

# 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.

## Welding Statewide Program of Study



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.

### Secondary Courses for High School Credit

#### Level 1

- Introduction to Welding

#### Level 2

- Welding I
- Introduction to Film Interpretation of Weldments

#### Level 3

- Welding II/Lab

#### Level 4

- Practicum in Manufacturing
- Practicum in Entrepreneurship
- Career Preparation I

### Postsecondary Opportunities

#### Associates Degrees

- Certified Welder or Welder Inspector
- Machine Shop Technology/Assistant
- Operations Management and Supervision
- Occupational Safety and Health Technology/Technician

#### Bachelor's Degrees

- Welding Engineering Technology/Technician
- Biomedical Technology/Technician
- Operations Management and Supervision
- Environmental Health

#### Master's, Doctoral, and Professional Degrees

- Welding Engineering Technology/Technician
- Occupational Health and Industrial Hygiene
- Operations Management and Supervision
- Environmental Health

### Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none"> <li>• Participate and compete in SkillsUSA</li> <li>• Job shadow a machinist</li> </ul>	<ul style="list-style-type: none"> <li>• Work in a local business or industry apprenticeship</li> <li>• Join the American Welding Society</li> </ul>

### Industry-Based Certifications

- API 1104 Welding Pipelines and Related Facilities
- AWS Certified Welder
- AWS D1.1 Structural Steel
- AWS D9.1 Sheet Metal Welding
- AWS SENSE Level 1: Entry Welder
- Industrial Technology Maintenance (ITM) - Maintenance Welding
- NCCER Construction Technology Certification Level I
- NCCER Core
- NCCER Welding Level I
- Welding - Job Ready

- OSHA 30 Hour General\*  
\*IBC sunseting 8/31/24



### Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Welders, Cutters, Solderers, and Brazers	\$41,350	6,171	9%
Welding Soldering and Brazing Machine Setters, Operators and Tenders	\$40,040	280	9%

Successful completion of the Welding program of study will fulfill requirements of the Business and Industry endorsement. Revised – August 2022

# Welding Course Information

## Level 1

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Introduction to Welding	13032250 (1 credit)	None	None

## Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Welding I	13032300 (2 credits)	None	None
Introduction to Film Interpretation of Weldments	N1303687 (1 credit)	None	None

## Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Welding II/Lab	13032400 (2 credits) 13032410 (3 credits)	Welding I	None

## Level 4

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Practicum in Manufacturing	13033000 (2 credits) 13033005 (3 credits) 13033010 (2 credits) 13033015 (3 credits)	None	None
Practicum in Entrepreneurship	N1303425 (2 credits)	None	None
Career Preparation I	12701300 (2 credits) 12701305 (3 credits)	None	None

FOR ADDITIONAL INFORMATION ON THE MANUFACTURING CAREER CLUSTER,  
PLEASE CONTACT: [CTE@tea.texas.gov](mailto:CTE@tea.texas.gov)  
<https://tea.texas.gov/cte>

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