



MONTANA CAREER PATHWAYS

Career and Technical Education



Area of Study: Technology & Engineering

Career Pathway: STEM

Get the Facts

STEM careers include planning, managing, and providing scientific research and professional and technical services in a wide range of areas such as physical science, social science, engineering, laboratory and testing services, and research and development.

Workforce Trends

Employment in science, technology, engineering and math (STEM) occupations has grown 79% since 1990, from 9.7 million to 17.3 million, outpacing overall U.S. job growth.

STEM workers enjoy a pay advantage compared with non-STEM workers with similar levels of education. Among those with some college education, the typical full-time, year-round STEM worker earns \$54,745 while a similarly educated non-STEM worker earns \$40,505, or 26% less.

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
21107	CAD Design and Software	.50/1.0
21102	Drafting—General	.50/1.0
13003	Industrial Arts	.50/1.0
21051	Technological Literacy	.50/1.0
21053	Emerging Technologies	.50/1.0
Elective Courses		
21007	Engineering Design and Development	1.0
21008	Digital Electronics	1.0
21009	Robotics	.50
21012	Civil Engineering and Architecture	1.0
21013	Aerospace Engineering	1.0
21054	Technology Innovation and Assessment	.50
21102	Engineering Drafting	.50
21103	Drafting—Architectural	.50
21098	Technology—Workplace Experience (Engineering)	.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 STEM Fields are:

- High Skill; High Wage; In-Demand

Career Examples

- Climate Change Analyst
- Drafter
- Electronic Technician
- Engineer: Biological, Civil, Chemical, Computer, Electrical, Electronic, Environmental, Mechanical, or Mining and Geological
- Environmental Scientist
- Geothermal Technician
- GIS Scientist or Technician
- Robotics Technician
- Survey Technician

According to the Montana Department of Labor and Industry, the median hourly wage for occupations within Engineering Occupations is \$32.12; \$66,000/year.

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
English/Language Arts	4.0	English 9 1.0	English 10 1.0	English 11 1.0	English 12 1.0
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			

Beyond High School

There are many options for education and training beyond high school, depending on your career goals.

- Certificate
- Associate degree
- Bachelor's degree
- Professional degree
- On-the-job training
- Apprenticeship
- Military training

For more information on salary projections, labor market demand, and training options, visit lmi.mt.gov.

- *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.