

# ENGINEERING FUNDAMENTALS, CERTIFICATE OF ACHIEVEMENT

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The Engineering Fundamentals Certificate of Achievement combines a solid grounding in the basic principles that underly 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
<b>Required Core</b>		
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 91.15	Engineering 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	
<b>Total Units</b>		<b>18-24</b>

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.