

# 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.

## 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** • Principles of Manufacturing

**Level 2** • Introduction to Welding

**Level 3** • Welding I

**Level 4** • Welding II



This Program of Study is Available  
at MONTE ALTO ISD

### 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

- Job shadow a welder
- Intern for a local welding company

#### Expanded Learning Opportunities

- Tour a welding shop
- Participate in SkillsUSA
- Participate in a welding project that benefits the community

### Industry-Based Certifications

- NCCER Core
- NCCER Welding Level 1
- 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: \$48,177  
Annual Openings: 6,792  
10-Year Growth: 23%

#### First-Line Supervisors of Production and Operating Workers

Median Wage: \$62,584  
Annual Openings: 5,926  
10-Year Growth: 17%

#### Industrial Production Managers

Median Wage: \$119,691  
Annual Openings: 1,296  
10-Year Growth: 19%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

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



# Manufacturing Career Cluster

## Statewide Program of Study: Welding

### Course Information

Level 1

Course	Prerequisites   Corequisites	Career Cluster
<b>Principles of Manufacturing</b> 13032200 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Algebra I or Geometry <b>Recommended Corequisites:</b> None	
<b>Introduction to Welding</b> 13032250 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Algebra I and Principles of Manufacturing <b>Recommended Corequisites:</b> Algebra I	

Level 2

Course	Prerequisites   Corequisites	Career Cluster
<b>Welding I</b> 13032300 (2 credits)	<b>Prerequisites:</b> Introduction to Welding None <b>Corequisites:</b> None	

Level 3

Course	Prerequisites   Corequisites	Career Cluster
<b>Welding II</b> 13032400 (2 credits)	<b>Prerequisites:</b> Welding I <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Algebra I or Geometry <b>Recommended Corequisites:</b> None	

Student Name: \_\_\_\_\_ Student ID#: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Counselor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



COLLABORATIVE ALLIANCE FOR  
**RGV-CAREER**  
RURAL EDUCATION AND EMPLOYMENT RESOURCES

For additional information on the **Manufacturing** career cluster, contact  
[cte@tea.texas.gov](mailto:cte@tea.texas.gov) or visit <https://tea.texas.gov/cte>



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