available from the Counseling/Transfer Centers and the office of Teacher Preparation and Education Program Counselor.

Historically, RCC students interested in teaching careers have been able to complete all appropriate lower division liberal arts courses while enrolled here. Beginning in 2002 it is also possible for teacher education students to complete certain lower division courses in Education that transfer into the multiple-subject (Elementary) teacher education programs of nearby universities. Currently, a full articulation agreement exists with La Sierra University, Cal Baptist University, UCR, CSUSB, and many other institutions. Students are urged to check with their program adviser in the Counseling/Transfer Center or the counselor from the office of Teacher Preparation and Education Programs for the latest information.
COMMUNITY COLLEGE
The student planning to teach at the community college level must complete at least a Master’s degree in a subject matter area normally taught in the community college.

VOCATIONAL
For teaching in occupational areas, a combination of work experience in the field (five to six years) and education is needed.

ENGINEERING-MECHANICAL LOWER DIVISION
ENGINEERING CURRICULUM
The Statewide Engineering Liaison Council encourages engineering transfer students to complete the prescribed Engineering Core and to obtain verification of that at the community college in order to assure transferability as a junior to any UC, CSU, or selected private four-year colleges and/or universities in the state.

The Engineering Core requirements, Riverside Community College’s equivalent courses are: Mathematics 1A, 1B, 1C, 2; Chemistry 1A, 1B; Physics 4A, 4B, 4C; Engineering 17, 22, 35, 45; English 1A; Electives (8-12 units): Engineering 1A, 33; Machine Shop 51; Mathematics 4, 12; Chemistry 12A; Biology 1; Electronics 37.

To establish all necessary prerequisites to upper division courses, the Statewide Engineering Liaison Council indicates that it is imperative for engineering transfer students to concentrate on completing their technical (math, science, and engineering) course work and English 1A prior to transferring.

The requirements for the different fields of engineering may vary slightly from the outline listed above. All students should select classes to fulfill the core and/or general education requirements before transferring.

CSU FULLERTON
Chemistry 1A; Biology 1; Engineering 17, 22, 35; Mathematics 1ABC, 2, 3; Physics 4AB
UC RIVERSIDE
Mechanical Chemistry 1A or 1AH, 1B or 1BH; Engineering 17, 22, 30, 35; Mathematics 1ABC, 2; Physics 4ABC; Biology 11
CAL POLY POMONA
Electrical Chemistry 1A; Mathematics 1ABC, 2, 3; Physics 4ABC

ENGLISH
(English 1AB or equivalency test required at all colleges listed.)

CSU FULLERTON
English 1B or 1BH, 6, 7, 14, 15 (choose 2)
CAL POLY POMONA
English 1B or 1BH, 6 or 7, 14 or 15, 40 or 41; Communication Studies 3; Choose from French 3; German 3; Japanese 4; Spanish 3, 3N, 4, 8
CSU SAN BERNARDINO
English 6, 7

ENVIRONMENTAL SCIENCE
UC RIVERSIDE
Natural Science Option: Biology 8, 11, 12, 36; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Economics 5; Geology 1/1L or Geography 1/1L; Mathematics 1AB; Physics 2AB

CSU SAN BERNARDINO
Major is called Environmental Studies. Track A: Biology 1; Chemistry 2A; Three (3) courses from Anthropology 1; Chemistry 2B; Geology 1/1L; Geography 1/1L; Physics 10/11 or 2A

FORESTRY
UC BERKELEY
Biology 12; Chemistry 1A or 1AH; Economics 7 or 7H, 8; English 1A or 1AH, or 1B or 1BH; Geology 1/1L; Mathematics 1A, 1B, 12 or 12H
CSU HUMBOLDT
Biology 1 or 5; Mathematics 1A or 5

GEOGRAPHY
CSU FULLERTON
Geography 1 or 1H, 2, 3
CAL POLY POMONA
Geography 1 or 1H, 2
CSU SAN BERNARDINO
Geography 1/1L or 1H/1L, 2

GEOLGY
CSU LONG BEACH
Biology 1; Chemistry 1A or 1AH, 1B or 1BH; Geology 1/1L, 1B; Mathematics 1AB; Physics 4A, 4B
UC RIVERSIDE
Biology 1, 11, or 17; Chemistry 1A or 1AH, 1B or 1BH; Geology 1/1L, 1B; Mathematics 1AB; Physics 4ABC; Geography 1/1L or 1H/1L

HEALTH SCIENCE
CSU LONG BEACH
School Health Option: Anatomy and Physiology 2A, 2B; Biology 1; Chemistry 1A or 2A; Health Science 1; Kinesiology 4; Psychology 1
CSU SAN BERNARDINO
Public Health Option: Anatomy and Physiology 2A, 2B; Chemistry 2A; Microbiology 1
SAN DIEGO STATE UNIVERSITY
Biology 1; Chemistry 2A or 3; Mathematics 12 or 12H; Psychology 1; Sociology 1; Anthropology and Physiology 2A, 2B

HISTORY
CSU FULLERTON
History 1, 2, 6 or 6H, 7 or 7H
CSU LONG BEACH
History electives (9 units) - choose from History 2, 4, 5, 6 or 6H, 7 or 7H
CAL POLY POMONA
History 1, 2, 6 or 6H, 7 or 7H; Political Science 1
UC RIVERSIDE
History 1 or 2, 6 or 6H, 7 or 7H; (if U.S. is primary area of concentration)

JOURNALISM
CSU FULLERTON
Journalism 1, 2, 7
CSU LONG BEACH
Journalism 2, 7
CAL POLY POMONA

Journalism Option: Applied Digital Media 1; Communication Studies 3, 12; Journalism 7 and 12; Mathematics 12 or 12H; Photography 8

KINESIOLOGY

CSU SAN BERNARDINO

Anatomy and Physiology 2A, 2B; Biology 1

CAL POLY POMONA

Health Promotion Track: Accounting 1A; Mathematics 12 or 12H; Biology 11; Kinesiology 36

LANDSCAPE ARCHITECTURE

CAL POLY POMONA

Art 17; Chemistry 1A or 1AH; Engineering 1A, 1B; Mathematics 36

MATHEMATICS

CAL POLY POMONA

Physics 4ABCD; Mathematics 1ABC, 2, 3; Computer Information Systems 5

CSU SAN BERNARDINO

Computer Information Systems 5 or Computer Science 5; Mathematics 1ABC, 2, 7; Physics 4A

MICROBIOLOGY

CSU LONG BEACH

Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH; Mathematics 1A; Microbiology 1; Physics 2A, 2B or 4A, 4B

CAL POLY POMONA

Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12A, 12B; Health Science 1 or Kinesiology 35 or Psychology 1 or 2; English 1B or 1BH; Math 5; Microbiology 1; Physics 2AB

MUSIC

CSU FULLERTON

Music 4, 5; four semesters Performance; four semesters Ensemble

CAL POLY POMONA

Music 4, 5, 6, 12, 32, 38 or 39, 43, 93

UC RIVERSIDE

Music 4, 6; Piano Proficiency

NURSING—B.S. DEGREE

CSU FULLERTON

Anatomy and Physiology 2A, 2B; Chemistry 1A or 2A or 12A; Microbiology 1; Psychology 1; Sociology 1 or Anthropology 2

CSU LONG BEACH

Anatomy and Physiology 2A, 2B; Chemistry 2A, 2B; Microbiology 1; Psychology 1; Sociology 1

CSU SAN BERNARDINO

Anatomy and Physiology 2AB; Chemistry 2A, 2B; Communication Studies 10 or 1H; English 1A; Mathematics 25, 1A, 5, 10 or 11; Microbiology 1; Psychology 9

PHARMACY

UC SAN FRANCISCO

Anatomy and Physiology 2A, 2B; Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Communication Studies 1 or 1H, 2 or 3; English 1A or 1AH, 1B or 1BH; Mathematics 1A and 1B; Physics 2AB or 4AB; Economics 7 or 7H, or 8; Anthropology 2; Psychology 1 or Sociology 1

USC

Anatomy and Physiology 2A, 2B; Biology 11, 12; Chemistry 1A or 1AH, 1B or 1BH, 12AB; Communication Studies 9 or 9H; Economics 7 or 8; English 1AB; Mathematics 1A, 12 or 12H; Microbiology 1; Psychology 2 or Sociology 1; Physics 2A, 2B, 4A or 4B.

PHILOSOPHY

CSU FULLERTON

Philosophy 20; Choose two from Philosophy 10, 11, 32

CSU LONG BEACH

Philosophy 20, 21, 32 and 10 or 12

UC RIVERSIDE

Philosophy 11, 32

PHYSICS

CSU FULLERTON

Chemistry 1A or 1AH, 1B or 1BH; Mathematics 1ABC; Physics 4ABCD

CAL POLY POMONA

Biology 1; Chemistry 1A or 1AH, 1B or 1BH; Computer Information Systems 5 or Computer Science 5; Mathematics 1ABC, 2; Physics 4ABCD

UC RIVERSIDE

Chemistry 1A or 1AH, 1B or 1BH; Computer Information Systems 5 or 17A or 17B or Computer Science 5; Mathematics 1ABC, 2; Physics 4ABCD

CSU SAN BERNARDINO

Chemistry 1A or 1AH, 1B or 1BH; Computer Information Systems or Computer Science 5; Mathematics 1ABC, 3; Physics 4ABCD

POLITICAL SCIENCE

CSU FULLERTON

Political Science 1 or 1H

CSU LONG BEACH

Political Science 1 or 1H; Any two Political Science electives

CAL POLY POMONA

Political Science 1 or 1H, 2 or 2H, 4 or 4H; Economics 7 or 7H or 8

UC RIVERSIDE

Political Science 1 or 1H, 2 or 2H, 4 or 4H, 11; Mathematics 12 or 12H

CSU SAN BERNARDINO

Political Science 1 or 1H, 4 or 4H

PRE-LAW

Admission to most law schools requires a Bachelor’s Degree from an accredited college or university. The major can be any academic discipline, but the student must have achieved a good grade point average. Undergraduate courses should provide an adequate foundation for broad culture: Anthropology, Economics, English, History, Mathematics and Logic, Philosophy, Political Science, Psychology, Science, Sociology, Speech and Debate.

PSYCHOLOGY

CAL POLY POMONA

English 1B or 1BH or Philosophy 11 or 32; Mathematics 12 or 12H; Psychology 1, 2; Sociology 1, 2;

CSU SAN BERNARDINO

Mathematics 5, 10, 11, 12 or 12H, 25 or 1A; Psychology 1; Psychology 9 or Early Childhood Studies 20;
SOCIAL SCIENCES

CAL POLY POMONA
Anthropology 1; Economics 8; English 1B or 1BH; Geography 2; History 1, 2, 6 or 6H; Political Science 2 or 2H; Sociology 10

SOCIAL WORK

CSU LONG BEACH
Anthropology 2; Anatomy and Physiology 2A; Mathematics 12 or 12H; Psychology 1; Sociology 1

SAN DIEGO STATE UNIVERSITY
Biology 1 or 2AB, 10 or 12; Economics 7 or 7H or 8; Psychology 1; Sociology 1; Mathematics 12 or 12H; Foreign Language 3

SOCILOGY

CSU FULLERTON
Sociology 1

UC RIVERSIDE
Sociology 1 and 6 units of Sociology electives

CSU SAN BERNARDINO
Sociology 1

THEATER ARTS

CSU SAN BERNARDINO
Theater Arts 25, 32, 33, 36, 44, 48; Choose from one Dance D22, D33, D38, D44

CAL POLY POMONA
Theater Arts 3, 33, 34 and 2, 4, 5 or 6; English 9

HIGH SCHOOL EXIT EXAM
GUI-801 Test for Success CAHSEE Preparation

WORKSHOP COURSES
Each discipline of the college has the option of developing workshop courses that are specifically designated to be experimental courses. (They are developed by faculty members in the discipline and receive curriculum committee approval prior to being offered.) Workshop courses cannot be used to satisfy specific graduation requirements; however, they may be used as elective credit for the Associate degree. Courses with this designation may be periodically found in the semester schedule of classes.

COORDERATIVE WORK EXPERIENCE EDUCATION
The purpose of the Cooperative Work Experience Education Program is to provide students with an opportunity to increase their overall knowledge of their jobs by relating classroom theory with the world of work, while exposing them to the concepts of human relations in their business and personal lives. There are two work experience programs: general and occupational.

AUTOMOTIVE INTERNSHIP
Auto 99 is an internship designed to allow students to work in automotive dealerships in conjunction with an experienced technician. This class reinforces theories, concepts and practical applications taught in manufacturer specific automotive classes at Riverside City College.

GENERAL WORK EXPERIENCE EDUCATION
This program provides career guidance, job information, human relations, and other similar services for employed students. These jobs do not have to be related to the student’s major. The job may be salaried or volunteer, but students must have a job before the beginning of the third week of class. The student earns 3 units per semester for 180-225 hours of volunteer or paid work experience, respectively, plus weekly attendance at a one hour lecture class. Students can take two (2) semesters of general work experience for a maximum of six (6) units. Veterans wishing to earn units and VA benefits must take occupational work experience.

OCCUPATIONAL WORK EXPERIENCE EDUCATION
Work Experience is a one hour per week class which allows students to earn up to 4 units per semester for experience gained through employment or volunteer service. Enroll in a general Work Experience section and you will be placed in your choice of one of the disciplines below.

Units Determination:
General Work Experience (not related to one of the occupational disciplines listed below) is 3 units only.

Occupational Work Experience (one of the disciplines shown below) varies from 1-4 units. For every one (1) unit of work experience credit students must complete 75 hours of paid work or 60 hours of volunteer work during the college semester. No more than 20 hours per week may be applied toward this work requirement. Below is a general guide to help students enroll in the appropriate number of units of work experience.

<table>
<thead>
<tr>
<th>Hours Worked Per Week</th>
<th>Students should enroll in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-40 (paid)</td>
<td>up to 4 units</td>
</tr>
<tr>
<td>14-19 (paid)</td>
<td>up to 3 units</td>
</tr>
<tr>
<td>9-13 (paid)</td>
<td>up to 2 units</td>
</tr>
<tr>
<td>5-8 (paid)</td>
<td>1 unit</td>
</tr>
</tbody>
</table>

Accounting
Administration of Justice
Air Conditioning
Applied Digital Media and Printing
Architecture
Art
Auto Body
Auto Technology
Business Administration
Community Interpretation
Computer Applications and Office Technology
Computer Information Systems
Construction Technology
Cosmetology
Culinary Arts
Dental Hygiene
Dental Technology
Early Childhood Education
Education
Electronics
Engineering
Film, Television and Video
Fire Technology
Human Services
Journalism
Machine Shop
Management
Manufacturing
Marketing
Medical Assisting
Nursing
Paralegal Studies
Photography
Physical Education
Real Estate
Theater
Welding

HIGH SCHOOL COURSES

Foreign Languages
Two years of high school study in the same language with an earned grade of “C” or better for each course are equivalent to the first level of the same language at RCCD (for example, two years of Spanish in high school are equal to Spanish I at RCCD.)
Chemistry
Information regarding validation of high school chemistry courses for prerequisites can be found by calling the prerequisite hotline at (951) 222-8808 or on the web at http://www.rcc.edu/services/assessment/chemistry.cfm.

Articulated Courses
The Riverside Community College District (RCCD) and Secondary Education District articulation process provides a method by which college credit can be given for articulated high school and ROP courses, thereby creating a seamless transition from secondary to post-secondary education. Articulation means an agreement has been reached that the student will receive college credit for a specific high school or ROP course. Not all courses are articulated. Students can find the most up-to-date listing of articulated courses at RCCD’s Tech Prep website, www.rcc.edu/techprep. Students wishing to apply for credit by articulation should first complete a RCCD college application at http://www.cccapply.org/apply. Once a student ID# is obtained, students may apply online for articulated credit at www.rcc.edu/techprep. For further information or assistance, contact Career and Technical Education office, 951-222-8963.

Alvord Unified School District
Anatomy and Physiology/Acad. Anat/Phys (AMY 10)
Architectural Design 1 (ARE 24)
Computer Aided Drafting and Design (ENE 30)
Drafiting 2 (ENE 21)

Antelope Valley Union High School ROP
Emergency Medical Technician (EMS 50/EMS 51)*

California School for the Deaf, Riverside (CSDR)
Construction Technology (CON 60)

Corona-Norco Unified School District
Anatomy and Physiology (AMY 10)
Architectural Design 1A-1B (ARE 24 and 25)
Computer Aided Drafting 2A - 2B (ENE 42)
Design Manufacturing Technology 1A/1B (MAN 52)*
Electronics 1A and 1B (ELE 21)
Introduction to Engineering and Architecture 1A-1B (ENE 30 and 21)

Colton Redlands Yucaipa Regional Occupational Program
Computer Aided Drafting and Design (ENE 30)*
Construction Technology (CON 60)*
Welding Occupations (WEL 15)*

Jurupa Unified School District
Web Design (ADM 74)*

Lake Elsinore Unified School District
Advanced Engineering Design with Solidworks (ENE 42)*
Manufacturing and Materials Engineering 1 (WEL 34)*
Manufacturing and Materials Engineering 2 (WEL 35)*

Moreno Valley Unified School District
Advanced Engineering Drawing (ENE 31)
Anatomy and Physiology (AMY 10)
Architectural Design (ARE 24)
Digital Electronics (ELE 25)
Engineering Drawing 1 and 2 (ENE 21)
Medical Science/Health Careers 1 & 2 or Preparing to Work in Health Care Level 1 & 2 (HET 79)*
Principles of Engineering (ENE 60/ENE 10)

Murrieta Valley Unified School District
Drafting 1 (ENE 21)*

Riverside County Office of Education Regional Occupational Program
Allied Health Occupations (HET 79)*
Construction Technology (CON 60)
Emergency Medical Technician (EMS 50, 51)*
Maintenance Mechanics (MAN 60, 61)*
Masonry Occupations (CON 81, 82, 83, 84, 85, 86)
Nurse Assistant (HET 80)*

Riverside Unified School District
Anatomy and Physiology (AMY 10)
Certified Nursing Assistant (HET 80)*
Digital Electronics (ELE 25)
Health and Bioscience Academy I- First Responder (FIT E2A)*
Health and Bioscience Academy II-Intro to Healthcare Careers (HET 79)*
Health and Bioscience Academy II-Medical Terminology (MDA 1A)*
Medical Terminology (Riverside Adult School) (MDA 1A)*
Principles of Engineering (ENE 10 and ENE 60)

San Bernardino County Regional Occupational Program
Computer Aided Drafting (ENE 21, ENE 30)

San Bernardino City Unified School District
Construction Occupations A/B (CON 60)

Val Verde Unified School District
Anatomy and Physiology (AMY 10)
Web Page Design and Development (ADM 74)*

*All courses marked with an (*) must be completed with a “B” or better, otherwise coursework must be completed with a “C” or better.

This listing is subject to change throughout the program year. Please view the most current list of articulated courses at www.rcc.edu/techprep.

Career and Technical Education Programs
Riverside Community College District offers Associate in Science Degrees and Certificate Programs with an occupational emphasis. Both provide instruction in skills and knowledge needed to enter a skilled or professional occupation. Associate in Science Degree programs require completion of at least 60 units of credit, which normally takes four semesters. Certificate programs, leading to an associate in science degree, require a minimum of 18 units, but vary in number of units required; most can be completed in two semesters. Certificates can lead to employment. Each course required for a certificate must be completed with a “C” grade or better. All certificate courses can be counted toward the degree as well as the major.

Need for Specialized Training
Many find it difficult to secure employment or to advance in current positions and better-paying jobs without specialized training. General education coursework has its value, but in the early stages of a career it is specific, technical skills employers seek. A certificate is
the best evidence specialized training has been secured. At times employers actually require certificates as a condition of employment or reclassification for higher pay.

Who Can Enroll in the Career and Technical Education Programs?
Individuals wishing to enroll at Riverside Community College District must file an official application. Admission to Riverside Community College District is regulated by state law as prescribed in the California Education Code.

Certificate Course Requirements
Students should plan to enroll in the specific courses listed under the certificate desired. If a required course for a certificate program is no longer offered, please see the department chair to ascertain an acceptable course substitute. Fifty percent of the coursework required for any certificate pattern must be completed at Riverside Community College District.

ASSOCIATE IN SCIENCE DEGREE
The Associate of Science Degree consists of course work totaling 60 units or more. This includes coursework in a specific college certificate pattern plus general education and elective courses.

<table>
<thead>
<tr>
<th>Program</th>
<th>Locally Approved Certificate</th>
<th>State Approved Certificate</th>
<th>Associate Degree</th>
<th>Moreno Valley</th>
<th>Norco</th>
<th>Riverside</th>
</tr>
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<tbody>
<tr>
<td>AREA OF EMPHASIS</td>
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<tr>
<td>Administration &amp; Information Systems</td>
<td></td>
<td>MAA494</td>
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<td><strong>LOGISTICS MANAGEMENT</strong></td>
<td>NAS579/NCE579*</td>
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<td>Computer-Aided Production Technology</td>
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<td><strong>MEDICAL ASSISTING</strong></td>
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<tr>
<td>Admin/Clinical Medical Assisting</td>
<td>MAS718/MCE718</td>
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<tr>
<td>Medical Transcription</td>
<td>MAS701/MCE701</td>
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<tr>
<td><strong>MUSIC</strong></td>
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<tr>
<td>Jazz Performance</td>
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</table>

*50% or more of the certificate/degree may be completed online
### CAREER AND TECHNICAL CERTIFICATES AND DEGREES

<table>
<thead>
<tr>
<th>Certificates and Degrees</th>
<th>Approved Locally</th>
<th>Approved State</th>
<th>Moreno Valley</th>
<th>Norco</th>
<th>Riverside</th>
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<td>MIDI</td>
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<td>PHOTOGRAPHY</td>
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<td>MAS501/MCE501</td>
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<td>ME501</td>
<td>NAS536/NCE536</td>
<td>AS536*/CE536*</td>
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<td>AS505/CE505</td>
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<td>WELDING TECHNOLOGY</td>
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<td>AS606/CE606</td>
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<tr>
<td>Stick Welding (SMAW)</td>
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<tr>
<td>TIG Welding (TGAW)</td>
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<tr>
<td>Wire Welding (FCAW, GMAW)</td>
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<td>CE818</td>
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</table>

*50% or more of the certificate/degree may be completed online

### STUDENTS ARE ABLE TO COMPLETE THE FOLLOWING CERTIFICATES/DEGREES AT THESE OFF-CAMPUS LOCATIONS:

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>PROGRAM AND PROGRAM CODE</th>
<th>LOCALLY APPROVED CERTIFICATE</th>
<th>STATE APPROVED CERTIFICATE</th>
<th>ASSOCIATE DEGREE</th>
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<tbody>
<tr>
<td>MORENO VALLEY COLLEGE</td>
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<tr>
<td>Ben Clark Training Center</td>
<td>Administration of Justice</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>MASS504/MCE504</td>
<td>•</td>
<td>•</td>
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</tr>
<tr>
<td></td>
<td>AOJ/Basic Correctional Deputy Academy MCE783</td>
<td>•</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>AOJ/Basic Public Safety Dispatch Course MCE784</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Law Enforcement MASM63/MCE563</td>
<td>• •</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emergency Medical Technician</td>
<td>MCE801</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paramedic MASM55/MCE585</td>
<td>• •</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire Technology MASM55/MCE555</td>
<td>• •</td>
<td>•</td>
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<td></td>
<td>Chief Officer MASM26/MCE26</td>
<td>• •</td>
<td>•</td>
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<td></td>
<td>Fire Officer MASM27/MCE27</td>
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<td></td>
<td>Firefighter Academy MASM69/MCE669</td>
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</table>
PROGRAMS AND CERTIFICATES
R=Riverside; M=Moreno Valley; N=Norco

ACCOUNTING
See BUSINESS ADMINISTRATION

ADMINISTRATION OF JUSTICE
ADMINISTRATION OF JUSTICE (MNR) MAS504/MCE504 NAS504/NCE504 AS504/CE504

This program focuses on the criminal justice system, its organizational components and processes, as well as its legal and public policy contexts. This includes instruction in criminal law and policy, police and correction systems organization, the administration of justice and the judiciary, and public attitudes regarding criminal justice issues.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Demonstrate knowledge of the breadth, scope and interconnectivity of the criminal justice system.
• Demonstrate an understanding of the theories and research in the area of crime, criminality and criminal justice.
• Demonstrate a basic knowledge of criminal law.
• Demonstrate a knowledge of the implications of legal evidence in the processing of criminal cases.
• Demonstrate a knowledge of the role of policing and the maintenance of favorable community relations.

Required Courses (27 units) Units
ADJ-1 Introduction to the Administration of Justice 3
ADJ-2 Principles and Procedures of the Justice System 3
ADJ-3 Concepts of Criminal Law 3
ADJ-4 Legal Aspects of Evidence 3
ADJ-5 Community Relations 3
Electives Choose from elective courses in the discipline 12

Associate in Science Degree
The Associate in Science Degree in Administration of Justice will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

ADMINISTRATION OF JUSTICE BASIC CORRECTIONAL (M) MCE783
Deputy Academy
Certificate Program
Required Courses (13 units) Units
ADJ-C1D Basic Correctional Deputy Academy (C) 13

ADMINISTRATION OF JUSTICE BASIC PUBLIC SAFETY DISPATCH COURSE (M) MCE784
Certificate Program
Required Courses (5 units) Units
ADJ-D1A Basic Public Safety Dispatch Course 5

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Analyze the various aspects of police work
• Identify minimum competencies in police functions of most frequent occurrence
• Apply laws of arrest, search and seizure, documentation of evidence and patrol procedures in a variety of scenarios and environments
• Compare and contrast basic techniques for evaluating and analyzing occupationally hazardous situations and selection of the appropriate response or procedure
• Compare and contrast the concepts of uniformity in police practices and procedures.

Required Courses (34.5-39 units) Units
ADJ-B1B Basic Peace Officer Training Academy 39
or Reserve Training Module Format 34.5
ADJ-R1A2 Level III Modular Academy Training 6.5
ADJ-R1B Level II Reserve Officer Training 11
ADJ-R1C Level I Reserve Officer Training 17

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

ADMINISTRATION OF JUSTICE BASIC CORRECTIONAL (M) MCE783
Deputy Academy
**CRIME SCENE INVESTIGATION (NR) NCE619**

**Certificate Program CE619**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Demonstrate an advanced knowledge of the principle components of criminal law and the criminal justice system.
- Demonstrate an advanced knowledge of the procedures and process of collecting, preserving, and cataloging physical evidence from a crime scene.
- Demonstrate an advanced ability to use computer technology to report the collection, preservation, and presentation of crime scene evidence.

**Required Courses (15 units)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ADJ-2</td>
<td>Principles and Procedures of the Justice System</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-3</td>
<td>Concepts of Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-13</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-14</td>
<td>Advanced Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ANT-10</td>
<td>Forensic Anthropology</td>
<td>3</td>
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</tbody>
</table>

**INVESTIGATIVE ASSISTANT (NR) NCE785**

**Certificate Program CE785**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Demonstrate a basic knowledge of the principle components of criminal law and the criminal justice system.
- Demonstrate a basic knowledge of the procedures and process of collecting, preserving, and cataloging physical evidence from a crime scene.
- Demonstrate the ability to properly write official reports related to the collection, preservation, and presentation of crime scene evidence.
- Demonstrate the ability to employ computer technology to facilitate student learning outcomes 1 through 3 above.

**Required Courses (15 units)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ-3</td>
<td>Concepts of Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-4</td>
<td>Legal Aspects of Evidence</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-13</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-23</td>
<td>Criminal Justice Report Writing(^1)</td>
<td>3</td>
</tr>
<tr>
<td>CIS-1A</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
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</tbody>
</table>

\(^1\) Successful completion of ENG-1A may substitute for this course.

**VICTIM SERVICES AIDE (R) CE679**

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Demonstrate a knowledge of the breadth, scope and interconnectivity of the criminal justice system.
- Demonstrate an understanding of the theories and research in the area of crime, criminality and criminal justice.
- Demonstrate the ability to conduct interpersonal interviews and counseling generally applicable to the helping professions.
- Demonstrate the ability to read and write at the college freshman level.

**Required Courses (16 units)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ADJ-1</td>
<td>Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJ-2</td>
<td>Principles and Procedures of the Justice System</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1A/1AH</td>
<td>English Composition</td>
<td>4</td>
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<tr>
<td>HMS-5</td>
<td>Introduction to Evaluation and Counseling</td>
<td>3</td>
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<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM-9/9H</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SOC-20H</td>
<td>Introduction to Criminology</td>
<td>3</td>
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</tbody>
</table>

**AIR CONDITIONING AND REFRIGERATION AS596/CE596**

This program prepares individuals to apply technical knowledge and skills to repair, install, service, and maintain the operating condition of air conditioning, and refrigeration systems. This includes instruction in diagnostic techniques, the use of testing equipment, the principles of mechanics, electricity, and electronics as they relate to the repair of air conditioning and refrigeration systems.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Demonstrate technical knowledge and skills needed to repair, install, service, and maintain air conditioning and refrigeration systems in operating condition.
- Utilize diagnostic techniques and testing equipment in the repair of air conditioning and refrigeration systems.
- Apply principles of mechanics, electricity, and electronics to the repair of air conditioning and refrigeration systems.

**Required Courses (26-27 units)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>AIR-50A</td>
<td>Air Conditioning and Refrigeration</td>
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<tr>
<td>AIR-50B</td>
<td>Advanced Refrigeration</td>
<td>5</td>
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<tr>
<td>AIR-51A</td>
<td>Environmental Control</td>
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<tr>
<td>AIR-51B</td>
<td>Industrial Commercial Refrigeration</td>
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<td>AIR-53</td>
<td>Basic Electricity for Air Conditioning and Refrigeration</td>
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**Electives (2-3 units)**

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<th>Units</th>
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<tbody>
<tr>
<td>CON-62</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>WEL-34</td>
<td>Metals Joining Processes</td>
<td>2</td>
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</table>

**Associate in Science Degree**

The Associate in Science Degree in Air Conditioning and Refrigeration will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
# Applied Digital Media and Printing

## Required Courses (34 units)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ADM-1</td>
<td>Introduction to Applied Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>ADM-30</td>
<td>Contemporary Topics in Applied Digital Media</td>
<td>1</td>
</tr>
<tr>
<td>ADM-55</td>
<td>Management and Estimating</td>
<td>3</td>
</tr>
<tr>
<td>ADM-58</td>
<td>Paper and Inks for Multi-purposed Design</td>
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<tr>
<td>ADM-63</td>
<td>Adobe InDesign</td>
<td>3</td>
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<td>ADM-70</td>
<td>Project Design and Production</td>
<td>3</td>
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<tr>
<td>ADM-71</td>
<td>Adobe Photoshop</td>
<td>3</td>
</tr>
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<td>ADM-80</td>
<td>Introductory Digital Darkroom</td>
<td>3</td>
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<tr>
<td>ADM-85</td>
<td>Beginning Offset Presswork</td>
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<td>ADM-89</td>
<td>Applied Digital Media Portfolio</td>
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## Electives (10 units)

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<td>ADM-64</td>
<td>Ethics and Legalities of Digital Manipulation</td>
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<td>ADM-65</td>
<td>Cross Platform File Management</td>
<td>1</td>
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<tr>
<td>ADM-67</td>
<td>WEB Animation with Flash</td>
<td>3</td>
</tr>
<tr>
<td>ADM-68</td>
<td>3D Animation with Maya</td>
<td>3</td>
</tr>
<tr>
<td>ADM-69</td>
<td>Motion Graphics and Compositing with After Effects</td>
<td>3</td>
</tr>
<tr>
<td>ADM-72</td>
<td>Advanced Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>ADM-74</td>
<td>Dreamweaver for Graphic Designers</td>
<td>3</td>
</tr>
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<td>ADM-76</td>
<td>QuarkXPress</td>
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<tr>
<td>ADM-77A</td>
<td>Adobe Illustrator</td>
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<tr>
<td>ADM-77B</td>
<td>Advanced Adobe Illustrator</td>
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## Required Courses (17 units)

<table>
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<tbody>
<tr>
<td>ADM-86</td>
<td>Advanced Offset Presswork and Bindery</td>
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<td>ADM-88</td>
<td>3D Creature Creations with Maya</td>
<td>3</td>
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<tr>
<td>ADM-200</td>
<td>Applied Digital Media and Printing Work Experience</td>
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<tr>
<td>ART-22</td>
<td>Basic Design</td>
<td>3</td>
</tr>
<tr>
<td>ART-36</td>
<td>Computer Art</td>
<td>3</td>
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<tr>
<td>CIS-54B</td>
<td>Introduction to Flash Scripting</td>
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<tr>
<td>ENG-17</td>
<td>Literary Magazine Production</td>
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<tr>
<td>FTV-64</td>
<td>Digital Editing Principles and Techniques</td>
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</tr>
<tr>
<td>PHI-20</td>
<td>Introduction to Digital Still Photography</td>
<td>3</td>
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</table>

## Certificate Program

### Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Demonstrate the ability to communicate effectively with clients and co-workers.
- Demonstrate ethical, economic, civic, and moral responsibility.
- Create a graphics project from concept to prepared artwork considering color model, resolution, target market, and, if applicable, assign substrates and inks for its production.
- Demonstrate proofing and pre-flighting techniques, portable document format (PDF) creation, and troubleshooting of a digital file in preparation for imaging a project.
- Demonstrate proper set-up, safe operation, and clean-up of an offset printing press.
- Demonstrate proper set-up, safe operation, and clean-up of finishing equipment.
- Demonstrate the ability to estimate costs, document materials and time spent on production, and an ability to meet deadlines.
- Produce a portfolio and networking skills to promote talents in preparation for work in the graphics industry.

## Associate in Science Degree

The Associate in Science Degree in Applied Digital Media and Printing will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

### Basic Electronic Prepress (R) CE822

- Demonstrate ethical, economic, civic, and moral responsibility regarding digital media and print.
- Create a graphics project from concept to prepared artwork considering color model, resolution, target market, and, if applicable, assign substrates and inks for its production.
- Demonstrate proofing and pre-flighting techniques, portable document format (PDF) creation, and troubleshooting of a digital file in preparation for imaging a project.
- Demonstrate proper set-up, safe operation, and clean-up of an offset printing press.
- Demonstrate an ability to meet deadlines.

### Basic Graphic Design (R) CE823

Prepares students for a career in graphic design to become a skilled technician for design careers in business, industry and the public/private sectors.

## Certificate Program

### Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Demonstrate ethical, economic, civic, and moral responsibility regarding digital media and print.
- Create a graphics project from concept to prepared artwork considering color model, resolution, target market, and, if applicable, assign substrates and inks for its production.
- Demonstrate proofing and pre-flighting techniques, portable document format (PDF) creation, and troubleshooting of a digital file in preparation for imaging a project.
- Demonstrate proper set-up, safe operation, and clean-up of an offset printing press.
- Demonstrate an ability to meet deadlines.

Required Courses (17 units) Units
ADM-1 Introduction to Applied Digital Media 3
ADM-63 Adobe InDesign 3
ADM-64 Ethics and Legalities of Digital Manipulation 1
ADM-65 Cross Platform File Management 1
ADM-71 Adobe PhotoShop 3
ADM-77A Adobe Illustrator 3
ART-22 Basic Design 3

BASIC MULTIMEDIA DESIGN (R) CE821
Prepares students for a career in multimedia to become a skilled technician for new media careers in business, industry and the public/private sectors.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Demonstrate ethical, economic, civic, and moral responsibility regarding digital media.
- Create WEB animation using Flash panels, commands and interface.
- Create cross-platform media that includes a variety of media including photos, video and audio.
- Demonstrate the use of motion graphics in video.
- Produce a portfolio and networking skills to promote talents in preparation for work in the graphics industry.

Required Courses (17 units) Units
ADM-64 Ethics and Legalities of Digital Manipulation 1
ADM-67 Web Animation with Flash 3
ADM-69 Motion Graphics with After Effects 3
ADM-71 Adobe PhotoShop 3
ADM-89 Applied Digital Media Portfolio 3
CIS-54B Introduction to Flash Scripting 3
PHO-20 Introduction to Digital Still Photography 3

ARCHITECTURE
ARCHITECTURE (N) NAS509/NCE509
This program prepares individuals to apply technical knowledge and skills to develop working drawings and electronic simulations for architectural and related construction projects. This includes instruction in basic construction and structural design, architectural rendering, architectural-aided drafting (CAD), layout and designs, architectural industrial print interpretation, building materials, and basic structural wiring diagramming.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program should be able to demonstrate:
- An ability to apply and integrate computer technology in the design process exhibiting skills necessary for entry-level employment in the architecture profession.

ARCHITECTURE
ARCHITECTURE (N) NAS509/NCE509
This program prepares individuals to apply technical knowledge and skills to develop working drawings and electronic simulations for architectural and related construction projects. This includes instruction in basic construction and structural design, architectural rendering, architectural-aided drafting (CAD), layout and designs, architectural industrial print interpretation, building materials, and basic structural wiring diagramming.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program should be able to demonstrate:
- An ability to apply and integrate computer technology in the design process exhibiting skills necessary for entry-level employment in the architecture profession.
- Knowledge of architecture theory, and practice in the solution of Architectural design problems related to industry.
- An ability to work effectively in small and large group situations similar to those found in industry.
- The ability to apply the problem solving process to create and present design solutions.

Required Courses (27 units) Units
ARE-24 Architectural Drafting 3
ARE-25 Advanced Architectural Drafting 3
ARE-26 Architectural Rendering 3
ARE-35 History of Architecture-Beginnings of Architecture through Gothic Architecture 3
or
ARE-36 History of Architecture-Renaissance through the 20th Century 3
ARE-37 Architectural Design I 3
or
ART-22 Basic Design 3
ENE-21 Drafting 3
ENE-30 Computer-Aided Drafting (CAD) 3
ENE-60 Math for Engineering Technology 3
Electives (Choose from list below) 3

Electives (3 units)
ART-17 Beginning Drawing 3
ART-23 Design and Color 3
ART-24 Three Dimensional Design 3
CON-60 Introduction to Construction 3
CON-61 Materials of Construction 3
ENE-26 Civil Engineering Drafting 3
ENE/ELE-27 Technical Communication 3
ENE-31 Computer-Aided Drafting and Design 3

Associate in Science Degree
The Associate in Science Degree in Architecture will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes
In addition to achieving the program learning outcomes for the architecture certificate program, students who complete the Associate in Science Degree in Architecture will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.
The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree:

ARCHITECTURAL GRAPHICS (N)  NCE787

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Complete a set of residential working drawings, which may include first floor drawings, second floor drawings, foundation drawings, elevations, cross-sections, framing, electrical drawings, and structural detail.
- Demonstrate an ability to apply and integrate computer technology into the design process to achieve a desired result.

Required Courses (9 units)  Units
ARE-24  Architectural Drafting  3
ENE-21  Drafting  3
ENE-30  Computer-Aided Drafting  3

ART

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

VISUAL COMMUNICATIONS - ANIMATION (R)  CE774

This program prepares individuals to communicate information, entertainment and ideas through motion picture animation. This includes practical, hands-on instruction in how to plan and produce a variety of animated works seeing the project through from concept to practice including but not limited to writing, directing, and all aspects of animation production.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Demonstrate the ability to apply the principles of animation and story telling, in conceptual and visual form, to the creation of motion pictures that entertain audiences.
- Discuss the history of film animation and identify examples that consider a variety of the fundamental approaches to the art of animation.
- Assume the roles of writer, director, producer, animator, editor, storyboard artist, and production manager in the creation of animated works.
- Acquire skills that facilitate their ability to adapt themselves to the professional world, and have long-lasting and enriched careers.

Required Courses (17 units)  Units
ART-17  Beginning Drawing  3
ART-22  Basic Design  3
ART-26  Beginning Painting  3
ART-35  Illustration  3
ADM-64  Ethics and Legals of Digital Manipulation  1
ADM-65  Cross Platform File Management  1
Digital Media Electives (Choose from list below)  3

Digital Media Electives (3 units)
ART-36  Computer Art  3
ADM-1  Introduction to Applied Digital Media  3
ADM-71  Adobe Photoshop  3
ADM-76  QuarkXPress  3
ADM-77A  Adobe Illustrator  3

VISUAL COMMUNICATIONS - ILLUSTRATION (R)  CE825

This program prepares individuals to visually communicate information and ideas through personal expression that features figurative work. This includes practical, hands-on instruction in how to plan and produce a variety of illustrated works integrating communication goals with a visual message.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Acquire skills to fuse the creative thinking and technical communication skills with a personal vision.
- Discuss verbally and illustrate visually a basic understanding of commercial illustration techniques.
- Develop skills to visually solve problems and communicate their ideas in order to prepare an operational portfolio of their creative and successful works.
- Hone artistic skills and technical expertise in order to effectively convey complex ideas in a variety of media.

Required Courses (15 units)  Units
ART-20  Beginning Sculpture  3
or
ART-24  3D Design  3
ART-40  Figure Drawing  3
ART-41  Figure Painting  3
ART-44  Animation  3
Digital Media Electives (Choose from list below)  3

Digital Media Electives (3 units)
ART-36  Computer Art  3
ADM-1  Introduction to Applied Digital Media  3
ADM-71  Adobe Photoshop  3
ADM-76  QuarkXPress  3
ADM-77A  Adobe Illustrator  3
AUTOMOTIVE TECHNOLOGY

AUTOMOTIVE TECHNOLOGY - (R) AS511/CE511
AUTOMOTIVE BODY REPAIR
This program prepares individuals to apply technical knowledge and skills to repair, reconstruct and finish automobile bodies, fenders, and external features. This includes instruction in structure analysis, damage repair, non-structural analysis, mechanical and electrical components, plastics and adhesives, painting and refinishing techniques, damage analysis, and estimating.

Certificate Program

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

• Develop entry-level skills and knowledge for employment in the automotive industry. i.e. employment in an auto body repair facility, automotive paint shop.
• Acquire the skills and knowledge to work safely in the lab/shop environment.
• Demonstrate the ability to become part of the Inter-Industry Conference on Auto Collision Repair (I-CAR).

Required Courses (30 units) Units
AUB-50 Introduction to Automotive Body Technology 4
AUB-51 Intermediate Automotive Body Technology 4
AUB-52 Automotive Body Refinishing 4
AUB-53 Automotive Body Special Projects 4
AUB-54 Advanced Automotive Body and Frame 4
AUB-60 Automotive Trim and Upholstery, I 4
AUT-53A Automotive Trim and Upholstery, II 4
WEL-34 Metal Joining Processes 2

Associate in Science Degree
The Associate in Science Degree in Automotive Technology-Automotive Body Repair will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

AUTOMOTIVE TECHNOLOGY - ELECTRICAL (R) AS513/CE513
TRIM AND UPHOLSTERY (R)
This program prepares individuals to apply technical knowledge and skills to install springs, filling, padding, covering, and finishing (trim) on automobile related products.

Certificate Program

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

• Demonstrate their proficiency by the use of upholstery tools and techniques while removing, striping, reupholstering, and reinstalling an automotive seat or bench.
• Calculate the adequate amount of material and time required to reupholster an automotive seat or bench.

Required Courses (26 units) Units
AUB-50 Introduction to Automotive Body Technology 4
AUB-51 Intermediate Automotive Body Technology 4
AUB-52 Automotive Body Refinishing 4
AUB-53 Automotive Body Special Projects 4
AUB-60 Automotive Trim and Upholstery, I 4
AUB-61 Automotive Trim and Upholstery, II 4
WEL-34 Metal Joining Processes 2

Associate in Science Degree
The Associate in Science Degree in Automotive Technology-Electrical will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

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AUTOMOTIVE TECHNOLOGY - FORD SPECIALTY (R)  AS519

The program is a joint effort of Riverside Community College, Ford Motor Company, and area Ford, Lincoln-Mercury and Mazda dealers. Students will participate in 9 to 12 weeks of classroom instruction, alternated with an additional 9 weeks of full-time paid work experience at a sponsoring Ford, Lincoln-Mercury or Mazda dealership. The system allows students to become familiar with the dealership environment, while applying and reinforcing the on-campus learning.

Associate Degree Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Acquire the skills and knowledge to work safely in the lab/shop environment.
- Develop entry level skills and knowledge for employment in the automotive industry.
- Utilize common shop equipment to diagnose and repair automobiles.
- Demonstrate the ability to diagnose and repair automotive electrical systems using industry approved diagnostic equipment.
- Write repair estimates using Consumer Protection guidelines as prescribed by the BAR.
- Access service information, printed or electronic, and comprehend the diagnostic and repair procedures.
- Prepare student to pass the Bureau of Automotive Repair (BAR) smog licensing certification exam.
- Demonstrate the ability to pass the Automotive Service Excellence (ASE) national certification exams.
- Practically apply knowledge acquired in class to diagnose and repair automobiles.
- Prepare students to pass the Mobile Air Conditioning Society (MACS) certification exam.

Required Courses (44 units)  Units
AUT-71  Ford Electrical and Electronics Systems  4
AUT-72  Ford Applied Electronics  4
AUT-73  Ford Engine Performance  8
AUT-74  Ford Brakes, Steering and Suspension Systems  4
AUT-75  Ford Engine Repair  4
AUT-76  Ford Advanced Chassis Systems  4
AUT-78  Ford Manual Transmissions and Drive-Train Systems  4
AUT-79  Ford Automatic Transmissions and Transaxles  4
AUT-99  Automotive Technology Internship  2-2-2-2

(required to be taken four times)

Associate in Science Degree
The Associate in Science Degree in Automotive Technology-Ford Specialty will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

AUTOMOTIVE TECHNOLOGY - (R)  AS583

GENERAL MOTORS SPECIALTY

This program is a joint effort of Riverside Community College, General Motors Corporation and local GM dealers. Students will participate in 9 weeks of classroom instruction, alternated with an additional 9 weeks of full-time paid work experience at a sponsoring GM dealership. The system allows students to become familiar with the dealership environment, while applying and reinforcing the on-campus learning.

Associate Degree Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Acquire the skills and knowledge to work safely in the lab/shop environment.
- Develop entry level skills and knowledge for employment in the automotive industry.
- Utilize common shop equipment to diagnose and repair automobiles.
- Demonstrate the ability to diagnose and repair automotive electrical systems using industry approved diagnostic equipment.
- Write repair estimates using Consumer Protection guidelines as prescribed by the BAR.
- Access service information, printed or electronic, and comprehend the diagnostic and repair procedures.
- Prepare student to pass the Bureau of Automotive Repair (BAR) smog licensing certification exam.
- Demonstrate the ability to pass the Automotive Service Excellence (ASE) national certification exams.
- Practically apply knowledge acquired in class to diagnose and repair automobiles.
- Prepare students to pass the Mobile Air Conditioning Society (MACS) certification exam.

Required Courses (44 units)  Units
AUT-81  GM Electrical and Electronics Systems  4
AUT-82  GM Applied Electronics  4
AUT-83  GM Engine Performance  8
AUT-84  GM Brakes, Steering and Suspension Systems  4
AUT-85  GM Gasoline Engine and Repair  4
AUT-86  GM Advanced Chassis Systems  4
AUT-88  GM Manual Transmissions and Drive Trains  4
AUT-89  GM Automatic Transmissions and Transaxles  4
AUT-99  Automotive Technology Internship  2-2-2-2

(required to be taken four times)

Associate in Science Degree
The Associate in Science Degree in Automotive Technology-General Motors Specialty will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
AUTOMOTIVE TECHNOLOGY - MECHANICAL (R) AS515/CE515
This program prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of automobiles. This includes instruction in brake systems, engine repair, suspension and steering, automatic and manual transmissions, and drive trains.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Acquire the skills and knowledge to work safely in the lab/shop environment.
- Develop entry level skills and knowledge for employment in the automotive industry.
- Utilize common shop equipment to diagnose and repair automobiles.
- Demonstrate the ability to diagnose and repair automotive electrical systems using industry approved diagnostic equipment.
- Write repair estimates using Consumer Protection guidelines as prescribed by the BAR.
- Access service information, printed or electronic, and comprehend the diagnostic and repair procedures.
- Prepare student to pass the Bureau of Automotive Repair (BAR) smog licensing certification exam.
- Demonstrate the ability to pass the Automotive Service Excellence (ASE) national certification exams.
- Practically apply knowledge acquired in class to diagnose and repair automobiles.
- Prepare students to pass the Mobile Air Conditioning Society (MACS) certification exam.

Required Courses (28 units) Units
AUT-50 Automotive Principles 4
AUT-51A Internal Combustion Engines Rebuilding, Gas and Diesel-Upper End 4
AUT-51B Internal Combustion Engines Rebuilding, Gas and Diesel-Lower End 4
AUT-53A Automotive Chassis and Alignment 4
AUT-53B Automotive Brakes 4
AUT-55A Automotive Automatic Transmissions/Transaxles 4
AUT-55B Automotive Manual Drivetrain Systems 4

Certificate Program
Program Learning Outcomes
- Acquire the skills and knowledge to work safely in the lab/shop environment.
- Develop entry level skills and knowledge for employment in the automotive industry.
- Utilize common shop equipment to diagnose and repair automobiles.
- Demonstrate the ability to diagnose and repair automotive electrical systems using industry approved diagnostic equipment.
- Write repair estimates using Consumer Protection guidelines as prescribed by the BAR.
- Access service information, printed or electronic, and comprehend the diagnostic and repair procedures.
- Prepare student to pass the Bureau of Automotive Repair (BAR) smog licensing certification exam.
- Demonstrate the ability to pass the Automotive Service Excellence (ASE) national certification exams.
- Practically apply knowledge acquired in class to diagnose and repair automobiles.
- Prepare students to pass the Mobile Air Conditioning Society (MACS) certification exam.

Required Courses (28 units) Units
AUT-61 Introduction to Toyota Service 3
AUT-62 Toyota Fuel Systems I 3
AUT-63 Toyota Electrical Systems Mastery 3
AUT-64 Toyota Brakes and Suspension 3
AUT-65A Toyota Manual Transmissions and Transaxles 3
AUT-65B Toyota Automatic Transmissions and Transaxles 3
AUT-66 Toyota Climate Control Systems 3
AUT-67 Toyota Fuel Systems II 3
AUT-99 Automotive Technology Internship 2-2 (must be taken 2 times)

Associate in Science Degree
The Associate in Science Degree in Automotive Technology-Toyota will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

TOYOTA T-TEN (R) AS517/CE517
T-Ten offers accelerated options for career-minded individuals who want to quickly begin a dynamic, rewarding profession. Learn from top ASE-Certified instructors who are passionate about cars and eager to help you build a future. Master the latest diagnostic equipment in controlled, supervised learning environments. Make money while you learn on-the-job with a worksite education experience at a Toyota or Lexus dealership (where available).
BANKING AND FINANCE
The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree.

BANK OPERATIONS (R) CE625
This program prepares individuals to perform a wide variety of customer services in banks, insurance agencies, savings and loan companies, and related enterprises. This includes instruction in communications and public relation skills, business equipment operation, and technical skills applicable to the methods and operations of specific financial services.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Describe and analyze the roles of financial institutions in our economy and the services they provide.
• Compose business letters and memorandums common to the banking industry.
• Explain banking regulations and describe their impact on the banking industry.
• Research and analyze consumer decision parameters.

Required Courses (13 units) Units
BAN-51 Principles of Banking 3
CAT-1A Business Etiquette 1
CAT-30 Business English 3
CAT-31 Business Communications 3
MKT-41 Techniques of Selling 3

BUSINESS ADMINISTRATION
Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Use technology to analyze business decisions and to enhance business communications.
• Apply basic business and accounting calculations and analyses.
• Have an understanding of legal practices relating to business.
• Apply sound management practices.

Major Core Requirements:
Required Courses (18 units) Units
ACC-1A Principles of Accounting I 3
BUS-10 Introduction to Business 3
BUS-18A Business Law I 3
BUS-20 Business Mathematics 3
BUS-22 Management Communications 3
CIS-1A Introduction to Computer Information Systems 3
or
CIS/CAT-3 Computer Applications for Working Professionals 3

Major Concentration Requirements (12 units)
(In addition to Business Administration Major Core Requirements of 18 units noted above choose another 12 units selected from list below.)
 Accounting 12
 Banking And Finance 12
 General Business 12
 Human Resources 12
 Logistics Management 12
 Management 12
 Marketing 12
 Real Estate 12

NOTE: Students must complete all Business Administration Major Core Requirements and must complete Major Concentration Requirements (total of 30 units) in order to receive the certificate in the concentration area of their choice.

Associate in Science Degree
The Associate in Science Degree in Business Administration with a Major Concentration will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

ACCOUNTING CONCENTRATION (MNR) MAS523/MCE523
NAS523/NCE523 AS523/CE523
This program prepares individuals to practice the profession of accounting and to perform related business functions. This includes instruction in accounting principles and theory, financial accounting, managerial accounting, cost accounting, budget control, tax accounting, legal aspects of accounting, reporting procedures, statement analysis, planning and consulting, business information systems, accounting research methods, professional standards and ethics, and applications to specific for-profit, public, and non-profit organizations.

Program Learning Outcomes
In addition to outcomes for the Businesses Administration certificate, on successful completion of the Accounting concentration, students should be able to accomplish at least three of the following eight tasks:
• Explain the managerial applications of accounting reports and ratios to the business enterprise.
• Understand the major role financial reporting plays in fulfilling government’s duty to be publicly accountable in a democratic society.
• Apply cost accounting principles to manufacturing and service enterprises within a global society.
• Analyze and solve problems associated with the calculation and reporting of payroll.
• Analyze data and apply appropriate principles of federal income tax law.
• Analyze and solve accounting problems with application software.
• Prepare the detailed financial reports for governments and not-for-profit entities that stress the need for the public to understand and evaluate the financial activities and management of these organizations.
• Develop and apply principles of moral judgment and ethical behavior to business situations.

Business Administration Major Core Requirements 18
Required for this concentration 3
ACC-1B Principles of Accounting II 3
and
Select another 9 units from the following: 9
ACC-61 Cost Accounting 3
ACC-62 Payroll Accounting 3
ACC-63 Income Tax Accounting 3
ACC-65 Computerized Accounting 3
ACC-66 Non-Profit and Governmental Accounting 3
ACC-200 Work Experience 1-2-3-4
BUS/MAG-47 Applied Business and Management Ethics 3

Banking and Finance Concentration (R) AS631/CE631

Program Learning Outcomes
In addition to outcomes for the Businesses Administration certificate, on successful completion of the Banking and Finance concentration, students should be able to accomplish four of the following seven tasks:
• Describe and analyze the roles of financial institutions in our economy.
• Describe and analyze the services provided by banking institutions.
• Compose business letters and memorandums common to the banking industry.
• Explain banking regulations and describe their impact on the banking industry.

Business Administration Major Core Requirements 18
Select another 12 units from the following: 12
ACC-1B Principles of Accounting II 3
or
ACC-38 Managerial Accounting 3
BUS-18B Business Law II 3
BUS-40 International Business-Principles 3
BUS/MAG-47 Applied Business and Management Ethics 3
BUS-80 Principles of Logistics 3
BUS-200 Work Experience 1-2-3-4
MAG-51 Elements of Supervision 3
MAG-53 Human Relations 3
MKT-20 Principles of Marketing 3

Human Resources Concentration (NR) NAS623/NCE623

This program prepares individuals to manage the development of human capital in an organization, and to provide related services to individuals and groups. This includes instruction in personnel and organization policy, human resources dynamics and flows, labor relations, sex roles, civil rights, human resources law and regulations, motivation and compensation systems, work systems, career management, employee testing and assessment, recruitment and selection, managing employee and job training programs, and the management of human resources programs and operations.

Program Learning Outcomes
In addition to outcomes for the Business Administration certificate, on successful completion of the Human Resources Management concentration, students should be able to:
• Apply sound human resources management practices.
• Identify, describe and analyze the role of training and development, along with key influences that impact this function within human resources management.
• Describe and analyze the role of employee labor relations in human resources management, along with key influences impacting labor relations today.
• Understand the role that Human Resources Management plays in the successful operations of a business or organization.
LOGISTICS MANAGEMENT CONCENTRATION (N)  NAS580/NCE580
This program prepares students for entry into or career growth within the logistics industry, and ongoing study of the field. The focus is on integrated logistics, a necessity for management of effective and efficient supply chains. Logistics disciplines covered include warehousing, transportation, service contracting, purchasing, global logistics, etc.

Program Learning Outcomes
In addition to outcomes for the Businesses Administration concentration, students should be able to:

- Analyze and explain various human resources laws and policies required for a professional in the field to know and understand.
- Identify 3rd party logistics provider and client needs in negotiations, bidding and contracts, as well as legal and regulatory constraints to integrated logistics;
- Describe roles and value added by global logistics intermediaries.
- Understand how logistics functions can interact to efficiently use total personnel, facilities and equipment;
- Contribute knowledge needed by multidisciplinary teams to effectively integrate and exceed end user (customer) expectations;
- Compare roles and objectives of the logistics disciplines;
- Analyze, prepare, file and process claims when unavoidable freight disputes arise;
- Explain how the overall flow of goods, services and information can be optimized to satisfy customer and business goals;
- Research and analyze consumer decision parameters.
- Construct and implement a promotional program.
- Develop and implement marketing strategies.
- Develop a comprehensive marketing plan.
- Construct and implement a promotional program.
- Develop and implement marketing strategies.
- Describe roles and value added by global logistics intermediaries.

Business Administration Major Core Requirements 18
Required for this concentration 3

MAG-56 Human Resources Management 3
and
Select another 9 units from the following: 9
MAG-51 Elements of Supervision 3
MAG-52 Employee Training and Development 3
MAG-54 Employee Labor Relations 3
MAG/BUS-70 Introduction to Organizational Behavior 3

MANAGEMENT CONCENTRATION (MNR)  MAS521/MCE521
This program generally prepares individuals to plan, organize, direct, and control the functions and processes of a firm or organization with an emphasis on people as the most important asset of a business. This program will prepare individuals seeking management positions to be better candidates for promotion, and those already in management positions to improve their management skills and effectiveness. This includes instruction in management practice and theory, human resources management and behavior, interpersonal communications in a business setting, marketing management, and business decision making.

Program Learning Outcomes
In addition to outcomes for the Businesses Administration certificate, on successful completion of the Management concentration, students should be able to:

- Develop and implement marketing strategies.
- Develop a comprehensive marketing plan.
- Construct and implement a promotional program.
- Research and analyze consumer decision parameters.

Business Administration Major Core Requirements 18
Required for this concentration 3

MAG-44 Principles of Management 3
and
Select another 9 units from the following: 9
MAG-46 Contemporary Quality Systems Management 3
MAG/BUS-47 Applied Business and Management Ethics 3
MAG-53 Human Relations 3
MAG-56 Human Resources Management 3
MAG-60 Introduction to Hospitality Management 3
MAG-200 Work Experience 1-2-3-4
BUS-48 International Management 3

MARKETING CONCENTRATION (MNR)  MAS525/MCE525
This program prepares individuals to undertake and manage the process of developing both consumer and business markets, and communicating product benefits to targeted market segments. This includes instruction in buyer behavior and dynamics, sales promotions, building customer relationships, effective pricing, marketing campaigns, principles of marketing research, strategic market planning, advertising methods, customer service, retailing, and applications for specific products and markets.

Program Learning Outcomes
In addition to outcomes for the Businesses Administration certificate, on successful completion of the Marketing concentration, students should be able to:

- Develop and implement marketing strategies.
- Develop a comprehensive marketing plan.
- Construct and implement a promotional program.
- Research and analyze consumer decision parameters.
Business Administration Major Core Requirements 18
Required for this concentration 3
MKT-20 Principles of Marketing 3
and
Select another 9 units from the following: 9
MKT-40 Advertising 3
MKT-41 Techniques of Selling 3
MKT-42 Retail Management 3
MKT-200 Work Experience 1-2-3-4
BUS-43 International Business-Marketing 3
BUS-51 Principles of E-Commerce 3
BUS-80 Principles of Logistics 3

REAL ESTATE CONCENTRATION (MNR) MAS527/MCE527 NAS527/NCE527 AS527/CE527
This program prepares individuals to develop, buy, sell, appraise, and manage real property. This includes instruction in land use development policy, real estate law, real estate marketing procedures, agency management, brokerage, property inspection and appraisal, real estate investing, leased and rental properties, commercial real estate, and property management.

Program Learning Outcomes
In addition to outcomes for the Businesses Administration certificate, on successful completion of the Real Estate concentration, the student should be able to do the following:
- Demonstrate the ability to analyze ethical and procedural problems that arise in residential real estate sales transactions from the prospective of buyers, sellers, brokers, appraisers, lenders, and escrow officers.
- Discuss and evaluate real estate marketing and sales techniques.
- Discuss and calculate real estate taxes and solve basic real estate mathematics problems.
- Explain and evaluate methods of financing real estate purchases and securing loans with real estate.
- Demonstrate the ability to analyze the factors that affect real estate values.
- Discuss and evaluate real estate markets and trends.

Business Administration Major Core Requirements 18
Select another 12 units from the following: 12
RLE-80 Real Estate Principles 3
RLE-81 Real Estate Practices 3
RLE-82 Legal Aspects of Real Estate 3
RLE-83 Real Estate Finance 3
RLE-84 Real Estate Appraisal 3
RLE-85 Real Estate Economics 3
RLE-86 Escrow Procedures I 3
RLE-200 Work Experience 1-2-3-4

INSURANCE (R) AS629/CE629
This program prepares individuals to manage risk in both personal and organizational settings to provide insurance and risk-aversion services to businesses, individuals, and other organizations. This includes instruction in casualty insurance and general liability, property insurance, employee benefits, social and health insurance, loss adjustment, underwriting, risk theory, and pension planning.

Certificate Program
Required Courses (30 units) Units
ACC-1A Principles of Accounting, I 3
BUS-10 Introduction to Business 3
BUS-18B Business Law, II 3
BUS-22 Management Communications 3
BUS-61 Introduction to Insurance 1
BUS-62 Personal Insurance Principles 3
BUS-63 Principles of Property and Liability Insurance 3
BUS-64 Commercial Insurance Principles 3
BUS-65 Insurance Codes and Ethics 1
BUS-66 Insurance Internship 1
CAT/CIS-98A Introduction to Excel 1.5
CAT/CIS-98B Advanced Excel 1.5
CIS-1A Introduction to Computer Information Systems 3
or
CAT/CIS-3 Computer Applications for Working Professionals 3

ASSOCIATE IN SCIENCE DEGREE
The Associate in Science Degree in Insurance will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

INTERNATIONAL BUSINESS (R) CE627
This program prepares individuals to manage international business and/or business operations. This includes instruction in the principles and processes of international business policies, business environments, foreign currency issues, foreign operations and management, foreign direct investment as well as other modes of entry, and applications for doing business in specific countries and markets.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Explain the key elements of international business.
- Analyze the essential factors that determine the success of each element of international business.
- Explain the inter-relationship of each elements of international business that are required for a successful international business operation.
- Develop the framework of an international business plan, incorporating understanding of general business concepts, international marketing mix, international cultures, international economics, and international politics.
Required Courses (15 units) Units
BUS-10 Introduction to Business 3
BUS-40 International Business-Principles 3
BUS-43 International Business-Marketing 3
Group A Electives (Choose from list) 3
Group B Electives (Choose from list) 3

Group A Electives
BUS-46 International Business-Intro to Import/Exporting 3
BUS-48 International Management 3
BUS-90 International Logistics 3
COM-12 Intercultural Communication 3
ECO/POL-6 Introduction to Political Economy 3
ECO-7 Principles of Macroeconomics 3

Group B Electives
CHI-11 Chinese Culture and Civilization 3
FRE-11 French Culture and Civilization 3
GER-11 German Culture and Civilization 3
ITA-11 Italian Culture and Civilization 3
JPN-11 Japanese Culture and Civilization 3
KOR-11 Korean Culture and Civilization 3
RUS-11 Russian Culture and Civilization 3
SPA-11 Spanish Culture and Civilization 3

OPERATIONS AND PRODUCTION MANAGEMENT (R) CE833
This program prepares individuals to manage and direct the physical and/or technical functions of a firm or organization, particularly those relating to development, productions, and manufacturing. This includes instruction in principles of general management, manufacturing and production systems, plant management, equipment maintenance management, production control, industrial labor regulations and skilled trades supervision, strategic manufacturing policy, systems analysis, productivity analysis and cost control, and materials planning.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Analyze organizational effectiveness and establish productivity ratios.
- Evaluate a business environment and select an appropriate business improvement intervention to increase business effectiveness.
- Apply appropriate diagnostic tools to determine current business effectiveness and establish a plan for improvement.
- Analyze current business processes and develop a statistically valid graphical representation of performance and be able to predict future performance.
- Effectively select process improvement tools to analyze current business practices, determine problem areas and establish a plan to improve business performance.

Required Courses (15 units) Units
MAG-70 Introduction to Organization Development 3
BUS/MAG-71 Introduction to Productivity Management 3
BUS/MAG-72 Introduction to Quantitative Methods for Business 3
Electives (Choose from list below) 6

Electives (6 units)
BUS-20 Business Math 3
BUS/MAG-47 Applied Business and Management Ethics 3
BUS-80 Principles of Logistics 3
MAG-44 Principles of Management 3
MAG-51 Elements of Supervision 3

COMMERCIAL MUSIC NAA645/NCE645 PERFORMANCE (N)
The Commercial Music: Performance certificate is a program designed to provide students with the knowledge and skills necessary for studio recording and live performance in the commercial music industry. Courses allow students to become proficient on an instrument or voice, gain experience as an ensemble member, study the fundamentals of music including sight-reading and piano skills, become familiar with music technology and record in a state-of-the-art recording studio. Classes are taught utilizing industry-standard software and equipment in state-of-the-art facilities. The program prepares students for a wide variety of careers as instrumentalists and vocalists in studio or live performance settings.

Associate in Arts Degree
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Understand and employ fundamentals of music and musicianship such as melody, harmony, chord structure, rhythm, key signatures, phrasing, sight-singing and scalar patterns.
- Identify and discuss the origins of commercial music and explain how it relates to society today.
- Create and manipulate vocal or instrumental technique in a studio and live performance setting such as fingerings, dynamics, diction, breathing, rhythm, phrasing and vowel or finger placement.
- Memorize and recall standard commercial music literature in a live ensemble performance.

Required Courses (32 units) Units
MUC-1 Performance Techniques for Studio Recording (take 3 times) 2-2-2
MUC-7 Introduction To Music Technology 3
MUS-3 Fundamentals of Music 4
MUS-32 Class Piano 1
MUS-38 Beginning Applied Music Training (take 3 times) 2-2-2
MUS-65 Basic Musicianship 2
Electives (choose from the lists below) 10
Select 6 units from the following:

- **MUC-3** Introduction to Pro Tools: MIDI and Audio Production 3
- **MUS-19** Music Appreciation 3
- **MUS-23** History of Rock and Roll 3
- **MUS-93** The Business of Music 3

Select 4 units from the following:

- **MUC-10** Norco Choir 2
- **MUC-11** Studio Arts Ensemble 2

**Associate in Arts Degree**
The Associate in Arts Degree in Commercial Music: Performance will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

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**COMMUNITY INTERPRETATION**

**COMMUNITY INTERPRETATION (M) MAS557/MCE557**
The Community Interpretation program provides students with a foundation in the skills of Spanish-English translation and interpretation. Students train intensively in the three modes of interpreting: simultaneous, consecutive, and sight translation. Instruction covers general and literary translation and skills are applied in the contexts of medicine, law, and business. The program prepares individuals seeking interpreter certification and improves marketability for bilinguals who use Spanish and English in the workplace.

**Certificate Program**

**Required Courses (18 units)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMI-61</td>
<td>3</td>
</tr>
<tr>
<td>CMI-71</td>
<td>6</td>
</tr>
<tr>
<td>CMI-81</td>
<td>6</td>
</tr>
<tr>
<td>CMI-91</td>
<td>3</td>
</tr>
</tbody>
</table>

**Associate in Science Degree**
The Associate in Science Degree in Community Interpretation will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

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**COMPUTER APPLICATIONS AND OFFICE TECHNOLOGY**

This program prepares individuals to support business operations by using computer equipment to enter, process, and retrieve data for a wide variety of administrative purposes. This includes instruction in using basic business software and hardware; business computer networking; principles of desktop publishing; preparing mass mailings; compiling and editing spreadsheets; list maintenance; preparing tables and graphs; receipt control; and preparing business performance reports.

**EXECUTIVE OFFICE MANAGEMENT (R) AS639/CE639**

Prepares individuals to support business operations by using computer equipment to enter, process and retrieve data for a wide variety of administrative purposes. This includes instruction in using basic business software and hardware; business computer networking; principles of desktop publishing; preparing mass mailings; compiling and editing spreadsheets; list maintenance; preparing tables and graphs; receipt control; and preparing business performance reports.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Prepare, proofread, and process correspondence (including labels and envelopes), memorandums, bills, statements, receipts, and copy information from one record to another.
- Outline and explain administrative procedures and policies to supervisory workers.
- Coordinate and direct records and budget preparation to aid executives.
- Schedule and document appointments, meetings, and travel arrangements.
- Index, code, sort, file, retrieve and maintain office/corporation documents, records, and reports.
- Compile and create simple statistical reports.
- Create properly formatted and grammatically correct business documents.

**Required Courses (34 units)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT-1A</td>
<td>1</td>
</tr>
<tr>
<td>CAT/CIS-3</td>
<td>3</td>
</tr>
<tr>
<td>CAT-30</td>
<td>3</td>
</tr>
<tr>
<td>CAT-31</td>
<td>3</td>
</tr>
<tr>
<td>CAT-40</td>
<td>3</td>
</tr>
<tr>
<td>CAT-51</td>
<td>3</td>
</tr>
<tr>
<td>CAT-55</td>
<td>3</td>
</tr>
<tr>
<td>CAT-61</td>
<td>3</td>
</tr>
<tr>
<td>CAT-62</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-80</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-84</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-90</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-98A</td>
<td>1.5</td>
</tr>
<tr>
<td>CAT/CIS-98B</td>
<td>1.5</td>
</tr>
</tbody>
</table>
**Associate in Science Degree**

The Associate in Science Degree in Executive Office Management will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

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The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

**Administrative Office Professional (NR)** NCE637

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Compose, key, and properly format various types of business correspondence and reports using a computer terminal.
- Compose, key, and properly format spreadsheets, databases, and presentations using a computer terminal.
- Index, code, sort, and file correspondence and other business records.
- Compile and create simple statistical reports.
- Schedule appointments, meetings, and travel arrangements.

**Required Courses (13.5 units) Units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT/CIS-3</td>
<td>Computer Applications for Working Professionals</td>
<td>3</td>
</tr>
<tr>
<td>CAT-31</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>CAT-61</td>
<td>Professional Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>CAT-62</td>
<td>Records Management</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-98A</td>
<td>Introduction to Excel</td>
<td>1.5</td>
</tr>
</tbody>
</table>

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**Executive Office Professional (R)** CE635

This certificate provides students with knowledge and skills to perform advanced administrative clerical duties related to assisting executives by coordinating office services and systems needed to run a company efficiently and smoothly.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Prepare memorandums outlining and explaining administrative procedures and policies to supervisory workers.
- Coordinate and direct records and budget preparation to aid executives.
- Schedule appointments, plan meetings and conferences.
- Create, file, retrieve, and maintain office/corporation documents, records, and reports.
- Schedule appointments, meetings, and travel arrangements.
- Makes photocopies of correspondence, document, and other printed matter.

**Required Courses (13.5 units) Units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT-40</td>
<td>Administrative Office Management</td>
<td>3</td>
</tr>
<tr>
<td>CAT/ACC-55</td>
<td>Applied Accounting/Bookkeeping</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-80</td>
<td>Word Processing: Microsoft Word for Windows</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-90</td>
<td>Microsoft Outlook</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-98B</td>
<td>Advanced Excel</td>
<td>1.5</td>
</tr>
</tbody>
</table>

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**Legal Administrative Professional (R)** CE611

Completion of this certificate provides students with the ability to prepare legal papers and correspondence, such as summonses, complaints, motions, and subpoenas. Students should be able to apply legal terminology and procedure to documents and legal research.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Compose, key, and properly format various types of business and legal correspondence and reports using computer software.
- Prepares and processes legal documents and papers, such as summonses, subpoenas, complaints, appeals, motions, and pretrial agreements. Mails, faxes, or arranges for delivery of legal correspondence to clients, witnesses, and court officials.
- Reviews legal publications and performs database searches to identify laws and court decisions relevant to pending cases.
- Completes various forms, such as accident reports, trial and courtroom requests, and applications for clients.
- Drafts and types office memos.
- Receives and places telephone calls.
- Schedules and makes appointments.
- Makes photocopies of correspondence, document, and other printed matter.

**Required Courses (12 units) Units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT-36A</td>
<td>Legal Office Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>CAT-36B</td>
<td>Legal Office Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>CAT-37</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>CAT-38</td>
<td>Legal Word Processing and Forms Productions</td>
<td>3</td>
</tr>
</tbody>
</table>
**OFFICE ASSISTANT (NR)**  
**NCE633**  
**CE633**

This certificate provides students with the skills to perform routine clerical duties requiring limited knowledge of office systems or procedures.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Compose, key, and enter data into computer using keyboard.
- Prepare correspondence (including labels and envelopes), bills, statements, receipts, and copy information from one record to another.
- Proofread records or forms.
- Create properly formatted and grammatically correct business documents.
- Answer telephones, and convey messages.
- Demonstrate familiarity with fundamental aspects of computer technology.

**Required Courses (10 units)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT-1A Business Etiquette</td>
<td>1</td>
</tr>
<tr>
<td>CAT-30 Business English</td>
<td>3</td>
</tr>
<tr>
<td>CAT-51 Intermediate Typewriting/Document Formatting</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-93 Computers for Beginners</td>
<td>3</td>
</tr>
</tbody>
</table>

**OFFICE FAST-TRACK (NR)**  
**NCE812**  
**CE812**

This certificate prepares individuals to provide professional, entry-level skills, using basic business software, vocabulary and grammar fundamentals, and standards of behavior and etiquette in the workplace.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Apply business standards of acceptable behavior, communication, and etiquette to project a professional image.
- Apply grammar fundamentals, including proper sentence structure, punctuation, vocabulary, and spelling to all written documents.
- Apply introductory character, paragraph, and document formatting techniques to business documents using word processing software.
- Develop basic alpha/numeric keyboarding/typing typing skills at a minimum rate of 20 gross words a minute.
- Develop, create, and edit electronic presentations using industry-standard software.
- Apply the fundamental organizational concepts of digital filing to manage programs and files.
- Apply fundamental concepts of Internet browser software to navigate, search, retrieve, and send/receive information.
- Design and format, modify, query, and manipulate spreadsheets, charts and graphics, and lists (databases) using spreadsheet software.

**Required Courses (12 units)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT-1A Business Etiquette</td>
<td>1</td>
</tr>
<tr>
<td>CAT-30A Business English 30A</td>
<td>1</td>
</tr>
<tr>
<td>CAT/CIS-34A Introduction to Microsoft Word for Windows</td>
<td>1.5</td>
</tr>
<tr>
<td>CAT-53 Keyboard/Typing Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>CAT/CIS-65 Introduction to Microsoft PowerPoint</td>
<td>1.5</td>
</tr>
<tr>
<td>CAT/CIS-93 Computers for Beginners</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-95A Introduction to the Internet</td>
<td>1.5</td>
</tr>
<tr>
<td>CAT/CIS-98A Introduction to Excel</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**VIRTUAL ASSISTANT (R)**  
**CE677**

This program prepares individuals to support business operations through on-line processes such as developing a business plan for an on-line web presence, creating a virtual office space on-line and marketing this office space.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Develop and implement a sole-proprietorship virtual office.
- Develop and use a business plan for a virtual office.
- Create and use a marketing plan for a virtual office.

**Required Courses (16.5 units)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC/CAT-55 Applied Accounting/Bookkeeping</td>
<td>3</td>
</tr>
<tr>
<td>BUS-30 Entrepreneurship and Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>CAT-30 Business English</td>
<td>3</td>
</tr>
<tr>
<td>CAT-57 Creating and Managing the Virtual Office</td>
<td>3</td>
</tr>
<tr>
<td>CAT/BUS-58 Marketing the Virtual Office</td>
<td>3</td>
</tr>
<tr>
<td>CAT/CIS-98A Introduction to Excel</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Core courses will be offered online. Most electives will be offered in online or hybrid formats.

It is recommended that individuals interested in this field acquire office experience before deciding to work on their own as a virtual assistant.

**COMPUTER APPLICATIONS (MNR)**  
**MAS726/MCE726**  
**NAS726/NCE726**  
**AS726/CE726**

This program prepares individuals to perform basic data and text entry using standard and customized software products. This includes instruction in keyboarding skills, personal computer and work station operation, reading draft texts and raw data forms, and various interactive software programs used for tasks such as word processing, spreadsheets, databases, and others.
Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Describe and use operating system software.
- Describe and use Word processing software.
- Write structured programs using C++ or Java.
- Describe and use graphics software to manipulate digital images.
- Describe and use database software to construct 3NF databases.
- Construct a visually appealing web site including database structures within the design.
- Design and use spreadsheets that have embedded equations/formulas utilizing different data types.

Required Courses (31.5 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-1A</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS-1B</td>
<td>Advanced Concepts in Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-5</td>
<td>Fundamentals of Programming Logic using C++</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>MS Access Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-28A</td>
<td>Introduction to Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-21</td>
<td>Introduction to Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS-95A</td>
<td>Introduction to the Internet</td>
<td>1.5</td>
</tr>
<tr>
<td>CAT-31</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>Management Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS-22</td>
<td>Management Communications</td>
<td>3</td>
</tr>
<tr>
<td>Electives 1</td>
<td>(Choose from list below)</td>
<td>7.5</td>
</tr>
<tr>
<td>Electives 2</td>
<td>(Choose from list below)</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Electives 1 (7.5 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-2</td>
<td>Fundamentals of Systems Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CIS-23</td>
<td>Software and End User Support</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-25</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-61</td>
<td>Introduction to Databases</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-80</td>
<td>Word Processing: Microsoft Word for Windows</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-84</td>
<td>Word Processing: WordPerfect for Windows</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-98B</td>
<td>Advanced Excel</td>
<td>1.5</td>
</tr>
<tr>
<td>GIS-1</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
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</tbody>
</table>

Electives 2 (7.5 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-12</td>
<td>PHP Dynamic Web Site Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-14A</td>
<td>Web Programming: JavaScript</td>
<td>3</td>
</tr>
<tr>
<td>CIS-14B</td>
<td>Web Programming: Active Server Pages</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-54A</td>
<td>Introduction to Flash</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-56A</td>
<td>Designing Web Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CIS-72A</td>
<td>Introduction to Web Page Creation</td>
<td>1.5</td>
</tr>
<tr>
<td>CIS-72B</td>
<td>Intermediate Web Page Creation using Cascading Style Sheets (CSS)</td>
<td>1.5</td>
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<tr>
<td>CIS/CAT-76A</td>
<td>Introduction to Microsoft Expression Web</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-76B</td>
<td>Introduction to DreamWeaver</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-78A</td>
<td>Introduction to Adobe PhotoShop</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-79</td>
<td>Introduction to Adobe Illustrator</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-81</td>
<td>Introduction to Desktop Publishing using Adobe InDesign</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Computer Information Systems, Computer Applications will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

COMPUTER PROGRAMMING (MNR) MAS728/MCE728
NAS728/NC728
AS728/CE728

This program focuses on the general writing and implementation of generic and customized programs to drive operating systems that generally prepare individuals to apply the methods and procedures of software design and programming to software installation and maintenance. This includes instruction in software design; low and high level languages and program writing; program customization and linking; prototype testing; troubleshooting; and related aspects of operating systems and networks.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Design structured programs using C++, Javascript, or Java.
- Design and use object oriented programs in one of these languages C++, Java or PHP.
- Design and use advanced programming techniques in C++ or Java.

Required Courses (25.5 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-1A</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-2</td>
<td>Fundamentals of Systems Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-5</td>
<td>Fundamentals of Programming Logic using C++</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-21</td>
<td>Introduction to Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS-72A</td>
<td>Introduction to Web Page Creation</td>
<td>1.5</td>
</tr>
<tr>
<td>Electives From Group 1</td>
<td>From Group 1</td>
<td>6</td>
</tr>
<tr>
<td>Electives From Group 2</td>
<td>From Group 2</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives - Group 1 (6 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-12</td>
<td>PHP Dynamic Web Site Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-14A</td>
<td>Web Programming: JavaScript</td>
<td>3</td>
</tr>
<tr>
<td>CIS-14B</td>
<td>Web Programming: Active Server Pages</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-17A</td>
<td>C++ Programming: Objects</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-18A</td>
<td>Java Programming: Objects</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives - Group 2 (6 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-11</td>
<td>Computer Programming using Assembler</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-17B</td>
<td>C++ Programming: Advanced Objects</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-17C</td>
<td>C++ Programming: Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-18B</td>
<td>Java Programming: Advanced Objects</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-18C</td>
<td>Java Programming: Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Computer Information Systems, Computer Programming will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
Identify and differentiate the game development project to:

Upon successful completion of this program, students should be able to:

- Design and create images used for printed media in advertising;
- Understand and apply the techniques used to create and modify artwork using a vector-based program or bit-mapped program;
- Integrate text and graphics in a document layout program to create professional-quality, full-color documents;
- Format and combine text, numerical data, photographs, charts, and other visual graphic elements to produce publication-ready material;
- Demonstrate the knowledge of workflow process in the creation of printed media in advertising;
- Demonstrate the knowledge of design principles in advertising and layout design, type, and lettering applications;
- Incorporate two dimensional design visual media of printed media in advertising.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.
- Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.

Required Courses (36 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/GAM-35</td>
<td>Introduction to Simulation and Game Development</td>
<td>3</td>
</tr>
<tr>
<td>CIS/GAM-38A</td>
<td>Simulation and Gaming/3D Modeling</td>
<td>4</td>
</tr>
<tr>
<td>CIS/GAM-38B</td>
<td>Simulation and Gaming/3D Animation</td>
<td>4</td>
</tr>
<tr>
<td>CIS/GAM-38C</td>
<td>Simulation and Gaming/3D Dynamics and Rendering</td>
<td>4</td>
</tr>
<tr>
<td>CIS/CAT-78A</td>
<td>Introduction to Adobe Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>ART-17</td>
<td>Beginning Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART-18</td>
<td>Intermediate Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART-22</td>
<td>Basic Design</td>
<td>3</td>
</tr>
<tr>
<td>ART-40</td>
<td>Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives (6 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/GAM-36</td>
<td>Introduction to Computer Game Design</td>
<td>3</td>
</tr>
<tr>
<td>CIS/GAM-37</td>
<td>Beginning Level Design for Computer Games</td>
<td>3</td>
</tr>
<tr>
<td>CIS/GAM-39</td>
<td>Current Techniques in Game Art</td>
<td>4</td>
</tr>
<tr>
<td>CIS/CAT-54A</td>
<td>Introduction to Flash</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-79</td>
<td>Introduction to Adobe Illustrator</td>
<td>3</td>
</tr>
<tr>
<td>ART-23</td>
<td>Design and Color</td>
<td>3</td>
</tr>
<tr>
<td>ART-36</td>
<td>Computer Art</td>
<td>3</td>
</tr>
<tr>
<td>ART-44</td>
<td>Animation</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Science Degree
The Associate in Science Degree in Computer Information Systems, Desktop Publishing will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

C++ Programming (NR) NCE803

Riverside Community College District • Riverside City College 2011-2012

Create structured and Object code in C++ for business, gaming, mathematical and scientific problems by identifying the information input requirements, synthesizing the algorithmic steps needed to transform the data input into the required output information, and organizing the output format to facilitate user communication.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Create structured and Object code in C++ for business, gaming, mathematical and scientific problems by identifying the information input requirements, synthesizing the algorithmic steps needed to transform the data input into the required output information, and organizing the output format to facilitate user communication.
- Using C++ libraries create and run C++ programs that incorporate the following:
Multiprocessors
Multimedia
ODBC
SQL
Establish client/server relationship

- OR Using C++ libraries create and run C++ programs that incorporate data structures.

Required Courses (12 units) Units
CIS/CSC-5 Fundamentals of Programming Logic using C++ 3
CIS/CSC-17A C++ Programming: Objects 3
CIS/CSC-17B C++ Programming: Advanced Objects 3
CIS/CSC-17C C++ Programming: Data Structures 3

CISCO NETWORKING (R) CE810

Certificate Program

Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Demonstrate an understanding of routing fundamentals, subnets and IP addressing schemes.
- Explain the command and steps required to configure router host tables, and interfaces within the RIP, EIGRP and OSPF protocols.
- Demonstrate an understanding of switching concepts and LAN design to include the use of Virtual LANs with LAN trunking configured by the Spanning Tree Protocol.
- Define and demonstrate the concepts of Cisco’s implementation of ISDN networking including WAN link options.

Required Courses (16 units) Units
CIS-26A Cisco Networking Academy 1A 4
CIS-26B Cisco Networking Academy 1B 4
CIS-26C Cisco Networking Academy 1C 4
CIS-26D Cisco Networking Academy 1D 4

E-COMMERCE (R) CE807

The e-commerce certificate pattern readies the completer with the skills to design, market and implement an on-line business.

Certificate Program

Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Design, develop and implement a sound business plan that readily translates into an on-line business.
- Devise the web-presence to enhance the business as a well laid out web site using eye catching graphics including animation as necessary.
- Develop and implement sound business practices for the website addressing the technological, social, and ethical issues of an on-line business.

Required Courses (12 units) Units
CIS/CSC-5 Fundamentals of Programming Logic using C++ 3
CIS/CSC-18A Java Programming: Objects 3
CIS/CSC-18B Java Programming: Advanced Objects 3
CIS/CSC-18C Java Programming: Data Structures 3

Electives - Group 1 (3 units) Units
ADM-71 Adobe Photoshop 3
CAT/CIS-56A Designing Web Graphics 3
CAT/CIS-78A Introduction to Adobe Photoshop 3

Electives - Group 2 (3 units) Units
ADM-74 Dreamweaver for Graphic Designers 3
CAT/CIS-76A Introduction to Microsoft Expression Web 3
or
CAT/CIS-76B Introduction to Dreamweaver 3

JAVA PROGRAMMING (NR) NCE809 CE809

Completion of this certificate provides the student with skills a new programmer would need to obtain employment programming Java applications.

Certificate Program

Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Create structured and Object code in Java for business, gaming, mathematical and scientific problems by identifying the information input requirements, synthesizing the algorithmic steps needed to transform the data input into the required output information, and organizing the output format to facilitate user communication.
- Using Java libraries create and run Java programs that incorporate the following:
  - Multiprocessors
  - Multimedia
  - JDBC
  - SQL
  - Establish client/server relationship.
- Using Java libraries create and run Java programs that incorporate data structures.

Required Courses (12 units) Units
CIS/CSC-5 Fundamentals of Programming Logic using C++ 3
CIS/CSC-18A Java Programming: Objects 3
CIS/CSC-18B Java Programming: Advanced Objects 3
CIS/CSC-18C Java Programming: Data Structures 3
RESEARCH DATABASE MANAGEMENT TECHNOLOGY (R)  CE816

Provides the skills necessary to present a view of data as a collection of rows and columns and manage these relational databases based on a variety of data models.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Develop a transaction mechanism, that would guarantee the ACID properties, in order to ensure data integrity, despite concurrent user accesses and faults.
- Present the data to the user as a set of relations.
- Provide relational operators to manipulate the data in tabular form.
- Use a modeling language to define the schema of each database hosted in the DBMS, according to the DBMS data model.
- Optimize data structures (fields, records, files and objects) to deal with very large amounts of data stored on a permanent data storage device.
- Create a database query language and report writer to allow users to interactively interrogate the database, analyze its data and update it according to the users privileges on data.
- Develop a transaction mechanism, that would guarantee the ACID properties, in order to ensure data integrity, despite concurrent user accesses and faults.

Required Courses (15 units)  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-28A</td>
<td>MS Access Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-61</td>
<td>Introduction to Database Theory</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-62</td>
<td>Microsoft Access DBMS: Comprehensive</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-63</td>
<td>Introduction to Structured Query Language (SQL)</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CAT-91</td>
<td>Microsoft Project</td>
<td>3</td>
</tr>
</tbody>
</table>

SYSTEMS DEVELOPMENT (NR)  NCE806  CE806

The Systems Development mini certificate gives students the skills necessary to analyze, design, and develop an information system in any business environment that is involved in keeping data about various entities up-to-date and/or processing daily transactions.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Demonstrate a transaction mechanism, that would guarantee the ACID properties, in order to ensure data integrity, despite concurrent user accesses and faults.
- Design relational database tables, queries, forms, reports, macros, validation rules in MS Access.
- Design how to document a database and how MS Access can interface with the Web, demonstrate error trapping, database security, and automating ActiveX Controls with VBA.
- Use JavaScript to enhance a web site’s interactivity using the DOM.
- Use Photoshop to create and edit images for use on the Web, including photographs, logos, navigation buttons, background images, image maps, and web page design mockups (tracing images).
- Use PHP to create data driven web page content, form validation and processing, and database manipulation.
- Use XSLT to create and edit XML documents and XML transformations.
- Use a variety of Dreamweaver features to design, create, test, upload and manage an accessible and standards compliant interactive web site that includes the use of templates, as appropriate.

Required Courses (13.5 units)  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-14A</td>
<td>Web Programming: JavaScript</td>
<td>3</td>
</tr>
<tr>
<td>CIS-72B</td>
<td>Intermediate Web Page Creation</td>
<td>1.5</td>
</tr>
<tr>
<td>CIS/CAT-76B</td>
<td>Introduction to DreamWeaver</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Electives (4.5 units)

CIS/CSC-12 PHP Dynamic Web Site Programming 3
CIS-14B Web Programming: Active Server Pages 3
CIS/CAT-54A Introduction to Flash 3
CIS/CAT-56A Designing Web Graphics 3
CIS-72C Introduction to XML 1.5

CONSTRUCTION TECHNOLOGY

This program prepares individuals with the technical knowledge and skills in the area of building construction. This includes instruction enabling students to better understand and interpret construction codes, as well as clarifying processes and materials used in construction; and the basic physical laws which are used to formulate the prescriptive code regulations. Management and inspection skills are also examined.

CONSTRUCTION TECHNOLOGY (N) NAS532/NCE532

Certificate Program

Program Learning Outcomes

Graduates will be able to identify and describe the materials and methods currently being employed in today’s construction industry. Graduates will be able to interpret the major construction codes currently adopted by the state, county, and city which regulate construction installations. Graduates will be able to evaluate the basic concepts of engineering and soil design as they relate to structures.

Required Courses (30 units) Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-63A</td>
<td>Uniform Building Codes and Ordinances</td>
<td>3</td>
</tr>
<tr>
<td>CON-64</td>
<td>Office Procedure and Field Inspection</td>
<td>3</td>
</tr>
<tr>
<td>CON-65</td>
<td>Plumbing Code</td>
<td>3</td>
</tr>
<tr>
<td>CON-66</td>
<td>National Electrical Code</td>
<td>3</td>
</tr>
<tr>
<td>CON-67</td>
<td>Mechanical Codes</td>
<td>3</td>
</tr>
<tr>
<td>CON-68</td>
<td>Simplified Engineering for Building Inspectors</td>
<td>3</td>
</tr>
<tr>
<td>CON-70</td>
<td>Fundamentals of Soil Technology</td>
<td>3</td>
</tr>
<tr>
<td>CON-71</td>
<td>Energy Conservation Standards</td>
<td>1.5</td>
</tr>
<tr>
<td>CON-72</td>
<td>California State Accessibility Standards</td>
<td>1.5</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-60</td>
<td>Introduction to Construction</td>
<td>3</td>
</tr>
<tr>
<td>CON-61</td>
<td>Materials of Construction</td>
<td>3</td>
</tr>
<tr>
<td>CON-62</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CON-63BCD</td>
<td>Analysis of Revisions to the Uniform Building Code</td>
<td>3-3-3</td>
</tr>
<tr>
<td>CON-73</td>
<td>Project Planning for Site Construction</td>
<td>3</td>
</tr>
<tr>
<td>CON-200</td>
<td>Construction Work Experience</td>
<td>1-2-3-4</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Construction Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes

In addition to achieving the program learning outcomes for the construction technology certificate program, students who complete the Associate in Science Degree in Construction Technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

COSMETOLOGY

This program prepares individuals to provide professional cosmetic services in salons, resorts, casinos, dermatologist’s offices and other related industry establishments. This includes courses in hair design, hair sculpting, chemical, esthetic and other cosmetic services, safety and sanitation, management, customer service, and preparation for practicing as licensed cosmetologist in the state of California. Courses in applicable professional labor laws and regulations in the cosmetology industry, physiology, anatomy, electricity and ergonomics are also covered in depth. Emphasis is placed on passing state licensing exam and industry entry skills.

COSMETOLOGY (R) AS534/CE534

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Deduce valid conclusions, compare and contrast viable techniques and apply principles in preparation of the California State Board of Barbering and Cosmetology practical and written exam.
- Identify and analyze concepts leading to synthesis of theory for the state board written exam.
- Produce a business plan and portfolio.
- Demonstrate entry-level industry skills in a clinic laboratory setting.
- Demonstrate workplace behaviors (“soft skills”) necessary for success in the cosmetology industry.

Required Courses (47.5 units) Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS-60A</td>
<td>Beginning Cosmetology Concepts</td>
<td>11</td>
</tr>
<tr>
<td>COS-60B</td>
<td>Level II Cosmetology Concepts</td>
<td>10.5</td>
</tr>
<tr>
<td>COS-60C</td>
<td>Level III Cosmetology Concepts</td>
<td>10</td>
</tr>
<tr>
<td>COS-60D</td>
<td>Level IV Cosmetology Concepts</td>
<td>8</td>
</tr>
<tr>
<td>COS-60E</td>
<td>Level V Cosmetology Concepts</td>
<td>8</td>
</tr>
</tbody>
</table>

Evening students may take the following courses to meet the requirements for COS-60E

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS-60E1</td>
<td>Level V Cosmetology Concepts</td>
<td>4</td>
</tr>
<tr>
<td>COS-60E2</td>
<td>Level V Cosmetology Concepts</td>
<td>4</td>
</tr>
</tbody>
</table>

NOTE: Completion of cosmetology courses (each with a grade of “C” or better) entitles the student to the Cosmetology Certificate and eligibility for the State Board of Cosmetology licensing examination.

NOTE: Transfer students possessing eligible cosmetology hours of applied effort will be placed in the appropriate section with the approval of the department chair.
**Associate in Science Degree**
The Associate in Science Degree in Cosmetology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

**COSMETOLOGY BUSINESS ADMINISTRATION**

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (9 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC-1A  Principles of Accounting, I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-10  Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CIS-1A  Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Concentration Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC-1B  Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACC-38  Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS-18A  Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-18B  Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BUS-22  Management Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS/MAG-47  Applied Business and Management Ethics</td>
<td>3</td>
</tr>
<tr>
<td>MAG-44  Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MAG-46  Contemporary Quality Systems Management</td>
<td>3</td>
</tr>
<tr>
<td>MAG-51  Elements of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MAG-53  Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>MAG-56  Human Resources Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTE:** The Cosmetology Business Administration Certificate will be awarded to graduates of the Cosmetology Program, or Cosmetology License holders upon successful completion of all Cosmetology Business Administration Major Core Requirements and 12 units selected from the Major Concentration Requirements (total of 21 units) in order to receive the certificate in the concentration area of their choice.

In addition to the Cosmetology Business Administration Major Core Requirements of 9 units noted above, choose another 12 units from one of the following concentrations:

**ENTREPRENEURIAL CONCENTRATION (R) AS537/CE537**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Construct and implement a promotional program.
- Research and analyze consumer decision parameters.
- Apply knowledge of general business practices to specific cosmetology business situations.
- Analyze and solve problems associated with the calculation and reporting of payroll.
- Effectively communicate in small work groups.

Select another 12 units from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC-1B  Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACC-62  Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ART-39  Design and Graphics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-20  Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-30  Entrepreneurship and Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>MKT-20  Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT-30  Fashion Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>MKT-40  Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MKT-41  Techniques of Selling</td>
<td>3</td>
</tr>
<tr>
<td>MKT-42  Retail Management</td>
<td>3</td>
</tr>
<tr>
<td>CAT-30  Business English</td>
<td>3</td>
</tr>
</tbody>
</table>

**MANAGEMENT AND SUPERVISION (R) AS535/CE535**

**Concentration**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Anticipate and solve problems relative to supervising personnel.
- Apply human resource management principles in the successful operation of a business.
- Effectively describe and apply basic management practices.
- Effectively communicate in small work groups.

Select another 12 units from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC-1B  Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACC-38  Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS-18A  Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-18B  Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BUS-22  Management Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS/MAG-47  Applied Business and Management Ethics</td>
<td>3</td>
</tr>
<tr>
<td>MAG-44  Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MAG-46  Contemporary Quality Systems Management</td>
<td>3</td>
</tr>
<tr>
<td>MAG-51  Elements of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MAG-53  Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>MAG-56  Human Resources Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Associate in Science Degree**
The Associate in Science Degree in Cosmetology Business Administration will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

**The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree.**

**COSMETOLOGY INSTRUCTOR TRAINING (R) CE675**

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Create and demonstrate lesson planning, oral presentations, use methods of evaluations, test construction and use of audio/visual aids.
- Synthesize information and apply principles to solve instructional and classroom issues.
- Construct exams using multiple choice, true or false, identification, matching, essay, research and performance methods and identify the methodology of each test mechanism.
- Demonstrate methodologies required for student success used in the classroom environment.

Required Courses (15 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS-61A  Level I Cosmetology Instructor Concepts</td>
<td>7.5</td>
</tr>
<tr>
<td>COS-61B  Level I Cosmetology Instructor Concepts</td>
<td>7.5</td>
</tr>
</tbody>
</table>
ESTHETICIAN (R) CE673

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Deduce valid conclusions, compare and contrast viable techniques and apply principles in preparation of the California State Board of Barbering and Cosmetology practical and written exam.
- Identify and analyze concepts leading to synthesis of theory for the state board written exam.
- Produce a business plan and portfolio.
- Demonstrate entry-level industry skills in a clinic laboratory setting.
- Demonstrate workplace behaviors (“soft skills”) necessary for success in the cosmetology industry.

Required Courses (17 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS-62A</td>
<td>Level I Esthetician Concepts</td>
<td>8.5</td>
</tr>
<tr>
<td>COS-62B</td>
<td>Level II Esthetician Concepts</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Completion of esthetician courses (each with a grade of “C” or better) entitles the student to the Esthetician certificate and eligibility for the State Board of Barbering and Cosmetology licensing exam. Transfer students possessing eligible esthetician hours of applied effort will be placed in the appropriate section with the approval of the department chair.

CULINARY ARTS

This program prepares individuals to provide professional chef and related hospitality services in restaurants and other commercial food establishments. This includes instruction in recipe and menu planning, preparing and cooking of foods, supervising and training kitchen assistants, the management of food supplies and kitchen resources, including cost and inventory controls, aesthetics of food preparation and presentation, as well as training in a wide variety of cuisines and culinary techniques.

CULINARY ARTS (R) AS561/CE561

Certificate Program

Program Learning Outcomes

Upon successful completion of this certificate program, students should be able to:

- Demonstrate learned customer service, wait staffing and point-of-sale system knowledge in a working dining room setting.
- Employ proper safety and sanitation principles to the receiving, storage, preparation, and service of food.
- Formulate menus utilizing menu design techniques, conversions of written recipes, and calculations of food costing and menu pricing.
- Demonstrate practical and theoretical knowledge of classical and contemporary cooking methods for both hot food and baking/pastry arts.
- Demonstrate practical knowledge of classical knife cuts.
- Apply learned cooking methods to international cuisines.
- Demonstrate proficiency in piping skills, mold usage, plate presentation, and other artistic techniques used in the garde manger kitchen as well as hot food, cold food and pastry presentations.

Required Courses (27 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL-36</td>
<td>Introduction to Culinary Arts</td>
<td>8</td>
</tr>
<tr>
<td>CUL-37</td>
<td>Intermediate Culinary Arts</td>
<td>8</td>
</tr>
<tr>
<td>CUL-38</td>
<td>Advanced Culinary Arts</td>
<td>8</td>
</tr>
<tr>
<td>CUL-200</td>
<td>Culinary Arts Work Experience</td>
<td>1-2-3-4</td>
</tr>
</tbody>
</table>

Electives (Choose from list below) 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL-20</td>
<td>Fundamentals of Baking</td>
<td>2</td>
</tr>
<tr>
<td>CUL-22</td>
<td>Cake Decorating I</td>
<td>2</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Culinary Arts will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

DENTAL ASSISTANT

This program prepares individuals to provide patient care, take dental radiographs (x-ray), prepare patients and equipment for dental procedures, as well as discharge office administrative functions under the supervision of dentists and dental hygienists. This includes instruction in dental record-keeping, general office duties, reception and patient intake, scheduling, equipment maintenance and sterilization, dental radiography, pre and post-operative patient care and instruction, chair-side assisting, taking tooth and mouth impressions, and supervised practice.

DENTAL ASSISTANT (M) MAS621/MCE621

Certificate Program

Required Courses (39 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEA-10</td>
<td>Introduction to Dental Assisting and Chairside assisting</td>
<td>4</td>
</tr>
<tr>
<td>DEA-20</td>
<td>Infection Control for Dental Assistants</td>
<td>2</td>
</tr>
<tr>
<td>DEA-21</td>
<td>Introduction to Radiology for Dental Assistants</td>
<td>2</td>
</tr>
<tr>
<td>DEA-22</td>
<td>Introduction to Supervised Externships</td>
<td>1.5</td>
</tr>
<tr>
<td>DEA-23</td>
<td>Introduction to Dental Sciences</td>
<td>3</td>
</tr>
<tr>
<td>DEA-24</td>
<td>Dental Materials for the Dental Assistant</td>
<td>2</td>
</tr>
<tr>
<td>ENG-50</td>
<td>Or Higher +</td>
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</tbody>
</table>

Winter:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEA-30</td>
<td>Intermediate Chairside Dental Assisting</td>
<td>2</td>
</tr>
<tr>
<td>DEA-31</td>
<td>Radiology for Dental Assistants</td>
<td>1.5</td>
</tr>
<tr>
<td>DEA-32</td>
<td>Intermediate Supervised Externships</td>
<td>1</td>
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</table>

Spring:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>DEA-40A</td>
<td>Advanced Chairside Surgical Dental Assistant</td>
<td>4</td>
</tr>
<tr>
<td>DEA-40B</td>
<td>Advanced Chairside Orthodontic Dental Assistant</td>
<td>3.5</td>
</tr>
<tr>
<td>DEA-40C</td>
<td>Advanced Chairside Restorative Dental Assistant</td>
<td>4.5</td>
</tr>
<tr>
<td>DEA-41</td>
<td>Dental Office Procedures</td>
<td>4</td>
</tr>
</tbody>
</table>

+ This course may be taken prior to entrance into the Dental Assistant Program.
DENTAL HYGIENE
This program prepares individuals to clean teeth and apply preventive materials; provide oral health education and treatment counseling to patients; identify oral pathologies and injuries; and manage dental hygiene practices. This includes instruction in dental anatomy, microbiology, and pathology; dental hygiene theory and techniques; cleaning equipment operation and maintenance; dental materials; radiology; patient education and counseling; office management; supervised clinical training; and professional standards.

DENTAL HYGIENE (M) MAS724

Associate in Science Degree
Required Courses (60.5 units) Units
First Semester Courses:
DEH-10A Pre-Clinic Dental Hygiene #1 2.5
DEH-11 Principles of Dental Hygiene 2
DEH-12A Principles of Oral Radiology 1
DEH-12B Oral Radiology Laboratory 1
DEH-13 Infection Control in Dentistry 1
DEH-14 Systems Analysis of Dental Anatomy 3.5
DEH-15 Head and Neck Anatomy 2
DEH-16 Preventive Dentistry 1
DEH-17 General Pathology 2

First Winter Intersession Courses:
DEH-10B Pre-Clinic Dental Hygiene #2 1
DEH-19 Pain Control 1.5

Second Semester Courses:
DEH-20A Clinical Dental Hygiene #1 3
DEH-21 Clinical Seminar #1 1
DEH-22 Oral Radiology Interpretation 1
DEH-23 Introduction to Periodontology 2
DEH-24 Ethics 1
DEH-25 Medical/Dental Emergencies 1
DEH-26 Dental Treatment of Geriatric and Medically Compromised 2
DEH-27 Oral Pathology 3
DEH-28 Basic and Applied Pharmacology 2

Summer Session Courses:
DEH-20B Clinical Dental Hygiene #2 1

Third Semester Courses:
DEH-30A Clinical Dental Hygiene #3 3.5

DEH-31 Clinical Seminar #2 1
DEH-32 Dental Materials 2.5
DEH-33 Periodontology 1
DEH-34 Community Dental Health Education #1 1
DEH-35 Community Dental Health Education Practicum #1 1
DEH-36 Research Methodology 2
DEH-37 Nutrition in Dentistry 1

Second Winter Intersession Courses:
DEH-30B Clinical Dental Hygiene #4 1

Fourth Semester Courses:
DEH-40 Clinical Dental Hygiene #5 4
DEH-41 Clinical Seminar #3 1
DEH-42 Practice Management and Jurisprudence 2
DEH-43 Advanced Periodontology 1
DEH-44 Community Dental Health Education #2 1
DEH-45 Community Dental Health Education Practicum #2 1
DEH-46 Advanced Topics in Dental Hygiene 1

Associate in Science Degree
The Associate in Science Degree in Dental Hygiene will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
DENTAL LABORATORY TECHNOLOGY
This program provides individuals, under the supervision of dentists, to design and construct dental prostheses such as caps, crowns, bridges, dentures, splints, and orthodontic appliances. This includes instruction in dental anatomy, dental materials, ceramics technology, impressions, complete dentures, partial dentures, orthodontics, crowns and bridges, sculpture, bonding and assembly techniques, and equipment operation.

DENTAL LABORATORY TECHNOLOGY (M) MAS723/MCE723
Certificate Program
Required Courses (37 units) Units
DEN-70 Introduction to Dental Technology 2
DEN-71 Dental Morphology 3
DEN-72A Dental Materials I 1
DEN-72B Dental Materials II 1
DEN-74 Dental Anatomy and Physiology 1
DEN-75A Complete Denture Techniques I 3
DEN-75B Complete Denture Techniques II 3
DEN-77A Removable Partial Denture Techniques I 3
DEN-77B Removable Partial Denture Techniques II 3
DEN-79A Crown and Bridge Techniques I 3
DEN-79B Crown and Bridge Techniques II 3
DEN-82 Dental Laboratory Management 1
DEN-85 Orthodontic/Pedodontic Techniques 3
DEN-89A Dental Ceramics I 3
DEN-89B Dental Ceramics II 3
DEN-200 Work Experience 1-2-3-4

Electives (Choose from list below) 2-3

Associate in Science Degree
The Associate in Science Degree in Dental Laboratory Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

DRAFTING TECHNOLOGY
This program prepares individuals to apply technical skills and advanced computer software and hardware to the creation of graphic representations and simulation in support of drafting and engineering design problems typical of industry. This includes instruction in engineering graphics, computer-aided drafting (CAD), two-dimensional and three-dimensional engineering design, solids modeling, rapid prototyping and engineering animation.

DRAFTING TECHNOLOGY (N) NAS539/NCE539
Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to demonstrate:

- An ability to apply and integrate computer technology in the design process, exhibiting skills necessary for entry-level employment, as a designer in the drafting industry.
- Knowledge of engineering drawing skills and practice in the solution of industry related design projects.

Required Courses (24-25 units) Units
ENE-21 Drafting 3
ENE-22 Engineering Drawing 3
ENE-28 Technical Design 3
ENE-30 Computer Aided Drafting (CAD) 3
ENE-31 Computer Aided Drafting and Design 3
ENE-51 Blueprint Reading 2
ENE-52 Geometric Dimensioning and Tolerance 2
ENE-60 Math for Engineering Technology 3

Electives (2-3 units)
ARE-24 Architectural Drafting 3
ENE-23 Descriptive Geometry 3
ENE-26 Civil Engineering Drafting 3
ELE/ENE-27 Technical Communication 3
ENE-42 SolidWorks I 3
WEL-34 Metal Joining Processes 2

Associate in Science Degree
The Associate in Science Degree in Drafting Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes
In addition to achieving the program learning outcomes for the drafting technology certificate program, students who complete the Associate in Science Degree in Drafting Technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.
EARLY CHILDHOOD EDUCATION
This program focuses on the theory and practice of learning and teaching children from birth to age eight; the basic principles of educational and developmental psychology; the art of observing, teaching and guiding young children; planning and administration of developmentally appropriate inclusive educational activities; school safety and health issues; and the social and emotional foundations of early care and education.

EARLY CHILDHOOD EDUCATION (MNR)  MASN44/MCE544
MASS44/NE454
Certificate Program  AS544/CE544

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Develop, implement, and evaluate developmentally appropriate thematic and emergent curriculum for children who are typical and atypical in the areas of physical, cognitive, language, creative and social/emotional growth.
- Develop and apply appropriate practices and effective techniques that respect the cultural diversity of young children and their families.
- Integrate an educational philosophy into classroom practices that reflects a personal belief supportive of theoretical principles regarding how and why young children should receive early educational experiences.
- Develop and implement a system of ongoing observational practices that contributes toward the creation of learning environments conducive to the emergence of curriculum that adapts to the evolving needs of children.

Required Courses (31 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAR-19</td>
<td>Observation and Assessment Methods in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>EAR-20</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>EAR-22</td>
<td>Early Childhood Programs and Career Opportunities</td>
<td>3</td>
</tr>
<tr>
<td>EAR-24</td>
<td>Creative Activities through Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EAR-26</td>
<td>Child Health</td>
<td>3</td>
</tr>
<tr>
<td>EAR-28</td>
<td>Principles and Practices of Early Childhood Education Programs</td>
<td>3</td>
</tr>
<tr>
<td>EAR-30</td>
<td>Internship in Early Childhood Education</td>
<td>4</td>
</tr>
<tr>
<td>EAR-42</td>
<td>Child, Family and Community Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives (6 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-3</td>
<td>Art for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>DAN-5</td>
<td>Introduction to Movement Education for Preschool and Elementary Children</td>
<td>3</td>
</tr>
<tr>
<td>EAR-31</td>
<td>Home Visiting</td>
<td>3</td>
</tr>
<tr>
<td>EAR-33</td>
<td>Caring for Infants and Toddlers in Group Settings</td>
<td>3</td>
</tr>
<tr>
<td>EAR-34</td>
<td>Curriculum Activities for Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>EAR-37</td>
<td>School Age Child Care</td>
<td>3</td>
</tr>
<tr>
<td>EAR-38</td>
<td>Adult Supervision in ECE/CD Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>EAR-40</td>
<td>Introduction to Infants and Children with Disabilities and Other Special Needs</td>
<td>3</td>
</tr>
<tr>
<td>EAR-41</td>
<td>Internship in Early Intervention/Special Education</td>
<td>4</td>
</tr>
<tr>
<td>EAR-43</td>
<td>Children with Challenging Behaviors</td>
<td>3</td>
</tr>
<tr>
<td>EAR-44</td>
<td>Administration Of Early Childhood Programs I</td>
<td>3</td>
</tr>
<tr>
<td>EAR-45</td>
<td>Administration Of Early Childhood Programs II</td>
<td>3</td>
</tr>
</tbody>
</table>

Child Development Permit
The Early Childhood Education program provides an educational and practical foundation for students interested in working with children from infancy through third grade. In addition to theoretical principles, the curriculum offers practical skills and on-site training that will prepare students for employment in the field of Early Childhood Education. The program leads to certificates in Early Childhood Education and/or an Associate in Science Degree. The EAR courses will also fulfill the required child development coursework for the state issued Child Development Permit. Information regarding this permit and/or the Early Childhood Education Certificates are available from the Early Childhood Education Department.

Upon completion of the requirements for the certificate program and 16 units of special courses in general education, the student has fulfilled the course requirements for the Child Development Permit, teacher level. See the State guidelines for experience qualifications and additional levels. For child development interactive video information, see www.rcc.edu/edpermit.

Associate in Science Degree
The Associate in Science Degree in Early Childhood Education will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

EARLY CHILDHOOD INTERVENTION (MNR)  MAS601/MCE601
MAS601/NE601
Certificate Program  AS601/CE601

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Demonstrate an understanding of family function and structure, along with familial need for information and support that respects and values diverse cultures, values, beliefs and behaviors.
- Demonstrate basic knowledge of laws and regulations pertaining to and protecting children with disabilities and their families. Understand and identify the process of accessing community agencies, referral systems and procedures for specialized support, specialized documents, resources and placement options.
- Describe the typical child development milestones of children birth to adolescence and identify the strengths and special needs of the child in the context of his/her family, early childhood classroom, or early intervention setting.
- Describe the developmental assessment process and outline its role in identifying, planning and intervening for a child with special needs and his/her family, including the process of curriculum development.
• Demonstrate an understanding of the purpose and intent of an inclusive environment that supports the whole child while meeting the individual needs of children with disabilities.

Required Courses (31 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAR-20</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>EAR-24</td>
<td>Creative Activities through Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EAR-28</td>
<td>Principles and Practices of Early Childhood Education Programs</td>
<td>3</td>
</tr>
<tr>
<td>EAR-33</td>
<td>Caring for Infants and Toddlers in Group Settings</td>
<td>3</td>
</tr>
<tr>
<td>EAR-40</td>
<td>Introduction to Infants and Children with Disabilities and Other Special Needs</td>
<td>3</td>
</tr>
<tr>
<td>EAR-41</td>
<td>Internship in Early Intervention/Special Education</td>
<td>4</td>
</tr>
<tr>
<td>EAR-42</td>
<td>Child, Family and Community Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>EAR-43</td>
<td>Children with Challenging Behaviors</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives (6 units)

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>EAR-19</td>
<td>Observation and Assessment Methods in Early Childhood Education</td>
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</tr>
<tr>
<td>EAR-26</td>
<td>Child Health</td>
<td>3</td>
</tr>
<tr>
<td>EAR-31</td>
<td>Home Visiting</td>
<td>3</td>
</tr>
<tr>
<td>EAR-34</td>
<td>Curriculum Activities for Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>EAR-38</td>
<td>Adult Supervision in ECE/CD Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>EAR-44</td>
<td>Administration Of Early Childhood Programs</td>
<td>3</td>
</tr>
<tr>
<td>EAR-47</td>
<td>Childhood Stress and Trauma</td>
<td>3</td>
</tr>
</tbody>
</table>

**Associate in Science Degree**

The Associate in Science Degree in Early Childhood Intervention Assistant will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

**EARLY CHILDHOOD EDUCATION / (MNR) MCE797**

**TWELVE CORE UNITS** NCE797

**Certificate Program**

**Program Learning Outcomes**

• Demonstrate an understanding of the theoretical perspectives in human development and education.
• Appraise the role of the child as an active learner.
• Integrate child growth and development into practical and meaningful applications.

Required Courses (12 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAR-20</td>
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</tr>
<tr>
<td>EAR-28</td>
<td>Principles and Practices of Early Childhood Education Programs</td>
<td>3</td>
</tr>
<tr>
<td>EAR-42</td>
<td>Child, Family and Community Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

**INFANT AND TODDLER SPECIALIZATION (MNR) MCE 681**

**NCE 681**

**CE 681**

The Infant and Toddler Specialization certificate represents a composite of child development knowledge, skills, and responsibilities integral to working with children ages zero to three. Specific courses emphasize a responsive approach to the care and education of infants and toddlers in center-based programs and family child care homes.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

• Identify the patterns of development for children ages zero to three in the areas of the physical, cognitive and psychosocial domains.
• Understand and implement health and safety practices in environmental concerns and in individual child cleansing and feeding routines.
• Create and maintain an environment of care and learning specific to young infants and newly mobile children.
• Select equipment and materials conducive to the physical, cognitive and psychosocial needs of infants and toddlers.
• Plan and implement a curriculum based on a blend of routine and play activities.
• Use observation to assess child development, curriculum success, and environmental standards of quality, and then implement program adjustments based on assessment outcomes.

Required Courses (12 units) Units

<table>
<thead>
<tr>
<th>Course</th>
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<th>Units</th>
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</thead>
<tbody>
<tr>
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<td>3</td>
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<tr>
<td>EAR-33</td>
<td>Caring for Infants and Toddlers in Group Settings</td>
<td>3</td>
</tr>
<tr>
<td>EAR-34</td>
<td>Curriculum Activities for Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>EAR-35</td>
<td>Internship in Infant and Toddler Care</td>
<td>3</td>
</tr>
</tbody>
</table>
EDUCATION PARAPROFESSIONAL
This program prepares individuals to assist a teacher in regular classroom settings or in providing instruction and supervision to special student populations, such as bilingual/bicultural students, special education students, adult learners, and students learning English. This includes instruction in techniques of general classroom supervision, maintaining order, assisting with lessons, and carrying out related assignments.

EDUCATION PARAPROFESSIONAL (MR) MAS603/MCE603
ASE603/CE603

Certificate Program
Required Courses (32-34 units) Units
EDU-1 Teaching in the Multicultural Classroom 3
EDU-3 Introduction to Literacy Instruction 3
EDU-4 Introduction to Literacy/Service Learning 1
COM-1/1H Public Speaking 3
or
COM-9/9H Interpersonal Communication 3
EAR-20 Child Development 3
ENG-1A English Composition 4
or
ENG-50 Basic English Composition 4
HIS-6/6H Political and Social History of the United States 3
or
HIS-7/7H Political and Social History of the United States 3
Electives (May include, but not limited to 8-10 those listed below)

Recommended Electives (8-10 units)
EAR-26 Child Health 3
ENG-30 Children’s Literature 3
KIN-30 First Aid and CPR 3
SPA-3N Spanish for Spanish Speakers 5

Associate in Science Degree
The Associate in Science Degree in Education Paraprofessional will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

ELECTRONICS TECHNOLOGY
This program prepares individuals to apply basic engineering principles and technical skills in support of electrical, electronics, and communication engineers. Includes instruction in electrical circuitry, prototype development and testing; systems analysis and testing. Systems maintenance, instrument calibration, and report preparation.

ELECTRONICS COMPUTER SYSTEMS (N) NAS545/NCE545

Certificate Program
Program Learning Outcomes
Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of electronics, specializing in computer systems, by completing a mixed-signals project containing hardware and software elements that combine analog signal processing, digital logic, data-conversion, computer calculations, bit manipulations, interfacing with input/output devices and hardware interrupt handling.

Required Courses (35-39 units) Units
ELE-10 Survey of Electronics 4
or both
ELE-21 DC-AC Electronics 4
and
ELE-23 Electronics Devices and Circuits 4
ELE-25 Digital Techniques 4
ELE-26 Microprocessors and Microcontrollers 4
ELE/ENE-27 Technical Communication 3
ELE-36 Advanced Microprocessors 4
ELE-38 Computer Systems Troubleshooting 4
ELE-39 PCM and Digital Transmission 3
ELE-40 Fiber Optic Basics 3
Electives (Choose from list below) 6

Electives (6 units)
CIS/CSC-5 Fundamentals of Programming Logic using C++ 3
CIS/CSC-17A C++ Programming: Objects 3
CIS/CSC-17B C++ Programming: Advanced Objects 3
ELE-22 Passive Circuit Analysis 3
ELE-24 Active Circuit Analysis 3
ELE-200 Electronics Work Experience 1-2-3-4
ENE-22 Engineering Drawing 3
ENE-31 Computer-Aided Drafting and Design 3
ENE-60 Math for Engineering Technology 3
MAN-60 Hydraulic and Pneumatic Systems 3
MAN-75A Robotic Systems 4

Associate in Science Degree
The Associate in Science Degree in Electronics Computer Systems will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes
In addition to achieving the program learning outcomes for the electronics computer systems certificate program, students who complete the Associate in Science Degree in Electronics Computer Systems will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.
ELECTRONICS TECHNOLOGY (N)  NAS546/NCE546
Certificate Program

Program Learning Outcomes

Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of electronics technology by completing a design and construction project that utilizes analog power and signal processing circuitry, as well as digital hardware and software, to perform specific tasks according to a project framework. As part of this project, students will include wireless, bidirectional communications, proper selection and use of measurement equipment, good test procedures, circuit analysis, simulation tools and troubleshooting techniques.

Required Courses (28 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-21</td>
<td>DC-AC Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE-23</td>
<td>Electronics Devices and Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELE-25</td>
<td>Digital Techniques</td>
<td>4</td>
</tr>
<tr>
<td>ELE-26</td>
<td>Microprocessors and Microcontrollers</td>
<td>4</td>
</tr>
<tr>
<td>ELE/ENE-27</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td></td>
</tr>
</tbody>
</table>

Electives (9 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CSC-5</td>
<td>Fundamentals of Programming Logic using C++</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-17A</td>
<td>C++ Programming: Objects</td>
<td>3</td>
</tr>
<tr>
<td>CIS/CSC-17B</td>
<td>C++ Programming: Advanced Objects</td>
<td>3</td>
</tr>
<tr>
<td>ELE-22</td>
<td>Passive Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELE-24</td>
<td>Active Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELE-36</td>
<td>Advanced Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ELE-38</td>
<td>Computer Systems Troubleshooting</td>
<td>4</td>
</tr>
<tr>
<td>ELE-39</td>
<td>PCM and Digital Transmissions</td>
<td>3</td>
</tr>
<tr>
<td>ELE-40</td>
<td>Fiber Optic Basics</td>
<td>3</td>
</tr>
<tr>
<td>ELE-200</td>
<td>Electronics Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>ENE-22</td>
<td>Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENE-31</td>
<td>Computer-Aided Drafting and Design</td>
<td>3</td>
</tr>
<tr>
<td>ENE-60</td>
<td>Math for Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>MAN-60</td>
<td>Hydraulic and Pneumatic Systems</td>
<td>3</td>
</tr>
<tr>
<td>MAN-75A</td>
<td>Robotic Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Electronics Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes

In addition to achieving the program learning outcomes for the electronics technology certificate program, students who complete the Associate in Science Degree in Electronics Technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

ANALOG AND DIGITAL MICROELECTRONICS (N)  NCE831
Certificate Program

Required Courses (15 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-23</td>
<td>Electronics Devices and Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELE-24</td>
<td>Active Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELE-25</td>
<td>Digital Techniques</td>
<td>4</td>
</tr>
<tr>
<td>ELE-26</td>
<td>Microprocessors and Microcontrollers</td>
<td>4</td>
</tr>
</tbody>
</table>

ANALOG ELECTRONICS, ANALYSIS AND DOCUMENTATION (N)  NCE834
Certificate Program

Required Courses (15 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-22</td>
<td>Passive Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELE-23</td>
<td>Electronics Devices and Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELE-24</td>
<td>Active Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELE/ENE-27</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ELE-28</td>
<td>Automated Electronics Design and Documentation Tools</td>
<td>2</td>
</tr>
</tbody>
</table>

ANALOG ELECTRONICS TECHNOLOGY (N)  NCE835
Certificate Program

Required Courses (11 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10</td>
<td>Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>ELE-21 DC-AC Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE-23</td>
<td>Electronics Devices and Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELE-24</td>
<td>Active Circuit Analysis</td>
<td>3</td>
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</tbody>
</table>

DIGITAL ELECTRONICS TECHNOLOGY (N)  NCE837
Certificate Program

Required Courses (11 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-25</td>
<td>Digital Techniques</td>
<td>4</td>
</tr>
<tr>
<td>ELE-26</td>
<td>Microprocessors and Microcontrollers</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>ELE-36 Advanced Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ELE-39</td>
<td>PCM and Digital Transmission</td>
<td>3</td>
</tr>
</tbody>
</table>

DIGITAL TECHNOLOGY AND DOCUMENTATION (N)  NCE839
Certificate Program

Required Courses (16 units)  Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10</td>
<td>Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>ELE-21 DC-AC Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE-25</td>
<td>Digital Techniques</td>
<td>4</td>
</tr>
<tr>
<td>ELE/EDE-27</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ELE-28</td>
<td>Automated Electronics Design and Documentation Tools</td>
<td>2</td>
</tr>
<tr>
<td>ELE-39</td>
<td>PCM and Digital Transmission</td>
<td>3</td>
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</table>
## Electronic Circuit Analysis (N)  NCE836

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (10 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10 Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ELE-21 DC-AC Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE-22 Passive Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELE-24 Active Circuit Analysis</td>
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</table>

## Electronic Communications (N)  NCE838

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (15 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10 Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE/ENE-27 Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ELE-28 Automated Electronics Design and Documentation Tools</td>
<td>2</td>
</tr>
<tr>
<td>ELE-32 FCC Radiotelephone License Exam Preparation</td>
<td>3</td>
</tr>
<tr>
<td>ELE-39 PCM and Digital Transmission</td>
<td>3</td>
</tr>
</tbody>
</table>

## Electronics Documentation (N)  NCE844

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (9 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10 Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ELE-21 DC-AC Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE/ENE-27 Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ELE-28 Automated Electronics Design and Documentation Tools</td>
<td>2</td>
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</tbody>
</table>

## General Electronics Core (N)  NCE847

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (16 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10 Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE-23 Electronics Devices and Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELE-25 Digital Techniques</td>
<td>4</td>
</tr>
<tr>
<td>ELE-26 Microprocessors and Microcontrollers</td>
<td>4</td>
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</tbody>
</table>

## Microcomputer Technology (N)  NCE848

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (12 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-26 Microprocessors and Microcontrollers</td>
<td>4</td>
</tr>
<tr>
<td>ELE-36 Advanced Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ELE-38 Computer Systems Troubleshooting</td>
<td>4</td>
</tr>
</tbody>
</table>

## Microprocessor Technology (N)  NCE845

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (12 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-25 Digital Techniques</td>
<td>4</td>
</tr>
<tr>
<td>ELE-26 Microprocessors and Microcontrollers</td>
<td>4</td>
</tr>
<tr>
<td>ELE-36 Advanced Microprocessors</td>
<td>4</td>
</tr>
</tbody>
</table>

## Wireless and Fiber-Optic Communications (N)  NCE846

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (13 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-10 Survey of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELE-32 FCC Radiotelephone License Exam Preparation</td>
<td>3</td>
</tr>
<tr>
<td>ELE-39 PCM and Digital Transmission</td>
<td>3</td>
</tr>
<tr>
<td>ELE-40 Fiber-Optic Basics</td>
<td>3</td>
</tr>
</tbody>
</table>

## Emergency Medical Services

This program prepares individuals, under the remote supervision of physicians, to recognize, assess, and manage medical emergencies in prehospital settings and to supervise ambulance personnel. This includes instruction in basic, intermediate, and advanced EMS procedures; emergency surgical procedures; medical triage; rescue operations; crisis scene management and personal supervision; equipment operation and maintenance; patient stabilization, monitoring, and care; drug administration; identification and preliminary diagnosis of disease and injuries; communication and computer operations; basic anatomy, physiology, pathology, and toxicology; and professional standards and regulations.

## Paramedic (M)  MAS585/MCE585

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (49.5 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS-60 Patient Assessment and Airway Management</td>
<td>4</td>
</tr>
<tr>
<td>EMS-61 Introduction to Medical Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>EMS-62 Emergency Pharmacology</td>
<td>4</td>
</tr>
<tr>
<td>EMS-63 Cardiology</td>
<td>4</td>
</tr>
<tr>
<td>EMS-70 Trauma Management</td>
<td>4</td>
</tr>
<tr>
<td>EMS-71 Clinical Medical Specialty I</td>
<td>2.5</td>
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<tr>
<td>EMS-80 Medical Emergencies</td>
<td>4.5</td>
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<tr>
<td>EMS-81 Special Populations</td>
<td>4.5</td>
</tr>
<tr>
<td>EMS-82 Special Topics</td>
<td>2</td>
</tr>
<tr>
<td>EMS-83 Clinical Medical Specialty II</td>
<td>2.5</td>
</tr>
<tr>
<td>EMS-90 Assessment Based Management</td>
<td>4.5</td>
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<tr>
<td>EMS-91 Paramedic Field Internship</td>
<td>10</td>
</tr>
</tbody>
</table>

## Associate in Science Degree

The Associate in Science Degree in Paramedic will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree:

## Emergency Medical Technician (M)  MCE801

**Certificate Program**

<table>
<thead>
<tr>
<th>Required Courses (7 units)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS-50 Emergency Medical Services-Basic</td>
<td>6</td>
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<tr>
<td>EMS-51 Emergency Medical Services-Basic</td>
<td>1</td>
</tr>
<tr>
<td>Clinical /Field</td>
<td></td>
</tr>
</tbody>
</table>
ENGINEERING TECHNOLOGY
This program generally prepares individuals to apply basic engineering principles and technical skills in support of engineers engaged in a wide variety of projects. This includes instruction in various engineering support functions for research, production, and operation, and application to specific engineering specialties. This discipline focuses on Engineering Technology, Mechanical Engineering and Civil Engineering (Engineering Technicians).

ENGINEERING TECHNICIAN (N) NAS550/NCE550
Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to demonstrate:
- An ability to apply and integrate computer technology, such as Computer-Aided Drafting (CAD) and total station, in the field of civil engineering to qualify for entry-level position as a land surveyor and/or CAD technician.
- An ability to apply the problem solving process to create and present design solution.

Required Courses (27 units) Units
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENE-1A Plane Surveying I</td>
<td>3</td>
</tr>
<tr>
<td>ENE-1B Plane Surveying II</td>
<td>3</td>
</tr>
<tr>
<td>ENE-21 Drafting</td>
<td>3</td>
</tr>
<tr>
<td>ENE-22 Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENE-30 Computer-Aided Drafting (CAD)</td>
<td>3</td>
</tr>
<tr>
<td>MAT-35 Intermediate Algebra</td>
<td>5</td>
</tr>
<tr>
<td>MAT-36 Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>Electives (Choose from list below)</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (3 units)
- ARE-24 Architectural Drafting 3
- ENE-23 Descriptive Geometry 3
- ENE-26 Civil Engineering Drafting 3
- ENE-31 Computer-Aided Drafting and Design 3

Associate in Science Degree
The Associate in Science Degree in Engineering Technician will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes
Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of engineering technology by completing a portfolio, which may include sketches, Computer Aided Drafting (CAD), 3-D models, and rapid prototyping.

ENGINEERING GRAPHICS (N) NCE796
Certificate Program
Program Learning Outcomes
Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of engineering by completing a portfolio, which may include sketches, Computer Aided Drafting (CAD), 3-D models, and rapid prototyping.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

ENGINEERING TECHNOLOGY (N) NAS551
Associate in Science Degree
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- An ability to integrate computer technology in the field of Engineering Technology at a sufficient level for entry-level employment.
- Knowledge of engineering principles necessary for transfer to a four-year engineering institution.
- An ability to apply the problem solving process to create and present design solutions.

Required Courses (32-34 units) Units
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENE-21 Drafting</td>
<td>3</td>
</tr>
<tr>
<td>ENE-22 Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENE/ELE-27 Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENE-30 Computer Aided Drafting (CAD)</td>
<td>3</td>
</tr>
<tr>
<td>ELE-21 DC-AC Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MAT-11 College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MAT-36 Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>WEL-34 Metal Joining Processes</td>
<td>2</td>
</tr>
<tr>
<td>Electives (Choose from list below)</td>
<td>6-8</td>
</tr>
</tbody>
</table>
| Electives (6-8 units)
- CHE-2A Introductory Chemistry I 4
- ENE-23 Descriptive Geometry 3
- MAT-5 Calculus, A Short Course 4
- MAT-12 Statistics 3
- PHY-2A General Physics I 4

Associate in Science Degree
The Associate in Science Degree in Engineering Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes
Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of engineering by completing a portfolio, which may include sketches, Computer Aided Drafting (CAD), 3-D models, and rapid prototyping.

Students who complete the Associate in Science Degree in Engineering Technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:
FILM, TELEVISION AND VIDEO

The program prepares individuals to communicate information, entertainment and ideas through film, television and video. This includes practical, hands-on instruction in how to plan and produce a variety of genre in film, television and video; crew responsibilities and production techniques for film, television, video and audio; equipment operation including film and video cameras, editing equipment, switchers, character generators, lighting instruments, and microphones; techniques for making specific types of film, television and video programming; use of digital technology and computer applications to record, edit or enhance images, audio, graphics or effects; and how to manage film and video operations.

FILM, TELEVISION AND VIDEO (R) AS641/CE641

PRODUCTION SPECIALIST

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

• Plan and produce film, television, video and audio productions from concept to finished product.
• Operate a variety of electronic media production equipment and facilities including but not limited to film and video cameras, character generators, microphones, lighting instruments, teleprompters, editing software, sound recorders and control room test equipment.
• Create film and video productions that have a focused, coherent message with a clear beginning, middle and end and that meet industry technical standards for composition, lighting, sound and editing.
• Demonstrate workplace behaviors necessary for industry success including reliability, persistence, ability to adhere to deadlines and ability to communicate and work cooperatively in a team production environment.

Required Courses (29 units)

Core Requirements (20 units) Units

FTV-38 Telecommunications Production Project 3
FTV-41 Introduction to Telecommunications 3
FTV-42 Writing for Broadcast Television and Radio 3
FTV-43 Television Studio and Equipment 3
FTV-44 Introduction to Television Production 3.5
FTV-45 Television News Production 3.5
FTV-51 Telecommunications Laboratory 1

In addition, choose and complete courses from one emphasis below: 9

DIGITAL MEDIA/MOTION GRAPHICS EMPHASIS

Core Requirements 20

Select another 9 units from the following:

FTV-52 Telecommunications Laboratory 2
FTV-60 Overview of Digital Media 3
FTV-64 Digital Editing Principles and Techniques 3
FTV-66 Advanced Digital Editing 3
FTV-73 Introduction to Pro Tools Digital Audio Recording 3
FTV-74 Production Planning and Management 3
FTV-200 Telecommunications Work Experience 1-2-3-4
ADM-68 3D Animation with Maya 3

SOUND ENGINEERING EMPHASIS

Core Requirements 20

Select another 9 units from the following:

FTV-11 Sound Recording and Reinforcement Techniques 3
FTV-52 Telecommunications Laboratory 2
FTV-63 Multimedia Sound Design Techniques 3
FTV-64 Digital Editing Principles and Techniques 3
FTV-65 The Director’s Art in Filmmaking 3
FTV-66 Advanced Digital Editing 3
FTV-71 Sound Engineering for Audio in Media 3
FTV-73 Introduction to Pro Tools Digital Audio Recording 3
FTV-74 Production Planning and Management 3
FTV-200 Telecommunications Work Experience 1-2-3-4
MUS-8A Introduction to MIDI and Digital Audio 3

ADM-69 Motion Graphics and Compositing with After Effects 3
ADM-71 Adobe Photoshop 3
ART-22 Basic Design 3
ART-23 Design and Color 3
ART-36 Computer Art 3
PHO-8 Introduction to Photography 3

FILM PRODUCTION EMPHASIS

Core Requirements 20

Select another 9 units from the following:

FTV 12 History of Film 3
FTV-48 Short Film Production 3
FTV-52 Telecommunications Laboratory 2
FTV-64 Digital Editing Principles and Techniques 3
FTV-65 The Director’s Art in Filmmaking 3
FTV-66 Advanced Digital Editing 3
FTV-68 Story Development Process in the Entertainment Industry 3
FTV-69 Script Supervising for Television and Film 3
FTV-70 Scriptwriting Software using Final Draft 1
FTV-72 Introduction to Lighting Design for Film and Television 3
FTV-73 Introduction to Pro Tools Digital Audio Recording 3
FTV-74 Production Planning and Management 3
FTV-200 Telecommunications Work Experience 1-2-3-4
ADM-68 3D Animation with Maya 3
ADM-69 Motion Graphics and Compositing with After Effects 3
ADM-71 Adobe Photoshop 3
ENG-38 Introduction to Screenwriting 3
PHO-8 Introduction to Photography 3
THE-5 Theatre Practicum 3
TELEVISION PRODUCTION EMPHASIS

Core Requirements 20

Select another 9 units from the following:

- FTV-52 Telecommunications Laboratory 2
- FTV-64 Digital Editing Principles and Techniques 3
- FTV-66 Advanced Digital Editing 3
- FTV-67 Introduction to Video Production 2
- FTV-69 Script Supervising for Television and Film 3
- FTV-70 Scriptwriting Software using Final Draft 1
- FTV-73 Introduction to Pro Tools Digital Audio Recording 3
- FTV-74 Production Planning and Management 3
- FTV-200 Telecommunications Work Experience 1-2-3-4
- ADM-68 3D Animation with Maya 3
- ADM-69 Motion Graphics and Compositing with After Effects 3
- JOU-1 Introduction to Journalism 3
- JOU-7 Mass Communications 3
- PHO-8 Introduction to Photography 3
- THE-5 Theatre Practicum 3

Associate in Science Degree

The Associate in Science Degree in Film, Television and Video, Production Specialist will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree:

BASIC TELEVISION PRODUCTION (R) CE842 Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Plan and produce film, television, video and audio productions from concept to finished product.
- Operate a variety of electronic media production equipment and facilities including but not limited to film and video cameras, character generators, microphones, lighting instruments, teleprompters, editing software, sound recorders and control room test equipment.
- Create film and video productions that have a focused, coherent message with a clear beginning, middle and end and that meet industry technical standards for composition, lighting, sound and editing.
- Demonstrate workplace behaviors necessary for industry success including reliability, persistence, ability to adhere to deadlines and ability to communicate and work cooperatively in a team production environment.

Required Courses (17 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTV-38</td>
<td>Telecommunications Production Project</td>
<td>3</td>
</tr>
<tr>
<td>FTV-42</td>
<td>Writing for Broadcast Television and Radio</td>
<td>3</td>
</tr>
<tr>
<td>FTV-43</td>
<td>Television Studio and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>FTV-44</td>
<td>Television Production</td>
<td>3.5</td>
</tr>
<tr>
<td>FTV-45</td>
<td>Television News Production</td>
<td>3.5</td>
</tr>
<tr>
<td>FTV-51</td>
<td>Telecommunications Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

FIRE TECHNOLOGY

This program prepares individuals to perform the duties of fire fighters. This includes instruction in fire-fighting equipment operation and maintenance, principles of fire science and combustible substances, methods of controlling different types of fires, hazardous material handling and control, fire rescue procedures, public relations and applicable laws and regulation.

CHIEF OFFICER (M) MAS826/MCE826 Certificate Program

Required Courses (19.5 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT-C2A</td>
<td>Command 2A, Command Tactics At Major Fires</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C2B</td>
<td>Command 2B, Management of Major Hazards</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C2C</td>
<td>Command 2C, High Rise Fire Tactics</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C2D</td>
<td>Command 2D, Planning for Large Scale Disasters</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C2E</td>
<td>Command 2E, Wild Land Firefighting Tactics</td>
<td>1</td>
</tr>
<tr>
<td>FIT-C40</td>
<td>Advanced Incident Command System (I-400)</td>
<td>.5</td>
</tr>
<tr>
<td>FIT-M2A</td>
<td>Organizational Development and Human Relations</td>
<td>2</td>
</tr>
<tr>
<td>FIT-M2B</td>
<td>Fire Management 2B, Fire Service</td>
<td>2</td>
</tr>
<tr>
<td>FIT-M2C</td>
<td>Management 2C, Personnel and Labor Relations</td>
<td>2</td>
</tr>
<tr>
<td>FIT-M2D</td>
<td>Fire Management 2D, Master Planning in the Fire Science</td>
<td>2</td>
</tr>
<tr>
<td>FIT-M2E</td>
<td>Contemporary Issues and Concepts</td>
<td>2</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Fire Technology, Chief Officer will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

FIRE OFFICER (M) MAS827/MCE827 Certificate Program

Required Courses (18.5 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT-A1A</td>
<td>Fire Investigation 1A</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C1A</td>
<td>Command 1A, Command Principles</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C1B</td>
<td>Command 1B, Hazardous Materials</td>
<td>2</td>
</tr>
<tr>
<td>FIT-C1C</td>
<td>Fire Command 1C, I-Zone Firefighting</td>
<td></td>
</tr>
<tr>
<td>FIT-C30</td>
<td>Intermediate Incident Command System (I-300)</td>
<td>.5</td>
</tr>
<tr>
<td>FIT-I1A</td>
<td>Instructor 1A, Instructional Techniques</td>
<td>2</td>
</tr>
<tr>
<td>FIT-I1B</td>
<td>Instructor 1B, Instructional Techniques</td>
<td>2</td>
</tr>
<tr>
<td>FIT-M1</td>
<td>Fire Management 1, Management/Supervision</td>
<td>2</td>
</tr>
<tr>
<td>FIT-P1A</td>
<td>Prevention 1A, Fire Inspection Practices</td>
<td>2</td>
</tr>
<tr>
<td>FIT-P1B</td>
<td>Prevention 1B, Code Enforcement</td>
<td>2</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Fire Technology, Fire Officer will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
FIRE TECHNOLOGY (M)  
MAS555/MCE555

This program prepares individuals for an entry-level career in the fire service by providing a foundation of core concepts, practices, vocabulary, culture, safety, and requirements for the fire service. This program follows the Fire and Emergency Services Higher Education (FESHE) model from the National Fire Academy in Emmitsburg, Maryland and is a component of accreditation from the California State Fire Marshal.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

• Identify minimum qualifications and entry-level skills for fire fighter hiring. The student will be able to describe the following elements: application process; written exam process; physical agility exam, oral interview, chief’s interview; background investigation; and fire fighter probationary process. Students will identify fire service history, culture and diversity.

• Demonstrate the ability to analyze, appraise and evaluate fire and emergency incidents and identify components of emergency management and fire fighter safety including: size-up, report on conditions, Incident Command System; RECEO; 10 Standard Firefighting Orders; 18 Situations that shout “Watch Out”; and common factors associated with injuries and line of duty deaths.

• Identify and comprehend laws, regulations, codes and standards that influence fire department operations, and identify regulatory and advisory organizations that create and mandate them especially in the areas of fire prevention, building codes and ordinances, firefighter health and safety.

• Analyze the causes of fire, determine extinguishing agents and methods, differentiate the stages of the fire and fire development, and compare methods of heat transfer.

• Identify and describe the apparatus used in the fire service, and the equipment and maintenance of fire apparatus and equipment.

• Identify and describe common types of building construction and conditions associated with structural collapse and firefighter safety.

• Differentiate between fire detection and alarm systems, and identify common health and safety concerns for firefighter and first responders.

Required Courses (23 units)  
Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT-1</td>
<td>Fire Protection Organization</td>
<td>3</td>
</tr>
<tr>
<td>FIT-2</td>
<td>Fire Behavior and Combustion</td>
<td>3</td>
</tr>
<tr>
<td>FIT-3</td>
<td>Fire Protection Equipment and Systems</td>
<td>3</td>
</tr>
<tr>
<td>FIT-4</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FIT-5</td>
<td>Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FIT-7</td>
<td>Principles of Fire and Emergency Services Safety</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives (5 units)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS-50 and 51</td>
<td>Emergency Medical Services-Basic and Clinical/Field</td>
<td>7</td>
</tr>
<tr>
<td>FIT-8</td>
<td>Strategies and Tactics</td>
<td>3</td>
</tr>
<tr>
<td>FIT-9</td>
<td>Fire Ground Hydraulics</td>
<td>3</td>
</tr>
</tbody>
</table>

Students who successfully complete the certificate may also be eligible to receive additional certification through FEMA/National Fire Academy.

Associate in Science Degree

The Associate in Science Degree in Fire Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

FIREFIGHTER ACADEMY (M)  
MAS669/MCE669

Certificate Program

Required Courses (19 units)  
Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT-S3</td>
<td>Basic Firefighter Academy</td>
<td>19</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Fire Academy will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
GEOGRAPHIC INFORMATION SYSTEMS
This program prepares individuals for the systematic study of mapmaking and the application of mathematical, computer and other techniques to the science of mapping geographic information. This includes instruction in cartographic theory and map projections, computer-assisted cartography, map design and layout, photogrammetry, air photo interpretation, remote sensing, cartographic editing, and applications to specific industrial, commercial, research, and governmental mapping problems.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

### CORE CERTIFICATE IN GIS MAPPING (N) NCE794

**Certificate Program**
Required Courses (9 units) Units
---
GIS-1 Introduction to Geographic Information Systems 3
GIS-5 Cartography and Base Map Development 3
GIS-9 Spatial Analysis with GIS 3

### GEOGRAPHIC INFORMATION SYSTEMS (N) NCE790

**Certificate Program**
Required Courses (15 units) Units
---
GIS-1 Introduction to Geographic Information Systems 3
GIS-5 Cartography and Base Map Development 3
GIS-9 Spatial Analysis with GIS 3
GIS-17 Advanced GIS Applications 3
Electives (Choose from list below) 3

**Electives (3 units)**
---
GIS-13 GIS for Science, Business and Government 3
GIS-21 Global Positioning System (GPS) Field Techniques 3
GIS-25 GIS Internship 3

---

GENERAL BUSINESS
See BUSINESS ADMINISTRATION

GRAPHICS TECHNOLOGY
See Applied Digital Media and Printing

---

HUMAN SERVICES
The Human Services Program prepares students for various paraprofessional positions in human services, such as mental health case manager, job coach/employment specialist, social service intake specialist, or community health worker. Graduates of the program will be prepared to work as entry-level employees in a variety of settings such as group homes, halfway houses, mental health and correctional facilities, family, child and service agencies under the direct supervision of social workers and other human services professionals in public and non-profit social service agencies.

### HUMAN SERVICES (MR) MAS663/MCE663 AS663/CE663

**Certificate Program**

**Program Learning Outcomes**
Upon successful completion of this program, students should be able to:
- Demonstrate knowledge and skills needed to prepare for an entry-level paraprofessional position in human services.
- Develop a thoughtful, genuine, and empathetic attitude toward human beings.
- Increase the capacity for self-awareness and personal growth.
- Assist consumers and family members in matching needs with available community resources.
- Expand knowledge, skills, and attitudes necessary to help people better understand and help themselves.

**Required Courses (20 units) Units**
---
HMS-4 Introduction to Human Services 3
HMS-5 Introduction to Evaluation and Counseling 3
HMS-6 Introduction to Case Management 3
HMS-8 Introduction to Group Process 3
HMS-16 Public Assistance and Benefits 1
HMS-200 Human Services Work Experience 1-2-3-4
Electives (Choose from list below) 6

**Electives (6 units)**
---
HMS-7 Introduction to Psychosocial Rehabilitation 3
HMS-13 Employment Support Strategies 3
HMS-14 Job Development 3
HMS-18 Introduction to Social Work 3
HMS-19 Generalist Practices of Social Work 3

**Associate in Science Degree**
The Associate in Science Degree in Human Services will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree:

**EMPLOYMENT SUPPORT SPECIALIZATION (MR)**  MCE802  CE802

This program prepares students to apply technical knowledge and skills to provide employment support for individuals with disabilities and their family members.

**Certificate Program**

**Program Learning Outcomes**

Upon successful completion of the program, students will be able to:

- Demonstrate ability to help individuals become employable and self-sufficient.
- Provide follow-up services to help individuals maintain employment.
- Demonstrate ability to assist individuals with knowledge about benefits, eligibility requirements and available services and resources.

Required Courses (4 units)  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMS-13</td>
<td>3</td>
</tr>
<tr>
<td>HMS-16</td>
<td>1</td>
</tr>
</tbody>
</table>

**KINESIOLOGY**

This program prepares individuals to apply business, coaching and physical education principles to the organization, administration and management of athletic programs and teams, fitness/rehabilitation facilities and health clubs, sport recreation services, and athletic training programs. This includes instruction in program planning and development; business and financial management principles; sales, marketing and recruitment; event promotion, scheduling and management; facilities management; public relations; legal aspects of sports; and applicable health and safety standards.

**EXERCISE, SPORT, AND WELLNESS**

**Certificate Program**

**Major Core Requirements:**

Required Courses (21 units)  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN-4</td>
<td>3</td>
</tr>
<tr>
<td>KIN-10</td>
<td>3</td>
</tr>
<tr>
<td>KIN-12</td>
<td>3</td>
</tr>
<tr>
<td>KIN-14</td>
<td>3</td>
</tr>
<tr>
<td>KIN-16</td>
<td>3</td>
</tr>
<tr>
<td>KIN-30</td>
<td>3</td>
</tr>
<tr>
<td>KIN-35</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, choose and complete courses from one emphasis below:

<table>
<thead>
<tr>
<th>Emphasis</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitness Professions</td>
<td>4</td>
</tr>
<tr>
<td>Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>Personal Training</td>
<td>3</td>
</tr>
<tr>
<td>Yoga Instructor Training</td>
<td>3</td>
</tr>
<tr>
<td>Group Fitness Instructor</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fitness Professions Emphasis (R)**  AS595/CE595

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Demonstrate an acceptable level of health-related fitness.
- Demonstrate appropriate knowledge of fitness testing and of issues specific to different populations.
- Identify physiological principles of human movement in exercise and sport settings.
- Identify, explain, and apply appropriate principles of physical activity and nutrition for physical well being and lifelong learning.

(Total of 24-25 units)  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Requirements</td>
<td>21</td>
</tr>
<tr>
<td>Take one of the following:</td>
<td></td>
</tr>
<tr>
<td>KIN-42 Lifeguarding/Title 22 First Aid/</td>
<td>4</td>
</tr>
<tr>
<td>Water Safety Instructor</td>
<td></td>
</tr>
<tr>
<td>KIN-43 Personal Training</td>
<td>3</td>
</tr>
<tr>
<td>KIN-44 Yoga Instructor Training</td>
<td>3</td>
</tr>
<tr>
<td>KIN-45 Group Fitness Instructor</td>
<td>3</td>
</tr>
</tbody>
</table>

**Athletic Training Emphasis (R)**  AS597/CE597

**Program Learning Outcomes**

Upon successful completion of this program, students should be able to:

- Construct an injury prevention program for an athletic team based on knowledge of strength/conditioning, nutrition, health and safety, and protective equipment.
- Utilize appropriate knowledge and strategies to create an emergency action plan for an athletic team or teams.
- Apply the technical skills of taping and wrapping techniques.
- Demonstrate an appropriate and organized approach to event management.
- Identify and evaluate appropriate strategies for rehabilitation of athletic injuries.
- Demonstrate appropriate communication and behavioral skills and social attitudes necessary in an athletic training environment.

(Total of 29 units)  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Requirements</td>
<td>21</td>
</tr>
<tr>
<td>KIN-21 Athletic Training Applications</td>
<td></td>
</tr>
<tr>
<td>(Must take two times)</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>Take two of the following:</td>
<td></td>
</tr>
<tr>
<td>KIN-17 Athletic Training, Fall Sports,</td>
<td>2</td>
</tr>
<tr>
<td>Lower Extremity</td>
<td></td>
</tr>
<tr>
<td>KIN-18 Athletic Training, Spring Sports,</td>
<td>2</td>
</tr>
<tr>
<td>Upper Extremity</td>
<td></td>
</tr>
<tr>
<td>KIN-19 Athletic Training, Fall Sports,</td>
<td>2</td>
</tr>
<tr>
<td>Head, Neck, Spine, Torso, and Hip</td>
<td></td>
</tr>
<tr>
<td>KIN-20 Athletic Training, Spring Sports,</td>
<td>2</td>
</tr>
<tr>
<td>General Medical</td>
<td></td>
</tr>
</tbody>
</table>
COACHING EMPHASIS (R) AS599/CE599

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Identify and apply appropriate principles of coaching and an advanced level of knowledge and skill in at least one sport or physical activity.
- Demonstrate appropriate decisions relative to legal liability in coaching situations and circumstances.
- Apply appropriate strategies, tactics, and conditioning activities for the age and skill level of their athletes.
- Demonstrate an understanding of administrative practices in sports management.
- Identify, explain, and apply appropriate principles of problem solving for one or more problem, challenge, or difficulty associated with a sport.
- Recognize the principles of health care and safety for student athletes in relation to athletic training and sports medicine issues.

(Total of 30-31 units) Units

Core Requirements 21
Elective from Group 1 Electives 3
Elective from Group 2 Electives 3-4
Elective from Group 3 Electives 1
Elective from Group 4 Electives 1
Elective from Group 5 Electives 1

Group 1 Electives (3 units)
KIN-24 Sports Officiating, Fall Sports 3
KIN-25 Sports Officiating, Spring Sports 3

Group 2 Electives (3-4 units)
KIN-26 Foundations of Coaching 3
KIN-27 Football Theory 3
KIN-28 Basketball Theory 3
KIN-29 Soccer Theory 3
KIN-33 Baseball Theory 3
KIN-34 Softball Theory 3
KIN-42 Lifeguarding/Title 22 First Aid/ Water Safety Instructor 4

Group 3 Electives - Individual Activity Courses (1 unit)
KIN-A11 Tennis, Beginning 1
KIN-A12 Tennis, Intermediate 1
KIN-A13 Tennis Advanced 1
KIN-A20 Golf, Beginning 1
KIN-A21 Golf, Intermediate 1
KIN-A28 Swimming, Basic Skills and Aquatic Exercise 1
KIN-A29 Swimming, Intermediate Skills 1
KIN-A30 Swimming, Advanced Skills and Conditioning 1
KIN-A33 Track and Field: Running Event Techniques 1
KIN-A34 Track and Field: Field Event Techniques 1

Group 4 Electives - Team Activity Courses (1 unit)
KIN-A50 Baseball Fundamentals, Defensive 1
KIN-A51 Baseball Fundamentals, Offensive 1
KIN-A52 Fast Pitch Fundamentals, Offensive 1
KIN-A53 Fast Pitch Fundamentals, Defensive 1
KIN-A54 Fast Pitch Softball Fundamentals 1
KIN-A57 Basketball 1
KIN-A60 Football Fundamentals, Defensive 1
KIN-A61 Football Fundamentals, Offensive 1
KIN-A62 Flag Football 1
KIN-A64 Soccer 1
KIN-A67 Volleyball, Beginning 1
KIN-A68 Volleyball, Intermediate 1
KIN-A69 Volleyball, Advanced 1

Group 5 Electives - Fitness Activity Courses (1 unit)
KIN-A31 Water Aerobics and Deep Water Exercise 1
KIN-A74 Hiking and Backpacking 1
KIN-A75 Walking for Fitness 1
KIN-A77 Jogging for Fitness 1
KIN-A78 Long Distance Running 1
KIN-A80 Triathlon Techniques 1
KIN-A81 Physical Fitness 1
KIN-A86 Step Aerobics 1
KIN-A87 Step Aerobics, Intermediate 1
KIN-A88 Step Aerobics, Advanced 1
KIN-A90 Weight Training 1
KIN-A92 Weight Training, Advanced 1

Associate in Science Degree

The Associate in Science Degree in Kinesiology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
LOGISTICS MANAGEMENT

This program prepares individuals to manage business logistics functions, ranging from acquisitions to receiving and handling, through internal allocation of resources to operations units, and delivery to the final customer. This includes instruction in the domestic and international aspects of logistics contracts and purchasing, computerized logistics systems, inventory control, warehousing, transportation, and freight claims. Emphasis is placed on the efficient and effective integration of all logistics activities.

LOGISTICS MANAGEMENT (N) NAS579/NCE579

This program prepares students for entry into or career growth within the logistics industry, and ongoing study of the field. The focus is integrated logistics, a necessity for management of effective and efficient supply chains. Logistics disciplines covered include warehousing, transportation, service contracting, purchasing, global logistics, etc.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

- Compare roles and objectives of the logistics disciplines;
- Understand how logistics functions can interact to efficiently use total personnel, facilities and equipment;
- Contribute knowledge needed by multidisciplinary teams to effectively integrate and exceed end user (customer) expectations;
- Analyze, prepare, file and process claims when unavoidable freight disputes arise;
- Explain how the overall flow of goods, services and information can be optimized to satisfy customer and business goals;
- Identify 3rd party logistics provider and client needs in negotiations, bidding and contracts, as well as legal and regulatory constraints to integrated logistics;
- Describe roles and value added by global logistics intermediaries.

Required Courses (18 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-80</td>
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</tr>
<tr>
<td>BUS-82</td>
<td>1.5</td>
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<tr>
<td>BUS-83</td>
<td>1.5</td>
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<tr>
<td>BUS-85</td>
<td>3</td>
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<tr>
<td>BUS-86</td>
<td>3</td>
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<td>BUS-87</td>
<td>3</td>
</tr>
<tr>
<td>BUS-90</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Logistics Management will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

MANUFACTURING TECHNOLOGY

This program prepares individuals to apply basic engineering principles and technical skills to the identification and resolution of production problems in the manufacture of products. This includes instruction in machine operations, production line operations, engineering analysis, systems analysis, instrumentation, physical controls, automation, computer-aided manufacturing (CAM), manufacturing planning, quality control, and informational infrastructure.

AUTOMATED SYSTEMS (N) NAS732/NCE732

Certificate Program

Required Courses (26 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-26 Microprocessors and Microcontrollers</td>
<td>4</td>
</tr>
<tr>
<td>MAC/MAN-56 CNC Machine Setup and Operation</td>
<td>4</td>
</tr>
<tr>
<td>MAC/ENE-61 Computer Aided Design and Computer Aided Manufacturing</td>
<td>2</td>
</tr>
<tr>
<td>MAN-60 Hydraulics and Pneumatic Systems</td>
<td>3</td>
</tr>
<tr>
<td>MAN-64 Programmable Logic Controllers</td>
<td>3</td>
</tr>
<tr>
<td>MAN-75A Robotic Systems</td>
<td>4</td>
</tr>
<tr>
<td>Electives (Choose from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives (6 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-38 Computer Systems Troubleshooting</td>
<td>4</td>
</tr>
<tr>
<td>ENE/ELE-27 Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENE-60 Math for Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>ENE-200 Work Experience</td>
<td>1-2-3-4</td>
</tr>
</tbody>
</table>

Associate in Science Degree

The Associate in Science Degree in Manufacturing Technology, Automated Systems will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
AUTOMATED SYSTEMS TECHNICIAN (N) NAS737/NCE737

Certificate Program

Program Learning Outcomes

Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of automated systems by compiling a portfolio of their work, which may include sample parts accompanied by drawings and digital pictures.

Required Courses (24 units) Units

ELE-10 Survey of Electronics 4
ELE-26 Microprocessors and Microcontrollers 4
ELE/ENE-27 Technical Communications 3
ENE-51 Blueprint Reading 2
ENE-60 Math for Engineering Technology 3
MAC/MAN-55 Occupational Safety and Health Administration (OSHA) Standards for General Industry 2
MAN-60 Hydraulics and Pneumatic Systems 3
MAN-64 Programmable Logic Controllers 3

Associate in Science Degree

The Associate in Science Degree in Manufacturing Technology, Automated Systems Technician will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Learning Outcomes

In addition to achieving the program learning outcomes for the automated systems technician certificate program, students who complete the Associate in Science Degree in manufacturing technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree:

COMPUTER-AIDED PRODUCTION TECHNOLOGY (N) NCE799

Certificate Program

Program Learning Outcomes

Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of computer-aided production technology by completing the following: a Steam or Stirling Engine that involves parts using both the mill and lathe; a portfolio which may include printouts of Mastercam part file drawings, numerical code files, operation sheets, and writing assignment on occupational safety in the general industry.

Required Courses (14-15 units) Units

ENE-51 Blueprint Reading 2
ENE-60 Math for Engineering Technology 3
MAN/MAC-55 Occupational Safety and Health Administration (OSHA) Standards for General Industry 2
MAN/MAC-56 CNC Machine Set-up and Operation 4
Electives (Choose from list below) 3-4

Electives (3-4 units)

MAN-52 Computer-Aided Manufacturing-Mastercam 4
MAN/MAC-57 CNC Program Writing 3
MAN-59 Computer-Aided Manufacturing-GibbsCAM 4

MEDICAL ASSISTING

This program prepares individuals to provide medical office administrative services and perform clinical duties including patient intake and care, routine diagnostic and recording procedures, pre-examination and examination assistance, administration of medications, and first aid under the supervision of a physician. This includes instruction in basic anatomy and physiology; medical terminology; medical law and ethics; patient psychology and communications; medical office procedures; and clinical/diagnostic examination, testing, and treatment procedures.

ADMINISTRATIVE/CLINICAL MEDICAL ASSISTING (M) MAS718/MCE718

Certificate Program

Required Courses (22 units) Units

MDA-1A Medical Terminology IA 3
MDA-1B Medical Terminology IB 3
MDA-54 Clinical Medical Assisting and Pharmacology 5
MDA-59 Medical Office Procedures 5
Electives (Choose from list below) 6

Electives (6 units)

CIS-1A Introduction to Computer Information Systems or
CAT/CIS-3 Computer Applications for Working Professionals 3
CAT-50 Keyboarding and Document Processing 3
CAT/CIS-84 WordPerfect for Windows 3

Associate in Science Degree

The Associate in Science Degree in Administrative/ Clinical Medical Assisting will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificate may lead to employment competency, but does not lead to an Associate in Science Degree:

MEDICAL TRANSCRIPTION (M) MAS701/MCE701

The purpose of the course is to prepare the individual to be a medical language specialist who will apply the knowledge of medical terminology, anatomy and physiology, and English language rules to the transcription and proofreading of medical dictation from various healthcare providers. The individual will interpret and transcribe dictation by physicians and other healthcare professionals regarding patient assessment, therapeutic procedures, and clinical course, to provide a permanent medicolegal record of patient care. This includes preparing the individual to recognize, interpret and evaluate inconsistencies in the grammar of the spoken word and appropriately edit, revise and clarify it without changing the meaning of the dictation. The individual will be prepared to demonstrate an understanding of the medicolegal responsibilities and implications related to the transcription of documents in order to protect the patient and the institution/business facility. The operation of designated word processing, dictation and transcription equipment and software will be included.
**Certificate Program**

Required Courses (26 units) | Units
--- | ---
AMY-10 Survey of Human Anatomy and Physiology | 3
MDA-1A Medical Terminology IA | 3
MDA-1B Medical Terminology IB | 3
MDA-58A Medical Transcription | 5
CAT-30 Business English | 3

Electives (Choose from list below) | Units
--- | ---
MDA-58B Advanced Medical Transcription | 3
MDA-60 Survey of Human Diseases | 2
MDA-61 Pharmacology for Medical Office Personnel | 2
CAT/CIS-3 Computer Applications for Working Professionals | 3
CAT-50 Keyboarding and Document Processing | 3
CAT/CIS-84 Word Processing: WordPerfect for Windows | 3

Electives (9 units)

**Associate in Science Degree**
The Associate in Science Degree in Medical Assisting/Medical Transcription will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

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**MUSIC**
The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

**JAZZ PERFORMANCE (R) CE852**

**Certificate Program**

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Analyze, practice and interpret jazz and popular music chord symbols.
- Demonstrate the ability to analyze, learn, and perform standard jazz literature.
- Prepare a program, program notes or other materials related to the recital repertoire in cooperation with the instructor or recital coordinator.

Required Courses (17-17.5 units) | Units
--- | ---
MUS-25 Jazz Appreciation | 3
MUS-35 Vocal Music Ensembles (2 semesters) | 2
or
MUS-36 Instrumental Chamber Ensembles | 1.5
(1 semester)
MUS-39 Intermediate Applied Music (2 semesters) | 6
MUS-43 Jazz Improvisation and Theory (2 semesters) | 2
MUS-52 Recital Performance | .5
Performing Ensemble (Choose from list below) | 4

Performing Ensembles

MUS-33 Vocal Jazz Ensemble (2 semesters) | 4
or
MUS-44 Jazz Ensemble (2 semesters) | 4

---

**MIDI (R) CE850**

**Certificate Program**

Program Learning Outcomes
Upon successful completion of this program, students will be able to:

- Assemble, mix and master complete MIDI/Digital Audio compositions and film scores.
- Utilize MIDI/Digital audio software and hardware including computers, controllers, synthesizers, sequencers, samplers, effects processors, microphones and mixers.
- Communicate effectively and work cooperatively with film directors and music producers.

Required Courses (13 units) | Units
--- | ---
MUS-3 Fundamentals of Music | 4
MUS-8A Introduction to MIDI and Digital Audio | 3
MUS-8B Sequencing and Orchestration with Digital Audio and MIDI | 3
MUS-9 Music Composition and Film Scoring with Digital Audio | 3

**MUSIC PERFORMANCE (R) CE851**

**Certificate Program**

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Prepare and coordinate a recital with piano accompaniment, and/or chamber ensemble. This will include, but is not limited to, literature selection and preparation, collaboration with other musicians and written program development.
- Demonstrate practice and preparation skills required for music transfer students and or the professional musician. Skills will include, but are not limited to, successfully performing scales, arpeggios, exercises and etudes.
- Communicate effectively and work cooperatively within an ensemble setting.

Required Courses (17.5 units) | Units
--- | ---
MUS-39 Intermediate Applied Music (3 semesters) | 9
MUS-52 Recital Performance (25 minute solo program) | .5
Performing Ensemble (Choose from list below) | 8

Performing Ensembles (8 units—4 semesters)

MUS-28 Riverside Community Symphony | 2
MUS-33 Vocal Jazz Ensemble | 2
MUS-41 Chamber Singers | 2
MUS-42 Wind Ensemble | 2
MUS-44 Jazz Ensemble | 2
MUS-48 Marching Band | 2
MUS-77 Guitar Ensemble | 2
NURSING

REGISTERED NURSING PROGRAM (R) AS586

This program generally prepares individuals in the knowledge, techniques and procedures for promoting health, providing care for sick, disabled, infirm, or other individuals or groups. This includes instruction in the administration of medication and treatments, assisting a physician during treatments and examinations, referring patients to physicians and other health care specialists, and planning education for health maintenance.

Associate in Science Degree in Registered Nursing

Program Learning Outcomes

- Demonstrate critical thinking competencies using the nursing process as a basis for clinical decision-making by incorporating established nursing interventions which assist clients with common recurring health-illness problems at the primary, secondary, and tertiary levels of care.

- Apply leadership principles and management skills using collaboration in planning, delegating, supervising, and evaluating nursing care as it relates to complex situations.

- Demonstrate flexibility and innovation in adapting delivery of care according to the healthcare setting and healthcare policy system.

- Manage and coordinate care for a group of clients by assessing the skills of licensed and unlicensed assistive personnel, and delegating tasks appropriately based on complexity of client problems and skills of team members.

- Assume accountability for the delegation of client care to best meet client outcomes by supervising, teaching, and evaluating licensed and unlicensed assistive personnel.

- Use appropriate channels of communication when collaborating with multidisciplinary healthcare members to achieve client outcomes.

- Advocate for client rights while ensuring client and organizational confidentiality at all times.

- Manage care for groups of clients in diverse settings by supporting the client when making healthcare and end-of-life decisions.

- Demonstrate effective problem-solving and fair conflict resolution to achieve positive client outcomes.

- Manage resources, balancing quality care with cost containment.

- Demonstrate competence with current technologies to support and communicate the planning and provision of client care.

- Practice within the ethical and legal framework of nursing, including the California Nurse Practice Act, and report unsafe or illegal practices using appropriate channels of communication.

- Uses the ANA™ Standards of Practice and the Code of Ethics (ANA) for nurses to guide and evaluate nursing practice.

- Demonstrate professional behaviors, accountability for own nursing practice/competency and those duties delegated or assigned to others, including peer review.

- Demonstrate a foundation for cultural competence.

- Practice self-regulation assuming responsibility for updating knowledge base and clinical practice.

- Evaluate, reassess and adapt practice consistently and in response to constructive criticism or suggestions for improvement.

- Implement a plan for life-long learning, self-development, and self-care.

- Facilitate and apply evidence-based nursing practice.

- Contribute to the profession of nursing through mentoring, role modeling, participating in quality improvement activities, professional and organizational committees, and political action affecting healthcare.

- Demonstrate caring behaviors toward clients, peers, self, and other members of the healthcare team that builds positive team relationships, promotes organizational goals, and contributes to a healthy work environment.

- Delineate and maintain appropriate professional boundaries in the nurse-client relationship.

- Demonstrate successful performance on NCLEX-RN.

- Obtain employment as a competent professional ADN entry-level registered nurse.

The Associate in Science Degree in Registered Nursing will be awarded upon successful completion of the following courses:

Required Courses (72 units) Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMY-2A</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>AMY-2B</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>MIC-1</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Nursing 17 is required within one year prior to enrollment for all advanced placement/transfer students.</td>
<td></td>
</tr>
<tr>
<td>PSY-9</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>(PSY-9</td>
<td>required prior to NRN-2)</td>
<td></td>
</tr>
<tr>
<td>SOC-1</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANT-2</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1A</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>American Institutions</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Analytical Thinking</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>COM-1 or COM-9</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective Humanities</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>NRN-1</td>
<td>Introduction to Nursing Concepts and Practice</td>
<td>8</td>
</tr>
<tr>
<td>NRN-2</td>
<td>Beginning Nursing Concepts of Health and Illness</td>
<td>8.5</td>
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<tr>
<td>NRN-3</td>
<td>Intermediate Nursing Concepts of Health and Illness</td>
<td>9</td>
</tr>
<tr>
<td>NRN-4</td>
<td>Advanced Nursing Concepts of Health and Illness</td>
<td>9</td>
</tr>
<tr>
<td>NRN-15</td>
<td>Introduction to Nursing Roles and Relationships</td>
<td>2</td>
</tr>
<tr>
<td>NRN-16</td>
<td>Dimensions of AD-Registered Nursing</td>
<td>1.5</td>
</tr>
</tbody>
</table>

VOCATIONAL NURSING (R) AS588/CE588

This program prepares individuals to assist in providing general nursing care under the direction of a registered nurse, physician or dentist. This includes instruction in taking patient vital signs, applying sterile dressings, patient health education, and assistance with examinations and treatment.

Certificate Program

Program Learning Outcomes

Based on the nature of man, the stages of his life cycle and respecting his individual differences, the graduate of the Riverside City College Vocational Nursing Program will be a:

I. Provider of Care

Under the direction of the registered professional nurse, apply critical thinking as the basis for using the nursing process to assist clients with common, well defined health illness needs.

- Assess clients and communicate information that contributes to the nursing data base.

- Applying knowledge of Maslow’s hierarchy of human needs and Erikson’s stages of growth and development,
participate in the development of the plan of care using established nursing diagnoses for clients with common, well defined health illness needs.

- Using fundamental biopsychosocial principles, perform basic therapeutic and preventive nursing measures.
  - Use basic therapeutic communication techniques which promote positive relationships with clients, families, and multidisciplinary healthcare team members.
  - Perform basic health teaching during routine care as directed by the professional nurse to clients with common, well defined health illness needs.
  - Organize nursing care measures to give appropriate care to individual and/or multiple clients by prioritizing client(s) needs and implementing interventions.
  - Collaborate with healthcare team members to deliver holistic nursing care.
- Participate in evaluating the nursing care given and in modifying the plan of care as appropriate.
- Using collaboration, provide leadership and supervision to unlicensed assistive personnel to whom tasks have been delegated.
- Serve as an advocate for client rights, while ensuring client confidentiality at all times.
- Demonstrate competence with current technologies.

II. Member Within the Discipline of Nursing

Function as a member of the healthcare team by:

- Evaluate and demonstrate accountability for own performance according to ethical-legal standards and role of the vocational nurse in the healthcare delivery system.
- Seek assistance as necessary to ensure that appropriate nursing standards are maintained.
- Assess own knowledge and skills level to determine need for on-going study and participate in continuing nursing education in a changing health field.
- Within professional boundaries, demonstrate caring behaviors toward peers and other members of the multidisciplinary healthcare team.
- Acknowledge the responsibility of nurses to contribute to the profession of nursing through participation on committees and in organizations.

### Required Courses (51 units)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMY-10</td>
<td>Survey of Human Anatomy and Physiology</td>
<td>3</td>
</tr>
<tr>
<td>NVN-50</td>
<td>Introductory Vocational Nursing Foundations</td>
<td>2</td>
</tr>
<tr>
<td>NVN-51</td>
<td>Introductory Concepts of Vocational Nursing-Health/Illness</td>
<td>3</td>
</tr>
<tr>
<td>NVN-52</td>
<td>Introductory Concepts of Vocational Nursing Fundamentals</td>
<td>9.5</td>
</tr>
<tr>
<td>NVN-60</td>
<td>Intermediate Vocational Nursing Foundations-Nursing Process/Communication</td>
<td>1</td>
</tr>
<tr>
<td>NVN-61</td>
<td>Intermediate Concepts of Vocational Nursing-Care of the Family</td>
<td>6</td>
</tr>
<tr>
<td>NVN-62</td>
<td>Intermediate Concepts of Vocational Nursing-Medical/Surgical</td>
<td>12</td>
</tr>
<tr>
<td>NVN-63</td>
<td>Intermediate Concepts of Vocational Nursing-Mental Health</td>
<td>3</td>
</tr>
<tr>
<td>NVN-70</td>
<td>Advanced Vocational Nursing Foundations-Role Transition</td>
<td>1</td>
</tr>
<tr>
<td>NVN-71</td>
<td>Advanced Concepts of Vocational Nursing-Medical/Surgical</td>
<td>7.5</td>
</tr>
<tr>
<td>PSY-9</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

### Associate in Science Degree

The Associate in Science Degree in Vocational Nursing will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

#### Critical Care Nurse (R) CE581 Certificate Program

**Program Learning Outcomes**

Upon successful completion of the program, students should be able to:

- Identify environmental factors influencing the role of the critical care nurse.
- Develop constructive personal coping behaviors to be utilized when functioning as a critical care nurse.
- Identify ethical dilemmas and legal issues related to critical care nursing.
- Demonstrate the management of technical equipment commonly used.
- Identify methods for data collection utilized in patient assessment.
- Analyze pathophysiological behaviors of the major body systems.
- Incorporate assessment findings and patient responses into the delivery of patient care.
- Recognize signs and symptoms related to patient diagnosis frequently treated in critical care.
- Prioritize and organize care of the critically ill patient.
- Apply treatment protocols based on critical care policies, procedures, and professional standards.
- Implement interventions to meet the psychosocial needs of the critical care patient/family.
- Develop a collaborative and collegial working relationship with other healthcare team members.
Prerequisite: Completion of the RN program is required prior to enrolling in this course.

Required Courses (5 units) Units
NXN-81 Critical Care Nursing 5

NURSING ASSISTANT (R) CE584

Program Description
This program prepares individuals to perform routine nursing related services to patients in hospitals or long-term care facilities, under the training and supervision of a registered nurse or licensed practical nurse.

The certificate program noted below is incorporated into the VN programs. For a stand alone CNA course, please see HET-80 under Healthcare Technician or call 951-571-6135 for more information.

Certificate Program

Program Learning Outcomes

• Classify the basic human needs according to Maslow's hierarchy and apply the knowledge of these needs to the care of Level I patients (Middle, Older, and Very Old Adults).
• Describe the following eleven developmental psychosocial stages in the life cycle, according to Erikson/Newman and Newman.
• Assess the position of the patient from maximum health to death, according to the health-illness continuum.
• Demonstrate beginning critical thinking in using the nursing process with Level I patients' chronic health problems in various settings.
• Identify the three roles of the Associate Degree Nurse inherent within the outcome objectives of the nursing program.
• Demonstrate math/medication competency in calculations and drug dosages.
• Identify the competencies needed for a new graduate nurse in the current healthcare delivery system.
• Refer to the School of Nursing Associate Degree Nursing Program Level Objectives.

Required Courses (8-9.5 units) Units
NRN-1 Introduction to Nursing Concepts and Practice 8
or NVN-52 Introductory Concepts of Vocational Nursing-Nursing Fundamentals 9.5

PARALEGAL STUDIES AS591

Associate in Science Degree

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

• Produce written legal documents involved in litigation.
• Utilize electronic resources to research law and apply it to a given set of facts.
• Utilize appropriate judicial council pleading forms to produce documents required for pursuing and defending a lawsuit.
• Demonstrate a working knowledge of discovery tools and their functions as they relate to trial.
• Demonstrate ethical behavior of paralegals relevant to the attorney/client relationship.

Required Courses (37.5 units) Units
Level I Courses:
BUS-18A Business Law I 3
PAL-10 Introduction to Paralegal Studies 3
PAL-64 Legal Research and Computer Applications 3
PAL-68 Civil Litigation and Procedures I 3
CAT/CIS-80 Word Processing: Microsoft Word for Windows 3
or CAT/CIS-84 Word Processing: WordPerfect for Windows 3

Level II Courses:
BUS-18B Business Law II 3
PAL-14 Legal Ethics 3
PAL-70 Law Office Policies, Procedures and Ethics 1.5
PAL-72 Legal Analysis and Writing 3
PAL-78 Civil Litigation and Procedures II 3

Specialty Courses (Select 9 units from the following)
ACC-1A Principles of Accounting I 3
PAL-80 Internship Project 1.5
PAL-81 Bankruptcy Law and Procedures 3
PAL-83 Estate Planning and Probate Procedures 3
PAL-85 Family Law and Procedures 3
PAL-87 Trial Practice Preparation and Procedures 3
RLE-82 Legal Aspects of Real Estate 3

Associate in Science Degree
The Associate in Science Degree in Paralegal Studies will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
PHOTOGRAPHY
This program focuses on the principles and techniques of communicating information, ideas and emotion through digital and film photography. The goal is to prepare individuals for careers in photographic and photography-related fields. This includes instruction in: camera operation and maintenance, use and maintenance of all photographically-related equipment, selection of camera equipment, digital and film media, printing media, film developing, light and composition, color and special effects, photography as art, the history of photography, and the use of computer applications to refine and organize photographic images.

PHOTOGRAPHY (R) AS592/CE592
Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Demonstrate competency in manipulating aperture, shutter and focal length to create a proper exposure as well as control action and depth of field for use in specialized situations
• Identify, describe and demonstrate formal concepts of photographic composition
• Define and demonstrate elements of lighting for still life and portraiture
• Modify images through the use of digital manipulation of pixels using channels, color adjustments and layer blend modes
• Produce a portfolio of work demonstrating technical competencies and aesthetic merit

Required Courses (24 units) Units
PHO-8 Introduction to Photography 3
PHO-9 Intermediate Photography 3
PHO-10 Advanced Photography 3
PHO-12 Photojournalism 3
PHO-13 Advanced Darkroom Techniques 3
PHO-14 Basic Studio Portraiture 3
PHO-17 Introduction to Color Photography 3
PHO-20 Digital Photography 3

Associate in Science Degree
The Associate in Science Degree in Photography will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

PHYSICIAN ASSISTANT
This program prepares individuals academically and clinically to provide health care services with direction and supervision of a physician. Physician Assistants provide a broad range of medical services to include history taking, physical assessment, surgery assist, and diagnostic, preventive and therapeutic interventions. This includes basic medical, clinical, behavioral and social sciences; introduction of patient assessment; supervised clinical practice in family medicine, pediatrics, women health, general surgery, psychiatry, and behavioral medicine; health policy and professional practice issues; and the delivery of health care services to home-bound patients, rural populations, underserved populations.

PHYSICIAN ASSISTANT (M) MAS501/MCE501
Certificate Program
Program Learning Outcomes
Upon completion of the physician assistant program students should be able to:
• analyze etiologies, risk factors, underlying pathologic process, and epidemiology for adult and pediatric medical conditions
• analyze and synthesize the history, physical findings, and diagnostic studies to formulate a differential diagnosis
• identify and evaluate signs and symptoms and select and analyze appropriate diagnostic studies to determine the most likely diagnosis of a medical condition
• manage general medical and surgical conditions integrating knowledge about the indications, contraindications, side effects, interactions and adverse reactions of pharmacologic agents and other relevant treatment modalities
• utilize appropriate screening methods of disease processes in asymptomatic individuals to and discuss concepts of health promotion and disease prevention
• differentiate between the normal and abnormal anatomic, physiological, and diagnostic data and the relevance of the findings
• provide competent health care to patients with acute and chronic conditions
• provide culturally sensitive and culturally responsive health care to a diverse patient population and demonstrate caring and respectful behaviors when interacting with patients and their families
• develop informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
• counsel and educate patients and their families on health care
• perform competent medical and surgical procedures considered essential in the area of practice
• create and sustain a therapeutic and ethically sound relationships with patients utilizing effective listening, nonverbal, verbal and writing skills to elicit and provide information

PHYSICAL EDUCATION
See KINESIOLOGY
• collaborate effectively with physicians, other disciplinary team members, and professional groups to provide patient centered patient care
• demonstrate emotional resilience and stability, adaptability, flexibility and tolerance of ambiguity and anxiety
• demonstrate competent documentation concerning the patient care process for medical, legal, quality assurance and financial purposes
• integrate the legal and regulatory guidelines into the professional role of the physician assistant and show sensitivity and responsiveness to
• demonstrate respect, compassion and integrity for the patient, society, and the PA profession
• demonstrate knowledge of ethical principles pertaining to provision or withholding of clinical care
• establish, appraise, and integrate evidence from scientific studies related to the patients’ health problem
• apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
• distinguish biases related to gender, culture, cognitive, emotional, and physical limitations in themselves and others
• utilize information technology and medical information to support patient care decisions and patient education and to provide efficient patient care.
• demonstrate cost-effective health care and resource allocation that does not compromise quality of care

Required Courses (91.5 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHT-1</td>
<td>Applied Clinical Skills</td>
<td>2</td>
</tr>
<tr>
<td>PHT-2</td>
<td>Medicine Science I</td>
<td>6.5</td>
</tr>
<tr>
<td>PHT-3</td>
<td>History and Physical Assessment I</td>
<td>4</td>
</tr>
<tr>
<td>PHT-4</td>
<td>Applied Clinical Skills II</td>
<td>4</td>
</tr>
<tr>
<td>PHT-5</td>
<td>Medicine Science II</td>
<td>6.5</td>
</tr>
<tr>
<td>PHT-6</td>
<td>History and Physical Assessment II</td>
<td>4</td>
</tr>
<tr>
<td>PHT-7</td>
<td>Medical Pharmacology</td>
<td>4</td>
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<tr>
<td>PHT-8</td>
<td>Applied Clinical Skills III</td>
<td>3</td>
</tr>
<tr>
<td>PHT-9</td>
<td>Medicine Science III</td>
<td>6.5</td>
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<tr>
<td>PHT-10</td>
<td>Clinical Nutrition</td>
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<tr>
<td>PHT-11</td>
<td>Internal Medicine I</td>
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<td>PHT-12</td>
<td>Internal Medicine II</td>
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<td>PHT-13</td>
<td>General Surgery</td>
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<td>PHT-14</td>
<td>Surgery II</td>
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<td>PHT-15</td>
<td>Pediatrics</td>
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<tr>
<td>PHT-16</td>
<td>Obstetrics/Gynecology</td>
<td>6</td>
</tr>
<tr>
<td>PHT-17</td>
<td>Family Practice</td>
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<tr>
<td>PHT-18</td>
<td>Psychiatry/Mental Health</td>
<td>4</td>
</tr>
<tr>
<td>PHT-19</td>
<td>Emergency Medicine</td>
<td>4</td>
</tr>
</tbody>
</table>

Associate in Science Degree
The Associate in Science Degree in Physician Assistant will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

RETAIL MANAGEMENT/WAFC
This program prepares individuals to perform operations associated with retail sales in a variety of settings. This includes instruction in over-the-counter and other direct sales operations in business settings, basic bookkeeping principles, customer service, team/staff leadership and supervision, floor management, and applicable technical skills.

RETAIL MANAGEMENT/WAFC (NR)  NAS536/NCE536
(WESTERN ASSOCIATION OF FOOD CHAINS) AS536/CE536
Certificate Program

Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Use Generally Accepted Accounting Principles or International Accounting Standards guidelines to review and interpret financial documents.
• Calculate pricing models for mark-ups, profit margins for perishable and lost goods, discounts, and sinking funds.
• Prepare and deliver effective oral and written communications through multiple modes in multiple situations.
• Create and use basic word processing documents, spread sheets and visual (power point) presentations.
• Create and present a research paper on selected topics.
• Effectively apply basic management principles to actual and role-played work situations.
• Analyze and assess the legal and productivity implications of work conflicts.
• Effectively communicate in small groups.
• Analyze the effectiveness of marketing decisions and use marketing principles to assess market potential.

Required Courses (30 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC-1A</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>ACC/CAT-55 Applied Accounting/Bookkeeping</td>
<td>3</td>
</tr>
<tr>
<td>BUS-20</td>
<td>Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-22</td>
<td>Management Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS-1A</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CIS/CAT-3 Computer Applications for Working Professionals</td>
<td>3</td>
</tr>
<tr>
<td>COM-1</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>COM-9 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>MAG-57 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>MAG-56</td>
<td>Human Resources Management</td>
<td>3</td>
</tr>
<tr>
<td>MAG-44</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>MAG-51 Elements of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MAG-53</td>
<td>Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>MKT-20</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT-42</td>
<td>Retail Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Science Degree
The Associate in Science Degree in Retail Management/WAFC will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.
SIGN LANGUAGE INTERPRETING
This program prepares individuals to function as simultaneous and consecutive interpreters as well as transliterators of American Sign Language (ASL) and other signing systems employed to assist deaf and hard-of-hearing people, both voice-to-sign and sign-to-voice interpretation. This includes instruction in American Sign Language (ASL), alternative sign systems, fingerspelling, vocabulary and expressive nuances, oral and text translation skills, cross-cultural communications, slang and colloquialisms, and technical interpretation.

SIGN LANGUAGE INTERPRETING (R) AS505/CE505
Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Produce documented completion of a total of 54 observation hours, 27 mentorship hours, and 92 practicum hours.
• Provide a completed portfolio, including, but not limited to, a resume, an introductory letter, business cards, intake form, invoice form, and Interpreter Kit.
• Demonstrate entry-level interpreting skills before an exiting panel at the end of the 4th interpreting skills class.

Required Courses (28.5 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>AML-5</td>
<td>Sign Language for Interpreters</td>
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<tr>
<td>AML-10</td>
<td>Introduction to Sign Language Interpreting</td>
<td>3</td>
</tr>
<tr>
<td>AML-11</td>
<td>Interpreting I</td>
<td>4.5</td>
</tr>
<tr>
<td>AML-12</td>
<td>Interpreting II</td>
<td>4.5</td>
</tr>
<tr>
<td>AML-13</td>
<td>Interpreting III</td>
<td>4.5</td>
</tr>
<tr>
<td>AML-14</td>
<td>Interpreting IV/Practicum</td>
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</tr>
<tr>
<td>AML-20</td>
<td>Ethics and Professional Standards of Interpreting</td>
<td>3</td>
</tr>
<tr>
<td>AML/SOC-22</td>
<td>American Deaf Culture</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Science Degree
The Associate in Science Degree in Sign Language Interpreting will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

TELECOMMUNICATIONS
See Film, Television, and Video Production

WELDING TECHNOLOGY
This program prepares individuals to apply technical knowledge and skills for joining and cutting metallic materials. This includes instruction in SMAW, FCAW, GMAW, GTAW welding processes; Oxyacetylene and Plasma cutting of ferrous and non-ferrous materials. Including, welding metallurgy, structural welding safety, and applicable codes and standards.

WELDING TECHNOLOGY (R) AS606/CE606
Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
• Ability to work safely within the welding industry.
• Obtain skills necessary to obtain an entry-level job within the welding/construction industry.
• Demonstrate knowledge of SMAW, FCAW, GMAW, and GTAW welding processes.
• Obtain skills necessary to properly set up equipment used in the various welding processes.

Required Courses (36 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>WEL-15</td>
<td>Intro. to Basic Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-16</td>
<td>Advanced Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-35</td>
<td>Semi-Automatic Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-55A</td>
<td>Gas Tungsten Arc Welding-Plate Material</td>
<td>3</td>
</tr>
<tr>
<td>WEL-55B</td>
<td>Gas Tungsten Arc Welding-Exotic Metals</td>
<td>3</td>
</tr>
<tr>
<td>WEL-60</td>
<td>Advanced Pipe and Plate Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>WEL-61</td>
<td>Certification for Licensing of Welding</td>
<td>3</td>
</tr>
<tr>
<td>ENE-21</td>
<td>Drafting</td>
<td>3</td>
</tr>
<tr>
<td>ENE-60</td>
<td>Math for Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>ENG-50</td>
<td>Basic English Composition</td>
<td>4</td>
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<tr>
<td>Electives</td>
<td>(Choose from list below)</td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENE-51</td>
<td>Blueprint Reading</td>
<td>2</td>
</tr>
<tr>
<td>WEL-25</td>
<td>Introduction to Oxyacetylene Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-34</td>
<td>Metal Joining Processes</td>
<td>2</td>
</tr>
<tr>
<td>WEL-200</td>
<td>Welding Work Experience</td>
<td>1-2-3-4</td>
</tr>
</tbody>
</table>

Associate in Science Degree
The Associate in Science Degree in Welding Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

The following certificates may lead to employment competency, but do not lead to an Associate in Science Degree:

STICK WELDING (SMAW) (R) CE824
This certificate provides students with the technical knowledge and skill in oxyacetylene cutting, and SMAW welding to be able to enter into the welding career of either the field or shop environment. With these new skills, students will be able to obtain entry level employment.
Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

• Demonstrate knowledge and ability of SMAW process, safety, and oxyacetylene cutting.
• Demonstrate advanced knowledge and ability of SMAW, welding symbols, and safety.
• Differentiate between each of the welding processes used in the welding industry.
• Demonstrate knowledge of AWS welding codes.

Required Courses (11 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-15 Introduction to Basic Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-16 Advanced Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-34 Metal Joining Processes</td>
<td>2</td>
</tr>
<tr>
<td>WEL-61 Certification for Licensing of Welders</td>
<td>3</td>
</tr>
</tbody>
</table>

TIG WELDING (GTAW) (R) CE819

This certificate provides students with the technical knowledge and skill, in the oxyacetylene cutting and GTAW welding, to be able to enter into a welding career either in the field or shop environment. With these new skills, students will be able to obtain entry level employment.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

• Demonstrate knowledge and ability in oxyacetylene cutting, beginning SMAW welding process, and safety.
• Demonstrate knowledge and ability in the GTAW welding process, welding symbols, and safety.
• Differentiate between each of the welding processes used in the welding industry.
• Demonstrate knowledge of AWS welding codes.

Required courses (11 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-15 Introduction to Basic Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-55A Gas Tungsten Arc Welding-Plate Materials</td>
<td>3</td>
</tr>
<tr>
<td>WEL-34 Metal Joining Processes</td>
<td>2</td>
</tr>
<tr>
<td>WEL-61 Certification for Licensing of Welders</td>
<td>3</td>
</tr>
</tbody>
</table>

WIRE WELDING (FCAW, GMAW) (R) CE818

This certificate provides students with the technical knowledge and skill, in the oxyacetylene cutting and FCAW/GMAW welding, to be able to enter into a welding career either in the field or shop environment. With these new skills, students will be able to obtain entry level employment.

Certificate Program

Program Learning Outcomes

Upon successful completion of this program, students should be able to:

• Demonstrate knowledge and ability of beginning level of SMAW welding process, safety, and oxyacetylene cutting.
• Demonstrate knowledge and ability of the FCAW and GMAW welding processes, welding symbols, and safety.
• Differentiate between each of the welding processes used in the welding industry.
• Demonstrate knowledge of AWS welding codes.

Required Courses (11 units) Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-15 Introduction to Basic Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-35 Semi-Automatic Welding</td>
<td>3</td>
</tr>
<tr>
<td>WEL-34 Metal Joining Processes</td>
<td>2</td>
</tr>
<tr>
<td>WEL-61 Certification for Licensing of Welders</td>
<td>3</td>
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</tbody>
</table>