Engineering Career Cluster

The Engineering Career Cluster focuses on the planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles.

Engineering Foundations
Statewide Program of Study

The Engineering Foundations program of study focuses on a wide range of skills applied in the Engineering industry. Students will design, test, and evaluate projects related to engines, machines, and structures. CTE learners will apply 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 8th Grade
- Introduction to Engineering Design (PLTW1)

Level 2
- Engineering Science/Principles of Engineering (PLTW2)

Level 3
- Civil Engineering and Architecture (PLTW3)

Level 4
- Engineering Design and Problem Solving

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
• Participate in Skills USA	• Intern at an engineering firm • Shadow a machinist

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 Foundations program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised – August 2022

TEA Texas Education Agency

Engineering Foundations
Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Principles of Applied Engineering 8th Grade	PRAPPENG (1 Credit)	None	None
Introduction to Engineering Design (PLTW1)	N1303742 (1 credit)	None	None

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Engineering Science/Principles of Engineering (PLTW2)	13037500 (1 credit)	Algebra I, Biology, Chemistry and either Integrated Physics (IPC) or Physics	None

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Civil Engineering & Architecture (PLTW3)	N1303747 (1 credit)	None	None

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Engineering Design & Problem Solving	13037300 (1 credit)	Algebra I and Geometry	None

FOR ADDITIONAL INFORMATION ON THE ENGINEERING CAREER CLUSTER,
PLEASE CONTACT: CTE@tea.texas.gov
https://tea.texas.gov/cte