

# Science, Technology, Engineering, and Mathematics Career Cluster

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

## Engineering Foundations Statewide Program of Study



The Engineering program of study focuses on the design, development, and use of engines, machines, and structures. CTE learners will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems.

### Secondary Courses for High School Credit

#### 1st Course

- PLTW Introduction to Engineering Design

#### 2nd Course

- PLTW Engineering Science

#### 3rd Course Options

- PLTW Civil Engineering & Architecture
- PLTW Aerospace Engineering
- PLTW Digital Electronics \*LCHS only\*

#### 4th Course Options

- PLTW Engineering Design & Development
- Practicum in STEM: Engineering

### Postsecondary Opportunities

#### Associates Degrees

- Electrical and Electronics Engineering
- Drafting and Design Technology/ Technician, General
- Engineering Technology

#### Bachelor's Degrees

- Electrical and Electronics Engineering
- CAD/CADD Drafting and/or Design Technology/ Technician
- Bioengineering and Biomedical Engineering
- Construction Engineering Technology/ Technician

#### Master's, Doctoral, and Professional Degrees

- Electrical and Electronics Engineering
- Mechanical Engineering
- Bioengineering and Biomedical Engineering

### Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
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| <ul style="list-style-type: none"> <li>• Participate in Skills USA competitions</li> </ul> | <ul style="list-style-type: none"> <li>• Intern at an engineering firm</li> <li>• Shadow a machinist</li> </ul> |
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### Industry-Based Certifications

- Engineering Technology Foundations

### Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineers	\$110,843	481	9%
Industrial Engineers	\$97,074	1,263	10%
Mechanical Engineers	\$91,107	1,535	11%
Chemical Engineers	\$112,819	474	9%
Electrical Engineers	\$98,405	1,137	105

Successful completion of the Engineering program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised – November 2022