Announcement of Course & Course Numbers

COURSES

Credit Courses: Courses numbered 001-399 are graded courses authorized by the Governing Board of Solano Community College. All courses are not offered every year. Courses offered depend on prospective enrollment, the availability of instructors and physical facilities. Prospective students should consult the current Schedule of Classes for information on course offerings for a specific semester.

Noncredit Courses: The courses numbered 500-599 are offered on a noncredit basis. Regular attendance and participation are required. No grades or college credit are issued. Contact the Office of Admissions and Records or see the Schedule of Classes for current offerings.

CO/PREREQUISITES AND ADVISORIES

It is the intent of Solano Community College to guide students into courses in which they will have the best opportunity for academic success. Therefore, many courses have corequisites, prerequisites or advisories indicated in their descriptions.

Corequisite details: There are two types of corequisites. The first is a course or equivalent preparation that **must** be taken concurrently with another course. The second is a course or equivalent preparation that may be completed before or taken concurrently with another course. Both types of corequisites are listed as such under "Prerequisites," but the second type is followed by the parenthetical phrase "may be taken concurrently." A student's enrollment in a course with a corequisite is blocked until the requirements of the corequisite are satisfied.

Prerequisite: A course or equivalent preparation that **must** be completed **before** enrolling in another course. A student's enrollment in a course with a prerequisite is blocked until the requirements of the prerequisite are satisfied.

Advisory: A course or equivalent preparation that will broaden or deepen a student's learning experience in a subsequent course. A student's enrollment in a course with an advisory is not blocked for lack of the advisory skills.

Co/Prerequisites: Course corequisites and prerequisites ensure that the student has the minimum level of knowledge and/or skills to be successful in the specific course or program. The skills, concepts, and proficiencies learned in the prerequisite are not taught in the subsequent course. Corequisite and prerequisite information for a course, if any, appears in the "Prerequisite" area of the catalog description. For registration purposes, if a student is currently enrolled in a prerequisite course, that student may enroll in a subsequent course **contingent** on successful completion of the prerequisite. If the student is unsuccessful in the prerequisite, he/she will be **dropped** automatically from the subsequent course.

Advisories: Advisories are recommendations made to enhance or deepen the student's learning experience in a course. While the advisory skills and proficiencies are not required in order for a student to be successful in the course, advisories should be taken seriously. For specific information, students should consult their counselor or faculty advisor.

Solano Community College has established recommended minimum English and math standards for Associate Degree-level courses across the disciplines to advise students of the levels of writing, reading, and math skills they should have in order to have the most beneficial learning experience. Advisory information for a course appears in the "Course Advisory" area of the catalog description. The recommended **minimum** skill level in English in an Associate Degree-level course (SCC minimum English standard) is eligibility for enrollment in one English course one level below English 001. The recommended **minimum** skill level in mathematics in an Associate Degree-level course (SCC minimum Math standard) is eligibility for enrollment in elementary algebra (MATH 330).

Verification of a Co/Prerequisite: Students desiring to enroll in a course or program that specifies a co/prerequisite course and who have completed such a course at an institution other than Solano Community College must submit documentation to verify this completion. This documentation (unofficial or official transcript or report card) must be presented to a counselor, faculty advisor, or division dean or Office of Admissions or Records.

Announcement of Course & Course Numbers

Challenging a Co/Prerequisite. A student has the right to challenge a course co/prerequisite based on the following grounds: the co/prerequisite has not been established in accordance with the District process for establishing co/prerequisites; the co/prerequisite is either unlawfully discriminatory or is being applied in an unlawfully discriminatory manner; the prerequisite course has not been made "reasonably available" and the required completion of it will cause a delay of one or more terms in attaining the goal specified in the student's authorized Individualized Education Plan (IEP); or the student has the knowledge or ability to succeed in the course or program despite not meeting the co/prerequisite. In the challenge process, **the burden of proof is on the student**. In order to file a challenge, students must submit a "Petition to Challenge a Course Pre/Corequisite," available at the Office of Admissions and Records. If the challenge is upheld, the student will be allowed to enroll, contingent on the availability of space in the course; if denied, the student will not be allowed to enroll or, if already enrolled, will be dropped automatically from the class. Refer to the form for more detailed information on the requirements and procedures for processing this petition.

COURSE NUMBERING SYSTEM

The following numbering system indicates transferability, credit or noncredit status and other related information. For specific transfer information, students should consult a counselor and refer to the catalog of the prospective transfer institutions.

COURSE NUMBERS

001-049	Qualify for the A.A./A.S. Degree; transfer to the University of California system and the California State Universities.
050-099	Qualify for the A.A./A.S. Degree and transfer to the California State Universities.
100-199	Qualify for the A.A./A.S. Degree but, generally, do not transfer to four-year institutions. Some courses may be used to meet requirements in certain majors at some four-year institutions.
200-299	Vocational, credit courses which DO NOT apply to the A.A./A.S. Degree and do not transfer to four-year institutions.
300-399	Credit courses which DO NOT apply to the A.A./A.S. Degree. Exception: One English course one level below English 001 which may be applied to the Associate Degree as an elective and one elementary algebra course which may be used as an elective. These courses do not transfer to four-year institutions.
400-499	Upper division courses that apply to the B.S. Degree.
500-599	Non-credit courses.
600-799	Community Service courses. These courses are not for credit and usually charge a fee.

Some sequentially-numbered courses continue through two or more semesters and must often be taken in sequence. Check course prerequisites for appropriate course sequence.

The college reserves the right to cancel any class which does not meet the minimum enrollment requirements and whenever there are unexpected staffing or facility situations that cannot be satisfactorily resolved.

Course Identification Numbering System (C-ID)

The Course Identification Numbering System (C-ID) is a statewide numbering system that is different from the course numbers assigned by individual California Community Colleges. A C-ID Designator next to a course means that the course is comparable in content and scope to a similar course offered by participating California colleges and universities. Thus, if a catalog lists a C-ID Designator for a course, students can be assured that the course will be accepted at another California Community College that offers a course with the same C-ID Designator.

The C-ID Numbering System is particularly useful for students attending more than one California Community College since C-ID Designators are often applied to courses students need to prepare for transfer.

Below is the list of Solano Community College courses that currently have a C-ID designator.

Solano Community College		C-ID Designator
ACCOUNTING		
ACCT 001	Financial Accounting	ACCT 110
ACCT 002	Managerial Accounting	ACCT 120
ANTHROPOLOGY		
ANTH 001	Introduction to Biological Anthropology	ANTH 110
ANTH 002	Introduction to Cultural Anthropology	ANTH 120
ANTH 007	Introduction to Archaeology	ANTH 150
ART		
ART 002	Art History	ARTH 120
ART 003A	Arts of Asia	ARTH 130
ART 003B	Arts of Africa, Oceania, and the Americas	ARTH 140
ART 006	Design Principles in 2-Dimensions	ARTS 100
ART 007	Design-Color	ARTS 270
ART 008	Design Principles in 3-Dimensions	ARTS 101
ART 015	Intermediate Drawing	ARTS 205
BIOLOGY		
BIO 003	Evolution, Ecology & Biodiversity	BIOL 140
BIO 004	Human Anatomy with Lab	BIOL 110B
BIO 005	Human Physiology with Lab	BIOL 120B
BUSINESS		
BUS 018	Legal Environment of Business	BUS 120
CHILD DEVELOPMENT AND FAMILY STUDIES		
CDFS 038	Child Growth and Development	CDEV 100
CDFS 050	Child Family and Community	CDEV 110
CDFS 053	Teaching in a Diverse Society	ECE 230
CDFS 054	Health, Safety and Nutrition	ECE 220
CDFS 062	Principles & Practices of Teaching Young Children	ECE 120
CDFS 063	Introduction to Curriculum	ECE 130
CDFS 064	Observation and Assessment	ECE 200
CDFS 065	Practicum in Early Childhood Education	ECE 210
CHEMISTRY		
CHEM 002	General Chemistry for Science Majors Sequence A	CHEM 120S
CHEM 003	Organic Chemistry for Science Majors I, with Lab	CHEM 150
CHEM 004 + CHEM 003	Organic Chemistry for Science Majors Sequence A	CHEM 160S
COMPUTER INFORMATION SCIENCE		
CIS 021	Discrete Structures	COMP 152
CIS 022	Programming Concepts and Methodology I	COMP 122
CRIMINAL JUSTICE		
CJ 001	Introduction to Criminal Justice	AJ 110
CJ 002	Concepts of Criminal Law	AJ 120
CJ 011	Community and the Justice System	AJ 160
CJ 051	Criminal Investigation	AJ 140
CJ 053	Legal Aspects of Evidence	AJ 124
CJ 056	Juvenile Procedures	AJ 220
COMMUNICATION STUDIES		
COMM 001	Public Speaking	COMM 110
COMM 002	Introduction to Persuasion	COMM 190
COMM 006	Argumentation and Debate	COMM 120
COMM 008	Group Communication	COMM 140
COMM 012	Intercultural Communication	COMM 150
COMM 015	Oral Interpretation of Literature	COMM 170
COMM 050	Forensics (Speech & Debate)	COMM 160B
ECONOMICS		
ECON 001	Principles of Macroeconomics	ECON 202
ECON 002	Principles of Microeconomics	ECON 201

Course Identification Numbering System (C-ID)

Solano Community College		C-ID Designator
ENGLISH		
ENGL 001	College Composition	ENGL 100
ENGL 002	Argumentative Writing and Critical Thinking Through Literature	ENGL 110
ENGL 004	Critical Thinking and Composition: Language in Context	ENGL 105
ENGL 006	Introduction to Creative Writing	ENGL 200
ENGL 030	Survey of American Literature 1	ENGL 130
ENGL 031	Survey of American Literature 2	ENGL 135
ENGL 040	Survey of British Literature 1	ENGL 160
ENGL 041	Survey of British Literature 2	ENGL 165
GEOGRAPHY		
GEOG 001	Introduction to Physical Geography	GEOG 110
GEOG 001L	Physical Geography, Laboratory	GEOG 111
GEOG 002	Introduction to Human Geography	GEOG 120
GEOG 004	World Regional Geography	GEOG 125
GEOG 006	California Geography	GEOG 140
GEOG 010	Introduction to Geographic Information Systems and Techniques, with Lab	GEOG 155
GEOLOGY		
GEOL 001	Physical Geology	GEOL 100
GEOL 002	Physical Geology Laboratory	GEOL 100L
GEOL 010	Introduction to Geographic Information Systems and Techniques, with Lab	GEOG 155
HISTORY		
HIST 002	World History to 1500	HIST 150
HIST 003	World History since 1500	HIST 160
HIST 004	Western Civilization I	HIST 170
HIST 005	Western Civilization II	HIST 180
HIST 017	United States History to 1877	HIST 130
HIST 018	United States History from 1865	HIST 140
JOURNALISM		
JOUR 001	Introduction to Reporting and Newswriting	JOUR 110
JOUR 011	Introduction to Mass Communications	JOUR 100
JOUR 060	Lower Division Student Media Practicum I	JOUR 130
JOUR 061	Lower Division Student Media Practicum II	JOUR 131

Solano Community College		C-ID Designator
KINESIOLOGY		
KINE 020S	First Aid and CPR	KIN 101
MATHEMATICS		
MATH 011	Introduction to Statistics	MATH 110
MATH 020	Single Variable Calculus I Early Transcendentals	MATH 210
MATH 021	Single Variable Calculus II Early Transcendentals	MATH 220
MATH 023	Ordinary Differential Equations	MATH 240
MATH 040	Introduction to Linear Algebra	MATH 250
MUSIC		
MUSC 001	Music Theory I	MUS 120
MUSC 001	Musicianship I	MUS 125
MUSC 002	Music Theory II	MUS 130
MUSC 002	Musicianship II	MUS 135
MUSC 003	Music Theory III	MUS 140
MUSC 003	Musicianship III	MUS 145
MUSC 004	Music Theory IV	MUS 150
MUSC 004	Musicianship IV	MUS 155
MUSC 005	Music Fundamentals	MUS 110
MUSC 009	Large Ensemble	MUS 180
MUSC 010	Large Ensemble	MUS 180
MUSC 014	Large Ensemble	MUS 180
MUSC 015	Large Ensemble	MUS 180
MUSC 016	Large Ensemble	MUS 180
MUSC 017	Large Ensemble	MUS 180
MUSC 020	Large Ensemble	MUS 180
MUSC 024	Large Ensemble	MUS 180
MUSC 025	Large Ensemble	MUS 180
MUSC 026	Large Ensemble	MUS 180
MUSC 040A	Applied Music	MUS 160
MUSC 040B	Applied Music	MUS 160
MUSC 040C	Applied Music	MUS 160
MUSC 040D	Applied Music	MUS 160
NUTRITION		
NUTR 010	Introduction to Nutrition Science	NUTR 110
PHOTOGRAPHY		
PHOT 056	Photojournalism and Documentary Photography	JOUR 160

Course Identification Numbering System (C-ID)

Solano Community College		C-ID Designator
PHYSICS		
PHYS 002	General Physics (Non-Calculus)	PHYS 105
PHYS 004	General Physics (Non-Calculus)	PHYS 110
PHYS 006	Physics for Science and Engineering: A	PHYS 205
PHYS 007	Physics for Science and Engineering: B	PHYS 210
PHYS 008	Physics for Science and Engineering: C	PHYS 215
POLITICAL SCIENCE		
PLSC 001	Introduction to American Government and Politics	POLS 110
PLSC 002	Introduction to Comparative Government and Politics	POLS 130
PLSC 003	Introduction to International Politics	POLS 140
PLSC 004	Introduction to Political Science	POLS 150
PLSC 006	Introduction to Political Theory	POLS 120
PSYCHOLOGY		
PSYC 001	Introductory Psychology	PSY 110
PSYC 002	Biological Psychology	PSY 150
PSYC 004	Research Methods in Behavioral Science	PSY 200
SOCIOLOGY		
SOC 001	Introduction to Sociology	SOCI 110
SPANISH		
SPAN 001	First Semester Spanish	SPAN 100
SPAN 001S	Spanish for Spanish Speakers I	SPAN 220
SPAN 002	Second Semester Spanish	SPAN 110
SPAN 002S	Spanish for Spanish Speakers II	SPAN 230
SPAN 003	Third Semester Spanish	SPAN 200
SPAN 004	Fourth Semester Spanish	SPAN 210

Solano Community College		C-ID Designator
THEATRE ARTS		
THEA 001	Acting I	THTR 151
THEA 002	Acting II	THTR 152
THEA 003	Stagecraft	THTR 171
THEA 006	Introduction to Theatre	THTR 111
THEA 008	Stage Makeup	THTR 175
THEA 009	Script Analysis	THTR 114
THEA 020	Introduction to Stage Lighting	THTR 173
THEA 021	Introduction to Theatre Design	THTR 172
THEA 024A	Rehearsal and Performance in Production – Comedy	THTR 191
THEA 024B	Rehearsal and Performance in Production – Drama	THTR 191
THEA 024C	Rehearsal and Performance in Production – Classical	THTR 191
THEA 024D	Rehearsal and Performance in Production – Musical	THTR 191
THEA 032A	Fundamentals of Costume Design	THTR 174
THEA 032C	Fundamentals of Costume Design – Classical	THTR 174
THEA 032D	Fundamentals of Costume Design – Musical	THTR 174
THEA 047A	Technical Theatre in Production – Comedy	THTR 192
THEA 047B	Technical Theatre in Production – Drama	THTR 192
THEA 047C	Technical Theatre in Production – Classical	THTR 192
THEA 047D	Technical Theatre in Production – Musical	THTR 192

NOTE: This list will change periodically.
Consult a counselor or visit http://www.c-id.net or http://www.assist.org
for the most current list of Solano Community College courses with C-ID agreement.

Accounting

Accounting

Program Description
In recent years, accounting has been one of the fastest growing professions, and the monetary rewards for the individual just entering the field and those achieving corporate positions are among the highest. Accountants deal with the financial condition of a company, an individual, or an organization. An accountant is an analyst who is employed because of expertise in financial matters.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 29-unit major with a grade of C (2.0) or better in each course. The Associate in Science Degree can be obtained by completing a total of 60 units, including the required courses in the major, the general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who earn the Accounting Associate Degree or transfer with a focus on accounting will be able to:

1. Demonstrate the use of the accounting cycle to prepare the income statement, statement of owner's equity, and balance sheet while applying the generally accepted accounting principles and concepts.
2. Analyze and evaluate managerial decisions using basic managerial accounting concepts and theory.

Students who earn the Accounting Certificate will be able to:

1. Demonstrate the use of the accounting cycle to prepare the income statement, statement of owner's equity, and balance sheet while applying the generally accepted accounting principles and concepts.

REQUIRED COURSES	**Units**
ACCT 001 Principles of Accounting - Financial	4
ACCT 002 Principles of Accounting - Managerial	4
ACCT 050 Computer Accounting	3
ACCT 176 Intermediate Accounting	3
ACCT 177 Cost Accounting	3
ACCT 183 Principles of Income Tax	3
CIS 001 Introduction to Computer Science	3
OR	
CIS 050 Microcomputer Applications	3
CIS 066 Microsoft Word	3
CIS 073 Microsoft Excel	3
Total units.	**29**

Recommended Electives:
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/a****nd select* "Accounting."

Account Clerk Job-Direct Certificate
All courses in the major must be completed with a grade of C or better

REQUIRED COURSES	**Units**
ACCT 001 Principals of Accounting-Financial	4
BUS 100 Work Readiness	1.5
CIS 073 Microsoft Excel	3
OT 162 Ten-Key	1
Total units	**9.5**

Accounting

ACCT 001 4.0 Units
Principles of Accounting - Financial
Course Advisory: Eligible for English 001 and Elementary Algebra. A study and analysis of accounting as an information system, its importance and use by external uses such as investors, creditors, and others making decisions. The course covers the accounting cycle, application of the generally accepted accounting principles, financial reporting, and statement analysis. The course will include issues relating to the valuation of assets, liabilities, and equity, the recognition of revenue and expenses, cash flow, internal controls, ethics, and International Financial Reporting Standards. C-ID ACCT 110. *Four hours lecture.*

ACCT 002 4.0 Units
Principles of Accounting - Managerial
Prerequisite: ACCT 001 with a minimum grade of C or P. Course Advisory: Working knowledge of Excel helpful. A study and analysis of how managers use accounting information in decision-making, planning, directing operations, and controlling, to include the following: terms and concepts; job order cost accounting; process cost accounting; departmental accounting; product analysis; pricing decisions; flexible budgeting; standard cost analysis; cost-volume-profit analysis; preparation of operational, capital and financial budgets; and analysis of financial reporting in manufacturing and service environments. C-ID ACCT 120. *Four hours lecture*.

ACCT 050 3.0 Units
Computer Accounting
Prerequisite: ACCT 001. Course Advisory: SCC minimum English and Math standards. A hands-on course covering a complete computerized accounting system. Topics include a review of basic accounting concepts, preparation of business reports and graphs, and the creation of an accounting system for a company. *Three hours lecture.*

ACCT 176 3.0 Units
Intermediate Accounting
Prerequisite: ACCT 001 with minimum grade of C or P. Course Advisory: Working knowledge of Excel helpful. Accounting theory as applied to common issues faced by accountants in today's businesses. Lecture, group-study, and computer-based study emphasize the conceptual framework, the four major financial statements, footnotes, and present-value concepts. The class helps prepare the student for an entry-level position in professional accounting. *Three hours lecture.*

ACCT 177 3.0 Units
Cost Accounting
Prerequisite: ACCT 002 with a minimum grade of C or P. A comprehensive study and analysis of manufacturing costs as they apply to planning, controlling, and determining unit costs, inventory valuation, and income. *Three hours lecture.*

ACCT 180 3.0 Units
Introduction To Accounting
Course Advisory: SCC minimum English and Math standards. A study and analysis of the accounting cycle for a merchandising business and professional enterprises, payroll accounting, accruals and deferrals, accounting systems, error correction, and financial reporting. *Three hours lecture.*

ACCT 183 3.0 Units
Principles of Income Tax
Course Advisory: SCC minimum English and Math standards. A comprehensive study and analysis of the principles of federal income tax applied to individual, partnership, informational, and corporate tax returns. *Three hours lecture.*

Aeronautics

Airframe Maintenance Technician

Program Description
Practical and theoretical knowledge in basic maintenance techniques, plus the special requirements of either airframe or powerplant work. Upon satisfactory completion of the required courses, the student is eligible to take the Federal Aviation Administration written oral and practical examination for airframe or powerplant license.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 41-unit major listed below. An Associate in Science Degree can be obtained upon completion of the units required for the major in either Airframe or Powerplant or Airframe and Powerplant and general education requirements.

A combination Airframe & Powerplant Maintenance Technician Certificate of Achievement can be obtained upon completion of the 41-unit airframe major and 21-unit powerplant courses. An Associate in Science Degree can be obtained upon completion of the units required for the airframe major, powerplant courses and general education requirements.

The Federal Aviation administration (FAA) requires 1150 hours (four full semesters) of instruction to complete the Airframe curriculum (An additional 750 hours, two full semesters for Airframe and Powerplant). All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Airframe Maintenance Technician or Airframe & Powerplant Maintenance Technician Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate proficient, entry-level aviation maintenance skills in airframe and powerplant with emphasis on aircraft engines, aircraft structures, and aircraft systems.
2. Have a working knowledge to inspect, maintain, service and repair aircraft electrical, engine (piston and turbine), airframe structure, flight control, hydraulic, pneumatic, fuel, navigation and instrument systems and other aircraft components specified by Federal Aviation Regulation Part 147.
3. Obtain an FAA, Airframe and Powerplant License upon completion of the Federal Aviation Administration (FAA) knowledge, oral, practical and written examination in general, airframe, and powerplant subjects.

REQUIRED COURSES	**Units**
AERO 055 Aviation Maintenance Technician General I	10
AERO 102 Airframe Maintenance I	10
AERO 103 Aviation Maintenance Technician General II	10
AERO 105 Airframe Maintenance II	10
AERO 118 FAA Airframe Test Review & Qualification	1
Total units	**41**

For combined Airframe & Powerplant Maintenance Technician Requied Courses (In addition to the 41 units listed above)	**Units**
AERO 106 Powerplant Maintenance I	10
AERO 107 Powerplant Maintenance II	10
AERO 119 FAA Powerplant Test Review & Qualification	1
Total units	**21**

Recommended Electives:
AERO 150 FAA Special Projects-Airframe Enhancement
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

These programs are Gainful Employment Programs. For additional information, please visit *http://www.solano.edu/gainful_employment/*and select "Aeronautics Airframe Maintenance Technician," or "Aeronautics Airframe & Powerplant Maintenance Technician."

Aeronautics

Powerplant Maintenance Technician

Program Description
Practical and theoretical knowledge in basic maintenance techniques, plus the special requirements of either powerplant or airframe & powerplant work. Upon satisfactory completion of the required courses, the student is eligible to take the Federal Aviation Administration written, oral, and practical examination for powerplant or airframe & powerplant license.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 41-unit powerplant major. An Associate in Science Degree can be obtained upon completion of the units required for the powerplant major and general education requirements.

A combination Airframe & Powerplant Maintenance Technician Certificate of Achievement can be obtained upon completion of the 41-unit powerplant major and 21-unit airframe courses. An Associate in Science Degree can be obtained upon completion of the units required for the powerplant major, airframe courses and general education requirements.

The Federal Aviation Administration (FAA) requires 1150 hours (four full semesters) of instruction to complete the Powerplant curriculum (An additional 750 hours, two full semesters for Airframe and Powerplant). All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Powerplant Maintenance Technician or Airframe & Powerplant Maintenance Technician Certificate of Achievement/ Associate Degree will be able to:

1. Demonstrate proficient, entry-level aviation maintenance skills in powerplant or airframe and powerplant with emphasis on aircraft engines, aircraft structures, and aircraft systems.
2. Have a working knowledge to inspect, maintain, service and repair aircraft electrical, engine (piston and turbine), airframe structure, flight control, hydraulic, pneumatic, fuel, navigation and instrument systems and other aircraft components specified by Federal Aviation Regulation Part 147.
3. Obtain an FAA, Powerplant or Airframe and Powerplant License upon completion of the Federal Aviation Administration (FAA) Knowledge, oral, practical and written examination in general, powerplant or airframe and powerplant subjects.

REQUIRED COURSES	**Units**
AERO 055 Aviation Maintenance Technician General I	10
AERO 103 Aviation Maintenance Technician General II	10
AERO 106 Powerplant Maintenance I	10
AERO 107 Powerplant Maintenance II	10
AERO 119 FAA Powerplant Test Review & Qualification	1
Total units	**41**

For combined Airframe & Powerplant Maintenance Technician Certificate or Degree Required Courses (In addition to 750 hours, 2 semesters)	**Units**
AERO 102 Airframe Maintenance I	10
AERO 105 Airframe Maintenance II	10
AERO 118 FAA Airframe Test Review & Qualification	1
Total Units	**21**

Recommended Electives:
AERO 150 FAA Special Projects-Airframe Enhancement
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

These programs are Gainful Employment Programs. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Aeronautics Powerplant Maintenance Technician," or "Aeronautics Airframe & Powerplant Maintenance Technician."

Aeronautics

AERO 055 10.0 Units
Aviation Maintenance Technician General I
Course Advisory: SCC Minimum English and Math standards. Presents the fundamentals necessary for the advanced study in Aeronautics. It will define the history of aviation and powerplant operation, and the study of flight: aircraft weight and balance, ground operation and servicing, mathematics, maintenance forms and records, basic physics, maintenance publication, and mechanic privileges and limitation. Safety is stressed throughout the course. In addition, this course is a study of the methods and processes used in the production of an aircraft, including shop safety. The course includes fundamentals in the use of hand tools and power equipment, aircraft drawings, cleaning, corrosion control; and the processes used by the manufacturers for aircraft construction. *Five hours lecture, fifteen hours lab.*

AERO 102 10.0 Units
Airframe Maintenance I
Course Advisory: SCC minimum English standard. This course presents the application of fundamental methods, techniques, and practices used in aircraft inspection, maintenance, and repair. The course includes fundamentals of shop safety, wood structures, fabric covering, finishes, composite structures, plastics, sheet-metal structures, welding, assembly and rigging, and airframe inspection. *Five hours lecture, fifteen hours lab.*

AERO 103 10.0 Units
Aviation Maintenance Technician General II
Course Advisory: SCC minimum English standard. This course offers a study of fluid control systems and components with emphasis on design, maintainability, testing and system repair. The course includes the fundamentals of hydraulic fluids, fluid carrying lines and fittings, inspection, servicing and testing of pneumatic and hydraulic systems. The course also presents theory and application of direct and alternating current as related to aircraft electrical components and systems. *Five hours lecture, fifteen hours lab.*

AERO 105 10.0 Units
Airframe Maintenance II
Course Advisory: SCC minimum English standard. This course offers a detailed study of the fundamentals of fabrication, maintenance, and repair of aircraft airframe systems. The course includes study of all basic systems which include: landing gear, hydraulic, pneumatic, cabin atmospheric control, flight instrumentation, communication, navigation, fuel storage and delivery, ice and rain detection, prevention and removal as well as fire detection and protection systems. *Five hours lecture, fifteen hours lab*.

AERO 106 10.0 Units
Powerplant Maintenance I
Course Advisory: SCC minimum English and Math standards. This course is designed to acquaint the student with reciprocating engines. The course includes study in the fundamentals of basic engine design, types and materials of construction, nomenclature, repair, overhaul and servicing, maintainability and reliability concepts. *Five hours lecture, fifteen hours lab.*

AERO 107 10.0 Units
Powerplant Maintenance II
Course Advisory: SCC minimum English and Math standards. The course presents a study of the theory, operation, maintenance and repair of the turbine engine and related systems. It gives the student practical "hands on" experience that will satisfy future employment and FAA requirements. *Five hours lecture, fifteen hours lab.*

AERO 118 0.5 to 1.5 Units
FAA Airframe Test Review and Qualification
Course Advisory: SCC minimum English and Math standards. This course is to be taken during the final semester of a student's enrollment in the Aeronautics program. The course consists of a comprehensive oral, practical, and written examination of all material covered in the Airframe Program for the purpose of verifying the student's readiness to pass the Federal Aviation Administration Airframe Examinations. Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit course. *One and one-half to four and one-half hours lab.*

AERO 119 0.5 to 1.5 Units
FAA Powerplant Test Review & Qualification
Course Advisory: SCC minimum English and Math standards. This course is to be taken during the final semester of a student's enrollment in the Aeronautics program. The course consists of a comprehensive oral, practical, and written examination of all material covered in the Powerplant Program for the purpose of verifying the student's readiness to pass the Federal Aviation Administration Powerplant Examinations. Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit course. *One and one-half to four and one-half hours lab.*

AERO 150 0.5 to 1.5 Units
FAA Special Projects - Airframe Enhancement
Course Advisory: SCC minimum English and Math standards; Any Solano College Aeronautics course (AERO 055-119); or previous training/experience in aeronautics. This course is designed to give Aeronautics students a chance to make up time lost for FAA certificate and/or to work on special projects required by FAA to bring students in line with new FAA FAR Part 66 requirements. Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit course. *One and one-half to four and one-half hours lab.*

AERO 151 0.5 to 1.5 Units
FAA Special Projects - Powerplant Enhancement
Course Advisory: SCC minimum English and Math standards. This course is designed to give Aeronautics students a chance to make up time lost for FAA certificate and/or to work on special projects required by FAA to bring students in line with new FAA FAR Part 66 requirements. Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit course. *One and one-half to four and one-half hours lab.*

Air Conditioning and Refrigeration

ACR 100 3.0 Units
Air Conditioning and Refrigeration
Course Advisory: SCC minimum English standard. A study of compression systems, controls, refrigerants, various refrigeration systems, and commercial applications designed to develop the ability to understand and apply the basic principles required to maintain and service this type of specialized equipment. *Three hours lecture.*

ACR 101 3.0 Units
Air Conditioning and Refrigeration
Course Advisory: ACR 100; SCC minimum English standard. The maintenance and servicing of commercial air conditioning and refrigeration systems with the study of techniques applied to refrigerant handling, systems controls, and compression systems. *Three hours lecture.*

American Sign Language

ASL 001 3.0 Units
Deaf Culture in America
Advisory: SCC minimum English standard. This course introduces American Deaf Culture with historical and cultural overview of the American Deaf community and its language, American Sign Language (ASL). Fundamental sociological and anthropological theories will be discussed. Students will be given an opportunity to study and understand the following: minority group dynamics, attitudes and behavioral characteristics of the oppressed and oppressors, and the liberation movements. Analysis of the relationship of ASL to the history of the American Deaf community will be conducted. *Three hours lecture.*

ASL 046 3.0 Units
American Sign Language 1
Prerequisite: SCC minimum English standard. An introductory course to the culture and language of the deaf in this country. The course includes the acquisition of Fingerspelling skills and basic functional vocabulary of ASL. In addition to fluency in these two separate skills, the student will acquire basic knowledge of ASL syntax and nonverbal aspects of ASL, a history of the deaf in the country and deaf education, variations in Manual Communication, and the Culture of the Deaf. There will be both written and signed examinations, a research project, homework assignments, and individual examinations to demonstrate competency in both expressive and receptive ASL. Students will be expected to acquire a vocabulary of approximately 500 words (signs) and be proficient in Fingerspelling. *Formerly ENGL 046. Three hours lecture.*

ASL 047 3.0 Units
American Sign Language 2
Course Advisory: SCC minimum English standard. Emphasis is on vocabulary expansion, introduction to ASL idiomatic expressions and information regarding the ethics and process of becoming a sign language interpreter. Assessment of competency is accomplished through written and communicative examinations. Some interaction with the deaf population is required. *Formerly ENGL 047. Three hours lecture.*

ASL 050 3.0 Units
Deaf Education
Advisory: SCC minimum English standard. This course is designed to provide students with a general orientation to Deaf education. The course provides an overview of the historical, philosophical, and social aspects of Deaf education. In addition, an orientation to problems, issues, research, legislation, and current trends in the field of education of the Deaf and Hard-of-Hearing students is provided. *Three hours lecture.*

Anthropology

Associate in Arts in Anthropology for Transfer

Program Description
This program emphasizes the development and diversity of, and adaptations in, human behavior and biology. Students in this program may study a variety of anthropological subfields, including Physical, Cultural, and Archaeology. In addition to acting as a path for successful transfer to an institution offering a baccalaureate degree in Anthropology, the Associate in Arts in Anthropology for Transfer Degree provides students pursuing any baccalaureate degree with basic skills in critical analysis, application of the scientific method, and cross-cultural understanding.

Associate in Arts in Anthropology for Transfer Degree
Upon completion of the Associate in Arts in Anthropology for Transfer Degree, students will be prepared to transfer to a CSU undergraduate Anthropology program. The Associate in Arts in Anthropology for Transfer Degree will facilitate successful transfer to the CSU system, allowing students to complete baccalaureate degrees in a more timely fashion.

To earn the Associate in Arts in Anthropology for Transfer degree, students must:

1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete the Associate in Arts in Anthropology for Transfer degree, will be able to:

1. Demonstrate an understanding of anthropology as a science, in particular with regard to major theories, methods, and applications.
2. Increase understanding of human biological and cultural diversity, and be able to discuss processes responsible for such variation.

REQUIRED COURSES.....Units
ANTH 001 Physical Anthropology..... 3
ANTH 002 Cultural Anthropology 3
ANTH 007 Archaeology..... 3
Select four units from List A..... 4
Select three to five units from List B.....3 - 5
Select three units from List C 3-5.5

List A (select a minimum of 4 units)
ANTH 001L Physical Anthropology Laboratory..... 1.5
MATH 011 Elementary Statistics 4

List B (select 3 – 5 units)
Any List A course not already used
BIO 004 Human Anatomy 5
GEOL 001 Physical Geology..... 3
GEOL 002 Geology Laboratory..... 1
GEOL 010 Introduction to Geographic Information Systems..... 3
PSYC 004 Research Methods in Behavioral Science..... 3

List C (select 3 units)
Any List A or B course not already used
COMM 012 Intercultural Communication..... 3
SOC 001 Introduction to Sociology 3
GEOG 002 Cultural Geography 3
Required Major Total units.....19-23.5
CSU General Education or IGETC Pattern units....37-39
CSU Transferable Electives
(as needed to reach 60 transferable units)* 5.5-21
Total Degree units..... 60

** 9-19 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Anthropology

ANTH 001 3.0 Units
Physical Anthropology
Course Advisory: ENGL 001 with a minimum grade of C. This course is an introduction to the science of physical anthropology; covering the concepts, methods of inquiry, and scientific explanations of biological evolution and their application to the human species. Topics to be covered will include: the scientific method, genetics, principles and mechanisms of biological evolution, modern human variation and the race concept, biocultural adaptations, primate classification, comparative primate anatomy and behavior, and the fossil evidence for human evolution. C-ID ANTH 110. *Three hours lecture.*

ANTH 001L 1.5 Units
Physical Anthropology Laboratory
Prerequisite: ANTH 001 with a minimum grade of C (may enroll concurrently). Course Advisory: Eligibility for ENGL 001 and MATH 330. This introductory laboratory course is designed to familiarize students with the methods and materials of physical anthropology, and is intended to be a companion course to ANTH 001 (Physical Anthropology). This course provides hands-on experience with genetics exercises as well as the skeletal materials of modern humans, non-human primates, and fossil hominins. Other topics discussed include the scientific method, sources of biological variation (with special focus on variation in humans and non-human primates) and the forces of evolution, biological classification of the primates, and non-human primate behavior. *A field trip may be required. One-half hour lecture, three hours lab.*

ANTH 002 3.0 Units
Cultural Anthropology
Course Advisory: ENGL 001 with a minimum grade of C. This course in an introduction to the anthropological study of human culture; covering anthropological concepts such fieldwork, holism, the comparative method, cultural relativism, the nature of culture and cultural identity, and research ethics. Topics will include: subsistence patterns, political organizations including social inequality, kinship and family, communication, supernatural belief systems, gender and sexuality, art, culture change including globalization, and applied anthropology. C-ID ANTH 120. *Three hours lecture.*

ANTH 007 3.0 Units
Archaeology
Course Advisory: ENGL 001 with a minimum grade of C. SCC minimum Math standards. An introduction to the study of the concepts, theories, methods, and data of archaeology that contribute to our knowledge of human cultures. The course includes a discussion of the nature of scientific inquiry; the history and interdisciplinary nature of archaeological research; dating techniques; methods of survey, excavation, analysis, and interpretation; cultural resource management; professional ethics; and selected cultural sequences. Several key archaeological sites will be covered and will serve to illustrate central archaeological theories and methods. C-ID ANTH 150. *Three hours lecture*

ANTH 049 2.0 Units
Anthropology Honors
Prerequisite: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a minimum grade of B; an ability to work independently; and permission of the School Dean based on instructor availability. Open to students qualified to do advanced work in the field. The program may include research, directed reading, field work, or other advanced study. *Six hours by arrangement*.

Art

Art - Two-Dimensional

Program Description
The Two-Dimensional Art program offers many high-quality courses in drawing, painting, printmaking and design. Students are prepared to transfer to a four-year institution, start an art-related career or engage in fields where creative problem-solving and critical thinking skills are necessary. By enrolling in the 2-D Art major, students will develop their artistic abilities, strengthen analytical skills, and improve their interpretive capabilities. Solano Art students develop multicultural visual literacy, exercising the skills necessary to create, analyze, apply and integrate diverse visual experiences. Students may select from several studio art programs: Art—Two-Dimensional; Art-Three-Dimensional; Graphic Arts; and Studio Arts for Transfer.

Students earning an Associates Degree in Art—Two-Dimensional will also qualify for the Studio Arts for Transfer Degree (AA-T). However, the Art—Two-Dimensional degree is more rigorous than the AA-T degree, and provides a deeper foundation for student artists.

Associate in Arts Degree
The Associate in Arts Degree can be obtained upon completion of 60 units, including the 29 to 30 units in the major for Art—Two-Dimensional, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Art Two-Dimensional Associate Degree will be able to:
1. Analyze, apply and integrate diverse visual experiences.
2. Develop and articulate with proficiency an understanding of visual and multi-cultural literacy.
3. Work independently and cooperatively to solve creative problems, applying critical thinking skills.

REQUIRED COURSES.....Units
Foundation Component 9
Drawing Component 6
Art History Component 6
One course from Painting Component 3
One course from 2D Emphasis Component 2-3
One course from Three Dimensional Component 3
Total Units 29-30

Foundation Component (all courses required)
ART 006 Design Principles in 2-Dimensions 3
ART 007 Design-Color 3
ART 008 Design Principles in 3-Dimensions 3

Drawing Component (both courses required)..... **Units**
ART 004 Life Drawing 3
ART 014 Introduction to Drawing 3

Art History Component (Select 6 units) ..... **Units**
ART 002 Art History 3
Select one course from List A

List A
ART 001 Art History 3
ART 003A Arts of Asia 3
ART 003B Arts of Africa, Oceania, and the Americas 3
ART 011 Survey of Modern Art 3
ART 012 Inside/Outside: The Cultures and Identities of Visual Artists in a Diverse America 3

Painting Component (Select one course)..... **Units**
ART 016 Beginning Painting 3
ART 017 Acrylic and Oil Painting 3
ART 021 Watercolor 3

2D Emphasis Component (Select one course). ..... **Units**
ART 005 Life Drawing 3
ART 015 Intermediate Drawing 3
ART 018 Advanced Intermediate Painting: Acrylic and Oil Painting 3
ART 019 Figure Painting 3
ART 020 Landscape Drawing and Painting —Reflections of Nature ..... 2 - 3
ART 022 Watercolor - Intermediate 3
ART 038 Introduction to Printmaking 3
ART 058 Clothed Figure 3
ART 061 Collage & Assemblage 3
ART 100 Color and Mixed Media Drawing ..... 2 - 3
ART 145 Portrait Drawing and Painting ..... 2 - 3

List C: Three Dimensional Component
(Select one course)..... **Units**
ART 023 Introduction to Ceramics: Hand Building 3
ART 026 Introduction to Ceramics: Wheel Throwing Techniques 3
ART 031 Sculpture 3

Recommended Electives
ART 010 Art Appreciation
ART 024 Intermediate Ceramics: Hand Building
ART 025 Ceramic Design And Decoration:
Hand Building Methods
ART 027 Intermediate Ceramics:
Wheel Throwing Techniques
ART 028 Ceramic Design: Wheel Throwing Techniques
ART 029 Raku Pottery
ART 030A Architectural Ceramics, Murals and Tiles
ART 030B Mural Painting: History, Community, Practice
ART 032 Sculpture: Human Figure
ART 033 Intermediate Sculpture
ART 034 Ceramic Sculpture
ART 035A Introduction to Wood-Fired Ceramics
ART 036 Ceramic Surfaces – Drawing and Painting on Clay
ART 037 Clay and Glazes for the Ceramic Artist
ART 039 Etching and Engraving: Line Techniques
ART 040 Etching and Engraving: Tone
ART 041 Etching and Engraving: Color
ART 042 Screen Printing
ART 043 Printmaking: Relief Printing, Including Woodcut
ART 045A Graphic Design I
ART 045B Graphic Design II
ART 045C Typography
ART 060 Exhibition Design
ART 065 Book Making
ART 074 Kiln Design and Operation
ART 075 Art Studio Concepts
ART 076A Portfolio Development – Artistic Inquiry
ART 076B Portfolio Development: Documentation
ART 077A Professional Practices for Artists
ART 077B Art on Site
PHOT 030 Beginning Photography

Art - Three-Dimensional

Program Description
The Three-Dimensional Art program offers extensive training in sculpture, ceramics and creative problem solving. Students are prepared to pursue further study at four year institutions, pursue a career as a studio artist or succeed in any career pursuit where creative problem solving is paramount. The program features state-of-the-art facilities, experienced, dedicated and diverse faculty, student-centered learning, multi-cultural perspectives, visual literacy training and a commitment to the highest standards of excellence in education and community service. Students may select from several studio art programs: Art—Two-Dimensional; Art—Three-Dimensional; Graphic Arts; and Studio Arts for Transfer (AA-T). These programs are designed to develop visual skills in a variety of art media. Students completing the requirements for the associates degree in Art—Three-Dimensional will also meet requirements for the Studio Arts AA-T degree. Art—Three-Dimensional is a more rigorous program, giving student artists a deeper foundation for further study and artistic practice.

Associate in Arts
The Associate in Arts Degree can be obtained upon completion of 60 units, including the courses in the major for Art—Two-Dimensional or Art—Three-Dimensional, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Art – Three Dimensional Associate Degree will be able to:
1. Analyze, apply and integrate diverse visual experiences.
2. Develop and articulate with proficiency an understanding of visual and multi-cultural literacy.
3. Work independently and cooperatively to solve creative problems, applying critical thinking skills.

Students must complete courses in all of the following components according to the listed requirements in each.

REQUIRED COURSES.....Units
Foundation Component.....9
Drawing Component.....6
Art History Component.....6
Drawing Component.....3
One course from Ceramics Component.....3
One course from 3D Emphasis Component.....2-3
One course from Professionalism Component.....3
Total Units.....32-33

Foundation Component (all courses required)
ART 006 Design Principles in 2-Dimensions.....3
ART 007 Design-Color.....3
ART 008 Design Principles in 3-Dimensions.....3

Sculpture Component (both courses required)
ART 031 Sculpture.....3
ART 032 Sculpture: Human Figure.....3

Art History Component (complete 6 units)
ART 002 Art History.....3
Select one course from List A

List A
ART 001 Art History.....3
ART 003A Arts of Asia.....3
ART 003B Arts of Africa, Oceania and the Americas.....3
ART 011 Survey of Modern Art.....3
ART 012 Inside/Outside: The Cultures and Identities of Visual Artists in a Diverse America.....3

Drawing Component (select one course).....**Units**
ART 014 Introduction to Drawing.....3

Ceramics Component (Select one course).....**Units**
ART 023 Introduction to Ceramics: Hand Building.....3
ART 024 Intermediate Ceramics: Hand Building.....3
ART 025 Ceramic Design And Decoration: Hand Building Methods.....3
ART 026 Introduction to Ceramics: Wheel Throwing Techniques.....3
ART 027 Intermediate Ceramics: Wheel Throwing Techniques.....3
ART 028 Ceramic Design: Wheel Throwing Techniques.....3

Emphasis Component (Select one course).....**Units**
ART 029 Raku Pottery.....2 - 3
ART 030A Architectural Ceramics, Murals and Tiles.....2 - 3
ART 033 Intermediate Sculpture.....2 - 3
ART 034 Ceramic Sculpture.....2 - 3
ART 035A Introduction to Wood-Fired Ceramics.....2 - 3
ART 036 Ceramic Surfaces - Drawing and Painting on Clay.....2 - 3
ART 037 Clay and Glazes for the Ceramic Artist.....2 - 3
ART 074 Kiln Design and Operation.....2 - 3

Professionalism Component (Select one course).....**Units**
ART 076A Portfolio Development – Artistic Inquiry.....3
ART 076B Portfolio Development: Documentation.....3
ART 077A Professional Practices for Artists.....3
ART 077B Art on Site.....3

Recommended Electives
ART 005 Life Drawing
ART 010 Art Appreciation
ART 015 Intermediate Drawing
ART 016 Beginning Painting
ART 017 Intermediate Painting: Acrylic and Oil
ART 018 Advanced Intermediate Painting: Acrylic and Oil
ART 019 Figure Painting
ART 020 Landscape Drawing and Painting--
Reflections of Nature
ART 021 Watercolor
ART 022 Watercolor - Intermediate
ART 030B Mural Painting: History, Community, Practice
ART 038 Introduction to Printmaking
ART 039 Etching and Engraving: Line Techniques
ART 040 Etching and Engraving: Tone
ART 041 Etching and Engraving: Color
ART 042 Screen Printing
ART 043 Printmaking: Relief Printing, Including Woodcut
ART 045A Graphic Design I
ART 045B Graphic Design II
ART 045C Typography
ART 046 Illustration I
ART 046C Illustration II
ART 058 Clothed Figure
ART 060 Exhibition Design
ART 061 Collage & Assemblage
ART 065 Book Making
ART 076B Portfolio Development: Documentation
ART 100 Color and Mixed Media Drawing
ART 145 Portrait Drawing and Painting
PHOT 030 Beginning Film Photography
PHOT 070 Beginning Digital Photography

Art

Art History

Program Description
This program provides the academic and practical experience to prepare students for a career, or further education at a four-year institution, in art history and related fields. By completing this program, students will also complete the requirements for the AA-T degree in Art History. However, this program is more rigorous than the AA-T degree, providing a broader foundation for the Art History student.

Associate in Arts Degree
The Associate in Arts Degree can be obtained by completing a total of 60 units, including the 24 units for the major, the general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Art History Associate Degree will be able to:
1. Analyze, apply and integrate diverse visual experiences.
2. Develop and articulate with proficiency an understanding of visual and multi-cultural literacy.
3. Work independently and cooperatively to solve creative problems, applying critical thinking skills.

REQUIRED COURSES	**Units**
ART 001 Art History	3
ART 002 Art History	3
ART 014 Introduction to Drawing	3
Both courses from List A:	6
One course from List B:	3
One course from List C:	3
One course from List D:	3
Total Units	**24**

List A: Non-Western Art History (both classes required)	**Units**
ART 003A Arts of Asia	3
ART 003B Arts of Africa, Oceania, and the Americas	3

List B: Modern, Contemporary, and Theory (select one course)	**Units**
ART 011 Survey of Modern Art	3
ART 012 Inside/Outside: The Cultures and Identities of Visual Artists in a Diverse America	3

List C: Studio Art: Principles of Design (select one course)	**Units**
ART 006 Design Principles in 2-Dimensions	3
ART 007 Design-Color	3
ART 008 Design Principles in 3-Dimensions	3

List D: Diverse Media (Select one course)	**Units**
ART 023 Introduction to Ceramics: Hand Building	3
ART 026 Introduction to Ceramics: Wheel Throwing Techniques	3
ART 030B Mural Painting: History, Community, Practice	3
ART 038 Introduction to Printmaking	3
ART 045A Graphic Design I	3
PHOT 030 Beginning Photography	3
PHOT 070 Beginning Digital Photography	3

Art

Associate in Arts in Art History for Transfer (ADT: A.A.-T)

Program Description
This program provides the academic and practical experience to prepare students for a career, or further education at a four-year institution, in art history and related fields, such as museum studies, art education and administration. The Associate in Arts in Art History for Transfer provides the academic and practical experience to transfer into the CSU system to complete a baccalaureate degree that will prepare students for a career in the Art History industry.

Associate in Arts in Art History for Transfer
The Associate in Arts in Art History for Transfer degree is especially designed for students who plan to complete a bachelor's degree in Art History at a CSU campus. Students completing an Associate in Arts in Art History for Transfer degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that accepts the Associate in Arts in Art History for Transfer degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. The Associate in Arts in Art History for Transfer degree also prepares students for art history degree programs at CSU institutions, but does not come with the same guarantees. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

To earn the Associate in Arts in Art History for Transfer degree, students must:
1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete the Associate in Arts in Art History for Transfer degree will be able to:
1. Analyze, apply and integrate diverse visual experiences.
2. Develop and articulate with proficiency an understanding of visual and multi-cultural literacy.
3. Work independently and cooperatively to solve creative problems, applying critical thinking skills.

REQUIRED COURSES.....Units
ART 001 Art History 3
ART 002 Art History 3
ART 014 Introduction to Drawing 3

Select 3 units from List A..... 3
Select 3 units from List B..... 3
Select 3 units from List C 3

List A: Non-Western Arts History (select 3 units)
ART 003A Arts of Asia..... 3
ART 003B Arts of Africa, Oceania, and the Americas..... 3

List B: Studio Art (select minimum of 3 units) ..... **Units**
ART 004 Life Drawing..... 3
ART 006 Design Principles in 2-Dimensions 3
ART 007 Design-Color..... 3
ART 008 Design Principles in 3-Dimensions 3
ART 016 Beginning Painting 3
ART 019 Figure Painting 3
ART 023 Introduction to Ceramics: Hand Building 3
ART 026 Introduction to Ceramics: Wheel Throwing Techniques..... 3
ART 031 Sculpture 3
ART 032 Sculpture: Human Figure 3
ART 038 Introduction to Printmaking 3
ART 039 Etching and Engraving: Line Techniques..... 3
ART 043 Printmaking: Relief Printing, Including Woodcut..... 3
PHOT 030 Beginning Photography..... 3

List C: Modern, Contemporary, and Theory
(select 3 units) ..... **Units**
ART 011 Survey of Modern Art..... 3
ART 012 Inside/Outside: The Cultures and Identities of Visual Artists in a Diverse America 3
Any List A or B course not already used 3

Required Major Total Units 18
CSU General Education or IGETC Pattern units..37 - 39
CSU Transferable Electives
(as needed to reach 60 transferable units)* 3-5

Total Degree Units 60

** 3 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Art

Graphic Design & Illustration

Program Description
This program provides the student with sufficient academic and practical experience for entrance into the job market as a graphic artist, or for study towards the B.A. in college or professional school.

Associate in Arts Degree
The Associate in Arts Degree can be obtained by completing a total of 60 units, including the 27 unit major, the general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Graphic Design & Illustration Associate Degree will be able to:
1. Analyze, apply and integrate diverse visual experiences.
2. Develop and articulate with proficiency an understanding of visual and multi-cultural literacy.
3. Work independently and cooperatively to solve creative problems, applying critical thinking skills.

REQUIRED COURSES	**Units**
ART 004 Life Drawing	3
OR	
ART 015 Intermediate Drawing	3
ART 006 Design Principles in 2-Dimensions	3
ART 007 Design-Color	3
ART 014 Introduction to Drawing	3
ART 045A Graphic Design I	3
ART 045B Graphic Design II	3
ART 045C Typography	3
ART 046 Illustration I	3
ART 046C Illustration II	3
Total Units	**27**

Recommended Electives
ART 002 Art History
ART 004 * Life Drawing
ART 015 * Intermediate Drawing
ART 031 Sculpture
ART 038 Introduction to Printmaking
ART 042 Screen Printing
BUS 148A Small Business Project-Based Path for Entrepreneurs
CINA 010 The Art of Cinema
CINA 015 Film Production
OCED 090 Occupational Work Experience
OCED 091 General Work Experience
PHOT 030 Beginning Photography
PHOT 070 Beginning Digital Photography

***if not already taken as part of the major**

Art

Associate in Arts in Studio Arts for Transfer (ADT: A.A.-T)

Program Description
This program provides the academic and practical experience to prepare students for a career, or further education at a four-year institution, in studio art. The program is designed for students to develop visual skills in a variety of art media.

Associate in Arts in Studio Arts for Transfer
The Associate in Arts in Studio Arts for Transfer is especially designed for students who plan to complete a bachelor's degree in Studio Art at a CSU campus. Students completing an Associate in Arts for Transfer degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that accepts the A.A. degree for Transfer will be required to complete no more than 60 units after transfer to earn a bachelor's degree. This degree also prepares students for studio art programs at other four-year institutions, but does not come with the same guarantees. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

To earn the Associate in Arts in Studio Art for Transfer degree, students must:
1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete the Associate in Arts in Studio Arts for Transfer degree will be able to:
1. Analyze, apply and integrate diverse visual experiences.
2. Develop and articulate with proficiency an understanding of visual and multi-cultural literacy.
3. Work independently and cooperatively to solve creative problems, applying critical thinking skills.

REQUIRED CORE	**Units**
ART 002 Art History	3
ART 006 Design Principles in 2-Dimensions	3
ART 008 Design Principles in 3-Dimensions	3
ART 014 Introduction to Drawing	3
3 units from List A	3
9 units from List B	9

List A (choose three units)	**Units**
ART 001 Art History	3
ART 011 Survey of Modern Art	3
ART 012 Inside/Outside: The Culture and Identities of Visual Artists in Diverse America	3

List B (choose a minimum of 9 units)	**Units**
ART 004 Life Drawing	3
ART 005 Life Drawing - Intermediate	3
ART 007 Design-Color	3
ART 015 Intermediate Drawing	3
ART 016 Beginning Painting	3
ART 017 Intermediate Painting: Acrylic and Oil	3
ART 018 Advanced Intermediate Painting: Acrylic and Oil	3
ART 019 Figure Painting	3
ART 021 Watercolor	3
ART 022 Watercolor - Intermediate	3
ART 023 Introduction to Ceramics: Hand Building	3
ART 026 Introduction to Ceramics: Wheel Throwing Techniques	3
ART 031 Sculpture	3
ART 032 Sculpture: Human Figure	3
ART 034 Ceramic Sculpture	3
ART 038 Introduction to Printmaking	3
ART 039 Etching and Engraving: Line Techniques	3
ART 041 Etching and Engraving: Color	3
ART 043 Printmaking: Relief Printing, Including Woodcut	3
PHOT 030 Beginning Photography	3

Required Major Total Units	**25.5 – 27**
CSU General Education or IGETC Pattern Units	**37 - 39**
CSU Transferable Electives (as needed to reach 60 transferable units)*	**0 - 2**
Total Degree Units	**60**

** 6 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Art

ART 001 3.0 Units
Art History
Course Advisory: Eligibility for ENGL 001. Explores the history of art in the Western World from the Paleolithic era through the Middle Ages. Focuses on the interrelation of art and culture, with a comparative study of select works of non-Western art. *Field trip may be required. Three hours lecture.*

ART 002 3.0 Units
Art History
Course Advisory: Eligibility for ENGL 001. Explores the history of Western Art through a critical analysis of Renaissance art through Post-Modern art. Students will examine the connection between art and culture, and evaluate the historic, religious, and political influences on the artistic choices of diverse men and women of art history from the 15th century to today. *Field trip may be required.* C-ID ARTH 120. *Three hours lecture.*

ART 003A 3.0 Units
Arts of Asia
Course Advisory: English 001 and SCC minimum MATH standard. This course provides a survey of art and architecture from India, Southeast Asia, China, Korea, and Japan from pre-history to modern times. C-ID ARTH 130. *Three hours lecture.*

ART 003B 3.0 Units
Arts of Africa, Oceania, and the Americas
Course Advisory: English 001 and SCC minimum MATH standard. This course is a survey of the arts and architecture of Africa, Oceania, and the Americas, with an emphasis on traditional arts and practices. This course will also address issues related to the scholarship and display of these arts in the Western world. C-ID ARTH 140. *Three hours lecture.*

ART 004 3.0 Units
Life Drawing
Course Advisory: SCC minimum English standard. A study of the human figure in action and repose using a variety of drawing materials and approaches. Students work directly from the live model to develop skills using assignments which include gesture, line drawings, tone studies and the use of color. The student submits a midterm and final portfolio for evaluation. *Field trip may be required. Two hours lecture, four hours lab.*

ART 005 3.0 Units
Life Drawing - Intermediate
Prerequisite: ART 004 with a minimum grade of C. The continued study of the human figure with more advanced problems in drawing and composition. Following initial review, the student may choose an individual program of study with the approval of the instructor. *Field trip may be required. Two hours lecture, four hours lab*.

ART 006 3.0 Units
Design Principles In 2-Dimensions
Course Advisory: SCC minimum English standard. A fundamental study of visual elements and principles of design for production of art images in 2-Dimensions using various materials in black and white. Design formats developed from historic and esthetic precepts are employed to investigate the relationship of form and content. *Field trip may be required.* C-ID ARTS 100. *Two hours lecture, four hours lab.*

ART 007 3.0 Units
Design-Color
Course Advisory: SCC minimum English standard. A study of the principles of additive and substractive color in two dimensions. Various theories of color will be studied including those of Albers and Ittens. Reference to the use of color in the dominant styles of art history will be made. Students will produce a portfolio of projects in applied color and the elements of design. *Field trip may be required.* C-ID ARTS 270. *Two hours lecture, four hours lab.*

ART 008 3.0 Units
Design Principles In 3-Dimensions
Course Advisory: SCC minimum English standard. The fundamental study of visual elements and principles of design for production of art objects in three dimensions using various sculpture materials and methods. Design formats developed from historic and esthetic precepts are employed to investigate the relationships of form and content. *Field trip may be required.* C-ID ARTS 101. *Two hours lecture, four hours lab.*

ART 010 3.0 Units
Art Appreciation
Course Advisory: Eligibility for English 001. An introductory course examining the cultural, universal, and personal factors influencing the making and viewing of art. Includes a study of style, composition, materials and techniques used in the creation of art from disparate cultures and periods of history. *Field trip may be required. Three hours lecture.*

ART 011 3.0 Units
Survey of Modern Art
Course Advisory: English 001. A study of the art and architecture of the major modern movements and artists from the 19th century and 20th centuries. Analysis of subject, form and content of paintings, photography and sculpture in lecture and audio visual presentation. Classes supplemented by field trips to current exhibitions. Written examinations and paper required. Field trip may be required. *Three hours lecture.*

ART 012 3.0 Units
Inside/Outside:The Cultures and Identitites of Visual Artists in a Diverse America.
C*ourse Advisory: English 001*. An art survey course that examines and assesses three or more groups of culturally diverse artists, art organizations and support structures. Explores art issues related to social and historical trends in the U.S., including ways in which art may reflect and shape American attitudes towards identity (ethnic, gender, sexual, intersectional), culture and discrimination. *Field trip may be required. Three hours lecture.*

ART 014 3.0 Units
Introduction To Drawing
Course Advisory: SCC minimum English standard. A study of drawing as a means of expression with emphasis on the potential variety of forms and materials available to the artist. Students will create representational and abstract drawings from still life, the figure, nature and imagination. Observational drawing skills and technical skills will be developed. *Field trip may be required. Two hours lecture, four hours lab.*

ART 015 3.0 Units
Intermediate Drawing
Course Advisory: ART 014; SCC minimum English and Math standards. A basic drawing class which develops the concepts introduced in ART 014 on a more advanced level. Problems in observation and imagination and the translation of these experiences into graphic terms by exploration of line, shape, mass, space, texture, and light and shadow. Emphasis on composition and the development of a personal approach to drawing. Students will be required to submit a portfolio of assignments. *Field trip may be required.* C-ID ARTS 205. *Two hours lecture, four hours lab.*

ART 015B 3.0 Units
Collage and Assemblage
Course Advisory: SCC minimum English standard. Explores the making of 2D and 3D collages and assemblages in a variety of media. Addresses the history and prevalence of collage thinking as an approach to art making while integrating traditional drawing and painting skills. *Field trip may be required. Two hours lecture, four hours lab.*

ART 015C 3.0 Units
Book Making
Course Advisory: SCC minimum English and Math standards. Explores book making in a variety of formats. Discussion of the history and development of the book is included. Students will make several books: Classic signature book bound between boards, side bound books and a variety of artist's books including altered books, boxed books, and 3 dimensional book structures like accordion books and pop-up books. *Field trip may be required. Two hours lecture, four hours lab.*

ART 016 3.0 Units
Beginning Painting
Course Advisory: ART 014; SCC minimum English standard. Introduction to techniques and materials of painting in acrylic or oil. Designed for the student with limited experience in painting, this course includes color theory, composition, exposure to a variety of subject matters, and the development of skills for individual expression. *Field trip may be required. Two hours lecture, four hours lab.*

ART 017 3.0 Units
Intermediate Painting: Acrylic and Oil
Course Advisory: SCC minimum English standard, ART 016. A study of acrylic and oil painting techniques focusing on use of color, the medium and composition. A series of painting assignments designed to develop skills in both media. *Field trip may be required. Two hours lecture, four hours lab.*

ART 018 3.0 Units
Advanced Intermediate Painting: Acrylic and Oil
Prerequisite: ART 017 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. A study of color, composition and technique in oil or acrylic painting on an intermediate level. Students may choose to build on assignments from ART 017 or develop an outline of semester assignments appropriate to their interests and skill needs. *Field trip may be required. Two hours lecture, four hours lab.*

ART 019 3.0 Units
Figure Painting
Course Advisory: SCC minimum English standard. ART 016. A study of the human figure using a variety of painting techniques and approaches. Students work directly from the live model to develop skills in rendering and expression. Assignments include long and short observational paintings which will afford skill development in materials handling as well as compositional and thematic developments. *Field trip may be required. Two hours lecture, four hours lab.*

ART 019B 3.0 Units
Clothed Figure
Course Advisory: SCC minimum English standard. Course emphasis is on understanding the various properties of clothing and drapery, as used with the figure in painting and drawing. Gesture, proportion, form and color will be studied in relation to the clothed figure. Projects will include a variety of costume statements including fashion, sport, fantasy or science fiction and theatre costume. *Field trip may be required. Two hours lecture, four hours lab.*

ART 020 2.0 or 3.0 Units
Landscape Drawing And Painting - Reflections Of Nature
Course Advisory: SCC minimum English and Math standards. This drawing and painting class will focus on the outdoors as subject matter. Frequent field trips and class exercises will introduce and expand the student's awareness and observational skills of the environment, in the tradition of Natural History as well as plein air (outdoor) art making. The student will reflect and translate these experiences into graphic terms using various media while considering line, shape, mass, space, texture, light, color and shadow. The student will focus on composition and content while developing a personal understanding of the environment. Keeping a written and visual journal will also be a component of this class. This course will examine the interrelationships of humans and their surroundings, and the esthetic choices available with which to communicate our responses. This class will consist of regular field trips during class meetings as well as some weekend outings. Films, special lectures, various projects and assignments as well as consideration for weather conditions will make up the remaining time in the studio. *Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 021 3.0 Units
Watercolor
Course Advisory: SCC minimum English standard. An introduction to the materials and techniques of transparent watercolor. Course includes basic composition, color study and an exploration of materials. Lectures, demonstrations and field study will supplement class assignments. *Field trip may be required. Two hours lecture, four hours lab.*

ART 022 3.0 Units
Watercolor - Intermediate
Prerequisite: ART 021 with a minimum grade of C. Course Advisory: SCC minimum English standard. A continuation of the study of basic watercolor techniques with emphasis on a more individual approach to the medium. The student and instructor develop a course of study that will focus on needs in the areas of skills and self-expression. *Field trip may be required. Two hours lecture, four hours lab.*

ART 023 3.0 Units
Introduction to Ceramics: Hand Building
Course Advisory: SCC minimum English standard. Covers basic construction methods of hand building and finishing pottery. Emphasis on form, craftspersonship and creativity. Building methods include pinch technique, coil building, and slab construction. Surface techniques include texture, stencil, slip, relief, stain, and glaze. Non-traditional construction and surface techniques will also be covered. *Field trip may be required. Two hours lecture, four hours lab.*

ART 024 3.0 Units
Intermediate Ceramics: Hand Buiding
Prerequisite: ART 023 with a minimum grade of C. Course Advisory: SCC minimum English standard. Continuation of ART 023 with emphasis on expanding skills, experimentation, design, craftspersonship, and creativity. Application of basic techniques to create finished art forms. *Field trip may be required. Two hours lecture, four hours lab.*

ART 025 3.0 Units
Ceramic Design And Decoration: Hand Building Methods
Prerequisite: ART 024 with a minimum grade of C.
Course Advisory: SCC minimum English standard. Emphasizes ceramic design problem-solving. Emphasis on creativity, design, honing skills, craftspersonship and experimentation. Ceramic art of the past as well as contemporary art is discussed. Loading and firing kilns, formulating glazes and mixing clay bodies are also covered. Builds on fundamental skills covered in Art 023 and Art 024. *Field trip may be required. Two hours lecture, Four hours lab.*

ART 026 3.0 Units
Introduction to Ceramics: Wheel Throwing Techniques
Course Advisory: SCC minimum English standard. Introduction to basic wheel throwing techniques. Emphasis on form, craftspersonship, and creativity. Surface techniques include texture, stencil, slip, relief, stain, and glaze. Non-traditional construction and surface techniques will also be covered. *Two hours lecture, four hours lab.*

ART 027 3.0 Units
Intermediate Ceramics: Wheel Throwing Techniques
Prerequisite: ART 026 with a minimum grade of C. Course Advisory: SCC minimum English standard. Continuation of ART 026 with emphasis on expanding skills, experimentation, design, craftspersonship, and creativity. Application of basic techniques to create finished art forms. *Field trip may be required. Two hours lecture, four hours lab.*

ART 028 3.0 Units
Ceramic Design: Wheel Throwing Techniques
Prerequisite: ART 027 with a minimum grade of C. Course Advisory: SCC minimum English standard. Emphasizes ceramic design problem-solving. Emphasis on creativity, design, honing skills, craftspersonship and experimentation. Ceramic art of the past as well as contemporary art is discussed. Loading and firing kilns, formulating glazes and mixing clay bodies are also covered. Builds on fundamental skills covered in ART 026 and ART 027. *Field trip may be required. Two hours lecture, four hours lab.*

ART 029 2.0 or 3.0 Units
Raku Pottery
Course Advisory: SCC minimum English standard. ART 023 or ART 026 (one college level ceramics course). Covers the ancient and contemporary art of Raku. Topics include techniques of forming clay, the formulation of clay bodies and glazes for Raku, kiln construction, firing, post firing, Eastern and Western aesthetics, and the history of Raku. The course will not cover basic ceramic construction techniques. Students should already be familiar with basic hand building or wheel throwing techniques. *Field trip may be required. Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 030A 2.0 or 3.0 Units
Architectural Ceramics, Murals and Tiles
Course Advisory: SCC minimum English standard. ART 023 or ART 026 (one college level ceramics course). This course will investigate the history, contemporary examples, materials, techniques and the vast range of artistic expression possible in architectural ceramics, ceramic murals and tiles. The course will not cover basic ceramic construction techniques. Students should already be familiar with basic hand building or wheel throwing techniques. Student should expect to incur materials and equipment costs typical of a studio art course. *Field trips may be required in this course. Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 030B 3.0 Units
Mural Painting: History, Community, Practice
Course Advisory: ENGL 001 and SCC minimum Math Standard. This course explores the cultural history of mural painting as well as the social and political issues related to the creation and public reception of mural paintings. Students will apply aesthetic as well as conceptual analyses to the design and creation of a full-scale mural. Through both study and practice, students will consider the importance of the community in the mural-making process. *Course requires field trips. Students will travel to view murals in the Bay Area. Murals may be painted at a site off-campus. Four hours lecture, eight hours lab (8-week course).*

ART 031 3.0 Units
Sculpture
Course Advisory: SCC minimum English standard. Introduction to sculpture methods and materials. Emphasis on principles of three dimensional design and the interrelationship of form, content and context. Sculpture methods to be covered include modeling, mold making, welding, assemblage, and construction with a variety of materials. Various sculpture methods are practiced with attention to creative self-expression and historical context. *Field trip may be required. Two hours lecture, four hours lab.*

ART 032 3.0 Units
Sculpture: Human Figure
Course Advisory: SCC minimum English standard. Study of the human form in sculpture. Students will create both realistic and abstract sculpture of the human form in a variety of materials. *Field trip may be required. Two hours lecture, four hours lab.*

ART 033 3.0 Units
Intermediate Sculpture
Prerequisite: A minimum grade of C in ART 031, ART 032 or ART 034. Course Advisory: SCC minimum English standard. Further development of concepts and skills presented in ART 031 and ART 032. Emphasis is placed on individual expression. A variety of materials, methods, and sculptural concepts are explored. *Field trip may be required. Two hours lecture, four hours lab.*

ART 034 3.0 Units
Ceramic Sculpture
Course Advisory: SCC minimum English standard. Introduction to basic sculpture concepts, materials, and approaches with an emphasis on ceramics. Subjects to be covered include: Historic and contemporary approaches to ceramic sculpture, slab construction, coil building, mold making, extruded fabrication, modeling from the figure, introduction to ceramic color, characteristics and limitations of ceramic materials. *Field trip may be required. Two hours lecture, four hours lab.*

ART 035A 3.0 Units
Introduction to Wood-Fired Ceramics
Course Advisory: SCC minimum English and Math standards. Covers the ancient and contemporary art of wood-fired ceramics. Topics include techniques of forming clay, the formulating of clay bodies and glazes for wood fire, kiln construction, wood firing techniques, Eastern and Western aesthetics and the history of wood-fired ceramics.The course will not cover basic ceramic construction techniques. Students should already be familiar with basic hand building or wheel throwing techniques. *Two hours lecture, four hours lab.*

ART 036 2.0 or 3.0 Units
Ceramics Surfaces - Drawing and Painting on Clay
Course Advisory: SCC minimum English and Math standards. This course in ceramic surface design will explore the vast range of artistic expression possible with ceramic slips, stains, glazes and firing techniques at low, medium and high temperature ranges. The course will not cover basic ceramic construction techniques. Students should already be familiar with basic hand building or wheel throwing techniques. *Field trip may be required. Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 037 2.0 or 3.0 Units
Clay and Glazes for the Ceramic Artist
Prerequisite: A minimum grade of C or equivalent in either ART 023 or 026. Course Advisory: SCC minimum English and Math standards. Covers and investigates the theoretical and practical aspects of clay and glaze formulation. Topics covered include: Clay/glaze fit, glaze calculation, testing strategies, the development of color, the development of texture, kiln types, kiln temperatures and kiln atmosphere. *Field trip may be required. Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 038 3.0 Units
Introduction to Printmaking
Course Advisory: SCC minimum English and Math standards. Explores traditional and contemporary approaches to etching (Intaglio), lithography, relief (woodcut and linoleum) and screen printing. Digital and new methods of photographic printmaking are discussed and demonstrated. This course is project oriented to enable the student to develop a portfolio of completed works in various mediums. *Field trip may be required. Two hours lecture, four hours lab.*

ART 039 3.0 Units
Etching and Engraving: Line Techniques
Course Advisory: SCC minimum English standard. Covers history and techniques of line etching and engraving, including dry point, sugar lift line etching, and soft ground line variations. The student is expected to produce matted prints of completed projects. *Field trip may be required. Two hours lecture, four hours lab.*

ART 040 3.0 Units
Etching and Engraving: Tone
Course Advisory: SCC minimum English standard. Includes etching and engraving techniques such as aquatint, featherbiting, spit bite, and soft ground which produce tones that have gray and black areas defining line etchings. The student will prepare a portfolio of completed projects. *Field trip may be required. Two hours lecture, four hours lab.*

ART 041 3.0 Units
Etching and Engraving: Color
Course Advisory: SCC minimum English and Math standards. Includes etching and engraving techniques and their history, including the use of multiple plates for each color used on the key plate. Some color plate methods covered include a la poupee, monotype, chine colle, color rollings, and viscosity printing. The student will prepare a portfolio of completed projects. *Field trip may be required. Two hours lecture, four hours lab.*

ART 042 3.0 Units
Screen Printing
Course Advisory: SCC minimum English and Math standards. Screen printing techniques from paper stencils and pochoir to photographic and digital processes. Students are expected to develop a portfolio of prints that emphasizes the exploration of personal content while employing advanced screen techniques and related digital processes. The course will consist of studio production, lectures on contemporary and historical screen printing, demonstrations and critiques. *Field trip may be required. Two hours lecture, four hours lab.*

ART 042A 3.0 Units
Commercial Screen Printing
An introduction to the screen-printing process. Students will participate in the various functions of a design studio. They will produce artwork; select mesh, frames, and stencil systems; and select inks and substrates based on printing techniques. A combination of laboratory applications and theory will provide the foundation for this course. Acquisition of technical skills through the actual production of screen-printed products is a major goal of this course. Tee shirts, reusable shopping bags and aprons will be some of the merchandise the class will design and print for the Solano College community. This course is offered in conjunction with a certificate program. *Two hours lecture, four hours lab.*

ART 043 3.0 Units
Print Making: Relief Printing, Including Woodcut
Course Advisory: SCC minimum English and Math Standards. A general introduction to printmaking - the history, development, techniques, and processes. Emphasis is on an in-depth study and application of various relief methods (embossing, collagraph, linoleum cut, woodcut, and non-traditional methods) along with an investigation of relevant image source and development. *Field trip may be required. Two hours lecture, four hours lab.*

ART 045A 3.0 Units
Graphic Design I
Provides fundamental background for terminal and transfer students planning to enter the graphic design field. Instruction in the professional use of design, lettering, and illustration through solution of visual communication problems. *(Formerly ART 056) Two hours lecture, four hours lab.*

ART 045B 3.0 Units
Graphic Design II
Prerequisite: ART 045A with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. Computer design and production methods for print and digital mediums using Adobe and other software programs for layout, illustration, typography, and animation. Graphic design principles are stressed. *(Formerly ART 057) Two hours lecture, four hours lab.*

ART 045C 3.0 Units
Typography
Course Advisory: English 001 with a minimum grade of C. Typography fundamentals course covering the history, theory and study of letterforms and type design, using both traditional and digital media. Studies will include typographic characteristics, the relationship between type and image, principles of legibility, visual hierarchy, and grid systems. *Field trip may be required. Two hours lecture, four hours lab.*

ART 046 3.0 Units
Illustration I
Course Advisory: SCC minimum English standard. Problems in design and rendering of illustration for print and film media. Projects may include illustrations for books, magazines, advertising and film. *Field trip may be required. Two hours lecture, four hours lab.*

ART 046C 3.0 Units
Illustration II
Prerequisite: ART 046 with a minimum grade of C or equivalent as determined by portfolio review. Course Advisory: SCC minimum English standard. Studio illustration conception, production and finish. Students will execute illustration projects using professional procedures and equipment. Emphasis is on student creative and technical development. Written papers and portfolio review required. *Two hours lecture, four hours lab.*

ART 047 3.0 Units
Introduction to Animation
Prerequisite: SCC Minimum Math and English standards. This course will introduce students to the art of animation, and will cover its history and evolution. Student projects will facilitate and require the further development of visual literacy, esthetic principles, and critical thinking skills. Interactivity, the study of motion and linear and non-linear narrative structures will be explored. Students will gain an understanding of how animation can be used as an effective tool for storytelling, and will gain experience through group and individual animation projects. Offers an in-depth study of animation and interactive work using industry standard animation software. *Two hours lecture, four hours lab.*

ART 049 1.0 to 3.0 Units
Art Honors
Prerequisite: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a grade of 'B' or better; an ability to work independently and permission of the School Dean based on instructor availability. An independent study course designed for sophomores or students who have taken many of the basic classes and wish to continue work with an instructor in a specialized area. The student works by arrangement with the instructor on an outlined program of study. Students may take this course up to the maximum number of units over multiple semesters. *Three to nine hours by arrangement.*

ART 060 1.0 to 3.0 Units
Exhibition Design
Course Advisory: Eligibility for English 001. Provides fundamentals of designing exhibitions in gallery, museum, and alternative spaces. Students will gain experience developing exhibitions for the Herger Gallery (Fairfield Campus) and Centers. Topics covered include selection, design and installation of exhibitions; defining the mission of a gallery; public relations; and career opportunities. *Field trip may be required. One to three hours lecture.*

ART 064 3.0 Units
Monotype/Monoprint
Course Advisory: SCC minimum English and Math standards. This course will focus on the unique print. Study will include history and development of this form in relation to print tradition. Development of press skills in single-drop and multi-drop printing is required. A portfolio of printing techniques including direct, indirect and combination prints will be required. *Field trip may be required. Two hours lecture, four hours lab.*

ART 074 2.0 or 3.0 Units
Kiln Design and Operation
Course Advisory: SCC minimum English and Math standards. ART 023 or ART 023 (one college level ceramics course). This course in kiln design and operation will investigate the vast range of kiln designs, their operation and the opportunities each offers for artistic expression. Kiln designs covered will include natural gas, propane, electric, raku, salt, wood, and alternative kilns. Students will be able to determine which kilns and which firing strategies are best suited to their current artistic vision. The course will not cover basic ceramic construction techniques. Students should already be familiar with basic hand building or wheel throwing techniques. *Field trips may be required. Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 075 2.0 or 3.0 Units
Art Studio Concepts
Course Advisory: SCC minimum English standard. Intensive study in visual arts studio. Exposure to contemporary art directions, trends and selected topics. Different studio problems will be investigated each semester. Field trips may be required. *Students who wish to transfer must enroll in the 3-unit section. One to two hours lecture, three to four hours lab.*

ART 076A 3.0 Units
Portfolio Development - Artistic Inquiry
Course Advisory: SCC minimum English standard. This is an advanced course designed to serve the student in the preparation of a professional fine art portfolio consisting of a body or series of work. Emphasis is placed on 1) individual expression of an artistic vision 2) idea development 3) artistic inquiry 4) setting and meeting artistic goals and timelines for the production of a body or series of work. For this course the student should have the necessary skills, art making experience and motivation to work independently, with expert consultation by the instructor, on developing a coherent body of work. This course is the first in a two part course offering completed by Portfolio Development - Documentation. Student should expect to incur materials and equipment costs typical of a studio art course. *Field trip may be required. Two hours lecture, four hours lab.*

ART 076B 3.0 Units
Portfolio Development: Documentation
Course Advisory: SCC minimum English standard. This is an advanced course designed to serve the student in the preparation of a professional fine art portfolio consisting of a body or series of work. Emphasis is placed on 1) individual expression of an artistic vision 2) professional quality documentation and presentation of artwork and 3) capacity to communicate both verbally and in writing about artwork produced. For this course the student should have the necessary skills, art making experience and motivation to work independently, with expert consultation by the instructor, on developing a coherent body of work. This course is the second in a two part course offering following Portfolio Development - Artistic Inquiry. Student should expect to incur materials and equipment costs typical of a studio art course. *Field trip may be required. Two hours lecture, four hours lab.*

ART 077A 3.0 Units
Professional Practices for Artists
Course Advisory: SCC minimum English standard. This course is designed to provide the skills and information to serve the student in developing a professional art career. Topics include: How to approach galleries, institutions, universities, art schools, and potential employers. Techniques for promoting art for employment or transfer to four year schools, portfolio preparation, resume writing, artist statement and biography composition, sales and pricing of art, business basics, entrepreneurship, public relations, art on the internet, planning and goal setting, contracts, taxes, grant getting, display, shipping, sustaining creativity. Evaluation of marketing and promotional concepts. Recommended for all art and design majors seeking to become professionals. *Field trips may be required. Three hours lecture.*

ART 077B 3.0 Units
Art on Site
Course Advisory: SCC minimum English standard. Art on Site is a movable feast. We will visit artists, gallery owners, museum curators and art administrators on site, at their studios, galleries museums and offices. This will be a forum for students to hear first hand from artists, arts scholars and other art professionals discussing and contextualizing their work within the contemporary art field. Includes multiple lecturers by visitors and additional class lectures providing further context. Exposure to contemporary art directions, trends and job markets. *This course requires extensive field trips to destinations in the greater Sacramento area and Bay Area. Three hours lecture.*

ART 100 2.0 or 3.0 Units
Color and Mixed Media Drawing
Course Advisory: SCC minimum English standard. Course focuses on the use of a variety of drawing materials and techniques with special attention to color theory. Lectures, demonstrations and field study will supplement class assignments. *Field trip may be required. One to two hours lecture, three to four hours lab.*

ART 145 2.0 or 3.0 Units
Portrait Drawing and Painting
Course Advisory: ART 014. A multi-faceted course addressing the representation of likeness portrait study. Includes anatomy and work with live models, self-portraits and portraits of others. Issues of gender, ethnic identity, youth and aging, stereotyping and caricature will be presented in historical and contemporary contexts. Portrait work will be explored in a variety of stylistic formats from observational likeness to expressionistic images to symbolic portraits. Work in a variety of media is required. *Field trip may be required. One to two hours lecture, three to four hours lab.*

Updated in Addendum

Astronomy

ASTR 010 3.0 Units
General Astronomy
Course Advisory: Eligibility for English 001; SCC minimum Math standard. An introductory study of the universe, including the properties and evolution of galaxies, stars, pulsars, black holes, quasars, the sun, planets, and life in the universe. *Field trip may be required. Three hours lecture.*

ASTR 020 1.0 Units
Astronomy Laboratory
Prerequisite: ASTR 010, 030, or 040 (courses may be taken concurrently). Course Advisory: SCC minimum English and Math standards. Students will gain familiarity with the sky, telescopes, and other astronomical equipment. They will do experiments in Physics related to Astronomy. Topics will cover the moon, planets, stars, galaxies, and cosmology. *Field trips may be required. Three hours lab.*

ASTR 030 3.0 Units
The Solar System
Course Advisory: Eligibility for English 001; SCC minimum Math standard. An introductory study of solar system astronomy, the physics related to that astronomy, the planets and their moons, the sun, solar system debris, and the possibility of extraterrestrial life. *Field trips may be required. Three hours lecture.*

ASTR 040 3.0 Units
Stars, Galaxies, and Cosmology
Course Advisory: Eligibility for English 001; SCC minimum Math standard. An introductory study of stars, galaxies, the universe, and the physics related to these topics. This includes an examination of the facts relating to the sun, stellar lifetimes, supernovae, black holes, and cosmology. *Field trip may be required. Three hours lecture.*

Automotive

Automotive Body and Repair

Program Description
This program is designed to prepare the student for employment as a body repair and paint apprentice in privately owned repair shops or automotive dealerships. A student could be self-employed from the training after completing the program.

Certificate of Achievement and Associate Degree in Science
A Certificate of Achievement can be obtained by completing the 46-unit major below. The Associate in Science Degree can be obtained by completing 67 units, including the major and the general education requirements. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Automotive Body and Repair Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate knowledge of metal joining and straightening methods.
2. Inspect, remove, install, align panels, doors and trim to meet shop standards.
3. Determine type of paint; plan refinishing system; remove, prepare, seal and mask; apply coatings to vehicle.
4. Demonstrate correct use of chemicals within the shop environment.
5. Work safely and responsibly within all safety and environmental guideline standards for a shop.
6. Identify and strategize career plans for employment in the auto collision field.

REQUIRED COURSES	**Units**
AUTB 100 Fundamentals of Auto Body Repair	10
AUTB 101 Spray Paint Theory and Techniques	10
AUTB 102 Automotive Body Panels and Frame Straightening	10
AUTB 103 Advanced Auto Body Repair and Painting	10
IT 140 Industrial Materials	3
IT 150 Industrial Processes	3
Total units	**46**

Some courses may not be offered. Please contact the Dean of Applied Technology and Business for alternate courses if necessary.

Recommended Electives
BUS 005 Introduction to Business
DRFT 079 Blueprint Reading
IT 110 Modern Welding
OCED 070 Occupational Soft Skills
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** *and select "Automotive Body & Repair."*

Automotive

Automotive Technician

Program Description
This program is designed to prepare graduates for entry level employment in the automotive industry as apprentice technicians, parts specialists, service consultants, or specialists in one of the many areas in the automotive service and repair industry.

Associate in Science Degree
The Associate in Science Degree can be obtained upon completion of 66 units, including the major, and the general education requirements. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Associate Degree will be technically proficient in entry level skills as defined by the National Automotive Technician's Education Foundation (NATEF) by demonstrating:

1. Completion of 85 percent of the tasks established by NATEF for the Master Automobile Service Technology Certification.
2. Proper service and repair procedures of the following systems:
   - Engine Repair
   - Light Duty Hybrid/Electric Vehicle
   - Automatic Transaxles/Transmissions
   - Manual Drivetrain
   - Suspension, Steering and Alignment
   - Brakes
   - Electrical/Electronic Systems
   - Heating and Air Conditioning
   - Engine Performance
3. Proper safety procedures and techniques.
4. Efficient oral and written communication.
5. The ability to apply fundamental automotive technology principles.
6. Skills for successful employment in the field of Automotive Service and Repair
7. Appropriate methods for hazardous waste handling and disposal.

REQUIRED COURSES	**Units**
ATEC 070 Automotive Fundamentals	3
ATEC 130 Automotive Suspension and Steering	4
ATEC 131 Automotive Electrical Systems	4
ATEC 132 Automotive Brake Systems	4
ATEC 133 Automotive Engine Repair	4
ATEC 134 Automatic Transmissions/Transaxles	4
ATEC 135 Automotive Engine Performance	4
ATEC 136 Automotive Manual Drivetrain and Axles	4
ATEC 137 Automotive Heating and Air Conditioning	4
ATEC 138 Automotive Electronics	4
ATEC 139 Advanced Engine Performance	4
ATEC 140 Hybrid Vehicle Maintenance and Repair	2
Total Units	**45**

Recommended Electives
BUS 005 Introduction to Business
MT 120 Principles of Analog Electronics
IT 110 Modern Welding
IT 140 Industrial Materials
IT 150 Industrial Processes
MT 122 Principles of Digital Electronics
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** *and select "Automotive Technician."*

Automotive

Automotive Automatic Transmissions and Transaxles

Program Description
This program is designed to prepare graduates for entry level employment in the automotive industry as an Automatic Transmission/Transaxle Service/Repair Technician.

Certificate of Achievement
A Certificate of Achievement in Automatic Transmissions and Transaxles can be obtained by completing the 15-unit automotive major. All courses must be completed with a minimum grade of C or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Certificate of Achievement in Automatic Transmissions and Transaxles shall have demonstrated and practiced:

1. 85% of all Master Automobile Service Technology (MAST) P1, P2, and P3 (priority level) Automatic Transmission and Transaxle tasks in accordance with the 2013 National Automotive Technicians Education Foundation (NATEF) automotive training program accreditation standards for the Automatic Transmission and Transaxle Technician A2 Certification.

REQUIRED COURSES	**Units**
ATEC 070 Automotive Fundamentals	3
ATEC 131 Automotive Electrical Systems	4
ATEC 134 Automatic Transmissions/Transaxles	4
ATEC 138 Automotive Electronics	4
Total Units	**15**

Automotive

Automotive Electrical and Body Systems

Program Description
This program is designed to prepare graduates for entry level employment in the automotive industry as an Automotive Electrical/Electronics Service/Repair Technician.

Certificate of Achievement
A Certificate of Achievement in Automotive Electrical and Body Systems can be obtained by completing the 17-unit automotive major. All courses must be completed with a minimum grade of C or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Certificate of Achievement in Automotive Electrical and Body Systems shall have demonstrated and practiced:

1. 85% of all Master Automobile Service Technology (MAST) P1, P2, and P3 (priority level) Electrical/electronic Systems tasks in accordance with the 2013 National Automotive Technicians Education Foundation (NATEF) automotive training program accreditation standards for the Electrical/Electronic Technical A6 Certification.

REQUIRED COURSES.....Units
ATEC 070 Automotive Fundamentals 3
ATEC 131 Automotive Electrical Systems 4
ATEC 137 Automotive Heating and Air Conditioning ... 4
ATEC 138 Automotive Electronics..... 4
ATEC 140 Hybrid Vehicle Maintenance and Repair 2
Total Units 17

Automotive

ATEC 070 3.0 Units
Automotive Fundamentals
Course Advisory: SCC minimun English and Math standards. This course serves as the pre-requisite for all automotive technology certificate and/or degree applicable courses and provides the knowledge and skills needed to prepare students for entry into the automotive core curriculum. The study of automotive industry fundamentals including careers; safety; fasteners; hand tool identification and usage; vehicle systems; electrical fundamentals; service information access and use; automotive chemical and fluid applications; hazardous waste handling; general shop equipment usage, and vehicle servicing. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will in part prepare the student for the ASE Maintenance and Light Repair G1 Certification Examination. *Two hours lecture, three hours lab.*

ATEC 130 4.0 Units
Automotive Suspension and Steering
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). Course Advisory: ATEC 131, and SCC minimum English and Math standard. The study of automotive suspension and steering fundamentals including: diagnosis, inspection, repair, and adjustment of modern automotive steering, suspension, supplemental restraint, tire pressure monitoring, and alignment systems. Theory of operation, common automotive steering and suspension systems, wheel alignment principles, methods of diagnosis, adjustment and repair, and the use of suspension service equipment will be covered. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will in part prepare the student for the ASE Suspension and Steering A4 Certification Examination. T*wo hours lecture, six hours lab.*

ATEC 131 4.0 Units
Automotive Electrical Systems
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). Course Advisory: SCC minimum English and Math standard. A course covering theory and principles of automotive electrical systems. The course includes basic electrical theory, Ohm's Law, series and parallel circuits, electrical symbols and schematics, automotive batteries, charging systems, voltage regulation, starting systems, lighting systems, and various accessory systems. The laboratory portion of the course will place emphasis on diagnosis and testing techniques required to effectively determine the necessary action in an electrical system failure. The use of schematics, technical specifications, voltmeters, ohmmeters, ammeters, and circuit testers will be required. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will in part prepare the student for the ASE Electrical / Electronic A6 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 132 4.0 Units
Automotive Brake Systems
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). Course Advisory: ATEC 131; SCC minimum English and Math standards. The study of modern automotive braking systems. Hydraulic principles, coefficients of friction, and thermodynamics will be discussed. Diagnosis, repair, overhaul, and adjustment procedures of drum, disc/drum, and four-wheel disc systems will be emphasized. Anti-lock Braking Systems (ABS) diagnostics, servicing, and repair procedures will also be covered. The course will cover common domestic and import passenger vehicles, and light trucks only. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will prepare the student for the ASE Brakes A5 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 133 4.0 Units
Automotive Engine Repair
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). Course Advisory: ATEC 131; SCC minimum English and Math standards. The study of four stroke combustion cycle theory, engine torque, horsepower, materials, and manufacturing processes as they relate to internal combustion powerplants used in production automobiles and light trucks. The theory, principles, and diagnosis of cooling systems, lubrication systems, and common engine mechanical failures will be emphasized. The laboratory portion of the course will focus on comprehensive engine testing, in-vehicle engine servicing, engine disassembly/reassembly, precision measuring, and inspection of internal engine components. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will prepare the student for the ASE Engine Repair A1 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 134 4.0 Units
Automatic Transmissions/Transaxles
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). Course Advisory: ATEC 131; SCC minimum English and Math standards. The study of hydraulic and electronically actuated automatic transmissions and transaxles. Topics will include positive and variable displacement pumps, torque converters, bands and clutches, hydraulic valves, electronic shift solenoids, governors, and common compound planetary gear arrangements. The laboratory portion of the course will focus on diagnostic and overhaul procedures, in-vehicle testing, and bench testing of various components. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will prepare the student for the ASE Automatic Transmission A2 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 135 4.0 Units
Automotive Engine Performance
Prerequisite: ATEC 070 with a minimum grade of C (may take concurrently). Course Advisory: ATEC 131; SCC minimum English and Math standards. Lecture, demonstration and practical lab experience in the operation, troubleshooting and repair of the ignition, fuel and emission control systems of import and domestic passenger vehicles and light trucks. Emphasis is on theoretical knowledge and the proper use of diagnostic tools and equipment. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will in part prepare the student for the ASE Engine Performance A8 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 136 4.0 Units
Automotive Manual Drivetrain and Axles
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). Course Advisory: SCC minimum English and Math standards. A course covering theory and principles of manual transmissions/transaxles, clutches, driveshafts, half shafts, variable and constant velocity joints, differentials, rear wheel drive axle assemblies, all wheel drives, and four wheel drives. Gear types, ratios, and noise, vibration, harshness diagnostic routines will be discussed. Diagnosis, repair, overhaul, and adjustment procedures for common domestic, import, and light truck drivetrain components will be emphasized. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will prepare the student for the ASE Manual Transmission/Transaxle & Drivetrain A3 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 137 4.0 Units
Automotive Heating and Air Conditioning
Prerequisite: ATEC 070 with a minimum grade of C (may be taken concurrently). An Automotive Technology course covering theory and operation of automotive heating systems and air conditioning refrigeration systems. Topics will include the refrigeration cycle, evacuation principles, humidity, heat transfer, automotive refrigerants, temperature pressure relationship, greenhouse gases, and proper handling and storage of refrigerants. The laboratory portion of the course will focus on the diagnosis and repair of heating and cooling systems, use of refrigerant recycling-reclaiming equipment, use of evacuation equipment, retrofitting, and environmentally sound refrigeration handling techniques. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently, will prepare the student for the ASE A7 Air Conditioning and Heating Certification Examination. *Two hours lecture, six hours lab.*

ATEC 138 4.0 Units
Automotive Electronics
Prerequisite: A minimum grade of C in both ATEC 070 and ATEC 131. Emphasis on applied techniques in schematic reading, scan tool usage and diagnosis of various automotive electronic systems, including power doors, mirrors, windows and seats; sun roofs; air bags; keyless entry; networks and other body control electronics. This course builds on the concepts introduced in Automotive Electrical Systems. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will in part prepare the student for the ASE Electrical / Electronic A6 Certification Examination. *Two hours lecture, six hours lab.*

ATEC 139 4.0 Units
Advanced Engine Performance
Prerequisite: A minimum grade of C in ATEC 070, ATEC 131 and ATEC 135. Emphasis on applied techniques in advanced engine performance systems diagnostics including fuel injection; ignition; emission controls; OBD II and CAN/BUS. The course is correlated with the National Institute for Automotive Service Excellence standards and is designed to prepare the student for the ASE A8 and L1 Engine Performance Certification Examination series. *Two hours lecture, six hours lab.*

ATEC 140 2.0 Units
Hybrid Vehicle Maintenance and Repair
Course Advisory: SCC minimum English and Math standards. Study of hybrid vehicles, safety issues associated with hybrid vehicles, maintenance and repair procedures specific to hybrid vehicles. *One hour lecture, three hours lab.*

Automotive Body and Repair

AUTB 100 10.0 Units
Fundaments of Auto Body Repair
Course Advisory: SCC minimum English standard. Acquaints the student with the basic skills and fundamental principles of auto body repair. Learned skills are verified through manipulative projects and written tests. *Five hours lecture, fifteen hours lab.*

AUTB 101 10.0 Units
Spray Paint Theory and Techniques
Prerequisite: AUTB 100. Course Advisory: SCC minimum English standard. Acquaints the student with the basic principles and techniques of automotive refinishing. Skills acquired are verified through manipulative projects and written tests. *Five hours lecture, fifteen hours lab.*

AUTB 102 10.0 Units
Automotive Body Panels and Frame Straightening
Prerequisite: AUTB 100. Students will learn to repair and replace body panels. Includes unibody and frame straightening. Learned skills are verified through manipulative projects and written exams. *Five hours lecture, fifteen hours lab.*

AUTB 103 10.0 Units
Advanced Auto Body Repair and Painting
Prerequisite: AUTB 101, AUTB 102. Students are exposed to the fine details of automotive body repair. Excellence and precision of skills are refined and quality work is emphasized. Students demonstrate their achievements through manipulative projects and written tests. *Five hours lecture, fifteen hours lab.*

AUTB 110 3.0 Units
Special Projects
Prerequisite: AUTB 103. Advanced projects undertaken by students in their field of specialization, under supervision of the instructor. T*wo hours lecture, three hours lab.*

Biology

Biology

Program Description
The biology program emphasizes the relationship between structure and function of living systems and the concept that biological processes can be studied at different levels of organization. The program provides a balanced blend of mathematics, chemistry, physics and traditional and modern biology including the advanced topics essential to students continuing their studies at the university. Life is explored at the molecular, cellular, organismal and ecological levels.

Associate in Science Degree
The Associate in Science Degree can be obtained by completing the 46 - 50 unit major, the general education requirements, and electives for a total of 64 - 66 units. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Biology Associate Degree will be able to:
1. Design and/or interpret an investigation, including data collection and/or analysis.
2. Describe the molecular basis of genetics and energetics.
3. Explain the principles and mechanisms of microevolution and macroevolution.

REQUIRED COURSES	**Units**
BIO 002 Cell and Molecular Biology	5
BIO 003 Evolution, Ecology & Biodiversity	5
CHEM 001 General Chemistry	5
CHEM 002 General Chemistry	5
CHEM 003 Organic Chemistry I	5
CHEM 004 Organic Chemistry II	5
MATH 030 Analytic Geometry and Calculus	3
AND	
MATH 031 Analytic Geometry and Calculus	3
OR	
MATH 020 Analytic Geometry and Calculus I	5
AND	
MATH 021 Analytic Geometry and Calculus II	5
PHYS 002 General Physics (Non-Calculus)	5
AND	
PHYS 004 General Physics (Non-Calculus)	5
OR	
PHYS 006 Physics for Science and Engineering	5
AND	
PHYS 007 Physics for Science and Engineering	5
Total Units	**46 – 50**

BIO 002 5.0 Units
Cell and Molecular Biology
Prerequisite: CHEM 001. Course Advisory: Eligibility for ENGL 001. This course intended for biology majors covers the structure and function of prokaryotic and eukaryotic cells, biological molecules, cell reproduction and its controls. Mendelian and molecular genetics, cell physiology and the metabolism including cellular respiration and photsynthesis, cellular communication, and homeostasis. An extensive laboratory component teaches the techniques used in biotechnology to manipulate DNA and to study proteins. *Three hours lecture, Six hours lab.*

BIO 003 5.0 Units
Evolution, Ecology & Biodiversity
Prerequisite: BIO 002 with a minimum grade of C. Course Advisory: Eligibility for English 001, completion of Intermediate Algebra with a minimum grade of C and eligibility for college level math. This course for biology majors covers evolution, ecology, and the diversity of life. The laboratory component includes invertebrate and vertebrate dissection and several weekend and all day field trips. Students must successfully complete both the lecture and the laboratory portions of the course. *Field trips may be required. Some field trips may involve a fee. C-ID BIOL 140. Three hours lecture, six hours lab.*

Biology

BIO 004 5.0 Units
Human Anatomy
Course Advisory: Eligibility for English 001 and SCC minimum Math standard, BIO 016 and BIO 016L are strongly recommended. A study of the structural organization of the human body, from cellular to organismal level. Throughout the course, various types of instruction are used, including microscopic investigation of prepared slides of tissues and organs, gross (macroscopic) anatomical dissection, and examination of prosected human material. *Formerly BIO 006. C-ID BIOL 110B. Three hours lecture, six hours lab.*

BIO 005 5.0 Units
Human Physiology
Prerequisite: A minimum grade of C in BIO 004 and CHEM 001, CHEM 010. Course Advisory: SCC minimum English and Math standards. This course describes physiological and homeostatic mechanisms of the body systems in health and disease. The laboratory relates structure to function, uses instrumentation to measure physiological variables, and enables students to critically evaluate functional status. C-ID BIOL 120B *Three hours lecture, six hours lab.*

BIO 012 3.0 Units
Environmental Science
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. This course examines the basic concepts of biology (especially ecology), chemistry, and physics to study: (1) human population growth, (2) short and long-term use of resources (such as soil, food, land, renewable and nonrenewable energy, water, and air), and (3) the production of pollution and other wastes. *Field trips may be required. Three hours lecture.*

BIO 012L 1.5 Units
Environmental Science Laboratory
Prerequisite: BIO 012 (may be taken concurrently) Course Advisory: Eligibility for English 001 and SCC minimum Math standards. A course that uses laboratory and mandatory field trip techniques to examine the ecological roles of organisms, resource use, and pollution/waste. Field trips may be required. *One half-hour lecture, three hours lab.*

BIO 014 4.0 Units
Principles of Microbiology
Prerequisite: Minimum grade of C, CHEM 010, or CHEM 001 and a minimum grade of C in MATH 104, MATH 114 or two years of high school alegbra. Course Advisory: SCC minimum English and Math standards. The study of the morphology, physiology, genetics, taxonomy, and ecology of microorganisms. The course also includes principles of immunology, the control of microbes, and their relationship to disease. Laboratory exercises cover microscopy, staining, aseptic techniques, identification, and microbial growth among others. *Three hours lecture, three hours lab.*

BIO 015 4.0 Units
Introduction to Biology
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. A non-majors biology course that introduces basic concepts of living organisms including aspects of biological chemistry, cell structure and function, physiology, genetics, evolution, and ecology. *Students must successfully complete both the lecture AND lab portions of the course. Off-campus field trips may be required and may involve a fee. NOTE: Not open for credit to students who have completed BIO 001, 002 or 012. Three hours lecture, three hours lab.*

BIO 016 3.0 Units
Introduction to Human Biology
Course Advisory: SCC minimum English and Math standards. An introduction to general biology with emphasis on the human model. Topics include cell structure and function, human evolution, anatomy and physiology, genetics, and the human impact on the environment. This is a course for non-majors. NOTE: Not open for credit to students who have completed BIO 001, 002, 004, 005, 010 or 015. *Three hours lecture.*

BIO 016L 1.5 Units
Human Biology Laboratory
Prerequisite: BIO 016 with a minimum grade of C (may be taken concurrently). Course Advisory: Eligibility for English 001 and SCC minimum Math standard. A non-majors laboratory course providing an introduction to general biology with an emphasis on the human model. Topics include microscopy, cell structure and function, human anatomy and physiology, genetics and the human impact on the environment. Field trips may be required. Off-campus field trips may be required and may involve a fee. Note: Not open for credit to students who have completed BIO 002, 003, 004, 005 or 015. *One half-hour lecture, three hours lab.*

Biology

BIO 018 3.0 Units
Biology Of Sex
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. The biological bases of human sex and sexuality will be discussed. Emphasis will be placed on the normal and diseased state of the male and female reproductive system. Essay and objective exams as well as written assignments will be used for student evaluations; the final exam will be comprehensive. *Three hours lecture.*

BIO 019 4.0 Units
Marine Biology
Course Advisory: Eligibility for ENGL 001 and SCC minimum Math standard. A non-majors course that studies the diversity and natural history of life in the marine environment with an emphasis on the adaptations of organisms to their environment. Students must successfully complete both the lecture and laboratory portions of the course. *Field trips may be required. Some field trips may involve a fee. This course is not open for credit to students who have completed BIO 001 or 002. Three hours lecture, three hours lab.*

BIO 020 3.0 Units
Infectious Disease, Plagues, and Public Health
Course Advisory: Eligibility for English 001 and SCC minimum MATH standard. This course examines infectious disease and the changing disease landscape from the molecular to the ecological level. Topics include cell structure and function, microorganisms, immunity, epidemiology, historical plagues, emerging diseases, prevention and treatment, and conditions that promote novel disease emergence. This is a course designed for non-science majors. *Three hours lecture.*

BIO 025 3.0 Units
Human Genetics
Course Advisory: Eligibility for ENGL 001 and SCC minimum math standard. This course is designed for non-science majors to provide an understanding of basic principles of genetics, current developments in genetics, and the influence of genes and the environment in determining human characteristics. *Three hours lecture.*

BIO 047 0.5 to 3.0 Units
Independent Study
Prerequisite: Minimum grade of C in 12 units of credit, including 4 units from within the discipline. Course Advisory: Eligibility for English 001; statistics may be useful for data analysis. Designed for students who intend to major in biological sciences or pre-professional programs. *Students may take this course up to the maximum number of units over multiple semesters. One and one-half to nine hours by arrangement.*

BIO 049 1.0 to 3.0 Units
Biology Honors
Prerequisite: Eligibility for Honors Program; BIO 001, BIO 002, BIO 005, BIO 014, or BIO 015 (any of these courses may be taken concurrently). Requires approval of a faculty member sponsor and the Dean of the School of Science and Mathematics. Course Advisory: Eligibility for English 001. Requires students to complete an independent student project under the supervision of a member of the faculty. The project may be a laboratory or field study or a library study that leads to a thesis. In all cases, the final written product should show integration and synthesis of ideas. *Students may take this course up to the maximum number of units over multiple semesters. Three to nine hours by arrangement.*

BIO 099 0.5 to 2.0 Units
Biology Honors: Special Dissection
Prerequisites: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in BIO 004 with a minimum grade of B; an ability to work independently; permission of the School Dean based on instructor availability. An independent study project designed to increase understanding of human anatomy through detailed dissection and other projects assigned by the supervising instructor. The student will be evaluated through oral examination and evaluation of dissections. *This course is an Open Entry/Open Exit course. Students may continue BIO 099 over multiple semesters not to exceed 2 units. One and one-half to six hours by arrangement.*

BIO 101 0.5 Units
How To Study Science
This short-term course provides a step-by-step approach for success in transferable science courses. Topics include: overcoming science anxiety; learning how science courses are organized; how best to learn and retain scientific information; how to use science textbooks, common scientific terms and symbols; how to analyze figures; how to develop test-taking skills to prepare for lecture and laboratory tests; and more. *Two hours lecture (4 week course).*

BIO 160 2.5 Units
Review of Scientific Principles of Pre-Nursing
Prerequisite: CONDITION OF ENROLLMENT: Current acceptance or on the waiting list of an RN Program. This course focuses on science and mathematics topics that are critical to success for students entering an RN program. It provides a clinically pertinent review of select anatomy, physiology, nutrition, and microbiology topics for students entering nursing school. It is especially designed for students that have had an extended time period between finishing their pre-nursing requirements and entering nursing school. This course is taught by a panel of experts in the field. Case studies are extensively used in order to contextualize the material. *This is a Pass/No Pass only course. Ten hours lecture. (4-week course).*

Biomanufacturing

Biomanufacturing Bachelor of Science (Baccalaureate) Degree

Solano Community College is one of fifteen community colleges in the state of California to offer a pilot four year, or baccalaureate, degree. Solano Community College's degree is a Bachelor of Science in Biomanufacturing. In biomanufacturing scientists develop techniques to grow genetically engineered cells (bacterial, yeast, or animal cells) in large tanks called bioreactors and develop methods to purify the protein that the cells produce. Then technicians use analytical techniques to prove the purity of the isolated protein. In the future Biomanufacturing will be expanded to include the industrial production of biofuels, biomaterials, stem cells, and other products currently manufactured using chemical rather than biological techniques.

Program Description
The Bachelor of Science in Biomanufacturing program builds upon the Associate in Science in Industrial Biotechnology degree. In the baccalaureate program students gain knowledge in biology, chemistry, engineering, statistics, quality, regulatory affairs, and business. Students use biomanufacturing laboratory facilities to gain process development skills. Many of the courses have been designed with curriculum that aligns with the requirements of certifications from professional organizations.

Bachelor of Science Degree
The Bachelor of Science degree is awarded upon successful completion of a total of 120 units that include 60 lower-division units and ten upper-division major courses, three upper division general education courses, and electives. All courses in the major must be completed with a grade of C or better.

Program Outcomes

Biomanufacturing Technology:
1. Students will demonstrate the ability to identify and critically analyze two viable options for a biomanufacturing process. The critical analysis will include the technical, financial, and environmental impact of the two options as well as the identification of the benefits and disadvantages of each.
2. Students will be able to produce a professional report and presentation representing their opinion regarding the advantages of selecting a specific biomanufacturing process.

Quality:
3. Students will demonstrate the skills needed to conduct an investigation and analysis of an Out of Specification deviation that occurred during a production step in the manufacturing of a pharmaceutical protein. The student will be able to determine the impact of the OOS deviation on the batch of protein.
4. Students will be able to produce a written Corrective Action Preventative Action report in a format standard to the industry. The report will include evidence to justify their conclusions and action plan.
5. Students will demonstrate the ability to apply Quality by Design (QbD) principles (understanding of the product, the process, and the process control) as adopted by the U.S. Food and Drug Administration (FDA) to design a robust, stable, and controlled manufacturing process for a protein pharmaceutical that can be carried out under current Good Manufacturing Practices (cGMPs). This includes the ability to predetermine values and potential ranges of the critical quality attributes (CQAs) of the product and the critical material attributes (CMAs) of the materials. Students will also be able to determine which parameters would benefit from a Design of Experiments (DoE) approach for their optimization, and construct a strategy for experimental planning and data analysis.
6. Students will use a quality risk assessment approach to perform a criticality assessment to determine the Critical Process Parameters (CPPs) that would need to be monitored and controlled.

Program Requirements and Courses
Successful completion of the lower division prerequisites is required prior to enrollment in the upper division courses on the following page. The program has been designed to follow a cohort model: all students take all of the courses in order.

Biomanufacturing

REQUIRED COURSES

First Semester..... 15 Units
BIOT 401 Biomanufacturing Process Sciences 5
BIOT 407 Advanced Topics in Quality Assurance and Regulatory Affairs 4
ENGL 400 Advanced Technical Writing: Writing in the Scientific Professions 3
3 units of an Elective 3

Second Semester..... 16 units
BIOT 402 Design of Experiments for Biomanufacturing 4
BIOT 403 Design of Biomanufacturing Facilities, Critical Utilities, Processes, and Equipment 4
BIOT 404 Bioprocess Monitoring and Control..... 5
3 units of an Elective 3

Third Semester ..... 16 Units
BIOT 405 Emerging Biomanufacturing Technologies..... 3
BIOT 406 Supply Chain and Enterprise Resource Planning..... 3
BIOT 408 Six Sigma and Lean Manufacturing..... 4
PHIL 400 Bioethics 3
3 units of an Elective 3

Fourth Semester..... 13 units
BIOT 409 Methods in Quality Improvements, Investigations and Audits..... 4
BIOT 410 Emerging Trends in Biomanufacturing Quality 3
BUS 400 Bioprocess Monitoring and Control 3
3 units of an Elective 3
Total Units ..... 60 Units

Biomanufacturing

BIOMANUFACTURING BACCALAUREATE DEGREE PROGRAM
APPLICATION/ACCEPTANCE REQUIREMENTS
Currently the Biomanufacturing Bachelor of Science program admits students once per year in the fall. Applications are available online at *http://www.solano.edu/biomanufacturing*.

Prerequisite:
ALL of the following requirements must be met in order to APPLY to the Biomanufacturing Bachelor of Science degree program. If you are unsure about any of these items, please meet with an Academic Counselor. For counseling information, please visit http://www.solano.edu/counseling/.

1. Overall cumulative grade point average (GPA) of 2.5 for ALL college coursework.

2. Completion of, or current Spring semester enrollment in, the following prerequisites with a combined GPA of 2.5 and with no grade less than a C for each of the lower division courses: BIOT 001 (formerly BIOT 051), BIOT 052, BIOT 062, BIOT 063, CHEM 001, BIO 002.

3. Completion of lower division general education CSU/IGETC Option B or Option C program prerequisites (see SCC college catalog).

4. Students who have attended college outside the United States must have transcripts evaluated by a National Association of Credential Evaluation Services (NACES) approved independent agency, demonstrating equivalency to the above requirements (1, 2, & 3).

5. One Statement of Interest, submitted with your application, explaining why you are interested in the program. Topic below:

Write a Statement of Interest that explains why you would like to complete the Bachelor of Science degree in Biomanufacturing. In this essay, state how your background in the prerequisite courses and/or any job experience has prepared you to succeed in this rigorous program. Emphasize your laboratory background. Include any life experience, special circumstances or barriers that you had to overcome while completing the prerequisite courses.

Transcripts:
During the application process, unofficial transcripts may be submitted with the application. Upon admission to the Biomanufacturing Bachelor of Science degree program, you are required to submit one original official transcript in a sealed envelope to the Admissions and Records department from each college and university attended, including Solano Community College, prior to being granted permission to enroll and register for classes in the program.

Please send transcripts to:

Solano Community College
Admissions & Records
Attn: Biomanufacturing Baccalaureate Admissions
4000 Suisun Valley Road
Fairfield, CA 94534-3197

Foreign Transcripts:
All foreign transcripts must be evaluated by a NACES agency for determining U.S. equivalency. ***IF foreign courses were completed or degree earned**, the evaluation must state its equivalency to the Prerequisite requirements (1, 2, & 3) listed above. A list of approved agencies can be found in the Office of Admissions and Records.

Biomanufacturing

Steps for Completing the Application Process

1. New or Returning Solano Community College Students (Students currently enrolled in classes go to Step 2)

a. Apply: Students who have never attended Solano Community College or are former students (returning SCC students who are not currently enrolled in classes) must submit a current SCC application for admission. Access the SCC home page (www.solano.edu) and click on Application.

b. SCC ID number: After submitting your SCC application for admission, allow 30 minutes for processing. An email will be sent to the email address you provided in the application and will include your SCC ID number, username and password for your MySolano account. When completing a new application to Solano, if you previously had an ID number, the system will re-activate that same ID number. You will need your SCC ID number to complete the application.

2. Complete the Biomanfacturing Application

a. Have your SCC ID number, unofficial transcripts, and your Statement of Interest ready.

b. All required information for admission to the Biomanufacturing Program must be submitted through the link provided on our webpage.

3. Once Application is Submitted

a. Email Account: All correspondence regarding the application status will be sent to the email address you provided on the application. Applicants will not receive any paper or phone verification regarding their status. Please notify the Admissions and Records Office if you have a change in email address.

b. New student applications for fall semester enrollment will be evaluated beginning March 31st of each year. Incomplete applications will NOT be accepted.

<u>Accepted Applicant Requirements</u>

1. If you received notification that you have been accepted into the program, a Biomanufacturing Admitted Student Information Session must be completed before your program begins. A schedule will be made available through the School of Math and Science, Fairfield Campus.

2. Upon completion of the Admitted Student Information Session, the student must schedule an Advisement Session prior to registering for classes. Students will meet with an Academic Counselor to develop a Student Education Plan (SEP) during the Advisement Session.

Eligibility requirements, application process, and related information is available on the web at http://www.solano.edu/biomanufacturing.

Biomanufacturing

BIOT 401 5.0 Units
Biomanufacturing Process Sciences and Engineering Principles
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program. Permission of faculty required. A minimum grade of C in MATH 011. Builds upon the scientific knowledge underlying chemical engineering principles (for example fluid flow, mass transfer, heat transfer, and the energy relationship of fluid systems) to design, develop, and optimize key parameters in a biomanufacturing process. Process development includes the optimization of media composition, fermenter and bioreactor design, the design of downstream processes, instrumentation, engineering systems, and process control systems to maximize the yield and integrity of a protein pharmaceutical. *Three hours lecture, six hours lab.*

BIOT 402 4.0 Units
Design of Experiments for Biomanufacturing
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program. Permission of faculty required. A minimum grade of C in MATH 011. Teaches the formal approach called "Design of Experiments" (DoE), a system that optimizes a process through the methodical varying of key parameters and a formalized approach to the analysis, interpretation, and application of the results. DoE is designed to make any process more robust and to minimize variability from external sources. The course builds upon the statistical concepts required for DoE including hypothesis testing, confidence intervals, statistical models, and analysis of variance (ANOVA). The DoE approach systematically varies the parameters of a biomanufacturing project to improve its operation. *Three hours lecture, three hours lab.*

BIOT 403 4.0 Units
Design of Biomanufacturing Facilities, Critical Utilities, Processes, and Equipment
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program. Permission of faculty required. Students analyze and evaluate how the design of a biomanufacturing facility uses one-way personnel flow and one-way material flow to maintain appropriate levels of cleanliness and sterility to promote the production of safe and effective products. Students analyze the design of the processes, equipment, and instrumentation used in biological production to generate critical utilities, aseptic systems, environmental control and monitoring, upstream production, and downstream (recovery and purification) production within a regulated environment. *Four hours lecture.*

BIOT 404 5.0 Units
Bioprocess Monitoring and Control
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; BIOT 401. Permission of faculty required. Covers the measurement, monitoring, modeling, and control of biomanufacturing processes and the statistical methodology used for measuring, analyzing, and controlling quality during the manufacturing process including control charts and the analysis of process capabilities. *Three hours lecture, six hours lab.*

BIOT 405 3.0 Units
Emerging Biomanufacturing Technologies
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program. Permission of faculty required; BIOT 401. Focuses on biomanufacturing advances and emerging technologies in biological production and protein purification operations. In the course students compare the advances and disadvantages of the new technology to the traditional technologies and approaches. *Three hours lecture.*

BIOT 406 3.0 Units
Supply Chain and Enterprise Resource Planning in Biomanufacturing
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required. BIOT 402, BIOT 403, BIOT 404. Students gain knowledge of how companies manage the complete flow of materials in a supply chain from suppliers to customers. This course covers the design, planning, execution, monitoring, and control of raw materials, personnel resources, inventory management, and distribution. At the end students will have the knowledge required to take the CPIM (Certified in Production and Inventory Management) certification test administered by APICS (the American Production and Inventory Control Society). *Three hours lecture.*

BIOT 407 4.0 Units
Advanced Topics in Quality Assurance and Regulatory Affairs
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required. A minimum grade of C in MATH 011. Builds upon previous knowledge of quality assurance and regulatory affairs to study the harmonized quality system approaches of ICH (the International Committee on Harmonisation) Q8, Q9, Q10, and Q11. The course pays special attention to the topics of quality risk management, qualification, and validation. This course content has been aligned with the American Society for Quality's Body of Knowledge for a Certified Pharmaceutical Good Manufacturing Practice Professional examination. *Four hours lecture.*

BIOT 408 4.0 Units
Six Sigma and Lean Manufacturing
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required; BIOT 402, BIOT 403, BIOT 404. Covers the Six Sigma approach to the maintenance and improvement of biomanufacturing processes. It incorporates the DMAIC phases: design, measure, analyze, improve, and control. The course covers the use and implementation of lean manufacturing tools that biomanufacturing companies use to reduce waste. At the end of the course students will be prepared to take the certification test administered by the American Society for Quality for qualification with a white belt in Six Sigma. *Four hours lecture.*

BIOT 409 4.0 Units
Methods in Quality Improvements, Investigations, and Audits
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required; BIOT 407. Examines the investigational methods used by quality assurance departments to analyze process deviations and make the decision about the severity of the deviation. In this course students learn to write industry-standard CAPA (Corrective Action Preventative Action) report to conclude what corrective and preventative actions result from the investigation. The course also covers how a company would perform an internal audit in anticipation of an inspection by the Food and Drug Administration or an external audit for the supplier of a key raw material. This course content has been aligned with the American Society for Quality's Body of Knowledge for a Certified Quality Technician examination. *Three hours lecture, three hours lab.*

BIOT 410 3.0 Units
Emerging Trends in Biomanufacturing Quality
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required; BIOT 407. examines the process by which the quality systems of biomanufacturing evolve by examining a selected current trend in the laws and regulations governing pharmaceutical manufacturing. In this course students evaluate the effectiveness of the laws and regulations governing pharmaceutical manufacturing. *Three hours lecture.*

BUS 400 3.0 Units
Project Management
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required; ENGL 001, MATH 011. Corequisite: BIOT 409 and BIOT 410. Learn the core characteristics of project management including project selection, initiation, planning, execution, monitoring and control, and closing. Students learn how the management of the project's scope, time, cost, quality, human resources, communication, procurement, stakeholders, and risk lead to the ability to deliver the project on-time and on-budget, while meeting performance specifications. This course is designed to fulfill the classroom component of a Project Management Professional credential. *Three hours lecture.*

ENGL 400 3.0 Units
Advanced Technical Writing: Writing in the Scientific Professions
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required; ENGL 001 with a minimum grade of C. Advanced study in technical writing with a focus on writing for the sciences, including memos, forms, resumes, proposals, formal and informal reports, and peer review strategies. Emphasis is on understanding the differences between academic and technical writing, including techniques for organizing, evaluating, and presenting information in the objective style required in modern technical communications, as well as current trends in technology and scientific discourse. Instruction includes writing as a process, from researching a problem to organizing and drafting a document to testing, revising and editing that document. Students will learn to employ rhetorical strategies for effective visual and document design as well as how to address ethical, cultural, and political issues related to writing in the sciences. Currency in scientific writing and electronic publishing, including peer review, will also be emphasized. This course trains scientists to become more effective, efficient, and confident writers. *Three hours lecture.*

PHIL 400 3.0 Units
Bioethics
Prerequisite: Admission into the Biomanufacturing Baccalaureate degree program; Permission of faculty required; ENGL 001, MATH 011. Builds upon a philosophical and critical thinking foundation to train students to be able to model sound ethical decision making in the life science and medical fields. The course requires application of moral theory to a variety of problems in the life science and medical fields such as: genetic engineering, stem cells, allocation of resources, medically assisted dying, genetic screening, genetic alteration, abortion and reproductive rights, and experiments on human or animal subjects. Enrollment in this upper division General Education course is limited to students enrolled in the Bachelors of Science in Biomanufacturing program. *Three hours lecture.*

Biotechnology

Industrial Biotechnology - Associate in Science Degree

Program Description
This program prepares graduates to work in the biotechnology industry as production technicians. A production technician operates and maintains the equipment used to manufacture protein pharmaceutical products. Students will grow bacterial, yeast, and mammalian cells and recover the proteins that they produce. They will follow good manufacturing practices by maintaining records in order to comply with quality assurance procedures and government regulations. Students in the program must be able to adjust their time to a flexible schedule.

Associate in Science Degree
The Associate in Science Degree can be obtained upon completion of 60 units, including the major, general education requirements and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Industrial Biotechnology Associate Degree will be able to:

1. Understand the structure and function of protein pharmaceuticals and evaluate which protein properties a production facility can exploit to purify a particular protein from other cellular components.
2. Construct a pathway analyzing how a drug or biologic is produced by genetically engineered cells and subsequently purified.

REQUIRED COURSES.....Units
BIOT 001 Principles of Biotechnology..... 3
BIOT 052 Business and Regulatory
Practices in Biotechnology..... 3
BIOT 062 Cell Culture and Protein Recovery 4
BIOT 063 Biotechnology Instrumentation:
Quality Control & Genetic Engineering 4
One course from List A.....4-5
One course from List B.....4-5
Total Units ..... 22 – 24

List A (select one course)
BIO 002 Principles of Cell and Molecular Biology 5
BIO 014 Principles of Microbiology..... 4

List B (select one course)
CHEM 001 General Chemistry..... 5
CHEM 010 Intermediate Chemistry..... 4

NOTE: Prior knowledge and use of computers is advised, including word processing, spreadsheets, and databases.

This is a Gainful Employment Program. For additional information, please visit
http://www.solano.edu/gainful_employment/and select "Industrial Biotechnology."

Biotechnology

Industrial Biotechnology - Certificate of Achievement

Program Description
This program prepares graduates to work in the biotechnology industry as production technicians. A production technician operates and maintains the equipment used to manufacture protein pharmaceutical products. Students will grow bacterial, yeast, and mammalian cells and recover the proteins that they produce. They will follow good manufacturing practices by maintaining records in order to comply with quality assurance procedures and government regulations. Students in the program must be able to adjust their time to a flexible schedule.

Certificate of Achievement
The Certificate of Achievement can be obtained upon completion of the 27-28 unit major with a grade of "C" (2.0) or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Industrial Biotechnology Associate Degree will be able to:

1. Understand the structure and function of protein pharmaceuticals and evaluate which protein properties a production facility can exploit to purify a particular protein from other cellular components.
2. Construct a pathway analyzing how a drug or biologic is produced by genetically engineered cells and subsequently purified.

REQUIRED COURSES.....Units
BIOT 001 Principles of Biotechnology..... 3
BIOT 052 Business and Regulatory
Practices in Biotechnology..... 3
BIOT 062 Cell Culture and Protein Recovery 4
BIOT 063 Biotechnology Instrumentation:
Quality Control & Genetic Engineering 4
CHEM 001 General Chemistry..... 5
One course from List A.....4-5
One course from List B..... 4
Total Units .....27 - 28

List A (select one course)
BIO 002 Principles of Cell and Molecular Biology 5
CHEM 010 Intermediate Chemistry..... 4

List B (select one course)
BIOT 014 Principles of Microbiology 4
BIOT 0160 Basic Concepts/Methods in Biotechnology... 4

NOTE: Prior knowledge and use of computers is advised, including word processing, spreadsheets, and databases.

This is a Gainful Employment Program. For additional information, please visit
http://www.solano.edu/gainful_employment/and select "Industrial Biotechnology."

Biotechnology

Biotechnology Laboratory Assistant

Program Description
This program serves as a Bridge to Biosciences, enabling graduates to enter the Solano College Industrial Biotechnology program or to enter an entry level position in a biotechnology company. It serves as a stackable certificate that may be followed by Industrial Biotechnology Certificate or an Applied Biotechnology Certificate. A Laboratory Assistant may be hired by life science related companies to prepare buffers, prepare media, operate routine laboratory equipment, and to clean glassware.

Certificate of Achievement
The Certificate of Achievement can be obtained upon completion of the 14 unit major with a grade of "C" (2.0) or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Industrial Biotechnology Certificate of Achievement will be able to:

1. Demonstrate the ability to perform routine laboratory techniques including buffer preparation, media preparation, and aseptic microbial culture.
2. Demonstrate the ability to perform mathematical (algebraic) operations required for calculations important in chemistry and biology.
3. Demonstrate the ability to read and write in a range of writing style categories typical of laboratory and scholarly environments, including lab reports, expository texts, and research-based arguments.

REQUIRED COURSES	**Units**
BIOT 160 Basic Concepts/Methods in Biotechnology	4
MATH 330 Elementary Algebra	5
ENGL 360 Focused Enlish Fundamentals	5

This is a Gainful Employment Program. For additional information, please visit
http://www.solano.edu/gainful_employment/and select "Biotechnology Laboratory Assistant"

Biotechnology

BIOT 001 3.0 Units
Principles of Biotechnology
Prerequisite: BIO 014, BIO 002 or BIOT 160. SCC minimum English and math standards. This lecture course covers topics important in the development, production, recovery, and analysis of products produced by biotechnology. The course traces the path of a drug or biologic from the cell through the production facility, the final processing, and into the human body. It discusses the growth characteristics of the organisms used to produce pharmaceutical proteins, the techniques used in product recovery, and the techniques used in product analysis. *Three hours lecture.*

BIOT 052 3.0 Units
Business And Regulatory Practices In Biotechnology
Course Advisory: Eligibility for ENGL 001 and SCC minimum Math standard. Examines how basic business principles and sound manufacturing procedures assure the quality and safety of a product as the manufacturing team moves a product down the biotechnology production pipeline. It explores the role of governmental oversight and regulation during the discovery, development, and manufacturing of new products produced by biotechnology. *Three hours lecture.*

BIOT 062 4.0 Units
Cell Culture And Protein Recovery
Prerequisite: BIO 014 or BIO 002 or BIOT 160. Course Advisory: Eligibility for English 001. This laboratory course teaches the skills needed to serve as a technician in biotechnology production. Students grow and monitor bacterial, yeast, and mammalian cells on a laboratory scale that emulates the large-scale production used in industry. Students will become familiar with the cleaning, sterilization, aseptic inoculation, operation, and monitoring of fermenters and bioreactors. Students then recover and purify proteins produced by those cell cultures. They recover and purify proteins using centrifugation, ultrafiltration, and chromatography techniques. The course emphasizes the use of current Good Manufacturing Practices (cGMP), and students gain experience following Standard Operating Procedures (SOP). *Two hours lecture, six hours lab*.

BIOT 063 4.0 Units
Biotechnology Instrementation: Quality Control and Genetic Engineering
Prerequisite: BIO 014 or BIO 002 or BIOT 160. Course Advisory: Eligibility for English 001. This laboratory course teaches the skills needed to serve as a technician in biotechnology production. Students grow and monitor bacterial, yeast, and mammalian cells on a laboratory scale that emulates the large-scale production used in industry. Students will become familiar with the cleaning, sterilization, aseptic inoculation, operation, and monitoring of fermenters and bioreactors. Students then recover and purify proteins produced by those cell cultures. They recover and purify proteins using centrifugation, ultrafiltration, and chromatography techniques. The course emphasizes the use of current Good Manufacturing Practices (cGMP), and students gain experience following Standard Operating Procedures (SOP). *Two hours lecture, six hours lab.*

BIOT 160 4.0 Units
Basic Concepts/Methods in Biotechnology
Course Advisory: MATH 330 with a minimum grade of C; SCC minimum English standard . This course serves as a prerequisite to Solano College's biotechnology courses by giving students knowledge of the basic concepts in biology and chemistry used in biotechnology while also developing the basic laboratory skills required to succeed in the field. *Two hours lecture, six hours lab.*

Business

Associate in Science in Business Administration for Transfer (ADT: A.S.-T)

Program Description
This curriculum is designed to provide an opportunity for Business majors to achieve an associate in science degree in business administration while completing the requirements for transfer to a California State University (CSU) or other four-year college or university. A baccalaureate degree is recommended preparation for those considering careers in business. Completion of this curriculum will demonstrate commitment to the field and provide comprehensive preparation for upper-division work.

Associate in Science in Business Administration for Transfer
A Solano College student who has earned the associate in science degree in business administration for transfer will be granted priority admission to the CSU into a similar (BA) degree program as long as the student meets all prescribed admission requirements. Once admitted the student will only be required to complete 60 additional upper-division units to qualify for the similar BA degree. The A.S.-T degree does not guarantee admission to a specified major or campus, but does require the California State University to grant a student priority admission consideration to a CSU campus and to a major that is similar to the transfer degree.

To earn the Associate in Arts in Business for Transfer degree, students must:
1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete the Associate in Science in Business Administration for Transfer degree will be able to:
1. Recognize and describe the importance of marketing, law, economics, accounting, business administration, finance, risk analysis, and personnel management in business and formulate hypotheses based on these concepts.
2. Analyze practical business problems and utilize research and critical thinking to evaluate and recommend alternative solutions.
3. Use appropriate computer software to create and or modify relevant business documents.
4. Apply accounting concepts and principles in making business decisions.

REQUIRED COURSES	**Units**
ACCT 001 Principles of Accounting – Financial	4
ACCT 002 Principles of Accounting – Managerial	4
BUS 005 Introduction to Business	3
BUS 018 Legal Environment of Business	3
CIS 050 Microcomputer Applications	3
ECON 001 Principles of Economics (Macroeconomics)	3
ECON 002 Principles of Economics (Microeconomics)	3
MATH 011 Elementary Statistics	4
Required Major Total Units	**27**

CSU General Education or IGETC Pattern Units	**37 – 39**
CSU Transferable Electives (as needed to reach 60 transferable units)*	**3 – 5**
Total Degree Units	**60**

** 9 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Business

Business, General

Program Description
This program is designed for business students planning to transfer to the University of California and/or the California State University systems.

Certificate of Achievement
A Certificate of Achievement can be obtained by completing the 26-unit major with a grade of "C" or better in each course or a P if taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Business, General Certificate of Achievement will be able to:

1. Recognize the importance marketing, legal, economics, accounting, business forms, financing, risk, and personnel management in business and formulate hypotheses based on these concepts.

REQUIRED COURSES.....

Units	
ACCT 001 Principles of Accounting - Financial	4
ACCT 002 Principles of Accounting - Managerial	4
BUS 005 Introduction to Business	3
BUS 018 Legal Environment of Business	3
CIS 001 Introduction to Computer Science	3
OR	
CIS 050 Microcomputer Applications	3
ECON 001 Principles of Economics (Macroeconomics)	3
ECON 002 Principles of Economics (Microeconomics)	3
Elective(s) selected from the recommended electives	3
Total Units	**26**

Recommended Electives

(Select three units)..... **Units**	
BUS 092 Business Communication	3
CIS 020 Assembly Programming	3
CIS 022 Introduction to Programming	3
CIS 023 Data Structures and Algorithms	4
MATH 011 Elementary Statistics	4
MATH 020 Analytic Geometry and Calculus I	5
MATH 021 Analytic Geometry and Calculus II	5
MATH 030 Analytic Geometry and Calculus	3
MATH 031 Analytic Geometry and Calculus	3
OCED 090 Occupational Work Experience	1-8
OCED 091 General Work Experience	1-6

***Suggested general education math courses for the Business, General (Transfer) major are MATH 011 (Statistics) OR MATH 030 (Analytical Geometry and Calculus).**

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/***and select "Business, General."

Business

Business-Insurance: Property & Casualty

Program Description
This program provides essential background information needed by those wishing to work in an insurance office. Extensive employment opportunities are available in a variety of job areas from sales to accounting to database or project management.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained by completing the 31-unit major below. The Associate in Science Degree can be obtained upon completion of 60 units, including the major, and the general education requirements and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Business-Insurance: Property & Casualty Certificate of Achievement/Associate Degree will be able to:

1. Understand the insurance process, the segments of insurance, and the consequences of insurance contracts in mitigating loss.
2. Understand the risk management techniques available to handle exposure to loss and the use of risk modification.
3. Understand the financial and human consequences of loss. Proper and casualty exposures.
4. Apply the insurance principles in potential and real business and personal loss exposures.
5. Understand the exposures to loss faced by an individual and/or corporation.

REQUIRED COURSES	**Units**
ACCT 001 Principles of Accounting - Financial	4
BUS 005 Introduction to Business	3
BUS 018 Legal Environment of Business	3
BUS 070 Introduction to Insurance	1
BUS 071 Principles of Property and Liability Insurance	3
BUS 072 Personal Insurance	3
BUS 073 Commercial Insurance	3
BUS 074 Insurance—Code & Ethics	1
BUS 092 Business Communication	3
CIS 050 Microcomputer Applications	3
CIS 073 Microsoft Excel	3
OCED 090 Occupational Work Experience	1
Total Units	**31**

Recommended Electives
MKT 171 Introduction to Marketing
MKT 173 Principles of Selling

This is a Gainful Employment Program. For additional information, please visit
http://www.solano.edu/gainful_employment/and select "Business Insurance: Property & Casualty."

Insurance Specialist Job-Direct Certificate

All courses must be completed with a C or better

REQUIRED COURSES	**Units**
BUS 070 Introduction to Insurance	1
BUS 071 Principles of Property and Liability Insurance	3
BUS 072 Personal Insurance	3
BUS 073 Commercial Insurance	3
BUS 074 Insurance—Code & Ethics	1
Total Units	**11**

Business

BUS 005 3.0 Units
Introduction To Business
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. A comprehensive study and analysis of the principles of business. The course introduces students to contemporary business principles, practices, and terminology. Students will gain an understanding and appreciation of the private enterprise system, and how the functional areas of business work and interrelate. The course explores business career opportunities, provides the prerequisite knowledge needed for success in other business courses, and prepares students for transfer to upper-division business degree programs. Assigned readings, class participation, written homework, and written examinations are required. *Three hours lecture.*

BUS 018 3.0 Units
Legal Environment of Business
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. A comprehensive introduction to the study of law, with specific emphasis on the legal environment of business. Includes the legal process, legal institutions, ethics, jurisdiction, U.S. Constitution, contracts, agency, the Uniform Commercial Code (UCC), torts, employment law, property, bankruptcy law, forms of business organization, corporations, consumer protection, government regulation and Alternative Dispute Resolution (ADR), along with ethical concerns and current public policy issues. Written examinations required. C-ID BUS 120. *Three hours lecture.*

BUS 060 3.0 Units
Introduction to International Business
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. A comprehensive overview designed to provide a global perspective in a continuously emerging international marketplace, including topics such as foreign investing, impact of financial markets, international marketing, cultural understanding, and operation of multinational and small companies. *Three hours lecture.*

BUS 070 1.0 Units
Introduction to Insurance
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. Provides students with the background needed prior to taking the other insurance courses. Included are topics such as property/casualty insurance, distribution of insurance products and services to the consumer, how insurance company departments function, civil laws or tort and contract, basic commercial and personal Insurance Services Office (ISO) contracts, and the risk management process. *Three hours lecture (6-week course).*

BUS 071 3.0 Units
Principles of Property and Liability Insurance
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. One of five insurance courses that are designed to prepare students for employment in the insurance industry, which consists of many different types of employment opportunities, from selling insurance to working in a variety of positions in an insurance company. *Three hours lecture.*

BUS 072 3.0 Units
Personal Insurance
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. Assists individuals in learning basic information regarding personal insurance. It includes information about automobile insurance; homeowners' insurance; other residential insurance, such as fire and earthquake insurance; marine insurance; and other personal property. *Three hours lecture*.

BUS 073 3.0 Units
Commercial Insurance
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. One of five insurance courses designed to prepare students for employment in the insurance industry. Emphasis for this course is on commerical insurance. The insurance industry offers many different types of employment opportunities, from selling insurance to working in an insurance office. *Three hours lecture.*

BUS 074 1.0 Units
Insurance - Code & Ethics
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. Designed to enable students to understand and apply proper ethical business behavior and obligations, especially as they relate to those working in the field of insurance. *Three hours lecture (6-week course).*

BUS 092 3.0 Units
Business Communication
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. A study of communication theory in the planning and preparation of various types of letters, reports, resumes, and oral presentations along with analysis of group dynamics, symbolic communication, interview techniques and listening skills. Stresses audience analysis, style, appearance, and the importance of grammar, punctuation and vocabulary. Strong focus on gender and cultural communication issues and strategies in the workplace. Critical thinking encouraged through written and oral assignments and case studies on business communication and ethical issues. *Three hours lecture.*

Business

BUS 099 1.0 to 3.0 Units
Business Honors
Prerequisite: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a minimum grade of B; an ability to work independently; permission of the School Dean based on instructor availability. A comprehensive study and analysis of a topic of student scholarship which is centered on important topics or issues within the business field. Students may take this course up to the maximum number of units over multiple semesters. *Three to nine hours by arrangement.*

BUS 100 1.5 Units
Work Readiness
Course Advisory: SCC minimum English and Math standards. Covers the process of assessing the job market and completing a resume and application. Topics include how to be successful on the job and to gain satisfaction and rewards from work. The skills needed in the workplace are emphasized along with the social and communication skills, personal characteristics and habits, and expectations of the employer. *Three hours lecture (8-week course).*

BUS 148A 3.0 Units
Small Business Project-Based Path for Entrepreneurs
Small Business Project-Based Path for Entrepreneurs Course Advisory: SCC minimum English and Math standards. This course emphasizes activities and techniques through project management that develops competencies needed to become a successful leader. Students receive instruction and project-based activities in the areas of entrepreneurship, project management, personal and workplace skill, oral and written techniques, and networking. *Three hours lecture.*

BUS 181 1.0 to 3.0 Units
Business Mathematics
Course Advisory: SCC minimum English standard. This course requires students to apply essential mathematical skills necessary for success in business. Includes a review of fractions, decimals, percents, ratios, the percentage formula, and general business applications; covers advanced business applications such as interest, discount, markup, payroll, pricing policies, cash and trade discounts, and financial statements. This is a self-paced, programmed learning class. *Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit, Variable unit course; Online course is not Open Entry/Open Exit. One to three hour(s) lecture.*

BUS 182 1.0 Units
Small Business Mathematics
Course Advisory: SCC minimum English and Math standards. This course requires students to apply essential mathematical skills necessary for persons operating a successful business. It includes asset and inventory management; ratio analysis, depreciation, taxation applied to sales, excise, and real property; investments and insurance, and basic statistics. This is a self-paced, programmed learning class. *This is an Open Entry/Open Exit course; Online course is not Open Entry/Open Exit. One hour lecture.*

BUS 208 0.5 Units
Employee Relations And Personnel Policies
Good employees are made through effective training, development, and relations. This course explores techniques used in training and developing good employees. The elements that comprise a sound employee relations program are presented. *This is a Pass/No Pass only course. Four hours lecture (2-week course).*

Chemistry

Chemistry

Program Description
This program is designed to foster an understanding of the fundamental principles of chemistry in a variety of applications. Students will learn how chemical knowledge is derived, theorized, and applied in solving problems in everyday life.

Associate in Science Degree
The Associate in Science Degree can be obtained by completing 60 units, including the 26-30 unit major listed below, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Chemistry Associate Degree will be able to:
1. Interpret and analyze chemical data.
2. Apply chemical bonding knowledge to structural analysis.
3. Construct balanced equations for chemical reactions.
4. Develop various lab techniques.
5. Formulate and write names for chemical compounds.
6. Analyze chemical problems.

REQUIRED COURSES	**Units**
CHEM 001 General Chemistry	5
CHEM 002 General Chemistry	5
CHEM 003 Organic Chemistry I	5
CHEM 004 Organic Chemistry II	5
BIO (any course except 048 or 098)	3 - 5
PHYS 002 General Physics (Non-calculus)	5
OR	
PHYS 006 Physics for Science and Engineering	5
OR	
PHYS 010 Descriptive Physics	3
Total Units	**26 – 30**

CHEM 001 5.0 Units
General Chemistry
Prerequisite: A minimum grade of C in both CHEM 160 and MATH 104. Course Advisory: CHEM 010 is strongly recommended for students who need additional preparation in problem solving; SCC minimum English standard. Presents principles of general chemistry for students in science, engineering, medical and related professions. Topics include atomic structure and theory, the periodic table, bonding, gas laws, stoichiometry, solutions, ionization, thermochemistry and equilibrium. This course requires significant math skills and previous knowledge of fundamental chemistry concepts. Field trips and online work may be required. *Three hours lecture, six hours lab.*

CHEM 002 5.0 Units
General Chemistry
Prerequisite: CHEM 001 with a minimum grade of C. A continuation of chemical principles and theory covered in CHEM 001 with emphasis on electrochemistry, chemical equilibrium, acid-base equilibrium, thermodynamics, descriptive chemistry and quantitative and qualitative analysis. This course requires significant math skills and previous knowledge of fundamental chemistry concepts. Field trips and online work may be required. *Three hours lecture, six hours lab.*

Chemistry

CHEM 003 5.0 Units
Organic Chemistry I
Prerequisite: CHEM 002 with a minimum grade of C. Course Advisory: Eligibility for ENGL 001. First half of a two semester course sequence (CHEM 003 and CHEM 004) that begins a survey of organic chemistry for students in chemical, biological, health science, and related professions. Topics include analysis of structure and nomenclature, bonding, isomerism, and basic reaction mechanisms of organic chemicals. Functional groups considered include alkanes, alkenes, alkynes, alcohols, and alkyl halides and ethers. Basic organic laboratory procedures are introduced along with spectral analysis, simple syntheses, and reactions described in lecture. Field trip may be required. Online homework and quizzes may be required. C-ID CHEM 150; (CHEM 003 + 004) C-ID CHEM 160S. *Four hours lecture, four hours lab.*

CHEM 004 5.0 Units
Organic Chemistry II
Prerequisite: CHEM 003 with a minimum grade of C. Second half of a two semester course sequence (CHEM 003 and CHEM 004). Course Advisory: Eligibility for ENGL 001. Topics include analysis of structure, nomenclature, and reaction mechanisms of conjugated systems, aromatics, organometallics, aldehydes, ketones, amines, carboxylic acids and acid derivatives, and various functional groups, carbohydrates, lipids, amino acids, proteins, and nucleic acids. The laboratory will emphasize more advanced work and the application of instrumentation in organic chemistry. Field trip may be required. Online homework and quizzes may be required.C-ID (CHEM 003 + 004) CHEM 160S. *Four hours lecture, four hours lab.*

CHEM 010 4.0 Units
Intermediate Chemistry
Prerequisite: CHEM 160 with a minimum grade of C and a minimum grade of C in MATH 104 or MATH 114. Course Advisory: Eligibility for English 001. A general chemistry course often required for nursing students and for students majoring in physical therapy, occupational therapy, and industrial technology, it emphasizes the chemistry of inorganic compounds and covers selected topics such as atomic theory, bonding, equations, gas laws, solutions, acid-base theory, and oxidation-reduction. *Field trip may be required. Online homework may be required. NOTE: Not open for credit to students who have completed CHEM 001. Three hours lecture, three hours lab.*

CHEM 011 4.0 Units
Basic Organic Chemistry & Biochemistry
Prerequisite: CHEM 010 or CHEM 001 with a minimum grade of C. Course Advisory: Eligibility for English 001. Presents an overview of organic chemistry and biochemistry for majors in nursing, liberal arts and technical fields. *Field trip may be required. Online work may be required. Three hours lecture, three hours lab.*

CHEM 012 5.0 Units
Chemistry for the Health Sciences
Prerequisite: CHEM 160 with a minimum grade of C, or two semesters of high school chemistry, and a minimum grade of C in MATH 104 or MATH 114 or the equivalent or two years of high school algebra. Course Advisory: Eligibility for English 001. This course presents an overview of general, organic chemistry, and biochemistry for majors in nursing and other allied health occupations. Topics covered include chemical bonding, chemical equations, gas laws, solutions, acid-base theory, oxidation-reduction, functional groups and properties of organic compounds, and the structure and function of carbohydrates, lipids, proteins, and nucleic acids. These topics are discussed in the context of cellular metabolism and human health. This course is not a prerequiste for any chemistry course. Field trip may be required. Online homework may be required. NOTE: Not open for credit to students who have completed CHEM 011. Formerly CHEM 051. *Three hours lecture, six hours lab.*

CHEM 160 4.0 Units
Introductory Chemistry
Prerequisite: A minimum grade of C in any of the following: MATH 104 or MATH 114 or two years of high school algebra. Course Advisory: SCC minimum English standard. An introductory course covering the fundamental principles of inorganic chemistry. *Field trips may be required. Online work may be required. NOTE: Not open to students who have completed CHEM 001, CHEM 010, or equivalent. Three hours lecture, three hours lab.*

Child Development and Family Studies

Early Childhood Education

Program Description
This program offers comprehensive study of child development, strategies for child guidance, techniques for effective classroom interaction with emphasis on the child in the context of family and culture, and curriculum that enhances the development of the whole child. The Child Development and Family Studies Department is a participant in the Curriculum Alignment Project (CAP). A key effort of the Curriculum Alignment Project is to facilitate the transfer of the courses below as an integrated course of study promoting access to ongoing education and degree attainment. These courses will easily transfer between many California State Universities. The CAP courses include: CDFS 038, CDFS 050, CDFS 053, CDFS 054 (or NUTR 054), CDFS 062, CDFS 063, CDFS 064, and CDFS 065.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon successful completion of the 35-unit major with a grade of C (2.0) or better in each course. The Associate in Science degree can be obtained by completing the 35-unit major, the general education requirements (Solano College, CSU or IGETC), and electives.

Program Outcomes
Students who complete the Early Childhood Education Certificate of Achievement / Associate Degree will be able to:

1. Demonstrate an understanding of child development theory, current research, and trends in the field, and their application to responsive practice in early care setting.
2. Demonstrate an understanding of the context of individual development including the centrality of family, culture, and community. Students will develop specific techniques for creating meaningful relationships between home and school.
3. Develop curriculum and early care environments that are derived from unbiased observation and assessment of children's interests and developmental levels.
4. Demonstrate reflective practice in their work with young children by building awareness of self as teacher, child as learner, and early childhood pedagogy.

REQUIRED COURSES
Full-time students are advised to enroll in CDFS 038, CDFS 050, CDFS 062, and a required curriculum course (CDFS 071, 072, or 073) during their first semester. Second semester students should take CDFS 054, CDFS 063, and CDFS 064. In the third and fourth semesters, students should take practicum (CDFS 065 and CDFS 066), CDFS 053, and a required curriculum course (CDFS 071, 072, 073, or 074). Students will spend their first semester of ECE Practicum I (CDFS 065) assigned to the Solano College Children's Program. A second semester may be spent either on campus or off campus (CDFS 066). Off campus placements will be made with an approved teacher from the Early Childhood Mentor Project. Prior to the first week of enrollment in CDFS 065 or 066, students will be required to pass a criminal record check and be fingerprinted at District expense.

	Units
CDFS 038 Child Growth and Development	3
CDFS 050 Child, Family and Community	3
CDFS 053 Teaching in a Diverse Society	3
CDFS 054 Child Health, Safety, and Nutrition	3
OR	
NUTR 054 Child Health, Safety, and Nutrition	3
CDFS 062 Introduction to Early Childhood Education: Principles and Practices	3
CDFS 063 Introduction to Curriculum	3
CDFS 064 Observation and Assessment	3
CDFS 065 Early Childhood Education Practicum I	4
CDFS 066 Early Childhood Education Practicum II	4
Two courses from List A	6
Total Units	**35**

List A (Select two courses)	**Units**
CDFS 071 Language and Literature for ECE	3
CDFS 072 Art and Creative Development for ECE	3
CDFS 073 Music and Movement for ECE	3
CDFS 074 Science and Math for ECE	3

This is a Gainful Employment Program.
For additional information, please visit
http://www.solano.edu/gainful_employment/
and select "Early Childhood Education."

Child Development and Family Studies

Associate in Science in Early Childhood Education for Transfer (ADT: A.S.-T)

Program Description
Successful completion of this major prepares students to work in the field of early childhood education. Students will learn about child development, health and safety, observation and assessment, and techniques for effective classroom teaching including child guidance, curriculum development, and educating in a culturally respectful manner. One semester of practicum is required. This program aligns with the statewide Early Childhood Education Curriculum Alignment Project (CAP) which is designed to aid in student transfer. The CAP courses include: CDFS 038, CDFS 050, CDFS 053, CDFS 054 (or NUTR 054), CDFS 062, CDFS 063, CDFS 064, and CDFS 065.

Associate in Science in Early Childhood Education for Transfer
The Associate in Science in Early Childhood Education for Transfer is especially appropriate for students who plan to complete a bachelor's degree in Early Childhood Education or Child Development at a CSU campus. Students completing and Associate in Science in Early Childhood Education for Transfer degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that does accept the Associate in Science in Early Childhood Education for Transfer will be required to complete nor more than 60 units after transfer to earn a bachelor's degree. This degree also prepares students for Early Childhood Education degree programs at other four-year institutions, but does not come with the same guarantees. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

To earn the Associate in Science in Early Childhood Education for Transfer Degree, students must:
1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete the Associate in Science in Early Childhood Education for Transfer degree will be able to:
1. Demonstrate an understanding of child development theory, current research, and trends in the field, and their application to responsive practice in early care settings.
2. Demonstrate an understanding of the context of individual development including the centrality of family, culture, and community through developing techniques for creating meaningful relationships between home and school.
3. Develop curriculum and early care environments that are derived from unbiased observation and assessment of children's interests and developmental levels.
4. Demonstrate reflective practice in their work with young children by building awareness of self as teacher, child as learner, and early childhood pedagogy.

REQUIRED COURSES
The following 25 CDFS units are required for the Early Childhood Education for transfer degree. Some may double count for general education and the major (CDFS 038, CDFS 050). It is recommended that full time students enroll in CDFS 038, CDFS 050, and CDFS 062 in their first semester. Second semester students should take CDFS 054, CDFS 063, and CDFS 064. In the second year students should take CDFS 065, CDFS 053, and complete their other general education requirements. Practicum placements (CDFS 065) will be made at the Solano College Children's Program. Prior to the first week of enrollment in practicum student will be required to pass a criminal record check and be fingerprinted at the District's expense.

	Units
CDFS 038 Child Growth and Development	3
CDFS 050 Child, Family and Community	3
CDFS 053 Teaching in a Diverse Society	3
CDFS 054 Child Health, Safety, and Nutrition	3
CDFS 062 Introduction to Early Childhood Education: Principles and Practices	3
CDFS 063 Introduction to Curriculum	3
CDFS 064 Observation and Assessment	3
CDFS 065 Early Childhood Education Practicum I	4

Required Major Total Units	**25**
CSU General Education or IGETC Pattern units	**37 - 39**
CSU Transferable Electives (as needed to reach 60 transferable units)*	**2 - 5**
Total Degree Units	**60**

** 6 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Child Development and Family Studies

Associate Teacher

Program Description
The Associate Teacher Certificate of Achievement meets the education requirements for the associate teacher level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing and Community Care Licensing, Title 22 requirements for a fully qualified teacher. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

Certificate of Achievement
A Certificate of Achievement can be obtained by completing the 12-unit major with a minimum grade of "C" in each course or a P if taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Associate Teacher Certificate of Achievement will be able to:

1. Analyze major developmental milestones for children from conception through adolescence in the areas of physical, psychosocial, cognitive and language development using standard research methodologies including observation.
2. Assess early childhood settings, curriculum, and teaching strategies utilizing indicators of quality early childhood practices that support all children including those with diverse characteristics and their families.
3. Investigate and apply developmentally appropriate principles and teaching strategies to positively influence all young children's development and acquisition of knowledge and skills.
4. Identify the various and complex factors that affect the socialization of children including culture, historical factors, socio-economics, parenting styles, bias, etc. in an ecological context.

REQUIRED COURSES	**Units**
CDFS 038 Child Growth and Development	3
CDFS 050 Child, Family and Community	3
CDFS 062 Introduction to Early Childhood Education: Principles and Practices	3
CDFS 063 Introduction to Curriculum	3
Total Units	**12**

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Associate Teacher."

Child Development and Family Studies

CDFS 038 3.0 Units
Child Growth and Development
Course Advisory: Eligibility for ENGL 001. This course examines the major physical, cognitive, and psychosocial developmental milestones (typical and atypical) and theories from conception through adolescence. Emphasis is placed on the interaction bewtween maturational processes and environmental factors. Current research and methodologies are examined. Child observations and analysis are included. C-ID CDEV 100. *Three hours lecture.*

CDFS 040 3.0 Units
Family Relationships
Course Advisory: Eligibility for ENGL 001. A study of sociological and psychological factors influencing relationships, particularly dating, family, and marital relationships, as well as alternative lifestyles in contemporary society, including factors that affect communication and interpersonal interactions within relationships. *Three hours lecture.*

CDFS 050 3.0 Units
Child, Family and Community
Course Advisory: Eligibility for ENGL 001. An examination of the developing child in a societal context focusing on the interrelationships of family, school and community, including historical and socio-cultural influences. Socialization and identity development are emphasized, as are teacher strategies for building respectful, reciprocal relationships that support and empower children and families. C-ID CDEV 110. *Three hours lecture.*

CDFS 052 3.0 Units
Children with Special Needs
Prerequisite: CDFS 038. Course Advisory: Eligibility for ENGL 001. An introductory study of children with special needs, including causes of disabilities, their incidence, care, management, and general remedial procedures. Emphasis is on the child with disabilities in the home and community settings. *Three hours lecture.*

CDFS 053 3.0 Units
Teaching in a Diverse Society
Course Advisory: Eligibility for ENGL 001. Examination of teaching young children in a diverse society in an effort to support optimal identity development, competency, and inclusion. Theoretical and practical implications of oppression and privilege will be explored as they apply to children, families, programs, classrooms, and teaching. Various classroom strategies will emphasize culturally and linguistically appropriate anti-bias approaches. Course includes self-examination and reflection on issues related to social identity, stereotypes and bias, social and educational access, media, and schooling. C-ID ECE 230. *Three hours lecture.*

CDFS 054 3.0 Units
Child Health, Safety, and Nutrition
Course Advisory: Eligibility for ENGL 001, CDFS 038 and CDFS 062. Introduction to the laws, regulations, standards, policies and procedures and early childhood curriculum related to child health safety and nutrition. The key components that ensure physical health, mental health and safety for both children and staff will be identified along with the importance of collaboration with families and health professionals. Focus on integrating the concepts into everyday planning and program development for all children. *This course is the same course as NUTR 054. C-ID ECE 220. Three hours lecture.*

CDFS 055 3.0 Units
Impact of Violence on Children and their Families
Course Advisory: SCC minimum English standards.
Exploration of violence in America and its impact on the physical and psychological well-being of children, their families and early childhood teachers. Emphasis on critical factors in understanding appropriate early childhood violence prevention and intervention strategies. *Three hours lecture.*

CDFS 056 3.0 Units
Intervention and Strategies for Working with Children with Challenging Behaviors
Course Advisory: SCC minimum English standards. Provides early childhood teachers knowledge and skills to respond to the needs of children and families who experience stress and chronic violence through exploration of the power of play in helping children resolve conflicts and methods for teaching alternatives to violence. *Three hours lecture.*

CDFS 062 3.0 Units
Introduction to Early Childhood Education: Principles and Practices
Prerequisite: CDFS 038 (may be taken concurrently). Course Advisory: Eligibility for ENGL 001. An examination of the underlying theoretical principles of developmentally appropiate practices applied to programs, environments, emphasizing the key role of relationships, constructive adult-child interactions, and teaching strategies in supporting physical, social, creative and intellectual development for all young children. This course includes a review of the historical roots of early childhood programs and the evolution of the professional practices promoting advocacy, ethics and professional identity. C-ID ECE 120. *Three hours lecture.*

CDFS 063 3.0 Units
Introduction to Curriculum
Prerequisite: CDFS 038 with a minimum grade of C. Course Advisory: CDFS 062 with a minimum grade of C; Eligibility for ENG 001. This course presents an overview of knowledge and skills related to providing appropriate curriculum and environments for young children from birth to age 6. Students will examine a teacher's role in supporting development and fostering children's curiosity and learning. Through observation and assessment strategies students will develop appropriate play-based curriculum. An overview of content areas will include but not be limited to: Language and literacy, social and emotional learning, sensory learning, art and creativity, music, math, and science. C-ID ECE 130. *Three hours lecture.*

CDFS 064 3.0 Units
Observation and Assessment
Course Advisory: CDFS 038; Eligibility for ENGL 001. This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning to join with families and professionals in promoting children's success. Recording strategies, rating systems, portfolios, and multiple assessment tools are explored. C-ID ECE 200. *Three hours lecture.*

CDFS 065 4.0 Units
Early Childhood Education Practicum I
Prerequisite: Minimum grade of C in both CDFS 050 and CDFS 063. Course Advisory: Eligibility for ENGL 001. Supervised laboratory experience with infants through preschool children in the Solano College Children's Programs. Students will spend 8 hours in practicum, 1 hour in a teacher meeting, and 1 hour in seminar for a total of 10 hours per week. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comphrehensive understanding of children and families. Child centered, play-oriented approaches to teaching, learning, and assessment; and knowledge of curriculum content areas will be emphasized as students teachers design, implement and evalute experiences that promote positive development and learning for all young children. During the first week of enrollment, students will be required to be fingerprinted and cleared through Department of Justice and have a negative TB skin test at the District's expense. C-ID ECE 210. *One hour lecture, nine hours by arrangement.*

CDFS 066 4.0 Units
Early Childhood Education Practicum II
Prerequisite: CDFS 065 with a minimum grade of C. Course Advisory: Eligibility for ENG 001. Laboratory practicum emphasizing curriculum activities, comphrehensive case studies, methods of child observation, and relationships of theories to practices. Students may be placed in the Solano College Children's Programs on campus or with a Mentor teacher (selected by the SCC/ECE Mentor teacher selection committee) off campus. Students will spend 8 hours in practicum, 1 hour in a teacher meeting, and 1 hour in seminar for a total of 10 hours per week. During the first week of enrollment, students will be required to be fingerprinted and cleared through Department of Justice and have a negative TB skin test at the District's expense. *One hour lecture, nine hours by arrangement.*

CDFS 070 3.0 Units
Lifespan Human Development
Course Advisory: Eligibility for ENG 001. A survey of human development throughout the life cycle, including physical, social, intellectual, and emotional development from conception to death. Includes direct observation. *Three hours lecture.*

CDFS 071 3.0 Units
Language and Literature for ECE
Course Advisory: Eligibility for ENG 001 and CDFS 038. An introduction to children's literature and to the development of speech and language during early childhood. Students will explore teaching techniques which promote language acquisition including teacher-child interaction, story telling, puppetry, language games, flannel board stories, journaling, and the development of dramatic play materials. Culturally inclusive practices will be emphasized. *Three hours lecture.*

CDFS 072 3.0 Units
Art and Creative Development for ECE
Course Advisory: SCC minimum English and Math standards; CDFS 038. A study of art activities appropriate to the developmental needs of the young child. Emphasis is on children's use of art as a way to express their individuality and communicate their ideas about themselves and their world. *Formerly ECE 072. Three hours lecture.*

CDFS 073 3.0 Units
Music and Movement for ECE
Course Advisory: CDFS 038; Eligibility for ENG 001. Presents a curriculum of music appropriate for teachers of young children from infancy through the primary grades. Fundamentals of music and simple chording techniques will be introduced. *Formerly ECE 073. Field trip may be required. Three hours lecture.*

CDFS 074 3.0 Units
Science and Math for ECE
Course Advisory: CDFS 038 with a minimum grade of C; Eligibility for ENG 001 and SCC minimum Math standard. An exploration of scientific principles, materials, and information from the biological and physical sciences appropriate for young children. Through an emphasis on the choice and presentation of appropriate concepts and processes, students acquire basic science knowledge relevant to the intellectual development of the young child. *Formerly ECE 070. Field trip may be required. Three hours lecture.*

CDFS 075 3.0 Units
Care of Infants and Toddlers: Social-Emotional Foundations
Course Advisory: Eligibility for ENG 001. This course examines relationship-based infant/toddler group care, with an emphasis on social-emotional development. Theoretical foundations of quality care are addressed including the importance of home-family connections, cultural continuity, and responsive practice. Skills for individualizing care, routines, and working with children with special needs are explored. *Three hours lecture.*

CDFS 076 3.0 Units
Care of Infants and Toddlers: Curriculum and Environments
Course Advisory: Eligibility for ENG 001. Based on theory and an holistic approach to development, this course explores quality environments and curriculum for infants and toddlers. Through observation and assessment, students develop skills for creating meaningful cognitive, physical, literacy, and social/emotional experiences in group care. *Three hours lecture.*

CDFS 080 3.0 Units
Early Childhood Administration
Prerequisite: Minimum grade of C in both CDFS 038 and CDFS 062. Course Advisory: Eligibility for ENG 001. An overview of the fundamental duties and responsibilities of Early Childhood Administration, including preparation, implementation and evaluation of the program goals and budget controls. Meets requirements set by the California Commission on Teacher Credentialing for Site Supervisor and Program Director permit and State of California Community Care Licensing. *Three hours lecture.*

CDFS 081 3.0 Units
Early Childhood Staff Supervision
Prerequisite: Minimum grade of C in CDFS 038, CDFS 050, and CDFS 062. Course Advisory: Eligibility for ENG 001. A presentation of the fundamentals involved in becoming a more effective supervisor and methods and procedures in dealing with selection, supervision and evaluation of staff in an early childhood setting. Meets the requirements set by the California Commission on Teacher Credentialing for the Site Supervisor and Program Director Permit and State of California Community Care Licensing. *Three hours lecture.*

CDFS 082 2.0 Units
Adult Supervision: The Mentor Teacher
Prerequisite: Minimum grade of C in each CDFS 038, CDFS 050, and CDFS 062. Course Advisory: Eligibility for ENG 001. Methods and principles of supervising student teachers in early childhood classrooms. Emphasis on the role of experienced classroom teachers who function as mentors to new teachers while simultaneously addressing the needs of children, parents and other staff. Required for the Master Teacher, Site Supervisor, and Program Director Permits issued by the California Commission on Teaching Credentialing. *Two and three-quarters hours lecture (12-week course).*

CDFS 099 1.0 to 3.0 Units
Early Childhood Education Honors
Prerequisite: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a minimum grade of B; an ability to work independently; permission of the School Dean based on instructor availability. Course Advisory: Eligibility for ENGL 001. An independent study and research class in the areas of infant, toddler, and preschool early education programs. The student and instructor design an outlined program of study. Students may continue CDFS 099 over multiple semesters not to exceed 3 units. *Three to nine hours by arrangement.*

Communication Studies

Associate in Arts in Communication Studies for Transfer (ADT: A.A.-T)

Program Description
The Communication Studies Program is broad-based and concerned with the preparation and delivery of messages in interpersonal, public and business situations. This program focuses on understanding the communication process and improving communication skills. The program prepares the students to pursue professional goals in a variety of career possibilities including: Community College Teacher, Speech Writer, Communication Consultant, Lawyer, Minister, Personnel Director, Sports Broadcast Journalist, Public Relations, Political Campaign Aide, Sales, Counselor.

Associate in Arts Degree for Transfer
The Associate in Arts in Communication Studies for Transfer (AA-T) is especially appropriate for students who plan to complete a bachelor's degree in Communication Studies at a CSU campus. Students completing this degree (AA-T in Communication Studies) are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that does accept the AA-T in Communication Studies will be required to complete no more than 60 units after transfer to earn a bachelor's degree. This degree also prepares students for communication studies degree programs at other four-year institutions, but does not come with the same guarantees. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

To earn the Associate in Arts in Communication Studies for Transfer degree, a student must:
1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete the Associate in Arts in Communication Studies for Transfer Degree will be able to:
1. Critically evaluate speeches, debates, and other communicative performances.
2. Comprehend the skills and techniques necessary to be organized, confident communicators in a variety of classroom settings.
3. Understand the process of communication and communication methods in a multiple contexts.
4. Communicate utilizing a variety of performance methods.

REQUIRED COURSES	**Units**
COMM 001 Introduction to Public Speaking	3
Two courses from List A	6
Two courses from List B	6
One course from List C	3

List A: (select two courses)

COMM 006 Argumentation and Debate	3
COMM 008 Group Communication	3
COMM 010 Interpersonal Communication	3

List B: (select two courses)

COMM 002 Fundamentals of Persuasive Speaking	3
COMM 012 Intercultural Communication	3
COMM 015 Oral Interpretation of Literature	3
COMM 050 Forensics/Speech Workshop	1-4
COMM 060 Business and Professional Communication.	3
Any List A course not used	3

List C: (select one course)

ANTH 002 Cultural Anthropology	3
COMM 075 Sports Broadcasting	3
PSYC 001 Introduction to Psychology	3
SOC 001 Introduction to Sociology	3
Any List A or List B course not used	3

Recommended Electives
ENGL 002 Critical Thinking and Writing About Literature
ENGL 004 Critical Thinking and Composition: Language in Context
JOUR 001 Newswriting and Reporting
JOUR 011 Introduction to Mass Communication
PHIL 001 Introduction to Critical Thinking and Reasoning
THEA 001 Principles and Theory of Acting

Required Major Total Units	**18**
CSU General Education or iGETC Pattern units	**37 - 39**
CSU Transferable Electives (as needed to reach 60 transferable units)*	**9 - 11**
Total Degree Units	**60**

** 6 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Sports Broadcasting

Program Description
The Certificate of Achievement in Sports Broadcasting offers students hands-on experience in the basics of television and internet sports broadcasting. Areas of concentration include performance and technical training for a variety of televised sporting events and productions. The Certificate is geared for those who are interested in obtaining employable skills in a short timeframe. The Certificate of Achievement may be completed in one year and serves as a professional development opportunity.

Certificate of Achievement
A Certificate of Achievement can be obtained by completing the 12-unit major with a minimum grade of "C" in each course or a P if taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Sports Broadcasting Certificate of Achievement will be able to:

1. Obtain and demonstrate skill set for entry level positions in broadcasting and electronic media productions.
2. Amass a minimum of 200 experience hours working on sports production tasks and to acquire recorded audio/video content to compile a demo tape.
3. Broadcast production assignments totaling 200 hours, exams, self-evaluation journals, and viewer response and evaluations.
4. Demonstrate ability to work as an individual as well as an effective team member on sports productions.

REQUIRED COURSES	**Units**
COMM 075A Sports Broadcasting – Fall Sports	3
COMM 075B Sports Broadcasting – Spring Sports	3
COMM 080A TV Sports Production – Fall Sports	3
COMM 080B TV Sports Production – Spring Sports	3
Total Degree Units	**12**

Communication Studies

COMM 001 3.0 Units
Introduction to Public Speaking
Course Advisory: Eligibility for ENG 001. A public speaking course which includes instruction and practice in the various forms of public address and the techniques for orally presenting ideas clearly, concisely, and coherently. Students are required to outline speeches frequently and/or complete a detailed manuscript of the speech; to read a college-level public speaking textbook and apply its principles in the preparation of their speeches; to critically analyze public speeches of various types. C-ID COMM 110. *Three hours lecture.*

COMM 002 3.0 Units
Fundamentals of Persuasive Speaking
Course Advisory: Eligibility for ENGL 001. A persuasive speaking course which includes instruction and practice in the various forms of persuasive speaking including, but not limited to, sales presentations, speeches of praise/blame, propaganda, and opposing viewpoints. Students are required to outline persuasive speeches frequently; to read a college-level persuasive speaking textbook and apply its principles in the preparation of their persuasive speeches; to critically analyze persuasive speeches; and to deliver persuasive speeches of various types. These speeches will be presented in class, in person to an audience of peers. Faculty evaluation will be done in the classroom in person. C-ID COMM 190. *Three hours lecture.*

COMM 006 3.0 Units
Argumentation and Debate
Course Advisory: Eligibility for ENGL 001. A public speaking course which includes instruction and practice in the principles of argumentation and in the various forms of debate including the analysis of propositions, research, evidence and reasoning. Students are required to practice various forensic debating techniques through the presentation of their outlined advocate/government and opposition cases after investigating major contemporary issues; to read a college level argumentation and debate textbook and apply its principles in the preparation of their cases/and to critically analyze debate cases. These debates will be presented in class, in person to an audience of peers. Faculty evaluation will be done in the classroom in person. C-ID COMM 120. *Three hours lecture.*

COMM 008 3.0 Units
Group Communication
Course Advisory: SCC minimum English standard. This course is designed to increase students' understanding of group communication behaviors related to problem-solving, decision-making, leadership, group roles, norms and conformity and to prepare students to function more effectively in groups. This course is designed for students majoring in speech communication, business, international business, education, nursing, and all fields of study and certifications that require group and team-building skills. C-ID COMM 140. *Three hours lecture.*

COMM 010 3.0 Units
Interpersonal Communication
Course Advisory: Eligibility for ENG 001. Communication principles as applied to different interpersonal communication situations including verbal and non-verbal communication, listening, overcoming barriers to communication, and conflict resolution. *Three hours lecture.*

COMM 012 3.0 Units
Intercultural Communication
Course Advisory: SCC minimum English standard. This course introduces students to the challenges and promises of intercultural communication with application to American culture, subcultures, and different cultures of the world. Specific focus will be development of the ability to acknowledge and understand the unique voice of people from the African, Asian, Latina, Middle Eastern, and Pacific Island cultures as well as co-cultures within the United States. Through lectures, readings, films, group discussions, written and oral assignments, students will learn the skills necessary to achieve positive outcomes when communicating with others that are perceived as different. C-ID COMM 150. *Three hours lecture.*

COMM 015 3.0 Units
Oral Interpretation of Literature
Course Advisory: Eligibility for ENG 001. Study of literature through oral performance that includes development of skills in the analysis and interpretation of prose, poetry, and dramatic literature. Emphasis on vocal and physical techniques to orally communicate understanding of the literature performed. C-ID COMM 170. *Three hours lecture.*

Communication Studies

COMM 049 1.0 to 3.0 Units
Speech Honors
Prerequisite: Completion of 30 or more units of transferable college credit including 6 units of transferable speech; ENGL 001 with a minimum grade of B; an ability to work independently; and permission of the School Dean based on instructor availability. An independent study program designed for students who have completed the available Speech offerings and wish to continue work in one of these areas, or work with an instructor in a specialized area of oral communication. The student and instructor design an outlined program of study. Students may take this course up to the maximum number of units over multiple semesters. *Three to nine hours by arrangement.*

COMM 050 1.0 to 4.0 Units
Forensics/Speech Workshop
*Course Advisory: Eligibility for ENG 001. Provides training in the principles of all forms of compe*titive speaking, oral interpretation and debate, including participation in intercollegiate competition and appearances before campus and community groups. Students attend intercollegiate forensic tournaments and festivals or speak before campus or community audiences. Participation may include weekends and off campus travel. This is an Open entry/ Open exit course. C-ID COMM 160B. *One hour lecture, zero to nine hours lab.*

COMM 060 3.0 Units
Business and Professional Communication
Course Advisory: Eligibility for ENG 001. Presents practical communication skills to allow students to achieve effective verbal communication in business situations, community activities and other areas of daily life. Areas of discussion include giving and receiving the basic practical communication skills. Assignments and exercises are employed to allow students to achieve effective verbal communication in business situations, community activities, and other areas of daily life, including giving and receiving instructions, interviewing, verbal and non-verbal communication. *Three hours lecture.*

COMM 075A 3.0 Units
Sports Broadcasting - Fall Sports
Course Advisory: Eligibility for ENGL 001. A professional approach to the basics of on-air and internet sports broadcasting of football, soccer, volleyball and tennis. Areas of concentration include performance training for play-by-play description, color commentary, compiling and organizing statistical data for football, soccer, volleyball and tennis broadcasts. The course includes an in-depth approach to careers in broadcast communication with concentration on all aspects of research preparation and delivery presentation to establish and sustain a career in sports broadcasting in one or more of the following sports: football, soccer, volleyball and/or tennis. *Students will be required to attend weekly athletic events to fulfill activity hours. Events typically on TWTHF. One and one-half hours lecture, four and one-half hours lab.*

COMM 075B 3.0 Units
Sports Broadcasting - Spring Sports
Course Advisory: Eligibility for ENG 001. A professional approach to the basics of on-air and internet sports broadcasting of baseball, softball, basketball, hockey and swimming. Areas of concentration include performance training for play-by-play description, color commentary, compiling and organizing statistical data for baseball, softball, basketball, swimming and hockey broadcasts. The course includes an in-depth approach to careers in broadcast communication with concentration on all aspects of research preparation and delivery presentation to adequately and effectively establish and sustain a career in sports broadcasting in one or more of the following sports: baseball, softball, basketball, hockey and/or swimming. *Students will be required to attend weekly athletic events to fulfill activity hours. Events typically on TWTHFS. One and one-half hour lecture, four and one-half hours lab.*

COMM 080A 3.0 Units
TV Sports Production - Fall Sports
Course Advisory: Eligibility for ENG 001. Offers instruction and training in the fundamentals of televised sports productions, both in the studio and on location. The course focuses on all aspects of production: directing. board operation, computer graphics, videography, instant replay and pre and post production editing as it pertains to football, soccer, tennis and volleyball. *Students required to attend weekly athletic events to fulfill activity hours. Events typically on TWTHF afternoons and/or evenings. One and one-half hour lecture, four and one-half hours lab.*

COMM 080B 3.0 Units
TV Sports Production - Spring Sports
Course Advisory: Eligibility for ENG 001. Offers instruction and training in the fundamentals of televised sports productions, both in the studio and on location. The course focuses on all aspects of production: directing, board operation, computer graphics, videography, instant replay and pre and post production editing as it pertains to basketball, baseball, softball, hockey and swimming. *Students required to attend weekly athletic events to fulfill activity hours. Events typically on TWTHS afternoons and/ or evenings. One and one-half hours lecture, four and one-half hours lab.*

Computer Information Science

Computer Programming

Program Description
This program is designed to prepare the student for employment as a computer programmer trainee.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 33-unit major listed below. The Associate in Science Degree may be obtained by completing a total of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Computer Programming Certificate of Achievement/Associate Degree will be able to:

1. Construct applications that use GUI (graphical user interface) components and access databases for data permanence.
2. Develop a programming solution to a data structure problem using object-oriented methodologies and appropriate data structures and algorithms.
3. Implement a well-designed, properly normalized relational database after analyzing user requirements and business rules.

REQUIRED COURSES	**Units**
CIS 001 Introduction to Computer Science	3
BUS 092 Business Communication	3
CIS 022 Introduction to Programming	3
CIS 055 MS Windows Operating Systems	3
CIS 023 Data Structures and Algorithms	3
CIS 015 Programming in Visual Basic.NET	3
CIS 089 Essential Networking Technologies	3
CIS 078 Access - Database Management System	3
CIS 052 UNIX Operating System	3
CIS 020 Assembly Programming	3
3 units from Recommended Electives	3
Total Units	**33**

Recommended Electives (select 3 units)	**Units**
CIS 035 Introduction to Java Programming	3
CIS 060 Introduction to the Internet	1.5
CIS 061 Creating Web Pages	3
CIS 066 Microsoft Word	3
CIS 068 Object Oriented Game Programming with Flash	3
CIS 073 Microsoft Excel	3
CIS 080 SQL Database Management Systems	3
ACCT 001 Principles of Accounting - Financial	4
ACCT 002 Principles of Accounting – Managerial	4
BUS 005 Introduction to Business	3
OCED 090 Occupational Work Experience	1 - 8
OCED 091 General Work Experience	1 - 6

Note: Students planning to transfer to a four-year college and major in Management Information Systems/ Computer Science should see a counselor regarding Business Articulation Agreements for a particular university campus.

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Computer & Info Science: Computer Programming."

Computer Information Science

Microcomputer Applications

Program Description
This option is designed to prepare the student for employment as a microcomputer applications specialist.

Certificate of Achievement and Associate of Science Degree
A Certificate of Achievement can be obtained upon completion of the 30-unit major listed below. The Associate in Science Degree may be obtained by completing a total of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Microcomputer Applications Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate knowledge of application software such as word processing, spread sheets, personal information management, database, operating systems, and networking, presentation and html editors.
2. Understand Visual Basic programming.
3. Demonstrate effective oral and written communication.

REQUIRED COURSES	**Units**
CIS 001 Introduction to Computer Science	3
CIS 015 Programming in Visual Basic.NET	3
CIS 055 MS Windows Operating Systems	3
CIS 061 Creating Web Pages	3
CIS 066 Microsoft Word	3
CIS 073 Microsoft Excel	3
CIS 078 Access - Database Management System	3
CIS 089 Essential Networking Technologies	3
CIS 090 Introduction to PowerPoint	1.5
CIS 091 Microsoft Outlook	1.5
BUS 092 Business Communication	3
Total Units	**30**

Recommended Electives
CIS 020 Assembly Programming
CIS 022 Introduction to Programming
CIS 035 Introduction to Java Programming
CIS 060 Introduction to the Internet
CIS 066 Microsoft Word
CIS 080 SQL Database Management Systems
CIS 093 MS Publisher
ACCT 001 Principles of Accounting - Financial
ACCT 002 Principles of Accounting - Managerial
BUS 005 Introduction to Business
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Computer & Info Science: Microcomputer Applications."

Computer Information Science

Web Development and Administration

Program Description
This specialty is designed to prepare the student for employment as a web site administrator and developer.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 33-unit major listed below. The Associate in Science Degree may be obtained by completing a total of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Web Development and Administration Certificate of Achievement/Associate Degree will be able to:

1. Properly use design elements and an html editor in creating web pages.
2. Describe and explain the use of a database in a website utilizing input forms, queries, and data base results.
3. Develop a project incorporating CSS, search forms, tables, photo galleries, shared borders, themes, interactive components, dynamic web pages and publish to a website.

REQUIRED COURSES	**Units**
CIS 001 Introduction to Computer Science	3
CIS 061 Creating Web Pages	3
CIS 062 Creating Web Interactivity with Flash	3
CIS 069 Multimedia for the Web	3
CIS 072 Extensible Markup Language (XML)	1.5
CIS 075 Client-Side Web Programming	3
CIS 080 SQL Database Management Systems	3
CIS 081 Server-Side Web Programming	3
CIS 083 Web Server Administration	3
CIS 089 Essential Networking Technologies	3
CIS 111 Web Design with Cascading Style Sheets	1.5
Elective(s) selected from the Recommended Electives	3
Total Units	**33**

Recommended Electives (Select three units)

CIS 015 Programming in Visual Basic.NET	3
CIS 022 Introduction to Programming	3
CIS 023 Data Structures and Algorithms	3
CIS 035 Introduction to Java Programming	3
CIS 068 Object Oriented Game Programming with Flash	3
CIS 078 Access - Database Management System	3
CIS 120 Developing XML Web Services	1.5
CIS 121 PHP Programming with MySQL	3

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Web Development & Administration."

Computer Applications Specialist Job-Direct Certificate

The required courses must be completed with a grade of "C" or better.

REQUIRED COURSES	**Units**
BUS 100 Work Readiness	1.5
CIS 066 Microsoft Word	3
CIS 073 Microsoft Excel	3
CIS 078 Access - Database Management System	3
Total Units	**10.5**

Database Specialist Job-Direct Certificate

The required courses must be completed with a grade "C" or better.

REQUIRED COURSES	**Units**
CIS 072 Extensible Markup Language (XML)	1.5
CIS 078 Access - Database Management System	3
CIS 080 SQL Database Management Systems	3
Total Units	**7.5**

Computer Information Science

Microsoft Office Specialist Job-Direct Certificate

The required courses must be completed with a grade of "C" or better.

REQUIRED COURSES	Units
CIS 066 Microsoft Word	3
CIS 073 Microsoft Excel	3
CIS 078 Access-Database Management System	3
CIS 090 Introduction to PowerPoint	1.5
CIS 091 Microsoft Outlook	1.5
CIS 093 MS Publisher	1.5
Total Units	**13.5**

Microsoft Office Master Job-Direct Certificate

The required courses must be completed with a grade of "C" or better.

REQUIRED COURSES	Units
CIS 066 Microsoft Word	3
CIS 073 Microsoft Excel	3
CIS 090 Introduction to PowerPoint	1.5
CIS 093 MS Publisher	1.5
Total Units	**9**

Web Programmer Job-Direct Certificate

The required courses must be completed with a grade of "C" or better.

REQUIRED COURSES	Units
CIS 015 Programming in Visual Basic.NET	3
CIS 035 Introduction to Java Programming	3
CIS 068 Object Oriented Game Programming with Flash	3
CIS 075 Client-Side Web Programming	3
CIS 081 Server-Side Web Programming	3
Total Units	**15**

Web Developer Job-Direct Certificate

The required courses must be completed with a grade of "C" or better.

REQUIRED COURSES	Units
CIS 001 Introduction to Computer Science	3
CIS 061 Creating Web Pages	3
CIS 069 Multimedia for the Web	3
CIS 072 Extensible Markup Language (XML)	1.5
CIS 075 Client-Side Web Programming	3
CIS 081 Server-Side Web Programming	3
Total Units	**16.5**

Computer Information Science

CIS 001 3.0 Units
Introduction to Computer Science
Course Advisory: SCC minimum English and Math standards; keyboarding 30 wpm. An introduction to the hardware and software components of basic computer information systems. Also, an examination of information systems and their role in business. A review of historical, social and cultural implications of computer technology in today's society. Course content will include "hands-on" familiarization with a computer operating system and common application software. Additionally, the course includes an introduction to computer programming using the Visual Basic .Net language. Students will learn to develop problem specifications, detailed analysis, design algorithms, and construct structured computer programs. *Three hours lecture, one hour lab.*

CIS 015 3.0 Units
Programming in Visual Basic.NET
Prerequisite: CIS 001 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. An introductory course in Object Oriented Programming (OOP) using Visual Basic.NET, emphasizing problem-solving techniques using structured design and development. An extensive coverage of the Visual Basic computer language will be conducted using the Microsoft. Net environment. Students will construct forms and define procedures, events, properties, methods and objects to solve a variety of business-oriented problems. *Three hours lecture, one hour lab.*

CIS 020 3.0 Units
Assembly Programming
Prerequisite: CIS 015 or 022 or 035 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. A hardware-oriented programming course dealing with programming a computer at the assembler language level. Emphasis will be on the assembly language of computers. *Two hours lecture, three hours lab.*

CIS 022 3.0 Units
Introduction to Programming
Prerequisite: CIS 001 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. An introduction to computer programming. The course's content will include 'hands-on' development of structured algorithms and programs through top-down design, modular and object oriented programming, and standardized control structures. (Taught using an object-oriented computer programming language such as C++, C#, Java, etc.). *Three hours lecture, one hour lab.*

CIS 021 3.0 Units
Discrete Structures for Computer Science
Prerequisite: A minimum grade of C in both CIS 023 and Math 020. Course Advisory: SCC minimum English Standard. This course is an introduction to the discrete structures used in Computer Science with an emphasis on their applications. Topics covered include: Functions, Relations and Sets; Basic Logic; Proof Techniques; Basics of Counting; Graphs and Trees; and Discrete Probability. C-ID COMP 152. *Two hours lecture, three hours lab.*

CIS 022 3.0 Units
Introduction to Programming
Prerequisite: CIS 001 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. An introduction to computer programming. The course's content will include 'hands-on' development of structured algorithms and programs through top-down design, modular and object oriented programming, and standardized control structures. (Taught using an object-oriented computer programming language such as C++, C#, Java, etc.). C-ID COMP 122. *Three hours lecture, one hour lab.*

CIS 023 3.0 Units
Data Structures and Algorithms
Prerequisite: CIS 022 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. A study of the basic concepts associated with the creation and manipulation of data structures and their related processing algorithms. Topics include software engineering principles, the selection, design, and implementation of data structures including arrays, sequential and random access files, strings, stacks, queues, linked lists, and binary trees, and the development of efficient algorithms for sorting, searching, and manipulating these data structures. (Taught using an object-oriented computer programming language such as C++, C#, Java, etc.) *Two hours lecture, three hours lab.*

CIS 035 3.0 Units
Introduction to Java Programming
Prerequisite: A minimum grade of C in CIS 015 or CIS 022 or CIS 023. Course Advisory: SCC minimum English and Math standards. Introduces Object Oriented Programming (OOP) using the Java programming language. Includes hands-on development of Java applets and Java applications using objects, classes, interfaces and Graphical User Interface (GUI) components. *Two hours lecture, three hours lab.*

Computer Information Science

CIS 049 1.0 to 3.0 Units
Computer and Information Science Honors
Prerequisite: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a minimum grade of C; an ability to work independently; permission of the School Dean based on instructor availability. Course Advisory: SCC minimum English and Math standards. Designed for honor students who intend to major in one of the Computer and Information Science options. Students are expected to design their own projects and must submit them to the instructor for approval. *Students may take this course up to the maximum number of units over multiple semesters. Three to nine hours by arrangement.*

CIS 050 3.0 Units
Microcomputer Applications
Course Advisory: Basic keyboarding skills at 30 wpm; SCC minimum English and Math standards. This course will serve as an introduction to microcomputers and the more frequently used applications software. The course is designed for the microcomputer user who is not a computer science major. The purpose of this course is to help students to understand the concepts and fundamentals of working with: an operating system with its associated graphical user interface, word processing, spreadsheets, databases and presentation software. *Three hours lecture.*

CIS 052 3.0 Units
UNIX Operating System
Course Advisory: CIS 055 with a minimum grade of C or P; SCC minimum English and Math standards. This course will analyze the UNIX operating system, its terminology, user utilities, file structure, file security, commands, shells, shell programming, system architecture, and system administration. Emphasis will be placed on the shell environment, shell programming and utilities. The course will include hands-on exercises for the students to complete using the UNIX operating system (Currently taught using LINUX). *Three hours lecture.*

CIS 055 3.0 Units
MS Windows Operating Systems
Course Advisory: CIS 001 with a minimum grade of C or P; basic keyboarding skills. Students will learn how to use the Graphical User Interface (GUI) and the command line interface in carrying out system tasks in the MS Windows operating systems. Topics include file management, hard disk management, system tools, batch files, connectivity, and the registry. *Three hours lecture.*

CIS 060 1.5 Units
Introduction to the Internet
Course Advisory: SCC minimum English and Math standards. Designed to prepare students to use the Internet, a world wide computer network. Emphasis is on introducing features of the Internet, including electronic mail, the World Wide Web, Gopher, FTP (file transfer protocol), Telnet, and Usenet, as well as other Internet services and utilities. Students will explore hands-on the vast resources of the Internet, learn to access information using a variety of methods, and will construct a simple Web page. *Three hours lecture. (8-week course).*

CIS 061 3.0 Units
Creating Web Pages
Course Advisory: CIS 001; SCC minimum English and Math standards. This course is designed to prepare students to develop web sites that interact with databases. Emphasis is on the creation of Web sites with interactive Web pages, data access Web pages, and web pages with interactive components. Students will explore hands-on access to the Internet and an HTML editor to create and maintain Web sites. *Three hours lecture.*

CIS 062 3.0 Units
Creating Web Interactivity with Flash
Course Advisory: CIS 001 with a minimum grade of C or P; CIS 061 with a minimum grade of C or P; SCC minimum English and Math standards. This course covers the creation of vector-based graphics, animation, and interactivity within the Web environment. Emphasis will be placed on applying design principles to the elements of motion and interactivity. The basic operating principles of Macromedia Flash will be applied in order to create Web sites with animation, interactive buttons, and sound. Issues of optimal delivery and web accessibility will also be covered. A portfolio-quality professional level capstone project will be developed and presented. *Three hours lecture.*

CIS 066 3.0 Units
Microsoft Word
Course Advisory: CIS 001 or CIS 050 with a minimum grade of C or P; ability to keyboard at 30 wpm. Provides an in-depth study of the functions of the word processing program. Students will learn how to use basic and advanced program features to create and design business documents. *Three hours lecture.*

Computer Information Science

CIS 068 3.0 Units
Object Oriented Game Programming with Flash
Prerequisite: CIS 062 with a minimum grade of C. Course Advisory: CIS 001 with a minimum grade of C or P; SCC minimum English and Math standards. Using solid programming techniques and the fundamental concepts of Object Oriented Programming, students will use Macromedia Flash ActionScript to create multimedia games. This process includes designing, coding, testing, debugging and documenting Flash ActionScript programs. Additionally, students will apply these concepts to the creation of game programs that utilize digital media including images, animation, audio, video, and text. *Three hours lecture.*

CIS 069 3.0 Units
Multimedia for the Web
Course Advisory: CIS 061 with a minimum grade of C; SCC minimum English and Math standards. Takes an in-depth look at designing multimedia for the Web. Topics include developing graphic elements such as buttons, background textures and images for a Web site, using Cascading Style Sheets to position graphics, using Dynamic HTML to create web site interactivity, adding audio and/or video to a Web site, and manipulating Web multimedia file formats. *Three hours lecture.*

CIS 070 3.0 Units
Adobe Photoshop for the Web
Course Advisory: SCC minimum English and Math standards. CIS 001 or CIS 050 with a minimum grade of Pass or equivalent. This course emphasizes the use of computer technology to create and manipulate raster and vector digital images. Students use Photoshop techniques to produce digital creations for the web. Layers, filter effects, blending modes, and other editing tools will be used to produce digital images appropriate for print and electronic reproduction. The elements of Photoshop for use in industry-standard web and print production will be explored. *Three hours lecture.*

CIS 072 1.5 Units
Extensible Markup Language (XML)
Course Advisory: CIS 001 with a minimum grade of C; CIS 061 with a minimum grade of C; SCC minimum English and Math standards. Introduces Extensible Markup Language. Students will learn how to create XML documents and use XML-based markup languages. *Three hours lecture (8-week course).*

CIS 073 3.0 Units
Microsoft Excel
Course Advisory: CIS 001 with a minimum grade of C or P; ability to keyboard at 30wpm. Provides a thorough study of spreadsheet operation and enables the student to use the spreadsheet to perform mathematical computations and analysis. Students will create graphic representations of the information contained in a spreadsheet, perform list management routines, use functions, perform 'what if' analysis, customize toolbars and menus, and create macros using Visual Basic for Applications. *Three hours lecture.*

CIS 075 3.0 Units
Client-Side Web Programming
Course Advisory: CIS 001 with a minimum grade of C; CIS 061 with a minimum grade of C; SCC minimum English and Math standards. Focuses on the enhancement of Web pages by adding interactivity and functionality through the use of client-side programming. *Three hours lecture.*

CIS 078 3.0 Units
Access - Database Management System
Course Advisory: CIS 001 with a minimum grade of C. An introduction to relational database management using microcomputers. Micosoft's Access database management program is used. Students will learn how to create and maintain relational database structures, organize and manipulate data, ask questions of the data, create custom forms for entering data and custom reports for printing the data. How to publish objects on the Internet's World Wide Web is presented. The student will learn how to construct a complete application combining previously created tables, queries, forms, and reports. Visual BASIC Applications (VBA) and Structured Query Language (SQL) are introduced. Advanced database design is explored and the student learns how to 'normalize' a database structure. *Three hours lecture.*

CIS 080 3.0 Units
SQL Database Management Systems
Course Advisory: CIS 001, CIS 078; SCC minimum English and Math standards. Designed for the student who needs knowledge and skills about advanced database systems that use the SQL language such as IBM's DB2, Oracle, Sybase and Microsoft's SQL Server. This course is designed for the end user, the database designer and the database administrator. Microsoft SQL Server 2008 is the database system currently used for this course. *Three hours lecture.*

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CIS 081 3.0 Units
Server-Side Web Programming
Course Advisory: A minimum grade of C in both CIS 001 and CIS 061; SCC minimum English and Math standards. Emphasizes the creation of interactive web sites using a server-sided scripting language such as ASP.Net, CGI, or Perl. Topics include core features of the server-side scripting language, control structures, functions, arrays, form validations, regular expressions, environmental variables, and database-driven web applications. *Three hours lecture.*

CIS 083 3.0 Units
Web Server Administration
Course Advisory: A minimum grade of C in both CIS 001 and CIS 061; SCC minimum English and Math standards. This course covers web server installation and administration for the internet and intranet. Topics covered include the installation, configuration, management and tuning of web services, security, online transaction processing, and FTP services. *Three hours lecture.*

CIS 085 3.0 Units
Digital Publishing with InDesign
Course Advisory: CIS 001 or CIS 050 with a minimum grade of pass or equivalent; SCC minimum English and Math standards. An introduction to the graphics software program Adobe InDesign. Students will learn to produce and publish publications employing vector graphics and typography as well as color and print management. This course will establish an understanding of the basic features in Adobe InDesign for use in both print and digital media. *Three hours lecture.*

CIS 087 3.0 Units
Adobe Illustrator for the Web
Course Advisory: CIS 001 or CIS 050 with a minimum grade of P or equivalent; SCC minimum English and Math standards. An introduction to the graphics software program, Adobe Illustrator. Students will learn to create vector shapes, import, export and modify graphics, and use Illustrator tools. This course will establish an understanding of the basic features in Adobe Illustrator for use in digital media. *Three hours lecture.*

CIS 089 3.0 Units
Essential Networking Technologies
Course Advisory: CIS 001 with a minimum grade of C or P; SCC minimum English and Math standards. An introductory course starting with a general overview of networking. Network design, media, protocols, architectures, operations, and administration will be discussed. Local area networks, wide area networks, and network connectivity (including Internet) are covered. This course is the foundation of all other network classes and helps prepare the student to be successful when taking various certified examinations. *Three hours lecture.*

CIS 090 1.5 Units
Introduction to PowerPoint
Course Advisory: CIS 001 or CIS 050 with a minimum grade of C; ability to keyboard 30 wpm. This course introduces features and design concepts utilized in developing powerful presentations using a package software such as Microsoft PowerPoint. *Three hours lecture (8-week course).*

CIS 091 1.5 Units
Microsoft Outlook
Course Advisory: CIS 001 or CIS 050 with a minimum grade of C; basic keyboarding skills; SCC minimum English standard. Students get started using Outlook's features; working with the Contact address book; Inbox and e-mail; Journal; Notes; Tasks; use Calendar to track and schedule appointments, events and meetings; work with forms and templates; use Outlook with other applications. *Three hours lecture (8-week course).*

CIS 093 1.5 Units
MS Publisher
Provides 'hands-on' experience in the Microsoft Publisher desktop publishing computer program. Students will learn to produce camera ready, near-typeset quality reports, brochures, newsletters, labels, cards, and business forms. *Three hours lecture (8-week course).*

CIS 106 1.0 Units
Computer Literacy
Course Advisory: SCC minimum English and Math standards. This course is Designed to provide a brief introduction to information technology for novices. It includes an introduction to computer components, and also includes hands-on activities utlizing the Windows operating system, word processing and spreadsheet software and the internet. *Two hours lecture, 1 hour lab (8-week course).*

Computer Information Science

CIS 110 1.5 Units
Wireless LANs
Course Advisory: CIS 001 with a minimum grade of C or P; SCC minimum English and Math standards. This course is designed to instruct students on planning, designing, installing and configuring wireless LANs. The course offers in-depth coverage of wireless networks with extensive step-by-step coverage of IEEE 802.11b/a/g/pre-n implementation, design, security, and troubleshooting. *Three hours lecture, one hour lab (8-week course).*

CIS 112 3.0 Units
Introduction to Robotics Programming
Prerequisite: CIS 001. Course Advisory: SCC minimum English and Math standards. The student will be introduced to Programming a 360-degree, 5-axis articulating arm via the Industry Standard Smart Terminal hand held computer and the PC interface. The student will learn all the basic physical parts of the system. Additionally, the student will learn to utilize many of the 150 programming language commands to maniuplate the robot to do work in three dimensional work spaces over time. Furthermore, the student will learn and implement Industry Standard Robotic Safety Standards in the work place. *Three hours lecture.*

CIS 113 3.0 Units
Introduction to Programmable Logic Controllers
Prerequisite: CIS 001. Course Advisory: SCC minimum English and Math Standards. The student will be introduced to how to design, program and operate the Programmable Logic Controller (PLC) to control a number of process applications used by industries all over the world. The Programmable Logic Controller (PLC) is a microprocessor-based controller designed to provide easily programmed control of almost any type of process. The student will learn to program Input Modules, Output Modules, Processor Module, Power Supply, Programming device, and I/O chassis. *Three lecture hours.*

CIS 120 1.5 Units
Developing XML Web Services
Prerequisite: CIS 072. Course Advisory: CIS 001 and SCC minimum English and Math Standards. This course introduces the fundamental Web services architecture and its core technologies, including XML, XML Schema, SOAP, WSDL, and UDDI with the focus on writing, testing, and debugging a Web service such as a credit card validation Web service. *Three hours lecture, one hour lab by arrangement (8-week course).*

CIS 121 3.0 Units
PHP Programming with MySQL
Course Advisory: SCC minimum English and Math standards; CIS 061; CIS 001. This course teaches Web development with PHP and MySQL. It presents the basics of PHP and MySQL along with advanced topics including object-oriented programming and how to build Web sites that incorporate authentication and security. Upon completion of this course, students should be able to use PHP and MySQL to build professional quality, database-driven Web sites. Additionally, students will become proficient with the administration and maintenance of a MySQL database. *Three hours lecture, one hour lab by arrangement.*

CIS 162 4.0 Units
A+ Computer Hardware Technology
Course Advisory: SCC minimum English and Math standards. Presents the structure of modern personal computer architecture including the names, purpose, and characteristics of components such as motherboards, CPUs, RAM, disk drive storage, printers and networks. This course also addresses upgrading computer components, optimizing computer performance, preventative maintenance, safety, and computer hardware troubleshooting. Prepares the student for CompTIA A+ Hardware Service Technician Certification. *Three hours lecture, three hours lab.*

CIS 164 4.0 Units
A+ Computer Operating Systems Technology
*Course Advisory: ECTN 126, SCC minimum English and Math standards. P*resents the purpose and capabilities of computer operating systems, operating system components and utilities. The course emphasizes initial investigation of personal computer operating systems and demonstrates the uses of the operating system and other software for isolating troubles and completing the repair of personal computers. Prepares the student for CompTIA A+ Operating Systems Technologies certification. *Three hours lecture, three hours lab.*

CIS 166 4.0 Units
Computer Network+ Technology
Course Advisory: SCC minimum English and math Standards. Presents the architecture of computer networks, including the names, purpose, and characteristics of network components such as network interface card (NIC), hubs, routers, cabling and connectors as well as topologies, protocols and standards. This course also addresses network implementation, network support and troubleshooting. Prepares the student for CompTIA Network+ Computer Network Certification. As a team, in a laboratory environment, the class will assemble and implement a complete network, with a server running a Microsoft server network operation system (NOS) and several computers running the Microsoft Windows XP Professional Operating System. All of the required cabling will be assembled in the lab by the students under the supervision of the instructor. *Three hours lecture, three hours lab.*

CIS 168 4.0 Units
Computer Security+ Technology
Prerequisite: A minimum grade of C in either CIS 166 or ECTN 122. Course Advisory: SCC minimum English and Math standards. Presents the vulnerability, threats, and risks to data and other computer assets from spyware, Trojan horses, viruses, worms, and other security attacks. This course also addresses the fundamental policies and procedures for maintaining the security of a computer network. Prepares the student for the Computing Technology Industry Association's (CompTIA) Security+ Certification. *Three hours lecture, three hours lab.*

CIS 172 1.5 Units
Computer Forensics: Evidence Recovery
Course Advisory: SCC minimum English and Math standards. Introduces the student to the physical aspects of data collection from computer systems and computer networks. The student is introduced to the hardware and software used to collect data, the techniques used to ensure integrity and preserve data, and the requirements of preparing collected data for later forensic investigation. Students will learn to process a digital crime scene as well as the corporate environment for both criminal/civil cases and incident response. *(Formerly ECTN 172). One hour lecture, one and one-half hours lab.*

CIS 173 3.0 Units
Computer Forensics Investigations
Prerequisite: CIS 001. Course Advisory: Eligibility for English 001 and SCC minimum Math standard. Introduces the student to the tools and techniques of preserving and investigating digital evidence in a systematic and scientifically reliable manner using modern computer forensic software applications. The student is introduced to the interpretation and analysis of recovered data for the purpose of collecting legal evidence. Student is exposed to data in an array of formats and applications from several computer types and operating systems as well as deleted, encrypted, and damaged information. Evidence reporting practices are also introduced. *Two hours lecture, three hours lab.*

CIS 174 3.0 Units
Computer Forensics: Operating Systems Internals
Prerequisite: Minimum grade of C in either CIS 173 or ECTN 173. Course Advisory: SCC minimum English and Math standards. Students will explore the internal workings of computer operating systems and perform forensic examinations of various operating systems. Students will analyze FAT, NTFS, Ext2, Ext3, UFS1, and UFS2 file systems and data structures. Students will learn to recognize systems that have been compromised by viruses or other intrusive programs, and will be able to locate corrupt, hidden or deleted data. *Two lecture hours, three hours lab.*

Cosmetology

Cosmetology

Program Description
The program consists of sixteen hundred (1600) hours of intensive training and study designed to prepare the student to take the California State Board of Cosmetology examination for licensure. Units include theory and practice in fundamental skills in all phases of beauty culture. Assignment of units is based on hours in attendance. See the Course Description portion of the Catalog for prerequisite requirements for admission to the program.

Transfer students will be accepted on a space-available basis providing they have not achieved more than 500 certified hours of training.

Certificate of Achievement and Associate in Science Degree
A Certificate can be obtained by completing the 49.5 unit major listed below. The Associate in Science Degree can be obtained by completing a minimum of 66 units, including the major of at least 49.5 units and the general education requirements. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Cosmetology Certificate of Achievement/Associate Degree will be able to:

1. Translate and identify the differences between chemical and non-chemical changes as related to Cosmetology.
2. Employ and demonstrate the theories as related to sanitation, sterilization and rules and regulations as mandated by the Cosmetology Act and the Rules and Regulations - State approved textbooks.
3. Interpret and apply cosmetological theories as required for theoretical and practical applications.
4. Contrast and compare the skills and concepts as required by the California State Board of Barbering and Cosmetology.
5. Mandated Clinic Laboratory hours completed - Desk and Reception Training - Business and Communication skills developed - Sales and retail product knowledge.

REQUIRED COURSES	**Units**
COSM 100 Cosmetology I	12.5
COSM 101 Cosmetology II	12.5
COSM 102 Cosmetology III	12.5
COSM 103A Cosmetology IV	6
COSM 103B Cosmetology V	6
OR	
COSM 175 Cosmetology Education Practicum	6
Total Units	**49.5**

Recommended Electives:
COSM 103B Cosmetology V
COSM 104B Esthetics of Skin Care II
COSM 111 Special Hair Processes
COSM 112 Basic Hairstyling
COSM 113 Advanced Hairstyling
COSM 114 Brush-Up and/or Supplemental Training
COSM 115 Cosmetology Instructor Training I
COSM 116 Cosmetology Instructor Training II
COSM 117 Special Manicurist
COSM 175 Cosmetology Education Practicum
OCED 070 Occupational Soft Skills
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

NOTE: First time students to the Cosmetology Program will be required to attend an orientation meeting and purchase a materials card at registration in addition to the registration fees. The cost of the materials card and start-up materials exceeds $2,000. For more information see the schedule of classes or call the Cosmetology Department at (707) 864-7000 ext. 4389.

The Cosmetology program is approved by the California State Board of Barbering and Cosmetology.

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/***and select "Cosmetology."

Cosmetology

COSM 100 13.0 to 17.5 Units
Cosmetology I
Course Advisory: SCC minimum English and Math standards. This is the first course in a series of courses that provides the fundamental training towards the state mandated minimum hours designed to prepare the student for the California State Board of Cosmetology examination for licensure. A combination of both lecture and laboratory activities introduces the student to theoretical concepts, principles and practice in the beauty industry. Critical thinking skills are developed in the areas of communication, hair care, nail care, record keeping, and business decorum. A combination of 80 lecture hours and 600 lab hours for day students to earn 17.5 units and a combination of 80 lecture hours and 360 lab hours for evening students to earn 13 units each term. Students enrolling in this course must attend the mandatory information sessions. See the schedule of classes for location, dates and times. At the time of registration students must pay a Material's Fee with enrollment fees to the office of Admissions and Records. Students are required to purchase an equipment kit. The cost of the materials fee and start-up materials varies. For more information, current prices, textbooks, and ordering the equipment kit call the Bookstore at (707) 864-7111 or www.solano.bncollege.com. To qualify for the State Board of Cosmetology examination for a cosmetology license, students must have completed all state mandates including the following: a minimum of 1600 clocked hours, designated subject areas of technical instruction, designated subject areas of practical operations, completed the 10th grade or the equivalent, be at least 17 years of age, and have a current state or federally issued photo graphic identification. For more information; www.barbercosmo.ca.gov. *Five hours lecture, Twenty-five hours to thirty-seven and one-half hours.*

COSM 101 13.0 to 17.5 Units
Cosmetology II
Prerequisite: COSM 100 with a minimum grade of C. The second of a series of courses in Cosmetology to provide the training towards the state mandated hours of intensive training and study designed to prepare the student for the California State Board of Cosmetology examination for licensure. Focus is on the continued study of beauty industry. This course provides the students with the opportunity to synthesize and utilize cosmetology knowledge and skills in providing more advanced services for multiple clients. *All students enrolling in COSM 101 must pay a Material's Fee with enrollment fees to the Admissions and Records office at the time of registration. The cost of the materials fee and start-up materials varies. Five hours lecture, twenty five to thirty serven and one-half hours lab.*

COSM 102 6.0 to 8.5 Units
Cosmetology III
Prerequisite: COSM 101 with a minimum grade of C. The third in a series of courses in Cosmetology designed to provide the training towards the state mandated hours and prepare the student for the California State Board of Cosmetology examination for licensure. Topics include the principles and practices of cosmetology with emphasis on the essential knowledge and skills for licensure and working within the cosmetology industry. Students are able to increase practical application skills and processes by providing multiple clients with hair care, skin care and nail care services in the patron laboratory. All students enrolling in COSM 102 must pay a Material's Fee with enrollment fees to the Admissions and Records office at the time of registration. The cost of the materials fee and start-up materials varies. *Five hours lecture, twenty two and one-half to thirty seven and one-half hours lab (8-week course).*

COSM 103A 6.0 Units
Cosmetology IV
Prerequisite: A minimum grade of C in COSM 100, 101, and 102. Designed to meet the needs of students who are preparing to go to the state exam. Review over the basic skills that are required to pass the tests by practice and study. Reinforce the entry level skills expected from the industry. NOTE: All students enrolling in COSM 103A must pay a Material's Fee with enrollment fees to the Admissions and Records office at the time of registration. The cost of the materials fee and start-up materials varies. *Five hours lecture, twenty-one hours lab (8-week course).*

COSM 103B 6.0 Units
Cosmetology V
Prerequisite: COSM 103A or COSM 175. Provides the application of theoretical skills to increase performance proficiencies and accrue the hours as mandated by the State Board of Barbering and Cosmetology. Students are required to have the mandatory books and equipment kit as required in the concurrent course by the first class meeting. Students are required to pay a materials fee at the time of registration. The cost of the materials fee varies. For current costs, please refer to the schedule of classes for each semester. *Five hours lecture, twenty one hours lab (8-week course).*

Cosmetology

COSM 104A 15.0 Units
Esthetics of Skin Care I
Prerequisite: Tenth grade completion or equivalent and 18 years of age as required by the State Board of Barbering and Cosmetology. Course Advisory: SCC minimum English standard. A two semester course series in skin care consisting of 600 hours. Designed to prepare the student for the California State Board of Barbering and Cosmetology examination for Esthetician licensure. An intensive study of basic and advanced technological concepts in European facialing techniques. The curriculum framework provides the theoretical, manual and mechanical skills needed for a profession in esthetics. NOTE: Students are required to purchase a mandatory equipment kit and materials card at the SCC bookstore. The cost of materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. Additionally, students are required to attend the mandatory Cosmetology information session (see Schedule of Classes for the date and time). Five hours lecture, thirty hours lab.

COSM 104B 6.0 Units
Esthetics of Skin Care II
Prerequisite: COSM 104A. A continuation of COSM 104A providing additional in-depth training for more advanced skin care techniques and methodologies. Designed to prepare the student for the California State Board of Barbering and Cosmetology examination for Esthetician licensure. *NOTE: Students will be required to purchase a mandatory materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. Five hours lecture, twenty-one hours lab (8-week course).*

COSM 105A 9.5 Units
Fundamentals of Esthetics
Prerequisite: Tenth grade completion or equivalent; and 18 years of age as required by the State Board of Barbering and Cosmetology. Course Advisory: SCC minimum English and Math standards. The first of a two-part class designed to introduce students to the basic knowledge and skills to qualify them to take the state licensing exam in esthetics. Topics include the treatments, facials, makeup, and hair removal processes as well as a thorough understanding of the business aspects, general facial procedures, the human anatomy, chemistry, ingredients, electricity, sanitation and health and safety associated with this field. NOTE: All students enrolling in COSM 105A must pay a Material's Fee with enrollment fees to the Admissions and Records office at the time of registration. The cost of the materials fee and start-up materials varies. Additionally, students are required to attend the mandatory Cosmetology information session (see schedule of Classes for the information session date and time). This class is not open to students enrolled in COSM 104A. *Four and one-half hours lecture, fifteen hours lab.*

COSM 105B 9.5 Units
Advanced Fundamentals of Esthetics
Prerequisite: Tenth grade completion or equivalent and 18 years of age as required by the State Board of Barbering and Cosmetology; completion of COSM 105A. Course Advisory: SCC minimum English and Math standards. This course continues the basic skills practice and technical training from COSM 105A to qualify students for state licensure. It expands the knowledge of the practices, techniques, products, chemicals, laws and advanced procedures used in the current field of Esthetics. NOTE: Students will be required to purchase a mandatory materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the schedule of classes for each semester. This class is not open to students who have completed COSM 104A or students enrolled in COSM 104B. *Four and one-half hours lecture, fifteen hours lab.*

COSM 110 6.0 Units
Introduction to Cosmetology
Course Advisory: SCC minimum English standard. To acquaint students with cosmetology career opportunities and the industry options available. A survey of the concepts and processes utilized in the beauty industry. NOTE: All students enrolling in COSM 110 must pay a Material's Fee with enrollment fees to the Office of Admissions and Records at the time of registration. The cost of the materials fee and start-up materials varies. *Five hours lecture, twenty-one hours lab. (8-week course).*

COSM 111 2.0 Units
Special Hair Processes
Prerequisite: Current California State Cosmetology License or COSM 100 (may be taken concurrently). Course Advisory: SCC minimum English standard. This course is designed to teach theory and practice in the thermal and chemical processes used in the curling, straightening and waving of hair. *NOTE: Students are required to purchase a materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. One hour lecture, three hours lab*

COSM 112 2.0 Units
Basic Hairstyling
Prerequisite: Current California State Cosmetology License or completion of COSM 100. Course Advisory: SCC minimum English standard. This course is designed to provide licensed operators and students enrolled in the Solano College Cosmetology day program with a fundamental knowledge of basic styling and hair cutting skills. *NOTE: Students are required to buy a materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. One hour lecture, three hours lab.*

Cosmetology

COSM 113 2.0 Units
Advanced Hairstyling
Prerequisite: Current California State Cosmetology License. Course Advisory: SCC minimum English standard. Designed to provide licensed cosmetologists with advanced techniques in haircutting, hairstyling and make-up. Provides hands-on knowledge of the current trends released by the National Hairdresser's Association. Presents concepts and principles of newly established in the cosmetology industry. *NOTE: Students are required to purchase a materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester One hour lecture, three hours lab.*

COSM 114 15.0 Units
Brush-Up and/or Supplemental Training
Prerequisite: Completion of COSM 102 or its equivalent, or current license number or expired California State license number, or a letter from the California State Board of Cosmetology identifying specific requirements of training for cosmetology licensure. Course Advisory: SCC minimum English standard. Designed to meet the needs of cosmetologists who have deficiencies in theory or practice in the field of cosmetology. Assists cosmetologists who require additional training to qualify for better positions by upgrading skills. Preparatory training for cosmetologists who wish to renew their cosmetology license. *NOTE: Students are required to purchase a materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. Five hours lecture, thirty hours lab.*

COSM 115 13.0 Units
Cosmetology Instructor Training I
Prerequisite: Current California Cosmetologist's license and completion of COSM 102 or 114. Course Advisory: SCC minimum English standard. Presents cosmetology principles and techniques applied to instruction teaching methods. Designed for currently licensed cosmetologists who want to pursue a cosmetology instructor license through the California State Board of Barbering and Cosmetology. Focus is on the lesson planning, presentation methods, application techniques, evaluation processes and instruction materials. Provides the utilization of cosmetology processes to develop instruction performance criteria. NOTE: Students are required to purchase a materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. *Five hours lecture, twenty-four hours lab.*

COSM 116 8.0 Units
Cosmetology Instructor Training II
Prerequisite: COSM 115. Course Advisory: SCC minimum English standard. Continuation of Cosmetology 115 to give the student more sophistication in the development, implementation and evaluation of teaching methods. Focus is on laboratory practicum emphasizing curriculum activities utilizing lesson planning and teaching techniques. Provide the students with the opportunity to synthesize and utilize instructional knowledge and skills through classroom instruction presentations. Designed to prepare the student for the cosmetology instructor licensure examination for the California State Board of Barbering and Cosmetology. *NOTE: Students are required to purchase a materials card from the SCC bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. Five hours lecture, fifteen hours activities.*

COSM 117 15.0 Units
Special Manicurist
Course Advisory: SCC minimum English standard. Consists of four hundred (400) hours of intensive training and study. Designed to prepare the student for the California State Board Examination in Manicuring. Focus is on the essential knowledge and skills in all area of manicuring technology. Provide the opportunity for students to develop technical skills in providing nail care and artificial nail service to multiple clients in the patron laboratory. *NOTE: Students are required to purchase an equipment kit and materials card from the SCC Bookstore. The cost of the materials card and start-up materials varies. For current costs, please refer to the Schedule of Classes for each semester. Students are required to attend the mandatory Cosmetology information session (see information session statement in Schedule of Classes). Students must have completed the designated hours of practical training and technical instruction, the tenth (10th) grade, or its equivalent, and be 18 years of age to qualify for the manicurist license examination by the State Board of Barbering and Cosmetology. NOTE: Not open to students who have completed COSM 171, 172, 173, or 174. Five hours lecture, thirty hours lab.*

COSM 175 6.0 Units
Cosmetology Education Practicum
Prerequisite: A minimum grade of C in COSM 100, 101, 102, 104A, 104B, 115, or 117. Course Advisory: SCC minimum English standard. Provides the application of theoretical skills to increase performance proficiencies and accrue the hours as mandated by the State Board of Barbering and Cosmetology. *All students enrolling in COSM 175 must pay a Material's Fee with enrollment fees to the Admissions and Records office at the time of registration. The cost of the materials fee and start-up materials varies. Five hours lecture, twenty-one hours lab (8-week course).*

Counseling

Program Description
These courses are designed to assist students in making a successful adjustment to college, develop academic and career plans and goals, acquire learning skills, obtain job-seeking skills and employment, and develop interpersonal skills for life and work.

Associate Degree
Not offered in this discipline.

COUN 004 3.0 Units
Life Management
Course Advisory: Eligibility for ENGL 001 and SCC minimum Math standard. The course helps students evaluate the social, psychological and physiological factors that influence developing essential life management skills. The course encourages self exploration of personal responsibility, self-motivation, self discipline, self management, interdependence, and self-esteem. Includes introduction to financial, time and stress management and communication skills. Requires written papers and problem-solving exercises. *UC limitation of credit: 3 units of Counseling courses numbered 001-009. Three hours lecture.*

COUN 005 3.0 Units
Career/Life Planning
Course Advisory: Eligibility for ENGL 001 and SCC minimum Math standard. This course is designed to help students demonstrate an understanding and appreciation of the impact and significance of career choices on their social, psychological and physiological experiences throughout the life span. This course is also designed to help students identify their interests, skills, values and personality traits (self-assessment profile), conduct career research and exploration, and learn current job seeking skills. Students will analyze the relationship between themselves, their life choices and the ongoing process of career planning and self-development throughout the life span. At the time of registration the student will be charged a course materials fee for the required Strong and Myers Briggs online assessments payable to Admissions and Records. UC limitation of credit 3 units: Counseling courses 001-009. *Three hours lecture*

COUN 006 1.0 Units
University Transfer Success
Course Advisory: Eligibility for ENG 001 and SCC minimum Math standard. This course provides students with a concrete plan for understanding and succeeding in transferring to a four-year college or university. Topics include the following: Major selection; college options; application processes; academic preparation and student education plans. *UC limitation of credit: 3 units Counseing courses numbered 001-009. Four hours lecture (4 week course).*

COUN 007 3.0 Units
College Study Techniques
Course Advisory: Eligibility for ENG 001 and SCC minimum Math standards. This course provides an exploration of the intellectual, psychological, physiological and sociological factors that impact lifelong learning, well-being and success. Topics include: value of education and student responsibility; psychology of student attitudes, motivation, behaviors and self efficacy; critical thinking and effective study strategies; health issues and lifestyle choices; relying on others in a diverse world; effective written and oral communication; time management, campus and community resources; transfer and educational planning. UC limitation of credit: 3 units Counseling courses numbered 001-009. *Three hours lecture.*

COUN 008 1.0 Units
Math, Engineering and Science Achievement (MESA) Enrichment
Course Advisory: Eligibility for ENG 001 and SCC minimum Math standard. This course assists students in acquiring the knowledge and skills necessary to reach their educational goals in mathematics, engineering and science-related fields. Topics to be covered include: strengths assessment; math and science study skills; transfer preparation and career strategies. Students will synthesize and compare and contrast information to draw conclusions on course topics. *UC limitation of credit: 3 units for any Counseling courses numbered 001-009. One hour lecture.*

COUN 009 3.0 Units
Performance Enhancement
Course Advisory: Eligibility for ENG 001 and SCC minimum Math standard. Performance enhancement explores the psychological, social and physiological factors influencing optimal performance in life's endeavors including academics, performing arts, sports and in interpersonal and business relationships. Performance enhancement topics require evaluation of self care, life balance, confidence, arousal management, motivation, goal attainment, concentration, positive self talk, commitment, uses of imagery and visualization, active listening and demonstrating empathy. Students will design and apply their own Personal Performance Plan to a variety of performance arenas. *UC limitation of credit: 3 units for Counseling courses numbered 001-009. Three hours lecture.*

Counseling

COUN 015 3.0 Units
Valuing Diversity
Course Advisory: Eligibility for ENGL 001 and SCC minimum Math standard. An examination of the complexities of interpersonal relationships among several cultures in our society including self-concept, values, beliefs, communication and lifestyle. This course will invite exploration of individual cultural perception in order to promote respect for differences and to develop a sense of community. Examination requirements include written essays that demonstrate critical thinking. *Three hours lecture.*

COUN 023 3.0 Units
Psychology for Modern Life
Course Advisory: Eligibility for ENGL 001. This course examines the fundamental concepts of psychology as they relate to daily life. Topics include examining methods of psychology, stages of personality development, personal relationships, values, communication, motivation, emotions, lifestyle and attitudes. Concepts will be intoduced to foster the student's understanding of his/her own personal development. Theories and research will be applied across a diversity of settings. *Three hours lecture.*

COUN 062 3.0 Units
Helping Skills: Creating Alliances & Facilitating Change
Course Advisory: COUN 083, Eligibility for ENG 001 and SCC minimum Math standard. An introduction to the basic helping skills that enable the student to build an alliance, effect change and empower others within a multicultural society. A helping model is introduced and helping skills such as attending, active listening, demonstrating empathy, assessment and referral are discussed, role played and applied in an experiential manner to a number of common challenges. In addition, the pertinent legal and ethical guidelines of the professional helping relationship are presented, discussed and applied throughout the course. *Three hours lecture.*

COUN 064A 4.0 Units
Practicum I
Prerequisite: COUN 062, HS 051, HS 053. Course Advisory: Eligibility for ENG 001 and SCC minimum Math standard. The first of a two-course sequence in a supervised Human Services practicum experience at an approved agency or educational setting. In order to develop and apply culturally sensitive and ethically sound helping skills, students will work a minimum of 100 hours and participate actively in a two hour weekly seminar. Placement at most sites will involve a criminal background check. *Two hours lecture, six hours by arrangement.*

COUN 064B 4.0 Units
Practicum II
Prerequisite: COUN 064A. Course Advisory: HS 055; Eligibility for ENG 001; SCC minimum Math standard. The second semester of a two-course sequence in a supervised Human Services Practicum, required for Human Services majors. Students will further develop culturally and ethically competent helping skills as they continue to work in their approved site or work in a new approved site. Students will continue to hone and apply more advanced and educationally informed helping skills. This additional 100 hours in an approved site and its supporting 2 hour weekly seminar will meet the Human Services certificate and Associate degree requirement and will help students further clarify their potential for a longer range educational and career path in Human Services, Social Work or Counseling. *Practicum Sites often require students to pass a criminal background check. Two hours lecture, six hours by arrangement.*

COUN 091 0.5 Units
Foundations for College Success
Course Advisory: Completion of Solano Assessment testing and possession of all relevant academic records and other test results and transcripts including SAT, ACT, AP and IB and SCC minimum English and Math Standards. This short-term course provides an in-depth introduction to college and the required initial student education plan. It seeks to maximize the new student's successful experience by introducing Solano College's student support services, certificate, associate degree and transfer preparation requirements, and the essential personal motivators for college success. Students will provide their academic records, e.g. high school and college transcripts, assessments and tests such as SAT/ACT/AP/IB which will assist them in creation of the initial student education plan. *Eight hours lecture (One week course).*

COUN 102A 0.5 Units
Time Management & Goal Setting
Course Advisory: SCC minimum English and Math standards. This course introduces goal setting and time management techniques such as analyzing time usage, prioritizing and developing a schedule to assist students to achieve their educational and career goals. Other COUN 102 courses may be taken concurrently. *NOTE: Not open for credit to students who have completed COUN 007 with a minimum grade of C. Four hours lecture (2-week course).*

COUN 102B 0.5 Units
Test Taking, Test Anxiety & Memory
Course Advisory: SCC minimum English and Math standards. This course introduces test taking, test anxiety and memory concepts and techniques to assist students to achieve their educational and career goals. Other COUN 102 courses may be taken concurrently. *Note: Not open for credit to students who have completed COUN 007 with a minimum grade of C. Four hours lecture (2-week course).*

COUN 102C 0.5 Units
Study Systems
Course Advisory: SCC minimum English and Math standards. This course introduces note-taking, reading and study environment concepts/strategies and identifies attitudes and learning styles to assist students to achieve their educational and career goals. Other COUN 102 courses may be taken concurrently. *Note: Not open for credit to students who have completed COUN 007 with a minimum grade of C. Four hours lecture (2-week course).*

COUN 103 3.0 Units
Disability and Success
Course Advisory: SCC minimum English and Math standards. This is a college, career, and life preparation course to assist students with disabilities in accessing services and completing their community college and career goals. It includes the SCC Disability Service Program, the College community, community agencies serving people with disabilities, laws and disabilities, coping with a disability, self advocacy, success in the classroom, and a final "Plan for Personal Disability Management.""Student will receive a letter grade. *Three hours lecture.*

COUN 310 1.0 Units
Transition to College for Students with Disabilities
This is a transition course for high school seniors who are planning on entering the Community College system and receiving Disability Services. It includes the Student Support and Success Program process of entering into college, the difference between college and high school for students with disabilities. Students will obtain a beginning understanding of how to navigate successfully through the Community College system and Disability Services. Pass/No-Pass Only. *Two hours Lecture (8-week course)*

COUN 510 0.0 Units
Assessment/Orientation/Planning
Mandatory new student assessment, orientation and initial counseling. Includes reading, writing and mathematics assessments; overview of the programs and services that support student retention and success, time management practices, policies and procedures of Solano College and a preliminary Student Education Plan (SEP). *One hour lecture, two hours lab (1 week course).*

Criminal Justice

Associate in Science in Administration of Justice for Transfer (ADT: A.S.-T)

Program Description
This program offers core and selective courses which provide the student with a base of knowledge and proficiencies in the area of criminal justice. The program operates with the cooperation and participation of local criminal justice agencies. All instructors in the program have experience in the criminal justice field. Courses are scheduled both day and evening to accommodate full-time or part-time students seeking to acquire or upgrade skills and to prepare the criminal justice student for a four-year degree in the CSU system.

Associate in Science in Criminal Justice for Transfer
The Associate in Science in Administration of Justice for Transfer degree is designed for students who plan to complete a bachelor's degree in Administration of Justice at a CSU campus. Students completing an Associate in Science in Administration of Justice for Transfer degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that accepts the Associate in Science in Administration of Justice will be required to complete no more than 60 units after transfer to earn a bachelor's degree. The Associate in Science in Administration of Justice for Transfer degree also provides students with the learning experience on how to preserve and maintain social order by gaining critical skills in these key areas: law enforcement; corrections, probation, and parole; juvenile justice, delinquency, and juvenile corrections; criminology theory and crime control; and criminal justice leadership and administration. With this transfer degree, students will gain an understanding of both adult and juvenile justice systems, as well as the skills to apply innovative programmatic efforts. From due process to constitutional protections to the importance of case law in American criminal justice, the student will be exposed to the specific legal and ethical challenges for each branch of the U.S. criminal justice system.

To earn the Associate in Science in Administration of Justice for Transfer, students must:
1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

ADTs also require that students must earn a C or better in all courses required for the major or area of emphasis.
A "P" (Pass) grade is not an acceptable grade for courses in the major.

Program Outcomes
Students who complete the Associate in Science in Administration of Justice for Transfer will be able to:
1. Demonstrate an understanding of the American Criminal Justice system and the scope of responsibilities of the various local, state, and federal law enforcement agencies beginning with arrest through parole.
2. Articulate the system's objectives, the crime problem, and role expectations of criminal justice personnel, and describe the various agencies and each subsystem within the system.
3. Describe the system's responsibilities to the community, factors in crime causation, the social implications of crime and communication barriers between the system and the community.
4. Articulate the differences between the major criminological theories of the causes of crime and how those theories relate to policies toward crime and criminal behavior.
5. Analyze legal concepts and make rational decisions about case processing.
6. Demonstrate knowledge of the rules of evidence, legal definitions, and concepts of evidentiary law. Apply basic investigative proficiencies.
7. Demonstrate critical thinking and analytical skills acquired in the social sciences in preparation for continuance of college-level education at a four year college.

Criminal Justice

REQUIRED COURSES	**Units**
CJ 001 Introduction to Criminal Justice	3
CJ 002 Concepts of Criminal Law	3
Select Two Courses from List A	6
Select Two Courses from List B	6

List A (Select 2 courses)	**Units**
CJ 011 Community Relations	3
CJ 051 Criminal Investigation	3
CJ 053 Legal Aspects of Evidence	3
CJ 056 Juvenile Procedures	3

List B (Select 2 courses)	**Units**
CJ 064 Principles and Procedures of the Criminal Justice System	3
PSYC 001 Introduction to Psychology.	3
SOC 001 Introduction to Sociology	3
Any Course from List A not already used	3
Total Units	**18**

Required Major Total Units	**18**
CSU General Education or IGETC Pattern Units	**37 - 39**
CSU Transferable Electives (as needed to reach 60 transferable units)*	**5 - 12**
Total Degree Units.	**60**

** 0 - 9 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

Criminal Justice

Criminal Justice, Computer Forensics

Program Description
This program is designed to prepare the student for employment as a computer forensics investigator. It includes a mix of several disciplines of study that when combined, provide a basis for the general knowledge and skills required to perform the careful investigation of evidence obtained from computers and computer systems. In addition, this major provides the knowledge and skills required by computer network specialists involved in the tasks of securing computer systems and protecting information workers.

Certificate of Achievement and Associate in Science Degree
The Certificate of Achievement can be obtained upon completion of the 32.5 unit major listed below. The Associate Degree can be obtained upon completion of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Criminal Justice, Computer Forensics Certificate of Achievement/Associate Degree will be able to:

1. Perform complex operation and management of computer-based software systems.
2. Setup and maintain computer-based hardware systems.
3. Perform a computer investigation.
4. Understand the legal principles and practices of computer investigations.

REQUIRED COURSES	**Units**
CJ 051 Criminal Investigation	3
CJ 053 Legal Aspects of Evidence	3
CIS 001 Introduction to Computer Science	3
CIS 162 A+ Computer Hardware Technology	4
CIS 164 A+ Computer Operating Systems Technology	4
CIS 166 Computer Network + Technology	4
CIS 168 Computer Security + Technology	4
CIS 172 Computer Forensics: Evidence Recovery	1.5
CIS 173 Computer Forensics Investigations	3
CIS 174 Computer Forensics: Operating Systems Internals	3
Total Units	**32.5**

Recommended Electives
CIS 022 Introduction to Programming
CIS 052 UNIX Operating System
CIS 055 MS Windows Operating Systems
CIS 073 Microsoft Excel
ENGL 004 Critical Thinking and Composition: Language in Context
ENGL 051 Technical Writing
OCED 090 Occupational Work Experience
OCED 091 General Work Experience
OT 054A Beginning Keyboarding A
OT 054B Beginning Keyboarding B
OT 055A Intermediate Keyboarding/Word Processing A
OT 055B Intermediate Keyboarding/Word Processing B
SOCS 022 Ethnic, Racial and Minority Group Relations in Harmony and Conflict
SPAN 001 First Semester Spanish
SPAN 002 Second Semester Spanish

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Computer Forensics."

Criminal Justice

Criminal Justice, Corrections

Program Description
This program offers core and selective courses which provide the student with a base of knowledge and proficiencies in the area of corrections. The program operates with the cooperation and participation of local corrections agencies. All instructors in the program have experience in the corrections field. Courses are scheduled both day and evening to accommodate full-time or part-time students seeking to acquire or upgrade skills in the corrections field.

Certificate of Achievement and Associate in Science Degree
The Certificate of Achievement can be obtained upon completion of the 30-unit major listed below. The Associate in Science Degree can be obtained upon completion of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Criminal Justice, Corrections Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate an understanding of the American Criminal Justice system and the scope of responsibilities of the various local, state, and federal law enforcement agencies beginning with arrest through parole.
2. Articulate the system's objectives, the crime problem, and role expectations of criminal justice personnel, and describe the various agencies and each subsystem within the system.
3. Describe the system's responsibilities to the community, factors in crime causation, the social implications of crime and communication barriers between the system and the community.
4. Articulate the differences between the major criminological theories of the causes of crime and how those theories relate to policies toward crime and criminal behavior.
5. Analyze legal concepts and make rational decisions about case processing. Demonstrate knowledge of the rules of evidence, legal definitions, and concepts of evidentiary law. Apply basic investigative proficiencies.
6. Demonstrate critical thinking and analytical skills acquired in the social sciences in preparation for continuance of college-level education.

REQUIRED COURSES	**Units**
CJ 001 Introduction to Criminal Justice	3
CJ 002 Concepts of Criminal Law	3
CJ 011 Community Relations	3
CJ 051 Criminal Investigation	3
CJ 052 Investigative Report Writing	3
CJ 053 Legal Aspects of Evidence	3
CJ 058 Fundamentals of Crime and Delinquency	3
CJ 059 Interviewing and Counseling	3
6 units from List A	6
Total Units	**30**

List A: (Select 6 units)	**Units**
CJ 057 Criminal Justice Career Development	3
CJ 060 Probation and Parole	3
CJ 062 Legal Aspects of Correction	3
CJ 091 Vocational Work Experience – Corrections	1 - 3

Recommended Electives
CIS 050 Microcomputer Applications
COMM 010 Interpersonal Communication
COUN 062 Helping Skills: Creating Alliances & Facilitating Change
ENGL 004 Critical Thinking and Composition: Language in Context
ENGL 051 Technical Writing
HUMN 003 Journey in a Multicultural Landscape
HS 051 Introduction to Human Services
HS 053 Serving Special Populations
OCED 090 Occupational Work Experience
OCED 091 General Work Experience
OT 054A Beginning Keyboarding A
OT 054B Beginning Keyboarding B
OT 055A Intermediate Keyboarding/Word Processing A
OT 055B Intermediate Keyboarding/Word Processing B
SOCS 022 Ethnic, Racial and Minority Group Relations in Harmony and Conflict
SOCS 030 Peace, Non Violence and Conflict Resolution
SPAN 001 First Semester Spanish
SPAN 002 Second Semester Spanish

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Criminal Justice: Corrections."

Criminal Justice

Criminal Justice, Law Enforcement

Program Description
This program was established with the cooperation of the Solano County Criminal Justice Advisory Committee and offers courses for both pre-service and in-service students. All instructors have experience in law enforcement, and courses are scheduled day or evening to accommodate full-time and part-time students seeking to acquire or upgrade skills in the field.

Certificate of Achievement and Associate in Science Degree
The Certificate of Achievement can be obtained upon completion of the 30-unit major listed below. The Associate in Science Degree can be obtained upon completion of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Criminal Justice, Law Enforcement Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate an understanding of the American Criminal Justice system and the scope of responsibilities of the various local, state, and federal law enforcement agencies beginning with arrest through parole.
2. Articulate the system's objectives, the crime problem, and role expectations of criminal justice personnel, and describe the various agencies and each subsystem within the system.
3. Describe the system's responsibilities to the community, factors in crime causation, the social implications of crime and communication barriers between the system and the community.
4. Articulate the differences between the major criminological theories of the causes of crime and how those theories relate to policies toward crime and criminal behavior.
5. Analyze legal concepts and make rational decisions about case processing. Demonstrate knowledge of the rules of evidence, legal definitions, and concepts of evidentiary law. Apply basic investigative proficiencies.
6. Demonstrate critical thinking and analytical skills acquired in the social sciences in preparation for continuance of college-level education.

REQUIRED COURSES	**Units**
CJ 001 Introduction to Criminal Justice	3
CJ 002 Concepts of Criminal Law	3
CJ 011 Community Relations	3
CJ 051 Criminal Investigation	3
CJ 052 Investigative Report Writing	3
CJ 053 Legal Aspects of Evidence	3
CJ 058 Fundamentals of Crime and Delinquency	3
CJ 059 Interviewing and Counseling	3
6 units from List A	6
Total Units	**30**

Select six (6) units from the following	**Units**
CJ 056 Juvenile Procedures	3
CJ 057 Criminal Justice Career Development	3
CJ 064 Principles and Procedures of the Criminal Justice System	3
CJ 090 Vocational Work Experience Law Enforcement	1 - 3

Recommended Electives
CIS 050 Microcomputer Applications
ENGL 004 Critical Thinking and Composition: Language in Context
ENGL 051 Technical Writing
OCED 090 Occupational Work Experience
OCED 091 General Work Experience
OT 054A Beginning Keyboarding A
OT 054B Beginning Keyboarding B
OT 055A Intermediate Keyboarding/Word Processing A
OT 055B Intermediate Keyboarding/Word Processing B
SOCS 022 Ethnic, Racial and Minority Group Relations in Harmony and Conflict
SPAN 001 First Semester Spanish
SPAN 002 Second Semester Spanish

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Criminal Justice: Law Enforcement."

Criminal Justice

CJ 001 3.0 Units
Introduction to Criminal Justice
Course Advisory: Minimum grade of C in ENGL 001. Introduces students to the characteristics of the criminal justice system in the United States. Focus is placed on examining crime measurement, theoretical explanations of crime, responses to crime, components of the system, and current challenges to the system. The course examines the evolution of the principles and approaches utilized by the justice system and the evolving forces which have shaped those principals and approaches. Although justice structure and process is examined in a cross cultural context, emphasis is placed on the US justice system, particularly the structure and function of US police, courts, and corrections. Students are introduced to the origins and development of criminal law, legal process, and sentencing and incarceration policies. C-ID AJ 110. *Three hours lecture.*

CJ 002 3.0 Units
Concepts of Criminal Law
Course Advisory: Minimum grade of C in ENGL 001. A study of the history, philosophy and development of law and various legal systems; case law and legal research; corpus delicti, mental elements, capacity to commit crimes, and defenses; classification of crimes and penalties; elements of major crimes. C-ID AJ 120. *Three hours lecture.*

CJ 011 3.0 Units
Community Relations
Course Advisory: SCC minimum English and Math standards. This course examines the complex, dynamic relationship between the justice system and the community in addressing crime and conflict. The emphasis is on the challenges and prospects of administering justice within a diverse multicultural population. Topics covered may include crime prevention, restorative justice, conflict resolution and ethics. C-ID AJ 160. *Three hours lecture.*

CJ 051 3.0 Units
Criminal Investigation
Course Advisory: CJ 001; SCC minimum English and Math standards. Addresses the techniques, procedures, and ethical issues in the investigation of crime, including organization of the investigative process, crime scene searches, interviewing and interrogating, surveillance, source of information, utility of evidence, scientific analysis of evidence and the role of the investigator in the trial process. It introduces the fundamentals of investigation, crime scene search and recording, collection and preservation of evidence, scientific aid; interviews and interrogation, follow-up and case preparation. C-ID AJ 140. *Three hours lecture.*

CJ 052 3.0 Units
Investigative Report Writing
Course Advisory: CJ 001; CJ 002; CJ 051; Eligibility for ENG 001. Presents investigative report writing in criminal justice relative to police, probation, institutional and parole activities. Includes practical experience in preparing field notes, statements, and reports. *Three hours lecture.*

CJ 053 3.0 Units
Legal Aspects of Evidence
Course Advisory: CJ 001; SCC minimum English and Math standards. A study of the origin, development, philosophy and constitutional basics of evidence; constitutional and procedural considerations affecting arrest, search and seizure; kinds of degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights and case studies. C-ID AJ 124. *Three hours lecture.*

CJ 056 3.0 Units
Juvenile Procedures
Course Advisory: Eligibility for ENG 001. Presents the organization, function, and jurisdiction of juvenile agencies; the processing and detention of juveniles; juvenile case disposition; juvenile statutes and court procedures. C-ID AJ 220. *Three hours lecture.*

CJ 057 3.0 Units
Criminal Justice Career Development
Course Advisory: CJ 001; SCC minimum English and Math standards. Examines criminal justice career positions, employment standards and current occupational opportunities in the field. Includes practical aspects of various jobs and provides information and practice in entrance examination taking, oral interviews, and general preparation for various occupations within the criminal justice field. *Three hours lecture.*

CJ 058 3.0 Units
Fundamentals of Crime and Delinquency
Course Advisory: CJ 001; SCC minimum English and Math standards. Introduction to major types of criminal behavior, patterns of career offenders, factors which contribute to the production of criminality or delinquency. Includes methods used in dealing with violators in the justice system; the changing roles of police courts and after-care process of sentence, probation, prisons, and parole; changes of the law in crime control and treatment processes. *Three hours lecture.*

Criminal Justice

CJ 059 3.0 Units
Interviewing and Counseling
Course Advisory: CJ 001; SCC minimum English and Math standards. Overview of the interviewing and counseling techniques available to practitioners in law enforcement, the courts, and corrections emphasizing communication and practical skills. *Three hours lecture.*

CJ 060 3.0 Units
Probation and Parole
Course Advisory: CJ 001; CJ 058; SCC minimum English and Math standards. Presents the philosophy and history of correctional services. A survey of the correctional sub-systems of institutions by type and function, probation concepts and parole operations. A discussion of correctional employee responsibilities as applied to offender behavior modifications through supervisory control techniques. Covers rehabilitation goals as they affect individual and intimate cultural groups in both confined and field settings. *Three hours lecture.*

CJ 062 3.0 Units
Legal Aspects of Correction
Course Advisory: CJ 058; SCC minimum English and Math standards. Presents the legal aspects of corrections and code provisions relative to all phases of the correctional system. *Three hours lecture.*

CJ 064 3.0 Units
Principles and Procedures of the Criminal Justice System
Course Advisory: CJ 001; SCC minimum English and math standards. Detailed study of the role and responsibility of each sub-system within the criminal justice system; an examination of the philosophy, history, structure, operation and interrelation of each sub-system component; a description of procedure from initial entry of the individual into the system to the final disposition. *Three hours lecture.*

CJ 090 1.0 to 3.0 Units
Vocational Work Experience: Law Enforcement
Course Advisory: CJ 001. Volunteer service in a variety of governmental and private criminal justice agencies related to Law Enforcement. One unit of credit may be earned for each 75 hours paid or 60 hours unpaid work per semester to a maximum of 3 units per semester. Students who enroll in CJ 090 may not enroll in CJ 091 during the same semester. Students may take this course up to the maximum number of units over multiple semesters. This is a Pass/No Pass only course. NOTE: Combined units for all work experience courses shall not exceed 12. One hour lecture and five to twenty hours by arrangement. To determine the correct number of units in which to enroll, refer to the following formula for paid employment*: Full Semester Sections: 1 unit = 5 hours per week; 2 units = 10 hours per week; 3 units = 15 hours per week. **Unpaid work requires fewer hours per week.*

CJ 091 1.0 to 3.0 Units
Vocational Work Experience: Corrections
Course Advisory: CJ 001. Volunteer service in a variety of governmental and private criminal justice agencies related to Corrections. One unit of credit may be earned for each 75 hours paid or 60 hours unpaid work per semester to a maximum of 3 units per semester. Students enrolled in CJ 091 may not enroll in CJ 090 during the same semester. Students may take this course up to the maximum number of units over multiple semesters. This is a Pass/No Pass only course. NOTE: Combined units for all work experience courses shall not exceed 12. One hour lecture and five to twenty hours by arrangement. To determine the correct number of units in which to enroll, refer to the following formula for paid employment*: Full Semester Sections: 1 unit = 5 hours per week; 2 units = 10 hours per week; 3 units = 15 hours per week. **Unpaid work requires fewer hours per week.*

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Drafting

Drafting and Design Technician

Program Description
This program is designed to provide students with entry level skills in the fields of mechanical, electrical, civil and architectural drafting and/or design.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 30-unit major listed below The Associate in Science Degree can be obtained by completing a total of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Drafting and Design Technician Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.
2. Demonstrate proficiency at reading, drawing, and dimensioning industry standard mechanical drawings.
3. Demonstrate proficiency at reading, drawing, and dimensioning industry standard civil drawings.
4. Demonstrate proficiency at reading, drawing, and dimensioning industry standard electronic drawings.
5. Demonstrate proficiency at reading, drawing, and dimensioning industry standard architectural drawings.

REQUIRED COURSES	**Units**
DRFT 045 Introduction to Computer-Aided Drafting (CAD)	3
DRFT 046 Advanced CAD	3
DRFT 055 Mechanical Drafting - Level I	3
DRFT 058 Solid Modeling with Solidworks	3
DRFT 060 Architectural Drafting I	3
DRFT 075 Electronic Drafting	3
DRFT 080 Civil Drafting I	3
IT 140 Industrial Materials	3
IT 151 Vocational Mathematics	3
Select 3 units from Recommended Electives	3
Total Units	**30**

Recommended Electives (Select 3 units)	Units
ART 014 Introduction to Drawing	3
DRFT 050 Basic Drafting	1.5
DRFT 057 Mechanical Drafting - Level II	3
DRFT 065 Architectural Drafting II	3
DRFT 079 Blueprint Reading	3
DRFT 085 Civil Drafting II	3
DRFT 092 Special Problems	1 - 3
DRFT 130 Advanced Printed Circuit Board Design	3
DRFT 140 Surveying	3
ENGR 001 Introduction to Engineering	1
HORT 030 Landscape Design	3
OCED 070 Occupational Soft Skills	1.5
OCED 071 Occupational Soft Skills	1.5
OCED 090 Occupational Work Experience	1 - 8
OCED 091 General Work Experience	1 - 6

NOTE: Many of the advanced courses will require CAD. It is important to take DRFT 045 (Intro. to CAD) as early in your program as possible. College credit may be obtained with credit by examination in DRFT 045, 050, and 060 or they may be waived.

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Drafting Technician."

Drafting

Survey and Civil Drafting Technician

Program Description
This program is designed to provide students with entry-level skills in the fields of Surveying Technician, Civil Drafting Technician, and/or mapping technician.

Certificate of Achievement and Associate Degree
A Certificate of Achievement can be obtained upon completion of 27 core requirement units. An Associate in Science degree may be obtained by completing 60 units, including the required courses in the major, the general education requirements, and electives. All courses for this major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Survey and Civil Drafting Technician Certificate of Achievement/Associate Degree will be able to:

1. Demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.
2. Demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.
3. Demonstrate basic understanding in using industry standard survey equipment including Transit, Theodolite, and Level.

REQUIRED COURSES	**Units**
DRFT 045 Introduction to Computer-Aided Drafting (CAD)	3
DRFT 046 Advanced CAD	3
DRFT 060 Architectural Drafting I	3
DRFT 080 Civil Drafting I	3
DRFT 085 Civil Drafting II	3
DRFT 140 Surveying	3
GEOL 010 Introduction to Geographic Information Systems	3
OR	
GEOG 010 Introduction to Geographic Information Systems	3
IT 151 Vocational Mathematics	3
3 units from Recommended Electives	3
Total Units	**27**

Recommended Electives (Select 3 units)	**Units**
DRFT 050 Basic Drafting	1.5
DRFT 065 Architectural Drafting II	3
DRFT 079 Blueprint Reading	3
DRFT 092 Special Problems	1 – 3
ENGR 001 Introduction to Engineering	1
GEOL 001 Physical Geology	3
GEOL 002 Geology Laboratory	1
GEOL 005 Geology of California	3
IT 050 Alternative Energy Technologies	3
OCED 070 Occupational Soft Skills	1.5
OCED 071 Occupational Portfolio Development	1.5
OCED 090 Occupational Work Experience	1 – 8
OCED 091 Occupational Work Experience	1 – 6

This is a Gainful Employment Program. For additional information, please visit ***http://www.solano.edu/gainful_employment/*** and select "Survey Technician / Civil Drafting Technician."

Computer Aided Drafting (CAD) Technician Job-Direct Certificate

REQUIRED COURSES	**Units**
DRFT 045 Introduction to Computer-Aided Drafting (CAD)	3
DRFT 046 Advanced Computer Aided Drafting (CAD)	3
DRFT 079 Blueprint Reading	3
DRFT 125 Solid Modeling with Solidworks	3
Total Units	**12**

Drafting

DRFT 045 3.0 Units
Introduction to Computer-Aided Drafting (CAD)
Course Advisory: SCC minimum English and Math standards. Designed to introduce the drafting student to CAD (AutoCAD) technology and terminology. The student shall complete a series of related drawing problems using a CAD work station. Fundamentals of creating and modifying engineering and architectural related drawings. *Two hours lecture, three hours lab.*

DRFT 046 3.0 Units
Advanced Computer Aided Drafting (CAD)
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. Designed to develop advanced proficiency in CAD. Covers symbol libraries, isometrics, external references (XREFS), 3-D drawing, basic solid modeling, tables and customization techniques. *Two hours lecture, three hours lab.*

DRFT 050 1.5 Units
Basic Drafting
Course Advisory: SCC minimum English and Math standards. This course presents the fundamentals of drafting using hand drafting tools--pencil, paper, triangles, scales, compass, etc. Students will use traditional methods of construction for polygons, orthographic views, pictorial drawings, simple architectural floor plans and other technical drafting constructions and will be given hands on training in technical sketching. This course is intended to give additional training in visualization and object manipulation without the aid of a computer and is a recommended elective for drafting students, or for non-drafting students (in fields such as welding, mechatronics, engineering, etc) who may need to create technical drawings without a computer. *One-half hour lecture, three hours lab.*

DRFT 055 3.0 Units
Mechanical Drafting - Level I
Prerequisite: Minimum grade of C in DRFT 045; Minimum grade of C in DRFT 058 (may be take concurrently). Course Advisory: SCC minimum English and Math standards. This course teaches techniques and standards of mechanical drafting. Main topics include orthographic drawings, sections, pictorials, threads, fasteners, basic tolerance concepts, ANSI standards and working drawings. Basic mechanical design principles, with a special emphasis on electro-mechanical packaging, are introduced. *Two hours lecture, three hours lab.*

DRFT 057 3.0 Units
Mechanical Drafting - Level II
Prerequisite: DRFT 055 with a minimum grade of C. Course Advisory: IT 151 (may be taken concurrently); SCC minimum English and Math standards. A continuation of Drafting 055, with special emphasis on advanced electro-mechanical packaging and design, Geometric Dimension and Tolerancing (GD&T) terminology and drawing standards, gears, and advanced working drawings. Students will create designs using electronic components (Printed Circuit Boards, connectors, LEDs, etc) and 3D printed models. *Two hours lecture, three hours lab.*

DRFT 058 3.0 Units
Solid Modeling with Solidworks
Course Advisory: SCC minimum English standards; knowledge of drafting concepts. This course is designed to teach the basic concepts and skills necessary to create, view, and manipulate objects and engineering drawings in three dimensional space using Solidworks software. Student will create models in 3D printer, output support documentation and drawings, and incorporate design process concepts in designs. *Two hours lecture, three hours lab.*

DRFT 60 3.0 Units
Architectural Drafting I
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. Covers basic methods and practices of architectural drafting and design. Students will design a complete set of plans for a single family dwelling in accordance with local building regulations. Course includes an introduction to the Title 24 energy requirements and standards. Recommended for non-majors and drafting majors. Two hours lecture, three hours lab.

DRFT 65 3.0 Units
Architectural Drafting II
Prerequisite: DRFT 060 with a minimum grade of C. Course Advisory: IT 151 (may be taken concurrently); SCC minimum English and Math standards. A continuation of Drafting 60 with special emphasis multiple story residential design. Students will create an industry standard, two-story house design on a 12-14 sheet plan set. This course also exposes students to famous architects, past and present. Two hours lecture, three hours lab.

Drafting

DRFT 75 3.0 Units
Electronic Drafting
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. Designed for drafters to develop skill in reading and drawing plans related to electronics. Topics include, terminology, component identification, schematic symbols, cable drawings, electro-mechanical design from the electronic perspective. Special emphasis is placed on basic printed circuit board design. Students will design through-hole and surface mount printed circuit boards. Two hours lecture, three hours lab.

DRFT 079 3.0 Units
Blueprint Reading
Course Advisory: SCC minimum English and Math standards. Designed to provide an understanding and interpretation of a variety of blueprints. Emphasizes the ability to recognize and identify features of mechanical blueprints and architectural blueprints. Also includes basic development of freehand sketching abilities. *Two and one-half hours lecture, one and one-half hours lab.*

DRFT 080 3.0 Units
Civil Drafting I
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: IT 151 with a minimum grade of C. SCC minimum English and Math standards. An introductory course in civil drawing with emphasis on land division, breakdown of survey notes, office procedures and related math computations. Includes instruction in a variety of industry standard maps, including subdivision maps, assessors parcel maps and topographic maps. *Two hours lecture, three hours lab.*

DRFT 085 3.0 Units
Civil Drafting II
Prerequisite: DRFT 080 with a minimum grade of C. Course Advisory: IT 151 with a minimum grade of C; SCC minimum English and Math standards. Designed for the advanced civil drafting student with emphasis on computer programs and experience compatible with the industry standards. Includes the study of plan and profile, cross-section and earthwork calculations. *Two hours lecture, three hours lab.*

DRFT 092 1.0 to 3.0 Units
Special Problems
Prerequisite: DRFT 050. Individualized projects for advanced students who demonstrate competency to carry out individual work. Students may take this course up to the maximum number of units over multiple semesters. *Three to nine hours by arrangement.*

DRFT 130 3.0 Units
Advanced Printed Circuit Board Design
Prerequisite: DRFT 075 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. The student will learn how to design complex circuit boards from schematic layout to artwork generation. Course requires completion of a complete set of drawings for a printed circuit board, including proper documentation, all based on industry standards. Through-hole and surface mount technology are studied. *Two hours lecture, three hours lab.*

DRFT 140 3.0 Units
Surveying
Prerequisite: DRFT 080 with a minimum grade of C. Course Advisory: IT 151 with a minimum grade of C; SCC minimum English and Math standards. Presents the principles and practices of surveying. Topics include measurement of directions, distances and elevations. Students will learn the use and care of electronic survey equipment, transits, tapes and levels and be introduced to topics that include transverse calculations, horizontal and vertical curves, measuring standards and mapping. *Two hours lecture, three hours lab.*

Economics

Program Description
Economics is the study of how people make choices when faced with scarcity. It is therefore the study of the process of decision-making by individuals, business, governments, or any other group that must make such choices, and the study of the institutional context in which these decisions are made.

Associate Degree
Not offered in this discipline

ECON 001 3.0 Units
Principles of Economics (Macroeconomics)
Prerequisite: MATH 330 with a minimum grade of C. Course Advisory: Eligibility for ENGL 001. An introductory course focusing on aggregate economic analysis. Topics include: market systems, aggregate measures of economic activity, macroeconomic equilibrium, money and financial institutions, monetary and fiscal policy, international economics, and economic growth. Online work may be required. C-ID ECON 202. *Three hours lecture.*

ECON 002 3.0 Units
Principles of Economics (Microeconomics)
Prerequisite: MATH 330 with a minimum grade of C. Course Advisory: Eligibility for ENGL 001. This is an introductory course focusing on choices of individual economic decision-makers. Topics include scarcity, specialization and trade, market equilibrium, elasticity, production and cost theory, market structures, factor markets, and market failure. Online work may be required. C-ID ECON 201. *Three hours lecture.*

ECON 010 3.0 Units
Global Economics
Course Advisory: Eligibility for English 001 and SCC minimum Math standard. This is an introductory course that examines patterns of international trade and development. In this course students will understand how economies around the world are linked. Students will examine issues of global trade, trade policies, exchange rate systems, developing countries and controversies regarding trade policy. Students may be required to complete work online. *Three hours lecture.*

EDUC 050 3.0 Units
Introduction to Education
Course Advisory: SCC minimum English standard. Survey of American education as a social institution. The course is designed for, but not limited to, students who are considering entering the teaching profession. *Three hours lecture.*

Emergency Medical Technician

EMT 112 7.0 Units
Emergency Medical Technician (Basic)
Prerequisite: EMT 128 with a minimum grade of C. Course Advisory: Eligibility for ENGL 001 and SCC minimum Math standard. Based on state Emergency Medical Services Association regulations, the goal of the EMT (Basic) course is to acquire essential assessment & treatment skills for the delivery of prompt, efficient & safe pre-hospital emergency patient care. Application of these emergency care skills can minimize the risk of permanent disability to an individual. The course has lecture/discussion sessions & skills practice time. Students will attend a combined minimum of twenty-four (24) hours of observation time with an emergency department and an ambulance service. This clinical experience must include a minimum of ten (10) documented patient contacts wherein a patient assessment and other EMT skills are performed. Students successfully completing the course are eligible to take the National Registry Emergency Medical Technician (Basic) Exam as required by the state of California for certification. Certification enables students to qualify for employment with ambulance services, fire, or rescue services, search & rescue crews, ski patrol or related pre-hospital emergency care positions. NOTE: By law, applicants for certification must be at least 18 years of age. Students must present current Basic Life Support for Healthcare Providers course completion card at the mandatory information session in order to enroll in the course. Can be repeated every 2 years. *Five hours lecture, six hours activity.*

EMT 128 3.0 Units
Emergency Medical Responder
Course Advisory: SCC minimum English and Math standards. Provides the student with the basic emergency care procedures for sick and injured victims as a first responder including but not limited to: cuts, abrasions, broken bones, trauma injuries, burns and respiratory/cardiovascular emergencies. *Five hours lecture, three hours lab (8-week course).*

EMT 213 1.0 Units
Emergency Medical Technician (Basic) Refresher
Prerequisite: EMT 112 or previous EMT 213. Course Advisory: SCC minimum English and Math standards. Consists of review and update of EMT 112 course content and focuses on hands-on practice of all pre-hospital emergency skills, meeting the education requirements for EMT renewal. Topics and skills include: legal issues (including HIPAA), trauma, triage, use of airway/ventilation equipment with CPR, automated external defibrillation (AED), patient exam (medical & trauma), assessments and treatments for breathing, cardiovascular, neurologic, musculoskeletal, soft tissue injury, childbirth & environmental emergencies. Students apply assessments and treatments during pre-planned patient care skills scenarios to meet EMSA requirements for skills verification. May repeat every 1-2 years, ad infinitum (as stipulated by EMSA regulations for EMT I refresher and renewal). *Four and one-half hours lecture, four and one-half hours activity (3-week course).*

Emergency Medical Technician I
Job - Direct Certificate

The required courses must be completed with a grade of C or better.

REQUIRED COURSES .....Units
EMT 112 Emergency Medical Technician (Basic) 7
Total Units 7

Engineering

Engineering

Program Description
Solano Community College offers a two-year lower division Engineering Program that is designed to prepare students to transfer to a four-year university. The lower division Engineering Core Courses recommended by the Engineering Liaison Committee of the State of California have been coordinated between community colleges and the four-year colleges and universities throughout California. As part of our Engineering Program, an Associate in Science Degree in Engineering is available. Although most engineering students transfer to a four-year university, those with an AS degree can also be employed in entry-level jobs that require two years of college-level science and math.

Associate in Science Degree
The Associate in Science Degree in Engineering can be obtained by completing a total of 68-75 units, including the requirements listed below, the general education requirements, and electives. All courses for the major must be completed with a grade of C or better, or a grade of P if the course is taken on a Pass / No Pass basis.

Program Outcomes
1. Demonstrate analytical problem solving skills in Math, Physics, Chemistry and Engineering.
2. Conduct experiments and critically assess the data.
3. Write professional laboratory reports and/or give oral presentations.

REQUIRED COURSES ..... Units
CHEM 001 General Chemistry 5
MATH 020 Analytic Geometry and Calculus I 5
MATH 021 Analytic Geometry and Calculus II 5
MATH 022 Analytic Geometry and Calculus III 4
MATH 023 Differential Equations 4
PHYS 006 Physics for Science and Engineering 5
PHYS 007 Physics for Science and Engineering 5
Three courses from List A 10-13
Total Units 43-46

List A: (select three courses)..... **Units**
CIS 022 Introduction to Programming 3
DRFT 045 Introduction to Computer-Aided Drafting (CAD) 3
ENGR 017 Introduction to Electrical Engineering 5

ENGR 026 Mathematics and Engineering Problem Solving Using Matlab 4
OR
MATH 026 Mathematics and Engineering Problem Solving Using Matlab 4

ENGR 030 Engineering Mechanics: Statics 4
ENGR 045 Properties of Materials 4

Engineering

ENGR 001 1.0 Units
Introduction to Engineering
Course Advisory: Successful completion of ENG 001 and SCC minimum Math standard. A first, non-technical course for engineering students and students considering majoring in engineering. Introduction to different engineering fields, the campus life of engineering students, schedule guidelines, opportunities in engineering, engineers' roles in society, ethics in engineering, and strategies and approaches required to survive math, science, and engineering courses. Possible field trips. *One hour lecture.*

ENGR 017 5.0 Units
Introduction to Electrical Engineering
Prerequisite: MATH 023 with a minimum grade of C (may be taken concurrently), and PHYS 007 with a minimum grade of C. Course Advisory: Eligibility for ENG 001. Required for engineering majors, the course presents a study of basic circuit analysis techniques including Kirchhoff's laws, mesh-current, node-voltage, Thevenin and Norton equivalent; transient and steady-state responses of passive circuits; sinusoidal steady-state analysis; power calculations; operational amplifier; semiconductor devices. Weekly homework assignments and written tests, including a comprehensive final examination and lab reports, will be used to evaluate student success. *Four hours lecture, three hours lab.*

ENGR 026 4.0 Units
Mathematics and Engineering Problem Solving Using Matlab
Prerequisite: MATH 021 with a minimum grade of C (may be taken concurrently). This course covers methodologies for solving mathemathics and engineering problems. Students will also learn to perform mathematics and engineering computation and visualization using the MATLAB language. Students will write a variety of programs in the MATLAB language. Same as MATH 026. *Three hours lecture, three hours lab.*

ENGR 030 4.0 Units
Engineering Mechanics: Statics
Prerequisite: A minimum grade of C in both MATH 021 and PHYS 006. Course Advisory: Eligibility for ENG 001. This course, which is required for engineering majors, presents a study of the principles of statics of particles and rigid bodies as applied to equilibrium problems of two and three-dimensional structures, and the principles of friction, virtual work, and stability of equilibrium. *Four hours lecture.*

ENGR 045 4.0 Units
Properties of Materials
*Prerequisite: PHYS 006 with a minimum grade of C and CHEM 001 with a minimum grade of C. Course Advisory: Eligibility for ENG 00*1. This required course for engineering majors covers the application of basic principles of physics and chemistry to the structure and properties of engineering materials. Special emphasis is devoted to the relationship between microstructure and the mechanical properties of metals, polymers and ceramics, and the electrical, magnetic, and optical properties of materials. *Possible field trips. Three hours lecture, three hours lab.*

English

English

Program Description
The Associate in Arts Degree in English provides the academic and practical experience for further education in English at a four-year institution or a career in English or further education or careers in fields related to English. By completing this program, students may complete transfer requirements to the CSU system and UC system as well as public and private universities both in and out of California to pursue a Bachelor's Degree in English, English Literature or Creative Writing. A Bachelor's Degree in English may also include various emphases such as creative writing, composition/rhetoric, education, literature, or linguistics. Students who complete the A.A. Degree in English will also satisfy the requirements for the A.A.-T degree in English. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

Associate in Arts Degree
Students will take courses in English as well as in related fields required for English majors. The English program teaches writing, critical thinking, reading, and research skills as they apply to the areas of composition, creative writing, and the analysis of literature. Course work in creative writing is presented in sequenced writing workshops and courses in literary publishing. Course work in literature explores primarily British and American writers through genre, survey, figure, and thematic courses. The Associate in Arts Degree in English can be obtained by completing a total of sixty (60) units, including the twenty-five (25) to twenty-six (26) units for the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis

Program Outcomes
Students who complete the English Associate Degree will be able to:

1. Demonstrate an ability to compose and communicate using appropriate rhetorical patterns and writing strategies.
2. Demonstrate college-level reading, writing, and analytical skills.
3. Demonstrate an understanding of the importance and influence of literature's study of the human condition in shaping and reflecting intellectual history and cultural identity.
4. Demonstrate, through the study and analysis of literature from a variety of cultural or ethnic backgrounds and sexual orientations, an ability to recognize and examine assumptions about difference and social norms and an understanding of how the experience of reading literature from different perspectives can better prepare one for meaningful participation in a diverse global community.
5. Explore and demonstrate through creative writing and/or analytical techniques, the practice and study of diverse literatures and publishing.

REQUIRED COURSES	**Units**
The courses are listed in the suggested sequence.	
ENGL 002 Critical Thinking and Writing About Literature	4
Two courses from List A	6
Two courses from List B	6
Two courses from List C	6
One course from List D	3
Total Units	**25**

List A: (select two courses)	**Units**
ENGL 030 Survey of American Literature I	3
ENGL 031 Survey of American Literature II	3
ENGL 040 Survey of English Literature I	3
ENGL 041 Survey of English Literature II	3

List B: (select two courses)	**Units**
ENGL 006 Creative Writing 1	3
ENGL 021 Introduction to Poetry	3
ENGL 023 Introduction to the Modern Novel	3
ENGL 024 Introduction to the Short Story	3
Any course from LIST A not already used	3

List C: (select two courses)	**Units**
ENGL 007 Creative Writing II	3
ENGL 010 Creative Writing III	3
ENGL 018 Introduction to Mythology	3
ENGL 036 Multi-Ethnic Literature in America	3
ENGL 044 Introduction to Shakespeare	3
ENGL 058 Creative Writing: The Literary Magazine I	3
Any course from List A or B not already used	3

List D: (select two courses)	**Units**
ENGL 049 English Honors	1 – 3
ENGL 059 Creative Writing: The Literary Magazine II	3
HUMN 001 What it Means to be Human	3
Any course from List A, B, or C not already used	3

English

Associate in Arts in English for Transfer (ADT: A.A.-T)

Program Description
The Associate in Arts Degree in English for Transfer (A.A.-T) is for students who intend to complete a bachelor's degree in English at a CSU. Students will take courses in English as well as related fields required for English majors. This program teaches writing, critical thinking, reading, and research skills as they apply to the areas of composition, creative writing, and the analysis of literature. Course work in creative writing is presented in sequenced writing workshops and courses in literary publishing. Course work in literature explores primarily British and American writers through genre, survey, figure, and thematic courses.

Associate in Arts in English for Transfer
Students who complete this 19-unit major will be guaranteed admission with junior status to the California State University system, though not to a particular campus or major. In all cases, students should consult with a counselor for mor information on university admission and transfer requirements.

To earn the Associate in Arts in English for Transfer degree, students must:

1. Complete 60 semester units that are eligible for transfer to the California State University, including both of the following:
   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements
   b. A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.
2. Obtain a minimum grade point average of 2.0.

Program Outcomes
Students who complete an Associate in Arts in English for Transfer will be able to:

1. Demonstrate an ability to compose and communicate using appropriate rhetorical patterns and writing strategies.
2. Demonstrate college-level reading, writing, and analysis skills.
3. Demonstrate an understanding of the importance and influence of literature's study of the human condition in shaping and reflecting intellectual history and cultural identity.
4. Demonstrate, through study and analysis of literature from a variety of cultural or ethnic backgrounds and sexual orientations, an ability to recognize and examine assumptions about difference and social norms and an understanding of how the experience of reading literature from different perspectives can better prepare one for meaningful participation in a diverse global community.
5. Explore and/or demonstrate, through creative writing and/or analytical techniques, the practice and study of diverse literatures and publishing.

REQUIRED COURSES	**Units**
ENGL 002 Critical Thinking and Writing About Literature	4
Two courses from List A	6
Two courses from List B	6
One course from List C	3
Total Units	**19**

List A: (select two courses)	**Units**
ENGL 030 Survey of American Literature I	3
ENGL 031 Survey of American Literature II	3
ENGL 040 Survey of English Literature I	3
ENGL 041 Survey of English Literature II	3

List B: (select two courses)	**Units**
ENGL 006 Creative Writing I	3
ENGL 007 Creative Writing II	3
ENGL 010 Creative Writing III	3
ENGL 018 Introduction to Mythology	3
ENGL 021 Introduction to Poetry	3
ENGL 023 Introduction to the Modern Novel	3
ENGL 024 Introduction to the Short Story	3
ENGL 036 Multi-Ethnic Literature in America	3
ENGL 044 Introduction to Shakespeare	3
ENGL 058 Creative Writing: The Literary Magazine I	3
Any course from LIST A not already used	3

English

List C: (select one course) ..... **Units**
ENGL 059 Creative Writing: The Literary Magazine..... 3
HUMN 001 What it Means to be Human..... 3
Any course from List A or B not already used..... 3

Required Major Total Units: **19**
CSU General Education or IGETC Pattern Units ... 37-39
CSU Transferable Electives (as needed to reach 60 transferable units)* **11-13**
Total Degree Units **60**

** 9 units may be double counted toward both the major area of emphasis and CSU General Education or IGETC Pattern. Consult with a counselor for more information on completing this degree.*

ENGL 001 4.0 Units
College Composition
Corequisite: LR 010. Prerequisite: A high school GPA of 2.7 or better; OR a "B" or better in Junior or Senior High school English; or a "C+" or better in AP English; or a score of 90 or better within on the sentence skills section of the assessment test; or SAT verbal score of at least 500; or ACT score of at least 23; or a grade of "Pass" in ENGL 370 or 348E or 380 or 348G or 360; or recommendation of a counselor or English instructor based on a Multiple Measures Evaluation; or concurrent enrollment in English 348D or 310D. A writing course which emphasizes critical reading, expository and argumentative writing, and mastery of library research techniques. It includes instruction and practice in critical thinking, in analytical reading and evaluation of written work, and in the methods of clearly communicating and supporting ideas in organized, coherent essays (min 750 words each). Students are required to write an average of 7500 formal words, including a research paper, based on essays, literature read in class, personal experience, and college-level research. C-ID ENGL 100. *Four hours lecture.*

ENGL 002 4.0 Units
Critical Thinking and Writing About Literature
Prerequisite: ENGL 001 with a minimum grade of C. The development of critical thinking, reading, and writing skills as they apply to the analysis of fiction, poetry and drama, literary criticism, and related non-fiction from diverse cultural sources and perspectives. Emphasis is on the techniques and principles of effective written argument as they apply to literature. Essay examinations, critical papers, and some research projects are required. C-ID ENGL 110. *Four hours lecture.*

ENGL 004 4.0 Units
Critical Thinking and Composition: Language in Context
Prerequisite: ENGL 001 with a minimum grade of C. Course Advisory: SCC minimum Math standard. A study of the process of thought and its representation in writing, focusing on the formation of responsible opinions and their presentation in written argument. This course offers practice in the intellectual skills necessary for critical thinking, including observation, analysis, and research; it provides instruction in the organization, arrangement, and stylistic presentation of informative and argumentative writing; it examines the informative and argumentative writing of others and requires students to write their own analytical and argumentative essays. Essay examinations and critical papers are required. C-ID ENGL 105. *Four hours lecture.*

ENGL 006 3.0 Units
Creative Writing I
Prerequisite: ENGL 001 with a minimum grade of C. An introductory study of creative writing techniques in multiple genres. Students develop self-expression through writing and through individual and class criticism of student work. Frequent writing is required. C-ID ENGL 200. *Three hours lecture.*

ENGL 007 3.0 Units
Creative Writing II
Prerequisite: ENGL 006 with a minimum grade of C. An intermediate study of creative writing techniques. Students refine skills of self-expression through individual and class criticism of student work. Frequent writing and intense individual and class criticism of student work are requirements. *Three hours lecture.*

English

ENGL 010 3.0 Units
Creative Writing III
Prerequisite: ENGL 007 with a minimum grade of C. An advanced study of creative writing skills. Students will be expected to show proficiency in at least one genre (poetry, short story, drama, and novel). Frequent writing, intense individual and class criticism, and the compilation of an individual portfolio of genre-specific creative work are requirements. *Three hours lecture.*

ENGL 018 3.0 Units
Introduction to Mythology
Prerequisite: ENGL 001 with a minimum grade of C. A survey of the major elements of mythology, its history and development as part of the human experience with a central focus on Western mythology, its origins and development as well as its appearance in and influence on literature. Examinations and papers are required. *Three hours lecture.*

ENGL 021 3.0 Units
Introduction to Poetry
Prerequisite: ENGL 001 with a minimum grade of C. A study of poetry as a form of literature and art. This course examines the elements of poetry, the historical development of the genre, and the major themes treated by poetry. Examinations and critical papers are required. *Three hours lecture.*

ENGL 023 3.0 Units
Introduction to the Modern Novel
Prerequisite: ENGL 001 with a minimum grade of C. A study of selected novels written during the 20th Century, including the development of the modern novel as a form of literature and the specific techniques and themes employed by novelists. *Three hours lecture.*

ENGL 024 3.0 Units
Introduction to the Short Story
Prerequisite: ENGL 001 with a minimum grade of C. A study of the short story as a form of literature, examining the historical development of the short story, the literary elements of the genre, and the major themes treated by the short story. Examinations and critical papers are required. *Three hours lecture.*

ENGL 030 3.0 Units
Survey of American Literature I
Prerequisite: ENGL 001 with a minimum grade of C. A survey of literature written in the United States from the time of early settlement to the end of the Civil War. Through focus on significant works of diverse writers, attention is given to major literary movements and to understanding, comparing, and contrasting the diverse political, religious, social, and cultural elements of literature in the United States. Written examinations and critical papers are required. C-ID ENGL 130. *Three hours lecture.*

ENGL 031 3.0 Units
Survey of American Literature II
Prerequisite: ENGL 001 with a minimum grade of C. A survey of literature written in the United States from the end of the Civil War to the present. Through focus on significant works of diverse writers, attention is given to significant literary movements and to understanding, comparing and contrasting the diverse political, religious, social and cultural elements of literature in the United States. Written examinations and critical papers are required. C-ID ENGL 135. *Three hours lecture.*

ENGL 036 3.0 Units
Multi-Ethnic Literature in America
Prerequisite: ENGL 001 with a minimum grade of C. A study of representative literature by various American multicultural writers: Asian American, African American, European American, Latina/o, and Native American. Written examinations and critical papers are required. *Three hours lecture*

ENGL 040 3.0 Units
Survey of English Literature I
Prerequisite: ENGL 001 with a minimum grade of C. A study of major works of British authors from the Anglo-Saxon period through the Eighteenth Century, in poetry, prose, and drama. The course focuses on the development of a literature in English and explores how this literature responds to and shapes its historical and cultural context. It introduces students to the use of critical theory in the analysis of literature. Examinations and critical papers are required. C-ID ENGL 160. *Three hours lecture.*

English

ENGL 041 3.0 Units
Survey of English Literature II
Prerequisite: ENGL 001 with a minimum grade of C. A study of major works in poetry, prose, and drama from approximately 1798 to the present. The course focuses on the Romantic Movement, the Victorian Age, early 20th Century, modernism, postwar literature, post-colonial literature, and late 20th Century post-modernism. It examines the shifting relationship between literature and its historical and cultural contexts. It introduces students to questions of canon formation and the use of critical theory in the analysis of literature. Examinations and critical papers are required. C-ID ENGL 165. *Three hours lecture.*

ENGL 044 3.0 Units
Introduction to Shakespeare
Prerequisite: ENGL 001 with a minimum grade of C. An introduction to Shakespearean drama and poetry through a study of representative comedies, histories, tragedies, and sonnets. Students will be concerned with dramatic and poetic principles as well as with an understanding of the historical context into which Shakespearean drama fits. Examinations and critical papers are required. *Three hours lecture.*

ENGL 049 1.0 to 3.0 Units
English Honors
Prerequisite: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a minimum grade of B; an ability to work independently; permission of the School Dean based on instructor availability. An independent study project which generally results in a critical examination of literature of significant creative and/or analytical writing. Students may take this course up to the maximum number of units over multiple semesters. *Three to nine hours by arrangement with instructor and School Dean.*

ENGL 058 3.0 Units
Creative Writing: The Literary Magazine I
Prerequisite: ENGL 001 with a minimum grade of C. A course in the contemporary American Literary magazine which will also produce its own literary magazine: requesting submissions, reviewing them, selecting material, arranging contents and determining the format. Students may write creatively and make their work available for class commentary, as well as for possible inclusion in the magazine. *Three hours lecture.*

ENGL 059 3.0 Units
Creative Writing: The Literary Magazine II
Prerequisite: ENGL 058 with a minimum grade of C. An advanced study of the contemporary American literary magazine and the practice of publishing its own literary magazine, The Suisun Valley Review, where the student is expected to assume a lead editorial role. Students may write creatively and make their work available for class commentary, as well as for possible inclusion in the magazine. *Three hours lecture.*

ENGL 062 3.0 Units
Analytical Reading
Prerequisite: Eligibility for ENGL 360. A college-level reading course designed to improve and enhance the student's ability to understand inferential reading passages. Emphasis is on the development of critical reading skills, including the ability to understand the author's point of view and to engage in textual analysis. In addition, the student should develop the ability to successfully critique college-level reading material by analyzing a variety of prose structures. *Three hours lecture.*

ENGL 310 .5 to 1.5 Units
Writing Skills Lab
Upon registration, each student's writing sample will be used to identify his/her individual writing problems, and an individualized program will be designed to provide instruction in those problem areas. Credit will be earned upon successful completion and mastery of the student's course of study and an appropriate number of hours as specified in each student's contract. Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit, Pass/No Pass only course. *One to three hours by arrangement.*

ENGL 310A 1.5 Units
Introductory Reading and Writing Skills
Intensive instruction in developmental language processing skills, reading and writing skills, and general college survival skills. Success in this lab will be based on attendance, satisfactory completion of in-class reading and writing assignments. This is a Pass/No Pass only course. *Two hours lab, two and one-half hours by arrangement.*

ENGL 310D 1.0 Units
Advanced English Skills Lab
Corequisite: ENGL 001. Prerequisite: A high school cumulative GPA of 2.3 or better; or a "C" or better in Junior or Senior English; or a score of 70 or better on the sentence skills section of the assessment test; or SAT verbal score of at least 500; or ACT score of at least 23; or a grade of "Pass" in ENGL 350, 355, 370, 348E, 380, 348G, 359, or 360; or recommendation of a counselor or English instructor based on a Multiple Measures Evaluation. Intensive instruction in advanced reading and writing skills for students who are currently taking English 001 or other transfer-level content courses. This class is designed to help students further hone their craft as writers and readers. Success in this lab will be based on attendance and satisfactory completion of in-class reading and writing assignments. This is a pass/no pass course. *Three hours lecture.*

ENGL 360 5.0 Units
Focused English Fundamentals
Prerequisite: A score of 0-89 on the sentence skills section of the assessment test; OR recommendation of a counselor or English instructor based on a Multiple Measures Evaluation (decided upon by the English department). This is an intensive English course which gives students the tools to read and write the sort of sophisticated texts required of them in transfer level courses. There is no lab component to this course. This is a Pass/No Pass only course. *Five hours lecture.*

English as a Second Language

ESL 074 6.0 Units
Intermediate Integrated ESL Skills
Prerequisite: Minimum grade of C in the following: ESL 372 and ESL 374, ESL 334 or ESL 334B, or LOEP score: 2/3 in the range of 50-85. Brings together reading, composition, and grammar skills for intermediate-level ESL students. Students will study vocabulary and comprehension strategies for academic reading, read extensively for fluency, compose paragraph-length compositions, and develop control of a range of sentence structures and verb forms. Not available to students who have completed both ESL 078 and ESL 079. Not available to students who have completed ESL 074A and/or ESL 074B. *Six hours lecture.*

ESL 074A 3.0 Units
Intermediate Integrated ESL Skills: Part 1
Prerequisite: Minimum grade of C in the following: ESL 372 and ESL 374, ESL 334 or ESL 334B, or LOEP Score: 2/3 socres in the range of 50 - 85. The first half of a two-part intermediate integrated skills course, which brings together reading, composition, and grammar skills for intermediate-level ESL students. Students will study vocabulary and comprehension strategies for academic reading, read extensively for fluency, compose paragraph-length compositions, and develop control of a range of sentence structures and verb forms. Not available to students who have completed ESL 074. Not available to students who have completed both ESL 078 and 079. *Three hours lecture.*

ESL 074B 3.0 Units
Intermediate Integrated ESL Skills Part 2
Prerequisite: Minimum grade of C in the following: ESL 372 and ESL 374, ESL 334 or ESL 334B, or LOEP Scores: 2/3 scores 50 - 85, or instructor approval. Course Advisory: ESL 074A with a minimum grade of C. The second half of a two-part intermediate integrated skills course, which brings together reading, composition, and grammar skills for intermediate-level ESL students. Students will study vocabulary and comprehension strategies for academic reading, read extensively for fluency, compose paragraph-length compositions, and develop control of a range of sentence structures and verb forms. Not available to students who have completed ESL 074. Not available to students who have completed ESL 078 and ESL 079. *Three hours lecture.*

ESL 077 3.0 Units
Conversation/Pronunciation Skills
Corequisite: ESL 077L. Prerequisite: Minimum grade of C in ESL 372, ESL 373, or ESL 374. Course Advisory: ESL Assessment Test Score: At or above Level 2. Offers practice in acquiring patterns of American English grammar and pronunciation for the purpose of conversing clearly and completely. Includes practice in critically evaluating semantic and syntactic contrasts among various languages represented by students. *Three hours lecture.*

English as a Second Language

ESL 077L 0.5 Units
ESL 077 Lab
Corequisite: ESL 077. Course Advisory: Familiarity with basic reading and writing skills: English alphabet letter names, numbers, and ability to follow directions. Provides structured listening comprehension and pronunciation practice, basic grammar practice, and elementary word processing practice for students new to the English language who wish to improve their own ability to speak and understand clearly. Instruction is individualized. Materials for the lab may be purchased in the bookstore. This is an Open Entry/Open Exit, Pass/No Pass only course. *One and one-half hours lab.*

ESL 094 6.0 Units
Advanced ESL Integrated Skills
Prerequisite: A minimum grade of C in any of the following: ESL 074, ESL 074B, ESL 078, ESL 079 or LEOP scores; at least 2/3 scores over 85. Brings together the reading, composition, and grammar skills offered in the advanced, discrete-skills courses ESL 055, ESL 006, and ESL 087. Students will study vocabulary and comprehension strategies for academic reading, read extensively for fluency, compose paragraph- and essay-length compositions, and practice the grammatical structures necessary to performing a variety of rhetorical tasks. Prepares ESL students for the reading and writing demands of 300-level English courses. *Six hours lecture.*

ESL 094A 3.0 Units
Advanced ESL Integrated Skills Part 1
Prerequisite: A minimum grade of C in any of the following: ESL 078, ESL 079, ESL 074, ESL 074B, or LEOP scores: at least 2/3 over 85, or instructor approval. The first half of a two-semester advanced integrated skills course, bringing together the reading, composition, and grammar skills to prepare non-native English speakers for the reading and writing demands of 300-level English courses. Students will study vocabulary and comprehension strategies for academic reading, read extensively for fluency, compose paragraph- and essay-length compositions, and practice the grammatical structures necessary to performing a variety of rhetorical tasks. Not available to students who have already taken ESL 094. Not available to students who have already taken ESL 055 and ESL 006. *Three hours lecture.*

ESL 094B 3.0 Units
Advanced ESL Integrated Skills Part 2
Prerequisite: A minimum grade of C in any of the following: ESL 074 or both ESL 078 and ESL 079, or both ESL 074A and ESL 074B, or LOEP scores: 2/3 above 85, or intstructor approval. Course Advisory: ESL 094A with a minimum grade of C. The second half of a two-semester advanced integrated skills course, bringing together the reading, composition, and grammar skills to prepare non-native English speakers for the reading and writing demands of 300-level English courses. Students will study vocabulary and comprehension strategies for academic reading, read extensively for fluency, compose paragraph- and essay-length compositions, and practice the grammatical structures necessary to performing a variety of rhetorical tasks. Not available to students who have already completed ESL 094. Not available to students who have already taken ESL 055 and ESL 006. *Three hours lecture.*

ESL 330 0.5 to 1.5 Units
ESL Lab
Course Advisory: Familiarity with basic reading and writing skills: English alphabet letter names, numbers, and ability to follow directions. Provides structured listening comprehension and pronunciation practice, basic grammar practice, and elementary word processing practice for students new to the English language who wish to improve their own ability to speak and understand clearly. Students may take this course up to the maximum number of units over multiple semesters. This is an Open Entry/Open Exit, Pass/No Pass only course. *One and one-half to four and one-half hours lab.*

ESL 334 6.0 Units
Introductory Integrated ESL Skills: Reading, Writing, and Grammar
Course Advisory: Familiarity with basic reading and writing skills, English alphabet letter names, numbers, and ability to follow directions, and ESL test score for "Level 1." Introduces reading, writing, and grammar skills for low-intermediate-level ESL students. Students will study vocabulary and comprehension strategies, read for fluency, compose paragraphs, and develop familiarity with basic English sentence patterns and verb forms. Not available to students who have completed ESL 334A or 334B. *Six hours lecture.*

English as a Second Language

ESL 334A 3.0 Units
Introductory Integrated ESL Skills: Reading, Writing, and Grammar Part 1
Prerequisite: LOEP Assessment test score up to 30. The first half of a two-semester introductory integrated skills course, introducing the reading, writing and grammar skills for low-intermediate level non-native English speakers. Students will study vocabulary and comprehension strategies, compose paragraphs and develop familiarity with basic English sentence patterns and verb forms. Not available to students who have completed ESL 334. *Three hours lecture.*

ESL 334B 3.0 Units
Introductory Integrated ESL Skills: Reading, Writing, and Grammar Part 2
Prerequisite: LOEP Assessment test scores up to 30. Course Advisory: ESL 334A with a minimum grade of C. The second half of a two-semester introductory integrated skills course, introducing the reading, writing and grammar skills for low-intermediate level non-native English speakers. Students will study vocabulary and comprehension strategies, compose paragraphs and develop familiarity with basic English sentence patterns and verb forms. Not available to students who have completed ESL 334. *Three hours lecture.*

ESL 373 3.0 Units
ESL Basic Oral Communication Skills
Corequisite: ESL 373L. Course Advisory: Familiarity with basic reading and writing skills, English alphabet letter names, numbers, and ability to follow directions and ESL Assessment Test Score: Level 3. For students still developing fluency in spoken English, this course offers practice in mastering the patterns of spoken American English through study of the English sound system (pronunciation), conversation strategies, related grammar, writing, and spelling at a high-beginning level of proficiency with oral communication and listening as the focus. *Three hours lecture.*

ESL 373L 0.5 Units
ESL 373 Lab
Corequisite: ESL 373. Provides structured listening comprehension and pronunciation practice, basic grammar practice, notetaking practice and elementary word processing practice for students new to the English language who wish to improve their own ability to speak and understand clearly. Instruction is individualized. Materials for the Lab may be purchasd in the Solano College Bookstore. *One and one-half hours lab.*

ESL 374 3.0 Units
Fundamentals of ESL Grammar
Course Advisory: Familiarity with basic reading and writing skills, English alphabet letter names, numbers, and ability to follow directions and ESL Assessment Test Score: Level 3. The major goals of this course are increasing fluency and comprehension in speaking, listening, reading and writing English through the careful, guided study of grammar: Present, future and past verb tenses, singular and plural nouns, constructing simple sentences, special verbs and patterns, idioms to facilitate communication, spelling and study skills for learning a language. Attendance, participation, completion of quizzes and homework assignments requiring reading and writing will determine the student's success in completing the course. *Three hours lecture.*

ESL 534A 0.0 Units
Introductory Integrated ESL Skills: Reading, Writing and Grammar Part 1
Course Advisory: Familiarity with basic reading and writing skills, English alphabet letter names, numbers, and ability to follow directions, and ESL test score for "Level 1." The first half of a non-credit, two-semester introductory integrated skills course. This course introduces reading, writing and grammar skills for low-intermediate level English learners. Students will study vocabulary and comprehension strategies, compose paragraphs and develop familiarity with basic English sentence patterns and verb forms. *Three hours lecture.*