

# 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



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.

### High School Courses

#### Level 1

- Principles of Applied Engineering

#### Level 2

- Engineering Design and Presentation I

#### Level 3

- Engineering Design and Problem Solving

#### Level 4

- Practicum in STEM (**Coastal Bend College Option**)
- Scientific Research and Design

### 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
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|--|---|
| <ul style="list-style-type: none"> <li>Participate in Skills USA competitions</li> </ul> | <ul style="list-style-type: none"> <li>Intern at an engineering firm</li> <li>Shadow a machinist</li> </ul> |
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### Industry-Based Certifications

- Autodesk Associate (Certified User) AutoCAD
- Autodesk Associate (Certified User) Fusion 360
- Autodesk Associate (Certified User) Inventor for Mechanical Design
- Autodesk Associate (Certified User) Revit Architecture
- Engineering



- Certified SOLIDWORKS Associate\*  
\*IBC sunsetting 8/31/24

### 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 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