Career and Technical Education
Area of Study: Industrial Trades & Technology
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

Careers in STEM Fields are:

- High demand/High
- skill/High wage

Career Examples:

- Electrical Engineer
- Electronic Engineer
- Environmental Scientist (including health)
- Mechanical Engineer
- Mining and Geological Engineer
- Civil Engineer
- Drafter
- Survey Technician

According to the Montana Department of Labor and Industry the median hourly wage for occupations within Engineering Operations is $60,000/yr.

Recommended Pathway Courses
Students may select individual courses for exploration or a complete Pathway for an in-depth focus.

Foundation Courses (required)

- Applied Technology-BS .50 credit
- Introduction to Technical Design-BS/HHS .50 credit
- Engineering Design-HHS 1.0 credit
- Introduction to Engineering Design-SHS 1.0 credit

Elective Courses

- Principles of Engineering-SHS 1.0 credit

- Engineering Design & Development- credit 1.0
- Robotics Engineering 1.0 credit
- 3D Modeling & Animation 1.0 credit
- Architectural Design 1.0 credit
- Engineering-Workplace Experience .50/1.0 credit
- Civil Engineering & Architecture 1.0 credit
- Engineering Design & Development 1.0 credit
- Design Project 1: DDSN 113 Technical Drafting-Dual Credit .50 credit
- Design Project 2: DDSN 114 Introduction to CAD-Dual Credit .50 credit
- Advanced Problems in Engineering .50 credit

College and Career 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
- On-the-job training
- Apprenticeship

MCPS Graduation Requirements-High School

- English/Language Arts 4.0 credits
- Mathematics 3.0 credits
- Social Studies 2.0 credits
- Science 2.0 credits
- Health Enhancement 2.0 credits
- Art 1.0 credit
- Career and Technical Education 1.0 credit

Suggested High School Plan of Study
9th Grade

- English 9 1.0 credit
- Math 1.0 credit
- Social Studies .50/1.0 credit
- Earth Science 1.0 credit
- P.E/Health 1.0 credit
- Art Courses 1.0 credit
- Art
- STEM Foundation Course 1.0 credit

10th Grade

- English 10 1.0 credit
- Math 1.0 credit
- Social Studies .50/1.0 credit
- Biology 1.0 credit
- P.E./Health 1.0 credit
- Art
- STEM Foundation Course 1.0 credit

11th Grade

- English 11 1.0 credit
- Math 1.0 credit
- U.S. History 1.0
- Science Elective
- P.E./Health Electives
- Art
- Pathway Elective .50 credit

12th Grade

- English 12 1.0 credit
- Math 1.0 credit
- U.S. Government 1.0 credit
- Science Elective
- P.E./Health Electives
- Art
- Pathway Elective .50 credit

Work-Based Learning- Participation in a Pathway-related work-based learning experience
Career and Technical Student Organization- Skills USA