

Manufacturing Career Cluster

The Manufacturing career cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and process engineering. This career cluster includes occupations ranging from welder and machinist to industrial engineering technician and semi-conductor processing technician.

CFISD Program of Study: Manufacturing Technology

Successful completion of the Manufacturing Technology program of study will fulfill requirements of the Business and Industry endorsement.

The Manufacturing Technology program of study focuses on occupational and educational opportunities associated with the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. It includes exploration of a variety of machine tools that are used to produce precision parts and instruments. This program of study addresses how to modify parts to make or repair machine tools or maintain individual machines, and how to use hand-welding or flame-cutting equipment.



Recommended Course Sequence (credits)(A=advanced)

Students wanting an endorsement in this area must select three (3) or more courses totaling four (4) or more credits with at least one being advanced.

Grade 9	<ul style="list-style-type: none"> Principles of Manufacturing (1)
Grade 10	<ul style="list-style-type: none"> Diversified Manufacturing I (1)
Grade 11	<ul style="list-style-type: none"> Diversified Manufacturing II (1) (A) OR Precision Metal Manufacturing I (2) (A)
Grade 12	<ul style="list-style-type: none"> Practicum in Manufacturing (2) (A) OR Precision Metal Manufacturing II (2) (A)

Aligned Industry-Based Certifications Offered in CFISD

(course) (CCMR=impacts “career ready” status as outlined by the TEA Accountability System for College, Career or Military Readiness)

- AWS D1.1 Structural Steel (Diversified Manufacturing II, Precision Metal Manuf II) (CCMR)
- OSHA 10-Hour (Diversified Manufacturing I)

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow a metallurgist working at a refinery, steel mill, or aircraft manufacturing company
- Intern at a manufacturing plant using CNC machines

Expanded Learning Opportunities

- Tour a manufacturing facility
- Participate in SkillsUSA or TSA



- Receive training on industry-standard material, software & equipment.
- Enhance your resume by earning recognized industry-based certifications.
- Get a jump-start by taking advantage of core curriculum dual credit, transferable to 2-yr and 4-yr degrees.

ALL AT A FRACTION OF THE COST!



Example Postsecondary Opportunities

Associate Degrees

- Industrial Technology
- Instrumentation Technology
- Manufacturing Engineering Technology
- Machine Shop Technology

Bachelor's Degrees

- Engineering/Industrial Management
- Industrial Engineering
- Mechanical Engineering Technology
- Manufacturing Engineering

Master's, Doctoral, and Professional Degrees

- Mechanical Engineering
- Engineering/Industrial Management
- Industrial Engineering
- Engineering



Example Aligned Occupations

Data Source: Texas Wages, Texas Workforce Commission. rev 3/8/2024

Machinists

Median Wage: \$48,732
Annual Openings: 3,385
10-Year Growth: 23%

Industrial Engineering Technologists and Technicians

Median Wage: \$62,096
Annual Openings: 787
10-Year Growth: 17%

Mechanical Engineers

Median Wage: \$99,937
Annual Openings: 1,755
10-Year Growth: 19%



For more information on this and other CTE programs of study offered in CFISD, visit <https://www.cfisd.net/academics/career-technical-education/programs-of-study>

What's next? For more information on related programs available to continue your studies at Lone Star College, visit <https://www.lonestar.edu/programs-of-study>

