



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 manufacturing/process engineering.

Statewide Program of Study: Welding

The Welding 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. 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.



Secondary Courses for High School Credit

- Level 1**
- Introduction to Welding
 - Principles of Manufacturing

- Level 2**
- Welding
 - Entrepreneurship

- Level 3**
- Welding II

- Level 4**
- None

Aligned Advanced Academic Courses

Dual Credit Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count toward Completer status for this program of study.

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 a welding project that benefits the community • Participate in SkillsUSA <p>SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. We help each student excel. A nonprofit national education association, SkillsUSA serves in preparing students for careers in trade, technical and skilled service. Students compete at the regional, state, and national levels in Skills Assessment Program events, engage in community and leadership service activities, and meet students across the state and country through participation in our programs.</p>

Industry-Based Certifications

- AWS D1.1 Structural Steel
- AWS D9.1 Sheet Metal Welding



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

Welders, Cutters, Solderers, and Brazers

Median Wage: \$47,533
Annual Openings: 6,872
10-Year Growth: 10%

First-Line Supervisors of Production and Operating Workers

Median Wage: \$61,501
Annual Openings: 7,016
10-Year Growth: 11%

Industrial Production Managers

Median Wage: \$114,053
Annual Openings: 1,512
10-Year Growth: 13%

Data Source: Lightcast™. (2022). Occupation Table. Retrieved 9/27/2022.



For more information visit:








<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



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Statewide Program of Study: Welding

Course Information

	Course	Prerequisites Corequisites	Career Clusters
Level 1	Introduction to Welding 13032250 (1 credit)	Prerequisites: None Corequisites: None	 
	Principles of Manufacturing 13032200 (1 credit)	Prerequisites: None Corequisites: None	 
Level 2	Welding I 13032300 (2 credits)	Prerequisites: None Corequisites: None	
	Entrepreneurship I 13011101 (2 credits)	Prerequisites: None Corequisites: None	
Level 3	Welding II 13032400 (2 credits)	Prerequisites: Welding I Corequisites: None	
Level 4	None		

* Indicates course is included in more than one program of study.

For additional information on the **Manufacturing Career Cluster**, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>

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