ENGINEERING FUNDAMENTALS, CERTIFICATE OF ACHIEVEMENT

The Engineering Fundamentals Certificate of Achievement combines a solid grounding in the basic principles that underlie all engineering disciplines with a choice of electives that provide pathways to work experience or further study leading to the Engineering Certificate of Achievement or Associate in Science Degree.

Learning Outcomes

Upon successful completion of the program, students will be able to:

- Use the scientific method to investigate phenomena in the natural world and use concepts, experiments, and/or theory to explain them.
- Use the engineering method to solve technical problems or create products or processes.
- Analyze and evaluate complex issues or problems, draw reasoned conclusions and/or generate solutions, and effectively communicate their results.

Certificate of Achievement Requirements

Code	Title	Units
Required Core		
ENGR 1A	Introduction to Engineering	3
MATH 20A	Calculus with Analytic Geometry I	4
MATH 20B	Calculus with Analytic Geometry II	4
PHYS 3A	Science and Engineering Physics I	4
Select two courses from the following:		3-9
CHEM 1A	General Chemistry I	
COOP 99	Career-Focused Work Experience	
CSIS 10A	Programming Methods I: Java	
CSIS 10C	Programming Methods I.5: C and C++	
ENGR 1B	Design and Prototyping	
ENGR 2	Engineering Design Graphics	
ENGR 17	Programming and Problem-Solving in MATLAB	
Total Units		**18-24**

Please refer to the graduation requirements section of the Catalog for information about degree and certificate requirements including Reading and Writing, Mathematics, Information Competency, and General Education requirements.

The model sequence of coursework below is one pathway for students to complete the program. The information below is not an official educational plan. An MPC Counselor can assist you with creating a personalized education plan based on your academic, career, and personal goals. Visit MPC's Counseling website for more information about Counseling and up-to-date program requirements.

Year 1		
Fall		**Units**
ENGR 1A	Introduction to Engineering	3
MATH 20A	Calculus with Analytic Geometry I	4
Select one course from the following:		1-5
CHEM 1A	General Chemistry I	
or CSIS 10A	or Programming Methods I: Java	
or CSIS 10C	or Programming Methods I.5: C and C++	
or ENGR 1B	or Design and Prototyping	
or ENGR 2	or Engineering Design Graphics	
or ENGR 17	or Programming and Problem-Solving in MATLAB	
or COOP 99	or Career-Focused Work Experience	
	Units	**8-12**
Spring		
MATH 20B	Calculus with Analytic Geometry II	4
PHYS 3A	Science and Engineering Physics I	4
Select one course from the following:		2-5
CHEM 1A	General Chemistry I	
or CSIS 10A	or Programming Methods I: Java	
or CSIS 10C	or Programming Methods I.5: C and C++	
or ENGR 1B	or Design and Prototyping	
or ENGR 2	or Engineering Design Graphics	
or ENGR 17	or Programming and Problem-Solving in MATLAB	
or COOP 99	or Career-Focused Work Experience	
	Units	**10-13**
	Total Units	**18-25**