

A.S. Computer Engineering 24-25



ABOUT THIS MAJOR

The Associate in Sciences in Computer Engineering will provide students with a fundamental knowledge of Computer Engineering, to enhance their computational and problem solving skills, sharpen their critical thinking, and to ensure proper preparation for junior level Computer Engineering coursework at a university. Students completing this degree should realize that there are many sub disciplines in Computer Engineering and most require a similar core education, but not all. For more information, visit the [Mathematics, Sciences, and Engineering](#) division.

TO EARN A DEGREE A STUDENT MUST COMPLETE THE FOLLOWING:

- [1] Completion of a minimum of 60 degree applicable units
- [2] Completion of General Education
- [3] Minimum grade point average of 2.0
- [4] A "C" or better in all courses required for the major and ENGL 101

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>

RECOMMENDED PATHWAY AS: Computer Engineering

The Recommended Plan of Study is determined by the discipline faculty. All **Program Electives** for the Major and **General Education** Courses, Areas A-F, are recommended only. Except for ENGL 101, you can make other selections for this area if you choose ([See back page for options](#)).

- [*] = Courses will fulfill the completion requirements for Major & Gen Ed I
- [#] recommended courses may select other options.
- Electives are courses that count toward your credits for graduation, but not specific to degree of study
- Take classes in Summer or Intersession if needed to complete your degree in a timely manner!
- Fall/Spring: Max 19 units, 12-15 units Recommended.

TERM 1	
Course	Units
ENGR 110	3
AVC Gen Ed- AREA D2: * MATH 150	5
AVC Gen-Ed- AREA D1: ENGL 101	3
AVC Gen Ed- AREA B: #POLS 101	3
Total Units	14

TERM 2	
Course	Units
PROGRAM ELECTIVE: CS 120 or CS 121 or CS 121	3
MATH 160	4
AVC Gen Ed- AREA F: #HIST 110	3
AVC Gen Ed- AREA B: * PHYS 110	4
Total Units	14

SUMMER TERM 1	
Course	Units
AVC Gen Ed- AREA C: #ART 103	3
Total Units	3

TERM 3	
Course	Units
MATH 250	4
PHYS 120	4
CS 140	3
PROGRAM ELECTIVE: CS 130 or CS 131 or CS 132	3
Total Units	14

TERM 4	
Course	Units
MATH 220	4
MATH 230	4
ENGR 230	4
CS 150	3
Total Units	15

AS-Computer Engineering [Total Units 48]

Required Courses (42 units)	
ENGR110 - Introduction to Engineering	3
MATH150 - Calculus and Analytic Geometry	5
MATH160 - Calculus and Analytic Geometry	4
MATH220 - Linear Algebra	4
MATH230 - Introduction to Ordinary Differential Equations	4
MATH250 - Calculus and Analytic Geometry	4
PHYS110 - General Physics	4
PHYS120 - General Physics	4
ENGR230 - Circuit Analysis	4
CS140 - Assembly Language and Computer Architecture	3
CS150 - Discrete Structures	3

Computer Programming Electives: choose one of the following programming language options (6 units)	
C/C++ Programming: CS120 - Programming and Algorithms in C/C++ CS130 - Data Structures using C++	6
OR	
Java Programming: CS121 - Programming and Algorithms in Java CS131 - Data Structures using Java	6
OR	
Python Programming: CS122 - Programming and Algorithms in Python CS132 - Data Structures using Python	6

COUNSELING NOTE SECTION									
<p>**Consult with Counselor regarding Math Placement** Mathematics Calculus Sequence and prerequisites: MATH 135 →MATH140→ MATH 150→MATH 160→MATH 220, MATH 250, MATH 230. (Trigonometry) (Precalc) (Calc 1) (Calc 2) (Linear Alg.), (Diff.Eq.), (Calc 3)</p> <p>Prerequisite: If a course is listed as a prerequisite for another course, that prerequisite course must be completed with a satisfactory grade to enroll in the next course. A satisfactory grade is a grade of "A," "B," "C" or "P". Students who enroll in classes for which they do not meet the prerequisites will be involuntarily dropped. Students will be notified of this involuntary drop. Title 5, Section 55200(d)</p> <p>AVC 24-25 CATALOG: ACADEMIC POLICIES</p> <p style="text-align: center;">INFORMATION and RESOURCES</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Tutoring Assistance</td> <td style="width: 33%;">Career Center</td> <td style="width: 33%;">AVC Student Health Services</td> </tr> <tr> <td>Transfer Center</td> <td>Office of Students with Disabilities</td> <td>Palmdale Center</td> </tr> <tr> <td>Basic Needs</td> <td>Financial Aid</td> <td>Counseling Division</td> </tr> </table>	Tutoring Assistance	Career Center	AVC Student Health Services	Transfer Center	Office of Students with Disabilities	Palmdale Center	Basic Needs	Financial Aid	Counseling Division
Tutoring Assistance	Career Center	AVC Student Health Services							
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2024-2025 AVC General Education Requirements

Advising Form Effective Fall 2024 - Summer 2025

GE AREA	COMPLETED	IN PROGRESS	NEED
			<p>The requirements for an AA or AS degree include the following:</p> <ol style="list-style-type: none"> 1. A minimum of 60 semester units; with at least 12 semester units completed in residence at AVC for an AA/AS degree (credit earned by examination will not be included in these 12 units); maximum of 12 pass/no-pass credit units can be accepted towards an AA/AS degree. 2. Refer to each individual program for major requirements. All major courses as specified in the AVC catalog <u>must</u> be completed with a grade of "C" or better. 3. Completion of the requirements for the associate degree with a minimum cumulative grade point average (GPA) of 2.0 in the degree-applicable courses. <p>Double counting: While a course may 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.</p> <p>Prerequisite: If a course is listed as a prerequisite for another course, that prerequisite course must be completed with a satisfactory grade in order to enroll in the next course. A satisfactory grade is a grade of "A," "B," "C" or "P". Students who enroll in classes for which they do not meet the prerequisites will be involuntarily dropped. Students will be notified of this involuntary drop.</p> <p>Complete 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</p> <p>Legend: () = Newly Approved, Effective Fall 2024</p>
<p>AREA A: NATURAL SCIENCES Select at least 3 units</p>			
A			<p>ANTH 101, (101H); ASTR 101, (101H); BIOL 100, 101*#, 101L*#, 102, 103, 104, (104H), 110, 120, 201, 202, 204, 205; CHEM 101, 102, 110, 120, 210, 220; ELTE 101; ERSC 101; GEOG 101, 102; GEOL 101, (101H), 102; PHYS 101, 102, 110, 120, 211; PSCI 101</p> <p>*# BIOL 101 & 101L must be taken concurrently</p>
<p>AREA B: SOCIAL & BEHAVIORAL SCIENCES Select at least 3 units</p>			
B			<p>AJ 201, 204, 206; ANTH 102, 103, 110, 112, (112H), 140; BUS 101, 212; CFE 102, 103; COMM 217; DFST 105, 106, 110; ECON 100, 101, (101H), 102, (102H), 110; GEOG 105, 106, 110; HIST 101, 102, 104, 105, 107, (107H), 108, (108H), 110, (110H), 111, (111H), 113, 114, 116, 118, 119; POLS 101, (101H), 103, 200, 201, 202, 203; PSY 101, (101H), 200, 201, 212, 230, 232, 233, 234, 235, 236; SOC 101, (101H), 105, 110, 111, 112, 115, 116, 120, 200, THA 240</p>
<p>AREA C: HUMANITIES Select at least 3 units</p>			
C			<p>ART 100, 101, (101H), 102, 103, 104, 106, 110, 113, 120, 132, 135, 136, 137, 140, 145, 150, 163, 170, 210, 213; 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, (253H), 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, (107H), 108, (108H), 110, (110H), 111, (111H), 113, 115, 118, 119; LATN 101, 102, 201; MUS 101, (101H), 105, (106), (110), 111, 121, 131, 132, 151, 153, 185, 231, 232, 251A, 251B, 253A, 253B; MUSC 102, 103, 107, 108, 109; NF 150; PHIL 105, (105H), 106, 108, 109, (130), (140); PHOT 107; PHTC 101, 150, 201; SPAN 101, 1105S, 102, 201, 202, 2105S, 2205S; THA 101, (101H), 102, 103, 110, 115A, 115B, 116A, 116B, 117A, 117B, 118A, 118B, 121A, 121B, 130, 133, 225, 239, (239H)</p>
<p>AREA D: LANGUAGE AND RATIONALITY Select 3 units from (1) and 3 units from (2). Grade of "C" or better required in Area D1</p>			
D1			<p>D1 Academic Composition: ENGL 101, (101H)</p>
D2			<p>D2 Communication and Analytical Thinking: BUS 113; CA 103; CS 100, 110, 120, 121, 122, 123; COMM 101, (101H), 107, 109, 112, 114, 115, 201, 217, 219; ENGL 102, (102H), 103, (103H); GEOG 201, 205; MATH 103, 110, 115, (115H), 116, 120, 124, 128, 131, 135, 140, 148, 150, (150H), 160, 220, 230, 250; PHIL 101, 106, 110, 201, (210)</p>
<p>AREA E: ADDITIONAL BREADTH Select 3 units from Areas A, B, C, D2, or E *Courses must be taken from a discipline not previously selected</p>			
E			<p>HD 100, 101, 102, 103, 105; HE 101, 120, 110, 201; KINT 100; LIB 107, 110; NF 100, 102, 103, 110, 150; Any DA activity course(s) from DA 102-205, except DA 107A-C, 108, 109, and 111 Any Kinesiology Fitness (KINF) activity course, Intercollegiate Athletics (IATH) activity course, or DD214 for 4 units</p>
<p>AREA F: DIVERSITY STUDIES Select 3 units</p>			
F			<p>ANTH 102, 112 (112H); BUS 212; CFE 116; COMM 114, 217, 219; DFST 105, 106, 110; ECON 110; ENGL 250, 253, (253H), 256, 257, 259; ETHN (110), (111), (112), (113), 257EN; FTV 201, 203; HE 110, 201; HIST 110, (110H), 111, (111H), 113; MUSC 107, 108; POLS 202; SOC 105, 110, 116; THA 239, (239H), 240</p>