



# AS - Computer Engineering 23-24

## Recommended Plan of Study - Counseling

All courses with a + sign indicate a pre-requisite or co-requisite

GP

Term 1 (Fall/Spring: Max. 19 units, 12-15 u. recommended)	Units	Term 4 (Fall/Spring: Max. 19 units, 12-15 u. recommended)	Units
Gen. Ed. Area D2 MATH 150+, Calculus & Analytic Geometry	5	MATH 250+, Calculus & Analytic Geometry	4
%ENGR 110+, Introduction to Engineering	3	PHYS 120+, General Physics	4
General Education Area B #POLS 101	3	CS 140+, Assembly Language and Computer Architecture	3
Gen Ed. Area D1 (English 101+)	3	Programming Option, CS 130+ or 131+ or 132+	3
# Recommended	Total	Some CIS courses may require an additional prerequisite	Total
	14		14
Term 2 (Fall/Spring: Max. 19 units, 12-15 u. recommended)	Units	Term 5 (Fall/Spring: Max. 19 units, 12-15 u. recommended)	Units
MATH 160+, Calculus & Analytic Geometry	4	MATH 230+, Introduction to Ordinary Differential Equations	4
Gen. Ed. Area A PHYSICS 110+, General Physics	4	MATH 220+, Linear Algebra	4
Gen Ed. Area E Program. Opt. CS 120 or 121 or 122	3	ENGR 230+, Circuit Analysis	4
General Education Area F #HIST 110	3	CS 150+, Discrete Structures	3
Total	14	Total	15
Transfer or Graduate			
Term 3 (Fall/Spring: Max. 19 units, 12-15 u. recommended)		Units	
Gen Ed. Area C #ART 103	3	The state requires all students to have a Comprehensive Educational Plan. Make a counseling appointment as soon as enrollment is established on any term. Come by the Counseling Center or call.	
(Summer: Max. 15 units, 12 units recommended)	3		
Total	3		

Take Summer classes if needed to complete the program in a timely manner

Major Required Courses: (48 units)	
MATH 150+, Calculus & Analytic Geometry	5
MATH 160+, Calculus & Analytic Geometry	4
MATH 220+, Linear Algebra	4
MATH 230+, Introduction to Ordinary Differential Equations	4
MATH 250+, Calculus & Analytic Geometry	4
PHYS 110+, General Physics	4
PHYS 120+, General Physics	4
ENGR 110+, Introduction to Engineering	3
ENGR 230+, Circuit Analysis	4
CS 140+, Assembly Language and Computer Architecture	3
CS 150+, Discrete Structures	3
Programming Options: 6 unit seq. based on selected transfer	
Programming and Algorithms	
CS 120, C/C++ or CS 121, Java or CS 122, Python	3
CS 130+, C++ or CS 131+, Java or CS 132+ Python	3
Units Required for the Major: 48	
other requirements for degree	
General Education	15
Proficiency (See Proficiency Requirements)	*
Electives	0
Minimum Units Required for AS Degree 60	

- Other Requirements:**
- Minimum grade of "C" required on each course
  - Maximum of 12 pass/no-pass units accepted for the Degree
  - Refer to catalog or online website for course listings and descriptions

AS General Education: At least 3 units from each of the following areas below:  
**A, B, C, D1, D2, E, and F. Minimum Total GE Units Required: 21**

Area A Natural Sciences: (min. 3 units)
ANTH 101, 101L
ASTR 101+, 101L+
BIOL 100, 101+, 101L+, 102, 103, 104, 110+, 120+, 201+, 202+, 204+,
CHEM 101+, 102+, 110+, 120+, 210+, 220+
ELTE 101
ERSC 101+
GEOG 101+, 101L+, 102, 102L+
GEOL 101+, 101L+, 102+, 102L+
PHYS 101, 102+, 110+, 120+, 211+
PSCI 101

Area B Social & Behavioral Sciences: (min. 3 units)
AJ 201, 204, 206
ANTR 102, 103, 110, 112, 140
BUS 101, 212
CFE 102, 103+
COMM 217+
DFST 105, 106, 110
ECON 100, 101+, 102+, 110
GEOG 105, 106, 110
HIST 101, 102, 104, 105, 107, 108, 110, 111, 113, 114, 116+, 118, 119
POLS 101, 103, 200, 201+, 202+, 203+
PSY 101, 200+, 201+, 212+, 230+, 232, 233+, 234+, 235+, 236+

Area C Humanities: (min. 3 units)
ART 100, 101, 102, 103, 104, 106, 110, 113, 120, 132, 135, 136+, 137+, 140, 145, 150, 163+,
CHIN 101, 102+, 201+, 202+
COMM 112, 114, 214+, 217+, 219+
DA 101
DFST 101, 102+, 105, 106, 201+, 202+
ENGL 102, 111+, 112+, 221+, 222+, 225+, 227+, 230+, 231+, 235+, 242+, 253+, 256+, 257+, 259+, 265+, 279+
FREN 101, 102+, 201+, 202+, 203+
FTV 101, 103, 107, 108, 201, 203, 241, 251, 261
GER 101, 102+, 201+, 202+
HIST 101, 102, 104, 105, 107, 108, 110, 111, 113, 115, 118, 119
LATN 101, 102+, 201+
MUS 101, 105, 111, 121+, 131, 132+, 151+, 153+, 185+, 231+, 232+, 251A+, 253A+, 253B+
MUSC 102, 103, 107, 108, 109
NF 150
PHIL 105, 106, 108, 109
PHOT 107
PHTC 101, 150+, 201+
SPAN 101, 110SS, 102+, 201+, 202+, 210SS+, 220SS+
THA 101, 102, 103, 110, 115A, 115B+, 116A+, 116B+, 117A+, 117B+, 118A+, 118B+, 121A, 121B, 130, 133, 225+, 239

**Area D Language & Rationality: (min. 3 units from (1) and 3 units from (2))**

1. *Academic Composition:* Courses fulfilling the written composition requirement shall be designed to include both expository and argumentative writing.
  - ENGL 101+
2. *Communication and Analytical Thinking*
  - BUS 113+
  - CA 103
  - CS 120, 121, 122, 123
  - COMM 101, 107, 109, 112, 114, 115, 217+, 219+
  - ENGL 102+, 103+
  - GEOG 201, 205
  - MATH 110+, 115+, 116+, 120+, 124+, 128+, 135+, 140+, 148+ 150+, 160+, 220+, 230+, 250+
  - PHIL 101, 106, 110, 201+

**Area E - Additional Breadth: (min. 3 units)**

- From areas A\*\*, B\*\*, C\*\*, D2,\*\* or
- DA 111
  - HD 100, 101, 102, 103, 105
  - HE 101, 120, 201
  - KINT 100
  - LIB 107, 110
  - NF 100, 102, 103, 110

Any DA activity course(s) from DA102-205, except DA 107A-C, 108, 109, and 111. Any Kinesiology Fitness (KINF) activity course, Intercollegiate Athletics (IATH) activity course, or up to 4 units for military experience.

\*\* Courses must be taken from a discipline not previously selected.

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Area F Diversity Studies: (min. 3 units)	
ANTH 102, 112	FTV 201, 203
BUS 212	HE 201+
CFE 116+	HIST 110, 111, 113
COMM 114, 217+, 219+	MUSC 107, 108
DFST 105, 106	POLS 202+
ECON 110	SOC 105, 110, 116
ENGL 250+, 253+, 256+, 257+, 259+	THA 239

#### Proficiency Requirements

Proficiency requirements exist for the areas of Writing and Math. Students must demonstrate competency in each of these areas in order to be eligible for the associate degree.

##### A. WRITING

Completion of ENGL 101 with a minimum grade of "C." NOTE: ENGL 101 may be taken with the Pass/No Pass option; however, students are cautioned that other colleges and universities may not accept ENGL 101 courses taken on a Pass/No Pass basis, especially for satisfaction of general education and major requirements. Students planning to transfer should check college catalogs for applicable policies.

##### B. MATHEMATICS

Completion of MATH 102 or higher or CIS 121 with a satisfactory grade or placement by AVC assessment into a math course higher than MATH 102.

**\*Fulfilling proficiencies** will not require any extra units if the competencies are demonstrated by including the required courses in the general education, or major requirements, or by satisfying the reading proficiency through AVC's policy.

**Electives:** The remaining number of units (up to a minimum of 60) are considered electives. Any course that has already been counted toward (1) the general education requirements, or (2) the major, cannot be used as an elective. Any course with a designation of "AVC" at the end of a course description can be used as an elective.

**Grade Point Average Requirement:** An overall grade point average of 2.0 ("C" average) is required.

**Double Counting:** While a course might satisfy more than one general education requirement, it may not be counted more than once for these purposes. A course may be used to satisfy both a general education requirement and a major or area of emphasis requirement.

• **Residency:** Minimum of 12 units completed at AVC with a minimum of 9 of those units completed from the certificate/major. (credit earned by examination will not be included in these 12 units) Title 5, Section 54000:<http://ccr.oal.ca.gov>

**Requirements for Two or More Associate Degrees:** To be eligible for multiple associate degrees, a student must have completed all of the graduation requirements for each degree.

**Transfer:** Students planning to continue studies at a four-year college or university after AVC should visit the Transfer Resource Center or the Counseling Center and consult with a counselor as soon as possible to develop a plan of studies. Additional preparation for the major information on official transfer articulation agreements from AVC to many CSU/UC campuses can be found at the following Web site: [www.assist.org](http://www.assist.org)

The "**Catalog Rights Policy**" sets forth the criteria used for determining the degree requirements under which students may graduate. Please refer to the AVC Catalog for a detailed description or consult with a counselor.

**Advisory:** A condition of enrollment that a student is advised, but not required, to meet before or in conjunction with enrollment in a course or educational program.

**Prerequisite:** A condition of enrollment that a student is required to meet in order to demonstrate current readiness for enrollment in a course or educational program. Prerequisites are enforced and a student will be blocked from enrolling or involuntarily dropped after enrolling if the student does not meet the stated prerequisite. A student must complete a course prerequisite with a satisfactory grade of A, B, C or P (pass).

**Corequisite:** A condition of enrollment consisting of a course that a student is required to simultaneously take in order to enroll in another course. Corequisites are enforced and a student will be blocked from enrolling if the student does not meet the stated co-requisite.