

Science, Technology, Engineering, and Mathematics 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 Statewide Program of Study



The Engineering program of study focuses on the design, development, and use of engines, machines, and structures. CTE learners will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems.

Sharyland ISD Secondary Courses for High School Credit

Level 1

- Principles of Applied Engineering [1 Credit]
- Introduction to Engineering Design (PLTW) [1 Credit]

Level 2

- Manufacturing Engineering Technology I [1 Credit]

Level 3

- Engineering Design and Presentation I [1 Credit] (**Advanced Course**)
- Computer Integrated Manufacturing (PLTW) [1 Credit] (**Adv. Course**)
- Digital Electronics [1 Credit] (**Advanced Course**)
- Engineering Science [1 Credit] (**Advanced Course**)

Level 4

- Scientific Research and Design [1 Credit] (**Advanced Course**)

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

- Participate in Skills USA competitions

Work-Based Learning Activities

- Intern at an engineering firm
- Shadow a machinist

Sharyland ISD Industry-Based Certifications

- Autodesk Certified User in Inventor
- 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	10%

Engineering Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Principles of Applied Engineering	13036200 (1 credit)	None	None
Introduction to Engineering Design (PLTW)	N1303742 (1 credit)	None	None

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Manufacturing Engineering Technology I	13032900 (1 credit)	None	None

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Engineering Design and Presentation I	13036500 (1 credit)	Algebra I	None
Computer Integrated Manufacturing (PLTW)	N1303748 (1 credit)	None	None
Digital Electronics	13037600 (1 credit)	Algebra I and Geometry	None
Engineering Science	13037500 (1 credit)	Algebra I, Biology, Chemistry and either Integrated Physics (IPC) or Physics	None

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Scientific Research & Design	13037200 (1 credit)	Biology, Chemistry and either Integrated Physics (IPC) or Physics	None

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING AND MATH CAREER CLUSTER,
PLEASE CONTACT:

Your Junior High or High School Counselor

Sharyland ISD does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs or activities and provides equal access to the Boy Scouts and other designated youth groups. For inquiries regarding the nondiscrimination policies, contact our Title IX Coordinator at 1200 N. Shary Road, Mission, TX 78572, or by email at deborahgarza@sharylandisd.org and our Section 504 Coordinator at 1200 N. Shary Road, Mission, TX 78572, by email at azucenagarza@sharylandisd.org or by calling (956) 580-5200.