

Manufacturing Career Cluster

Revised—June 2024



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.

Endorsement: Business & Industry Statewide Program of Study: Welding

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

- 9th Grade N/A

- 10th Grade Welding I (Level 2) (KCC)
 Elective: Entrepreneurship I (Level 2)

- 11th Grade Welding II (Level 3) (KCC)

- 12th Grade Practicum in Manufacturing Welding (Level 4) (KCC)

A CTE Completer is a student who completes three or more CTE courses for four or more credits including one Level 3 or 4 (advanced level) CTE course within a program of study will fulfill the requirements of a Business and Industry Endorsement.

Aligned Industry-Based Certifications

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



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

NAVIANCE ACCESS

All Killeen ISD students (7th – 12th graders) should login to their Naviance account through Clever.

Log into Naviance by clicking the Clever logo or link and use the College SuperMatch Tool to find colleges offering degree plans in this field.

<https://clever.com/in/killeenisd>



Killeen ISD does not discriminate on the basis of race, color, national origin, sex, or disability in its programs or activities and provides equal access to the Boy Scouts and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: Rhea Bell, Title IX Coordinator, 902 N. 10th St., Killeen, TX 76541, 254-336-2822, Rhea.bell@killeenisd.org. Further nondiscrimination information can be found at [Notification of Nondiscrimination in Career and Technical Education Programs](#).



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

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%

Welding

Data Source: Texas Wages, 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>

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Endorsement: Business & Industry
Statewide Program of Study: Welding



Course Information

IT IS IN THE BEST INTEREST OF THE STUDENT TO TAKE ALL COURSES BELOW IN EACH GRADE

Level 1 9 th Grade	Course	Prerequisites Corequisites	Career Clusters
	N/A		
Level 2 10 th Grade	Course	Prerequisites Corequisites	Career Clusters
	Welding I* 13032300 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Algebra I, Principles of Manufacturing, Introduction to Precision Metal Manufacturing, or Introduction to Welding Recommended Corequisites: None	
Level 3 11 th Grade	Course	Prerequisites Corequisites	Career Clusters
	Welding II 13032400 (2 credits)	Prerequisites: Welding I Corequisites: None Recommended Prerequisites: Algebra I or Geometry Recommended Corequisites: None	
Level 4 12 th Grade	Course	Prerequisites Corequisites	Career Clusters
	Practicum in Manufacturing - Welding* First Time Taken: 13033000 (2 credits) Second Time Taken: 13033010 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

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

Armed Forces Career Information

- Aircraft Metals Technology – U.S. Air Force & U. S. Air Force Reserve
- Nondestructive Inspection – U.S. Air Force
- Low Observable Aircraft Structural Maintenance Specialist - U.S. Air Force
- This is not a comprehensive list.

Local Armed Forces Recruiter Contact Information:

- Air Force – (254) 247-8992
- Army – (254) 690-8554
- Army National Guard – (903) 262-6355
- Marines – (254) 690-2626
- Navy – (254) 690-2096

See your school counselor to connect with a military recruiter for career counseling and to take the ASVAB in high school.