



# Bridges Career Academy

## Manufacturing

### Bertha-Hewitt High School

Understand all aspect manufacturing processes. Experience working with metals and woods, while designing and welding manufacturing projects and repairing small engines. Develop skills in blue print reading, working with power and hand tools, machining equipment, welding machines, and shop safety. Project based, using real life activities. Gain entry-level employment or continue education.

### Academic Courses

- Cabinet Construction
- Mechanics
- Welding
- Manufacturing Design and Production

### Career Experiences

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

### 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:

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



# Manufacturing Career Academy

## Bertha-Hewitt High School

The Manufacturing Academy provides students an understanding all aspect manufacturing processes used in the vast number of manufacturing industries. Students experience working with metals and woods, while designing and welding manufacturing projects and repairing small engines. Developing skills in blue print reading, working with power and hand tools, machining equipment, welding machines, 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 continue their education at a post-secondary institution.

### ACADEMY COURSES

#### **Manufacturing Design and Production** —1 High School Credit

This course teaches students to develop an understanding of the manufacturing, designing and production of furniture and other saleable products. The students design a project and determine the cost of the materials needed to complete the project. Once the plan is completed, it will be broken into smaller projects and student groups will mass produce the project. Shop safety, working in groups, limited production waste and quality of work will be emphasized.

#### **Cabinet Construction** — 1 High School Credit

In this course students plan and build wood projects, including cabinets and furniture. Projects are complex and workmanship expectation is to demonstrate an advanced quality because the projects are functional and test the limits of woodworking skills.

#### **Mechanics** —1 High School Credit

This course covers the internal combustion engine. Students will study the basic parts of an engine, the difference between two and four stroke engines, gas fuel systems, diesel fuel systems, intake systems, cooling systems and exhaust systems. Includes small engine trouble shooting, repair and maintenance.

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

This course covers the basic skills and techniques of oxyacetylene welding. Students cover welding, brazing, frame cutting and soldering. Arc welds will be graded on fillet, outside corner, lap and flat welds. The importance of blueprints in welding and fabrication is emphasized and there will be discussion on the various types of lines, drawings and views while reading blue prints and creating projects.

### COMPLETION STANDARD

To receive a certification, students must complete all courses while earning an average of 'B' or better 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, tour the local businesses, and work with real life personal and 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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