



MONTANA CAREER PATHWAYS

Career and Technical Education



Area of Study: Industrial Technology Education

Career Pathway: Welding and Fabrication

Get the Facts

A welder is a skilled professional specializing in fusing materials to the Welding Procedure Specification (WPS) listed for the job at hand. Welders usually work with metals such as steel or aluminum; some work with thermoplastics or ceramics. To weld, cut, shape, braze, solder, or otherwise manipulate a workpiece, welders are well-versed at using an assortment of tools and equipment, including torches, gases, electrodes, hand tools, wire feeders, filler metals, and industrial chemicals.

Certifications are available through American Welding Society (AWS) and Certified Welding Technologies (CWT) among other organizations.

Workforce Trends

With the continuous need of skilled and knowledgeable employees in the welding industry, this pathway helps provide trained and work-ready employees. With a current annual growth rate of 16.5%, demand in Montana for individuals with welding and fabrication skills continues to increase.

CAREER AND TECHNICAL EDUCATION

Recommended Pathway Courses

Courses listed below provide a suggested sequence of courses for career and curriculum planning. Schools may offer additional courses beyond those listed within local Pathways.

CLASS AVAILABILITY MAY VARY AT YOUR SCHOOL

Course #	Foundation Courses (required)	Credit
21102	Drafting—General	.50/1.0
21107	CAD Design and Software	.50/1.0
13003	Industrial Arts	.50/1.0
13207	Welding	.50/1.0
Elective Courses		
13055	Metal Processing/Production	.50/1.0
13201	Metalwork Occupations	.50/1.0
13202	Metalworking	.50
13203	Machining	.50
13205	Sheet Metal	.50
13302	Equipment Maintenance and Repair	.50
12053	Entrepreneurship	.50
13248	Metalwork—Workplace Experience	.50
13098	Processing/Production-Workplace Experience	.50

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1.0 credit

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1.0 credit

2.0 credits for completion

Foundation courses taken beyond the required credits can be used as elective credit
Any High School CTE course(s) required for graduation may count towards Pathway completion
Additional CTE Credits are recommended for Pathway completion

Careers in Welding and Fabrication are:

- High Skill; High Wage; In-Demand

Career Examples

- Assembler
- Certified Welding Inspector
- Corrosion Technician
- Machinist
- Metal Artist
- Production Manager
- Quality Control Technician
- Structural Metal Worker
- Welder
- Welding Engineer

According to the Montana Department of Labor and Industry, the average median hourly wage for occupations within the Welding and Fabrication Career Pathway is \$18.29.

State Graduation Requirements		Suggested High School Plan of Study				College and Career
High School		9th Grade Suggested	10th Grade Suggested	11th Grade Suggested	12th Grade Suggested	Beyond High School
English/Language Arts	4.0	English 9 1.0	English 10 1.0	English 11 1.0	English 12 1.0	<p>There are many options for education and training beyond high school, depending on your career goals.</p> <ul style="list-style-type: none"> • Certificate • Associate degree • Bachelor's degree • Professional degree • On-the-job training • Apprenticeship • Military training <p>For more information on salary projections, labor market demand, and training options, visit lmi.mt.gov.</p>
Mathematics	2.0	Math* 1.0	Math* 1.0	Math* 1.0	Math* 1.0	
Social Studies	2.0	Social Studies* .50/1.0	Social Studies* .50/1.0	U.S History 1.0	U.S. Government 1.0	
Science	2.0	Earth Science 1.0	Biology 1.0	Science Elective*		
Health Enhancement	1.0	P.E./Health* .50	P.E./Health* .50	P.E./Health Electives*		
Arts	1.0	Arts Courses* 1.0				
Career and Technical Education	1.0	Pathway Foundation Course .50/1.0	Pathway Foundation Course .50/1.0	Pathway Elective Course .50/1.0	Pathway Elective Course .50/1.0	
Work-Based Learning		Participation in a Pathway-related work-based learning experience				
Career and Technical Student Organization		SkillsUSA or TSA				
<ul style="list-style-type: none"> • *Talk to your school counselor about requirements in the core curriculum. Core curriculum and elective requirements vary district to district. • Many CTE courses may qualify for dual enrollment credit, which in some cases may earn up to 1.0 credit toward Pathway completion. Talk to your school counselor about availability. 		<ul style="list-style-type: none"> • Dual enrollment course offerings vary by school and district. • Many Montana post-secondary programs accept high school courses toward a two- and four-year degree through dual enrollment. Check with post-secondary campuses for details. 				