



Manufacturing Career Academy Bertha-Hewitt High School

The Manufacturing Academy provides students an understanding manufacturing in a variety of industries. Students will experience working with metals, woods, design, welding and small engines. Skills in blue print reading, working with power and hand tools, equipment, welding machines, and shop safety are essential elements of the courses. Students will learn how the manufacturing skills are used across industries and jobs. 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

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. Discussions of all aspects of manufacturing and production will allow the project to be completed problem free. 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. Small engine trouble shooting, repair and maintenance will be part of the curriculum.

Welding

1 High School Credit

The purpose of this course is to develop 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.

Academic Completion Standard

Students wishing to receive a certification must complete all courses, earn a minimum of a '80%' grade in all classes.

Business and Industry Experiences

Students will explore and research careers with industry speakers, attend 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

Careers Options

Building Mechanical Engineer, Construction Project Supervisor, Inspector, Plumbing Inspector, Engineer, Associate Architect, Building Code Administrator, Engineering Technician Custom Stair Builder, Finish Carpenter, Lead Carpenter, Trim Carpenter, Assembler, Construction Worker, Installer, Architectural Designer, Industrial Maintenance Mechanic, Distributed Electrical Technician, Lean Manufacturer, Industrial Systems Specialist, Welder, Small Engine Mechanic

Job Outlook

Manufacturing Careers - 13% growth for Central Minnesota

Postsecondary Programs

Please check at www.mnscu.edu for colleges that offer educational programs for this Career Academy such as;

Central Lakes College, Hennepin Technical College, Rochester Community and Technical College, Minnesota West Community and Technical College, Bemidji State University, St. Cloud University, University of Minnesota, Northland Community and Technical College, Century College, South Central College, Ridgewater College, Minnesota West Community and Technical College, Hennepin Technical College, Rochester Community and Technical College

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