

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 engineering and drafter to electrical engineer and to mapping technician.

Engineering



The Engineering program of study focuses 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

Level 1

- Principles of Applied Engineering

Level 2

- None

Level 3

- Engineering Design and Presentation I

Level 4

- Engineering Design and Presentation II ¹
- Practicum in Science, Technology, Engineering and Mathematics – Engineering (H)



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join in Technology Students Association (TSA)

Work-Based Learning Activities

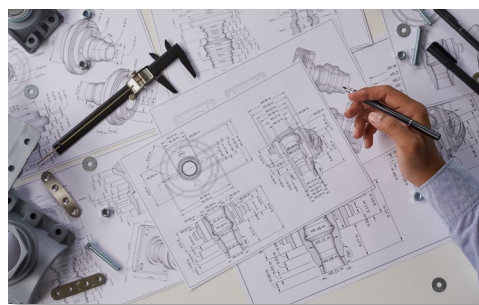
- Intern at an engineering firm
- Shadow a machinist

Industry-Based Certifications

- Autodesk Associate (Certified User) Inventor for Mechanical Design ¹

Aligned Advanced Academic Courses

- AP Calculus AB
- AP Physics 1
- AP Physics 2
- AP Statistics



Postsecondary Opportunities

Associates 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
- Mechanical Engineering
- Engineering, General

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Engineering Technologist and Technicians, Except Drafters	\$65,000	1,300	19%
Engineers	\$119,000	800	15%
Mechanical Engineers	\$107,000	1,700	19%

Successful completion of the Engineering program of study will fulfill requirements of the STEM endorsement. Revised – May 2024

Engineering Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE LEVEL(S)
Principles of Applied Engineering	13036200 (1 credit)	None	9

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE LEVEL(S)
None	-	-	-

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE LEVEL(S)
Engineering Design and Presentation I	13036500 (1 credit)	Principles of Applied Engineering & Algebra I	10

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE LEVEL(S)
Engineering Design and Presentation II	13036600 (2 credits)	Engineering Design & Presentation I & Geometry	11
Practicum in Science, Technology, Engineering, and Mathematics – Engineering (H)	13037400 (2 credits)	Engineering Design & Presentation II	12

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING AND MATH CAREER CLUSTER
PLEASE CONTACT YOUR CAMPUS CTE COUNSELOR

<https://tea.texas.gov/cte>

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[Notification of Nondiscrimination in Career and Technical Education Programs.](#)