

Certificate: Engineering Fundamentals 24-25



ABOUT THIS CERTIFICATE:

A student completing the Engineering Fundamentals Certificate will gain a solid grounding in the basic principles that underlie all engineering disciplines. This certificate provides both academic preparation for, and a pathway to,

internships. When combined with further study, it will lead to an Engineering Associate in Science Degree and/or transfer. This certificate is intended to be completed at the beginning of a student's course of study, while they are at the freshman level. For more information, visit the [Mathematics, Sciences, and Engineering](#) division.

TO EARN A Certificate A STUDENT MUST COMPLETE THE FOLLOWING:

- [1] Completion of Major & Program Electives Courses
- [2] Minimum grade point average of 2.0
- [3] A C or better in all courses required for the major

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>.

Certificate- Engineering Fundamentals [Total Units 25-28]

| Required Courses (19 units) | |
|--|---|
| ENGR110 - Introduction to Engineering | 3 |
| MATH150 - Calculus and Analytic Geometry | 5 |
| MATH160 - Calculus and Analytic Geometry | 4 |
| PHYS110 - General Physics | 4 |
| ENGL101 - College Composition | 3 |
| Program Electives: Complete (6-9 units) from the following: | |
| CHEM110 - General Chemistry | 5 |
| CS110 - Introduction to Programming Concepts and Methodologies | 3 |
| CS120 - Programming and Algorithms in C/C++ | 3 |
| CS121 - Programming and Algorithms in Java | 3 |
| CS122 - Programming and Algorithms in Python | 3 |
| CS123 - Programming and Algorithms in C# | 3 |
| ENGR125 - Programming and Problem-Solving in MATLAB | 4 |

RECOMMENDED PATHWAY Certificate- Engineering Fundamentals

The Recommended Plan of Study is determined by the discipline faculty.

- 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.
- This is a certificate only program, currently no associated degree offered.

| TERM 1 | |
|-------------|-------|
| Course | Units |
| ENGR 110 | 3 |
| ENGL 101 | 3 |
| MATH 150 | 5 |
| Total Units | 11 |

| TERM 2 | |
|------------------------------------|-------|
| Course | Units |
| MATH 160 | 4 |
| PHYS 110 | 4 |
| PROGRAM ELECTIVE: CHOOSE FROM LIST | 3-5 |
| PROGRAM ELECTIVE: CHOOSE FROM LIST | 3-5 |
| Total Units | 14-18 |

| COUNSELING NOTE SECTION | |
|--|---|
| <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>INFORMATION and RESOURCES</p> | |
| <p>Tutoring Assistance</p> | <p>Career Center</p> |
| <p>Transfer Center</p> | <p>Office of Students with Disabilities</p> |
| <p>Basic Needs</p> | <p>Financial Aid</p> |
| <p>AVC Student Health Services</p> | |
| <p>Palmdale Center</p> | |
| <p>Counseling Division</p> | |