

# WHAT WE'RE ABOUT

*Everything around you began with a concept or an idea. Once the idea was realized, the design process began and Manufacturing was born! Think of how you can impact the world around you—the world of Manufacturing is waiting for you!*

Come get trained in your future career! Learn and develop practical hands-on skills that will open the door to endless possibilities. No matter where your interest lies, Manufacturing Technology is the course for you! Manufacturing has a direct impact on the world around us. This course can offer valuable job opportunities in a variety of fields and self employment options are available. Students will work with a variety of materials such as, plastics, specialty metals and castings. You will be introduced to specialized production methods which include, CNC plasma cutting, CNC milling and lathe work. Hands-on training is the focus of this course.

For further information regarding our programming please contact the Guidance Office at

College Heights Secondary School  
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Guelph, Ontario N1G 1T3

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**Fax: 519.821.5531**

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**College Heights**  
Secondary School

# Manufacturing Technology

# Machine Shop

**SHSM**  
UPPER GRAND DSB



## GRADE 9

In grade 9, students will be introduced to a variety of manufacturing processes that include lathe operation, milling machine operations, plasma cutting, computer aided manufacturing (CNC) and blacksmithing. Students will explore these areas while completing practical projects that allow them to use all the skills learned including safety, measurement and blueprint reading. Projects can include everything from aluminum pens, custom belt buckles to basic blacksmithing hooks and tools.

## GRADE 10

Grade 10 offers a more detailed look at tools and equipment while allowing students to explore some of the more advanced machining techniques and technologies like Computer Aided Design (CAD) and CNC programming. This course explores industry standards and how they relate to health and safety, blueprint reading and measurement, CNC programming and how things are made for mass production. It is examined and learned by working on real world equipment that is used in industry daily. During this year, projects will vary from flashlights, hammers, and machinist tools.

## GRADE 11

The double credit Machine shop course is designed to replicate a real world shop environment. Students will learn about quality control and measurement, surface grinding operations and a more in depth knowledge on lathe, mills and CNC equipment, while preparing to build their own project following the guidelines of the design process. Grade 11 projects include turners cubes, chess pieces, pen holders and a custom project of the students choice. This class is also offered as a single credit as well.

## GRADE 12

In the final year of this course, students will have an opportunity to refine and specialize in areas of their own interest. This gives students a chance to prepare for college or improve their skills on various pieces of equipment. Preparation for the job world is important as they will write a resume and research potential apprenticeship options. Students will have a chance to prove their skills by completing various advanced level metal working projects. During this year students have some creative freedom with project choice, but will also take part in class projects such as competing in the University of Guelph's WingEng competition.

## JOB OPPORTUNITIES

Manufacturing can lead to exciting careers around the world. By selecting machine shop as a class at College Heights, you open up options available to you when you leave, such as university, college, workplace and apprenticeships.

### Tool and Die

A class of machinists in the manufacturing industries who make jigs, fixtures, dies, molds, machine tools, cutting tools, gauges, and other tools used in manufacturing processes. Depending on which area of concentration a particular person works in, he or she may be called by variations on the name, including tool maker.

### Moldmaker

A skilled trades worker who makes molds for use in metalworking and other manufacturing industries. It is sometimes regarded as a variety of the trade of the toolmaker.

### General Machinist

Usually called upon when a part needs to be produced from a material by cutting. Such a part may be unique or may be needed in the thousands. This could include a machinery part for a production line, or anything that can be made from metal or plastic.



## Specialty Programs

- OYAP (Ontario Youth Apprenticeship Program)
- SHSM (Specialist High Skills Major)
- Co-operative Education
- Locally Developed Courses
- Skills Canada