



Engineering Career Cluster

The Engineering career cluster focuses on planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and to mapping technician.

Program of Study: Engineering

The Engineering program of study focuses on occupational and educational opportunities associated with a wide range of skills applied in the Engineering industry. Students will design, test, and evaluate projects related to engines, machines, and structures. This program of study includes applying scientific, mathematical, and empirical evidence to solve problems through innovation, design, construction, operation, and maintenance of different engineering systems.

Secondary Courses for High School Credit

7th Grade	Principles of STEM and Applied Engineering
8th Grade	Introduction to Aerospace Engineering and Aviation
9th Grade	Engineering Design Process
10th Grade	Engineering Science
11th Grade	- Aerospace Engineering - Digital Electronics Honors - Civil Engineering - Robotics 1 - Scientific Research & Design: Introduction to Unmanned Aerial Vehicles - Computer Integrated Manufacturing
12th Grade	- Practicum in Engineering (Mobile Classroom) - Practicum in Engineering (Internships) - Practicum in Engineering (Electric Vehicles) - Engineering Design and Problem-Solving Honors - Robotics 2
Optional Electives	Career Prep 1

Internship and Practicum Opportunities

Students have the opportunity to gain hands-on experience in a variety of different businesses. There are numerous internships opportunities including the following: **Lockheed Martin, Textron, Bell Helicopter, Westwood, among others.**

Career and Technical Student Organization (CTSO)

KCAL Robotics

(Local Chapter)- VEX, BEST, FIRST

WIT

Workforce Industry Training

TSA

Technology Student Association

GEARS

Girls Engineering and Robotics Society

Career & Technical Student Organizations (CTSOs) are student-led organizations that build leadership, career skills, and real-world experience through competitions, networking, and hands-on learning.

Aligned Industry-Based Certifications

- FAA Part 107 Remote Drone Pilot
- NOCTI Engineering Technology Foundations



Example Postsecondary Opportunities

Apprenticeships

- Industrial Engineering Technician Apprenticeship

Associate Degrees

- Manufacturing Engineering Technology/ Technician
- Robotics Technology/Technician

Bachelor's Degrees

- Electrical and Electronics Engineering
- Engineering, General

Master's, Doctoral, and Professional Degrees

- Electrical and Electronics Engineering
- Engineering, General

Additional Stackable IBCs/License

- Professional Engineer (PE License)
- Engineer in Training Certification (EIT)



Example Aligned Occupations

Civil Engineering Technologists and Technicians

Median Wage: \$61,138

Annual Openings: 765

10-Year Growth: 11%

Aerospace Engineers

Median Wage: \$115,694

Annual Openings: 483

10-Year Growth: 18%

Mechanical Engineers

Median Wage: \$99,937

Annual Openings: 1,755

10-Year Growth: 19%

