



# Bridges Career Academy

## Manufacturing

### Crosby-Ironton High School

Understand careers in manufacturing. Work with a variety of metals while designing, welding and machining various machine parts. Learn skills in blueprint reading, tool sharpening, thread cutting and shop safety. Work on real-life activities. Gain entry-level employment or continue education.

### Academic Courses

- Trade Knowledge
- Welding I
- CAD Drafting & Design
- Robotics and Computer Programming

### Career Experiences

- Listen to industry speakers
- Attend the Bridges Career Exploration Day or other regional career fairs
- Tour local businesses
- Build projects for the community

### Completion Standards

COMPLETE

All courses

GRADES **B** ↑

Earn a **certificate** and **green cord** at graduation



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### Job Skills

In addition to having technical skills, employers expect workers in this industry to have these skills:

- Ability to work with customers and coordinating with other employees
- Critical thinking, problem solving and decision-making skills
- Managing equipment and software
- Employing necessary academic skills, such as math, grammar and technology
- Listening skills



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[www.BridgesConnection.org/CrosbyIronton](http://www.BridgesConnection.org/CrosbyIronton)

# Manufacturing Career Academy

## Crosby-Ironton High School

The Manufacturing Academy provides students with an understanding of the vast number of careers in the world of manufacturing today. Student experiences include working with a variety of metals while designing, welding and machining various machine parts. Skills in blueprint reading, tool sharpening, thread cutting, and shop safety are essential elements of the courses. The academy uses real life activities and allows students to work on both required and personal projects. When completing this academy, students will have skills needed to enter the workforce or transfer credits to higher education.

### ACADEMY COURSES

#### **Trade Knowledge** — .5 High School Credit

This course develops the student's ability to follow instructions, interpret specifications, and use various hand and power tools required to make thread repairs, soldering techniques, and double flare steel tubing. Various types of math problems are also addressed.

#### **Welding I** — .5 High School Credits and/or 2 College Credits

This course will introduce student to the world of welding. Subjects covered will include stick, wire feed, oxyacetylene welding and cutting welding aluminum, repair projects and the basic operation of a computer-controlled plasma cutter. Students will be able to select and construct a project of their own and they develop welding skills.

#### **Robotics with Computer Programming** — .5 High School Credit

Students will begin learning the concepts of programming through various introductory languages and environments. Students will apply what they learn to create programs, applications, and games. A unit on robotics will be included. This course is designed to be a rewarding and fun learning experience for students of all programming skill levels.

#### **CAD Drafting and Design** — .5 High School Credit

This course focuses on learning the fundamentals of CAD (Computer Aided Drafting) software and understanding how to utilize several programs. The student's imagination and creativity will be challenged with individual and various assigned projects. Both Auto CAD and Inventor programs will be used in Architectural and Mechanical drafting purposes. Creating, interpreting plans, and reading complex graphs, tables and charts will highlight this course.

### COMPLETION STANDARD

Students wishing to receive a certification for this academy must complete all courses. In addition, students must maintain a 'B' or better grade point average in each course.

### CAREER EXPERIENCES

Students will explore and research careers with industry speakers, attend the Bridges' Career Exploration Day event and other regional career fairs, and tour local businesses. Hands-on activities using a variety of electrical systems, robotics systems and residential and commercial electronic systems will be used. As a fund raiser, students will make and sell ice tongs.

### JOB SKILLS

In addition to having technical skills, employers expect their workers to have other skills such as:

- Listening skills
- Ability to work with customers and coordinating with other employees
- Critical thinking, problem solving and decision-making skills
- Managing equipment and software
- Employing necessary academic skills, such as math, grammar and technology

**CAREER OPTIONS:** [www.careerwise.minnstate.edu/careers](http://www.careerwise.minnstate.edu/careers)

**JOB OUTLOOK:** [www.careerwise.minnstate.edu/jobs](http://www.careerwise.minnstate.edu/jobs)

**POSTSECONDARY PROGRAMS:** [www.careerwise.minnstate.edu/education](http://www.careerwise.minnstate.edu/education)



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