


PROGRAMS

ENGINEERING - CERTIFICATE

Engineering Certificate of Achievement

Image:	
Title:	Engineering Dept
Text:	Learn more.
Link 1:	Engineering Dept
Link 2:	All Engineering Courses
Link 3:	Register via Mission Portal

Engineers design and create 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 Engineering Certificate is modeled after the statewide Engineering Transfer Preparation Certificate and offers four distinct engineering tracks. It is identical to the Engineering AS degree except all general education degree requirements is omitted.

In order to transfer to a four-year college or university, students who complete one of the certificate tracks will also have to complete the minimum admissions requirements for the intended transfer institution. Upon completion of the Engineering Certificate, 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.

To Earn this Certificate, Meet the Following Requirements

1. Complete all required certificate courses with a C (or P) or better.
2. Complete at least 1/3 of the program courses at Mission College to establish residency.

NOTES:

- *Requirements here apply to the current catalog year and are subject to change. Visit DegreeWorks in-1 My Mission Portal-1 to view requirements based your catalog year.*
- *Not all classes are offered each semester.*

Required Core Courses (35.0 units)

EGR 010H and MAT 003AH can be taken in lieu of EGR 010 and MAT 003A.

PROGRAMS

Code	Class	Units
EGR 010	Introduction to Engineering (3.0 Lecture/1.0 Lab)	4.0
MAT 003A	Analytic Geometry and Calculus I (5.0 Lecture)	5.0
MAT 003B	Analytic Geometry and Calculus II (5.0 Lecture)	5.0
MAT 004A	Multivariable Calculus (5.0 Lecture)	5.0
MAT 004B	Differential Equations (4.0 Lecture)	4.0
PHY 004A	Engineering Physics-Mechanics (4.0 Lecture/1.0 Lab)	5.0
PHY 004B	Engineering Physics-Electricity and Magnetism (3.0 Lecture/1.0 Lab)	4.0
PHY 004C	Engineering Physics-Light and Heat (3.0 Lecture/1.0 Lab)	4.0

Select One of the Following Career Tracks

Mechanical, Aeronautical, Manufacturing Track (22.0-23.0 units)

CHM 001AH can be taken in lieu of CHM 001A

Code	Class	Units
CHM 001A	General Chemistry (3.0 Lecture/2.0 Lab)	5.0
EGR 023	Mechanics - Statics (3.0 Lecture)	3.0
EGR 024	Introduction to Circuit Analysis (3.0 Lecture)	3.0
EGR 025	Engineering Graphics and Design (3.0 Lecture/1.0 Lab)	4.0
EGR 026	Engineering Materials (3.0 Lecture/1.0 Lab)	4.0

AND

Code	Class	Units
EGR 030	Introduction to Computing for Engineers (3.0 Lecture/1.0 Lab)	4.0

OR

Code	Class	Units
MAT 005	Programming and Problem-Solving in MATLAB (2.0 Lecture/1.0 Lab)	3.0

Civil Track (22.0-23.0 units)

CHM 001AH can be taken in lieu of CHM 001A

Code	Class	Units
CHM 001A	General Chemistry (3.0 Lecture/2.0 Lab)	5.0
EGR 023	Mechanics - Statics (3.0 Lecture)	3.0
EGR 024	Introduction to Circuit Analysis (3.0 Lecture)	3.0
EGR 025	Engineering Graphics and Design (3.0 Lecture/1.0 Lab)	4.0
EGR 026	Engineering Materials (3.0 Lecture/1.0 Lab)	4.0

And

Code	Class	Units
EGR 030	Introduction to Computing for Engineers (3.0 Lecture/1.0 Lab)	4.0

OR

Code	Class	Units
MAT 005	Programming and Problem-Solving in MATLAB (2.0 Lecture/1.0 Lab)	3.0

Electrical Track (13.0 units)

CHM 001AH can be taken in lieu of CHM 001A.

Code	Class	Units
CHM 001A	General Chemistry (3.0 Lecture/2.0 Lab)	5.0
EGR 024	Introduction to Circuit Analysis (3.0 Lecture)	3.0
EGR 024L	Introduction to Circuit Analysis Laboratory (1.0 Lab)	1.0
EGR 030	Introduction to Computing for Engineers (3.0 Lecture/1.0 Lab)	4.0

Computer, Software Track (16.0 units)

Code	Class	Units
CIS 044	Intro to Data Structures Using Java (3.0 Lecture/1.0 Lab)	4.0
EGR 024	Introduction to Circuit Analysis (3.0 Lecture)	3.0
EGR 024L	Introduction to Circuit Analysis Laboratory (1.0 Lab)	1.0
EGR 030	Introduction to Computing for Engineers (3.0 Lecture/1.0 Lab)	4.0
MAT 019	Discrete Mathematics (4.0 Lecture)	4.0

Units Required

	Units
Total Required Units	48.0-58.0