

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: Welding

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

The Welding Program of Study focuses on the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. CTE learners will learn 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) Introduction to Welding
Grade 10	<ul style="list-style-type: none"> Welding I (2)
Grade 11	<ul style="list-style-type: none"> Welding II (2) (A)
Grade 12	<ul style="list-style-type: none"> Practicum in Manufacturing (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 (Welding I, Welding II) (CCMR)
- OSHA 10-Hour

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Job shadow a welder Intern for a local welding company
Expanded Learning Opportunities	<ul style="list-style-type: none"> Tour a welding shop Participate in SkillsUSA or TSA Participate in a welding project that benefits the community

AVAILABLE TO STUDENTS AT ALL 12 HIGH SCHOOLS!

- 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!



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>



Example Postsecondary Opportunities

Apprenticeships

- Welding

Associate Degrees

- Welding Technology
- Building/Construction Site Management
- Operations Management and Supervision

Bachelor's Degrees

- Welding Technology
- Construction Management
- Project Management
- Building/Construction Site Management

Master's, Doctoral, and Professional Degrees

- Engineering
- Engineering/Industrial Management
- Manufacturing Engineering
- Construction Engineering



Example Aligned Occupations

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

Welders, Cutters, Solderers, and Brazers

Median Wage: \$48,494
Annual Openings: 5,636
10-Year Growth: 23%

First-Line Supervisors of Production and Operating Workers

Median Wage: \$62,514
Annual Openings: 6,566
10-Year Growth: 17%

Industrial Production Managers

Median Wage: \$124,377
Annual Openings: 1,544
10-Year Growth: 19%