



Bridges Career Academy Manufacturing

Verndale High School

Understand careers in manufacturing. Experience working with a variety of metals and woods, while designing, cutting and machining a part. Learn skills in blue print reading, tool sharpening, thread cutting and shop safety. Project based, using real life activities. Gain entry-level employment or continue education.

Academic Courses

- Machine Trades
- Woodworking
- Robotics
- Geometry OR
- Algebra

Career Experiences

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

Completion Standards

COMPLETE

4 of 5 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

Verndale High School

The Manufacturing Academy provides students with an understanding of the vast number of careers in the manufacturing industries. Students experience working with a variety of metals and woods, while designing, cutting and machining a part. 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

Machine Trades — 1 High School Credit

This course is an introduction to machine shop processes; students will learn basic and advanced machine shop skills. Use of metal lathes, EDM machines, milling machines, drill presses and other machine processes will be covered. The use of computerized machines and career opportunities in the machine trades will be explored.

Woodworking — 1 High School Credit

This course teaches cabinetmaking/millwork from the elements and principles of design to application. Students will learn blueprint reading, developing a materials list, proper use of materials and equipment, and build a project. Safety skills are essential to this course.

Robotics — 1 High School Credit

This course focuses on robots. Students will learn about simple machines, gears and mechanical advantages and applying that knowledge to building robots. Students will learn to wire and program a variety of robots in preparation for possible robotics' competition.

Geometry — 1 High School Credit

This course will cover the essentials of geometry, reasoning and proof, parallel and perpendicular lines, congruent triangles, relationships with triangles, similarity, right triangles and trigonometry, quadrilaterals, properties of transformation, properties of circles, measuring length and area and surface area and volume of solids.

Algebra 1 — 1 High School Credit

A study of the basic language of Algebra, which includes: basic operations with natural numbers, whole numbers, integers, rational and irrational numbers. Students will also solve equations with one or two variables, work story problems, multiply polynomial, and study factoring.

COMPLETION STANDARD

Students wishing to receive a certification must complete manufacturing courses and either Geometry or Algebra I. Students must earn an average of 'B' grade, however a 'C+' grade in Robotics is acceptable. A 90% attendance rate is also an expectation.

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 and manage time

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

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