

Engineering 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 (Academy) Statewide Program of Study



Career & Technical Education

The Engineering program of study focuses on the design, development, and use of engines, machines, structures, and automation processes, as well as rapid prototyping methods. Engineering pathway students will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different operations and manufacturing systems. Engineering students endeavor to improve the state of the world in ethical, cost-effective, efficient, and innovative ways. If you enjoy identifying a problem, producing solutions, and turning ideas into reality, then Engineering may be the right career pathway for you.

Secondary Courses for High School Credit

**All courses are held at Elkins High School*

9th Grade

- Introduction to Engineering Design (PLTW)

10th Grade

- Engineering Science (PLTW)

11th Grade

- Aerospace Engineering (PLTW)

and

- Civil Engineering and Architecture (PLTW)

12th Grade

- Engineering Design and Development (PLTW)

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in SkillsUSA or TSA competitions

Work-Based Learning Activities

- Intern at an engineering firm
- Shadow a machinist

Industry-Based Certifications

- Autodesk Associate (Certified User) & Professional Fusion 360
- Autodesk Associate (Certified User) & Professional Revit



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

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