



# MONTANA CAREER PATHWAYS

## Career and Technical Education



### Area of Study: Industrial Technology Education

## Career Pathway: Advanced Manufacturing

### Get the Facts

An Advanced Manufacturing professional will offer designing and improving products, operating high-tech tools and machinery, analyzing problems and coming up with creative solutions, and working with both your hands and your mind.

### Workforce Trends

With the continuous need of skilled and knowledgeable employees in the advanced manufacturing, this pathway will help provide employees that are trained and work ready.

With a current annual growth rate of 8.3%, the demand for individuals with design and construction skills continues to increase in Montana.

### 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
13201	Metalworking Occupations	.50/1.0
<b>Elective Courses</b>		
13002	Manufacturing-Comprehensive	.50
13054	Wood Processing/Production	.50
13055	Metal Processing/Production	.50
13056	Plastics Processing/Production	.50
13101	Production Systems	.50
13102	Electro-Mechanical Systems	.50
13103	Product Development	.50
13203	Machining	.50
13205	Sheet Metal	.50
13207	Welding	.50
13302	Equipment Maintenance and Repair	.50
21010	Computer Integrated Manufacturing	.50
21108	Blueprint Reading	.50
13998	Manufacturing—Work Place Experience	.50

1.0 credit

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 Advanced Manufacturing are:

- High Skill; High Wage; In-Demand

### Career Examples

- Automated Manufacturing Technologies
- CNC Machinist
- Communication Installer
- Engineer
- Machine Operator
- Manufacturing Quality Control
- Manufacturing Technician
- Precision Measurement Inspector

According to the Montana Department of Labor & Industry, the median hourly wage for occupations within the Manufacturing Career Pathway is \$34.57.

State Graduation Requirements		Suggested High School Plan of Study				College and Career
High School <i>Administrative Rules of Montana 10.55.905</i>		9th Grade Suggested	10th Grade Suggested	11th Grade Suggested	12th Grade Suggested	<b>Beyond High School</b> There are many options for education and training beyond high school, depending on your career goals. <ul style="list-style-type: none"> <li>• Certificate</li> <li>• Associate degree</li> <li>• Bachelor's degree</li> <li>• On-the-job training</li> <li>• Apprenticeship</li> </ul> For more information on salary projections, labor market demand, and training options, visit <a href="http://lmi.mt.gov">lmi.mt.gov</a> .
<b>English/Language Arts</b>	4.0	English 9 1.0	English 10 1.0	English 11 1.0	English 12 1.0	
<b>Mathematics</b>	2.0	Math* 1.0	Math* 1.0	Math* 1.0	Math* 1.0	
<b>Social Studies</b>	2.0	Social Studies* .50/1.0	Social Studies* .50/1.0	U.S History 1.0	U.S. Government 1.0	
<b>Science</b>	2.0	Earth Science 1.0	Biology 1.0	Science Elective*		
<b>Health Enhancement</b>	1.0	P.E./Health* .50	P.E./Health* .50	P.E./Health Electives*		
<b>Arts</b>	1.0	Arts Courses* 1.0				
<b>Career and Technical Education</b>	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	
<b>Work-Based Learning</b>		Participation in a Pathway-related work-based learning experience				
<b>Career and Technical Student Organization</b>		SkillsUSA				

- \*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.

- 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.