

ENGINEERING

engineering.missioncollege.edu

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Engineering: Associate in Science (AS)

Engineers design and create the technology of the future. They use the principles of math, science, and engineering to design and build new products, or to develop large-scale systems such as transportation systems or a water treatment plant. Engineering problems usually involve teams of people, so engineers must work well with others and communicate effectively.

The Associate in Science in Engineering will assist in preparing students for transfer to engineering programs at many four-year universities. Upon completion of the Associate in Science in Engineering, students will possess the knowledge and skills required for upper-division coursework in Engineering.

Program Learning Outcomes:

- Students will analyze and interpret experimental results and/or data to make engineering problem decisions.
- Students will use math, science, and engineering concepts to describe, formulate, and solve engineering problems.
- Students will communicate the results of design and/or analysis orally and through text and graphics.
- Students will work effectively in teams.

Career/Transfer Opportunities:

Career opportunities include the following engineering disciplines: aerospace, architectural, bio-engineering, biomedical, chemical, civil, computer, electrical, environmental, industrial, manufacturing, materials, mechanical, software, and nuclear. More career information can be found at <https://www.bls.gov/oes/current/oes170000.htm>

To earn this degree, students must meet the following requirements:

1. Completion of 60 degree applicable units with an overall GPA of 2.0.
2. Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.
3. Completion of the AA/AS Graduation Requirements, CSU GE-B or IGETC.

Core Requirements (35 units)

		Units
EGR 010	Introduction to Engineering -OR-	4.0
EGR 010H	Introduction to Engineering - Honors	4.0
MAT 003A	Analytic Geometry and Calculus I	5.0
MAT 003B	Analytic Geometry and Calculus II	5.0
MAT 004A	Multivariable Calculus	4.0
MAT 004B	Differential Equations	4.0
PHY 004A	Engineering Physics-Mechanics	5.0
PHY 004B	Engineering Physics-Electricity and Magnetism	4.0
PHY 004C	Engineering Physics-Light and Heat	4.0

Complete one of the following tracks (13-23 units)

Mechanical, Aerospace, Manufacturing Engineering or Civil Engineering Track (22-23 units):

Complete all of the following

		Units
CHM 001A	General Chemistry -OR-	5.0
CHM 001AH	General Chemistry - Honors	5.0
EGR 023	Mechanics - Statics	3.0
EGR 024	Introduction to Circuit Analysis	3.0
EGR 025	Engineering Graphics and Design	4.0
EGR 026	Engineering Materials	4.0
EGR 030	Introduction to Computing for Engineers -OR-	4.0
MAT 005	Programming and Problem-Solving in MATLAB	3.0

Electrical Engineering Track (13 Units):

Complete all of the following

		Units
CHM 001A	General Chemistry -OR-	5.0
CHM 001AH	General Chemistry - Honors	5.0
EGR 024	Introduction to Circuit Analysis	3.0
EGR 024L	Introduction to Circuit Analysis Lab	1.0
EGR 030	Introduction to Computing for Engineers	4.0

Computer, Software Engineering Track (16 Units):

Complete all of the following

		Units
CIS 044	Introduction to Data Structures w/Java	4.0
EGR 024	Introduction to Circuit Analysis	3.0
EGR 024L	Introduction to Circuit Analysis Lab	1.0
EGR 030	Introduction to Computing for Engineers	4.0
MAT 019	Discrete Mathematics	4.0

Required Units for the Major:

48.0-58.0

Completion of General Education Requirements and electives as needed to reach 60 units.

Total Required Units:

63.0-76.0