

Science, Technology, Engineering & Mathematics

Degree Type

Career Pathways

Science, Technology, Engineering & Mathematics Career Cluster

The Science, Technology, Engineering & Mathematics Career Cluster is focused on planning, managing and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Please check with your counselor to see which pathways and course sequences are offered at your school.

Schools

Battlefield High School,
Brentsville District High School,
Colgan High School,
Forest Park High School,
Freedom High School,
Gainesville High School,
Gar-Field High School,
Hylton High School,
Osborn Park High School,
Patriot High School,
Potomac High School,
Unity Reed High School,
Woodbridge High School

Engineering and Technology Pathway

Engineering and Technology Pathway: For a future in the Engineering and Technology pathway, students should study and apply principles from advanced mathematics, life sciences, physical science, earth and space science, and technology. In addition, future engineers and technologists should learn certain processes in mathematics, science and technology. In Grades 9-12, all future engineers and technologists should study mathematics each year, learning important mathematical concepts and processes defined by the National Council of Teachers of Mathematics in Principles and Standards for School Mathematics. With such knowledge and skills, students will be able to demonstrate the following competencies: 1.) Apply mathematics, science and technology concepts to solve problems quantitatively in engineering projects involving design, development or production in various technologies; and 2.) Recognize the core concepts of technology and their relationships with engineering, science and math, and other subjects. All future engineers and technologists should learn important science concepts and processes with an understanding of physics, chemistry and biology as a minimal set. These concepts and processes are defined by the National Research Council in the National Science Education Standards and by the American Association for the Advancement of Science in Benchmarks for Science Literacy. Additionally, learners should become proficient in the areas of technology defined by the Standards for Technological Literacy.

Drawing and Design Sequence

Title	Credits
Technical Drawing and Design	1
Engineering Drawing and Design	1
Engineering Explorations 1	1
Engineering Analysis and Applications	1

Engineering PLTW Sequence

Title	Credits
Introduction to Engineering Design (PLTW)	1
Principles of Engineering (PLTW)	1
Digital Electronics or Civil Engineering and Architecture	
Engineering Design & Development (PLTW)	1

Software Engineering PLTW Sequence

Title	Credits
Software Engineering Essentials (PLTW)	1
Software Engineering (PLTW)	1

Science & Mathematics Pathway

Title	Credits
Technology Foundations	1
Sustainability and Renewable Technologies	1
Total Credits	2-4