



Bridges Career Academy

Metals Design

Pequot Lakes High School

Understand of the variety of careers in manufacturing. Experience working with a variety of metals. Gain foundational skills such as; designing, welding, machining and building machines. Develop projects in mechanical designing using design software, blue print reading, engine operations, measuring, and shop safety are essential elements of the courses. Gain entry-level employment or continue education.

Academic Courses

- Intro to Metals
- Super Mileage
- Welding
- Robotics II

Career Experiences

- Tour local businesses
- Listen to industry speakers
- Attend the Bridges Career Exploration Day or other regional career fairs
- Work with real-life industry projects

Completion Standards

COMPLETE

- Intro to Metals AND Welding
- Super Mileage OR Robotics II

GRADES **B** ↑

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



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



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Metals Design Career Academy

Pequot Lakes High School

The Metals Design Academy provides students with an understanding of the vast number of careers in the world of manufacturing today. Students experience working with a variety of metals, while they gain the manufacturing's foundational skills such as; designing, welding, machining and building machines. Projects in mechanical designing using design software, blue print reading, engine operations, measuring, and shop safety are essential elements of the courses. The academy is project based, uses real life activities and allows students to design and build a high mileage car for competition. When completing this academy, students will have skills to enter the workforce or continue their education.

ACADEMY COURSES

Introduction to Metals — .5 High School Credit

This course will consist of an introduction to metal working. All areas of metalworking are explored including arc welding, wire feed welding, using a cutting torch, sheet metal and lathe work. Proper use of all tools and machines and safety in the metal shop is emphasized.

Super Mileage — .5 High School Credit

This course will cover the design and fabrication of a super mileage vehicle. This course will focus on engineering (incorporating math and science concepts) design, drawing, metal fabrication, fabrication using exotic materials, small engine and graphics. The highlight of this course includes a two-day competition held at Brainerd International Raceway in May.

Welding — .5 High School Credit

This course is designed for any student who may have an interest in welding. Subjects covered will be stick, wire feed, oxyacetylene welding and cutting, welding aluminum, and the basic operation of a computer controlled plasma cutter. Students will be able to select and construct a project of their own as they develop welding skills.

Robotics II — .5 High School Credit

Students will have a chance to design and build a robot for MSHSL competition. Students will be building a competition robot based on what the game outlined for that year has identified. Students will be involved with all phases of the building including programming the robot's functions.

COMPLETION STANDARD

Students wishing to receive a certification must complete Introduction to Metals, Welding and either Super Mileage or Robotics II while earning a minimum of a 'B' average in all courses.

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 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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