



# Bridges Career Academy

## Manufacturing

*Little Falls High School*

Understand careers in the world of manufacturing. Experience working with a variety of metals, while designing, welding and machining parts. Learn skills in blue print reading, tool sharpening, thread cutting and shop safety. Project-based, using real-life activities. Work on both required and personal projects. Gain entry-level employment or continue education.

### Academic Courses

- Introduction to Welding
- Introduction to Metals
- Vocational Welding I
- Vocational Welding II

### Career Experiences

- Learn from industry speakers
- Tour local Belle Prairie
- Attend the Bridges Career Exploration Day or other regional career fairs
- Work with real-life industry projects

### Completion Standards

COMPLETE

**All courses**

GRADES

**B** ↑

ATTENDANCE

**90%**

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:

- Listening skills
- Manage tools and equipment
- Use critical thinking skills
- Effectively communicate
- Time management



# Manufacturing Career Academy

## Little Falls High School

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

### ACADEMY COURSES

#### **Introduction to Welding** — .5 High School Credit

The purpose of this course is to develop the basic skills and techniques of GMAW, Oxyacetylene and arc welding. Shop safety, types of electrodes, welding machines, and basic weld types will be covered in all three welding methods.

#### **Introduction to Metals** — .5 High School Credit

This exploratory course is designed to introduce students to metal working. All areas of safety, careers, trade knowledge, layout and design, sheet metal, tool sharpening, machining, heat treating, thread cutting, spot welding and bench metal work skills will be covered. Students will be allowed to complete both personal and elective projects.

#### **Vocational Welding I** — 1 High School Credit

This course covers safety related to welding, the use of oxy-fuel welding, brazing and equipment. Students will use math concepts to determine the correct specifications of different types of welds. The importance of blueprints in welding and fabrication is emphasized and there will be discussion on the several types of lines, drawings and views while reading blue prints.

#### **Vocational Welding II** — 1 High School Credit and/or 2 College Credits

This course covers the SMAW/GMAW welding process, formerly known as the stick and wire feed process welding. Students will develop the skills to ensure all welds are of high quality and perform welds on plain low carbon sheet in both flat and horizontal positions. Special emphasis will be placed on E-6010 and E-7018 electrodes.

### COMPLETION STANDARD

Students wishing to receive a certification must complete all courses, earn a minimum of a 'B' grade, and have 90% attendance.

### CAREER EXPERIENCES

Students will explore and research careers with industry speakers, attend Bridges Career Exploration Day and other career fairs, tour the local businesses, and work with real life industry projects.

### JOB SKILLS

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

- Listening skills
- Manage tools and equipment
- Use critical thinking skills
- Effectively communicate
- Time management

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