



Bridges Career Academy

Metals Design

Henning High School

Understand careers in manufacturing. Experience working with a variety of metals, while designing, welding, machining, and building parts and machines. Learn skills in mechanical designing using CADD software, blue print reading, engine operations, measuring, and shop safety. Project based, using real life activities. Design and build a high mileage car for regional competitions. Gain entry-level employment or continue education.

Academic Courses

- Welding/Power Tech I
- Welding/Power Tech II
- Robotics/CADD


Career Experiences

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

Completion Standards

COMPLETE

ALL courses

GRADES **B** 

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



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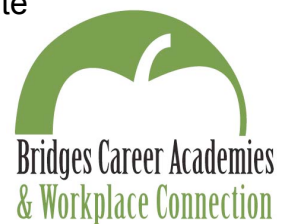
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Job Skills

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

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



Metal Design Career Academy

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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 designing, welding, machining, and building parts and machines. Skills in mechanical designing using CADD 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 regional competitions. When completing this academy, students will have skills to enter the work force or transfer their credits to higher education.

ACADEMY COURSES

Welding/Power Tech I — 1 High School Credit

This is a design class for hands-on-builders. Students will learn basic welding techniques such as oxy-acetylene cutting, Arc and wire feed welding. Curriculum includes learning about aero-dynamics, metal cutting fabrication, small engines and drive systems. Students will design and build a car for the MN Super-Mileage competition.

Welding/Power Tech II — 1 High School and/or 3 College Credits

This class is designed for students who have completed the Welding/Power Tech I course. Students will continue to challenge themselves by learning more advanced welding techniques and metal working techniques as well as enhancing their design skills as they plan and design personal metal projects. Students will complete the designing and building of a car for the MN Super-Mileage competition.

Robotics/CADD — 1 High School and/or 3 College Credits

This course focuses on robots. Students will learn about simple machines, gears and mechanical advantages and applying that knowledge to the building of robots. Students will learn to wire and program a variety of robots in preparation for possible Robotics' Competition. In addition, students will learn the Auto Cad (CADD) software. CADD is a computer drafting program that allows student design a variety mechanical projects.

COMPLETION STANDARD

Students wishing to receive a certification must complete all the courses while earning a minimum of a 'B' or better grade average. Students wishing to earn an additional industry certification must complete Welding/Power Tech I and II.

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. Highlights include participating in the Super-Mileage and First Robotics' competitions.

JOB SKILLS

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

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

CAREER OPTIONS: www.careerwise.minnstate.edu/careers

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