

COURSE NAME: MST010 Machining Basics

Credit Value: 5
Total Course Hours: 70
Prerequisite Course(s): None
Corequisite Course(s): None

COURSE DESCRIPTION

In this entry level course students will get an understanding and appreciation of the requirements and skills needed to become a Machinist. Equally dividing the hours into theory and practical exercises the student will learn initially in class, basic safety and skills used to operate machine tools and put that knowledge into a practical application. The theory component will blend elements from our post-secondary blueprint reading and theory courses and expose the students to basic blueprint reading, measuring tools, the drill press, lathe, vertical mill and vertical bandsaw. The practical segment will require manufacture and assembly of a simple table vise. Students using the fore mentioned equipment will be instructed on how to turn diameters, mill flat surfaces, produce internal threads, reamed holes and the use of correct fasteners to assemble all component parts.

PLAR INFORMATION

This course is eligible for Prior Learning Assessment and Recognition. Students are advised to discuss options with their program coordinator.

COURSE LEARNING OUTCOMES

Upon completion of this course, the student will have reliably demonstrated the ability to:

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| 1.0 Interpret basic machining drawings to include: evaluating and locating part features shown in orthographic projection and producing drawings of simple components to reinforce skills. | 7.0 Use hand tools for deburring and preparation of assembly of finished components. |
| 2.0 Demonstrate the basics of measuring using imperial steel rules, calipers and micrometers to layout machining positions and verify correct placement and size of parts after cutting operations. | 8.0 Assemble parts using hand tools and threaded fasteners to complete the final assembly of the table vise. |
| 3.0 Calculate proper machining spindle speeds using cutting speed formulas and industry charts and tables. | |
| 4.0 Operate a vertical band saw to cut simple profiles and shapes from plate steel. | |
| 5.0 Demonstrate facing operations and turning of diameters on an engine lathe. Use the tailstock tooling for drilling and threading operations. | |
| 6.0 Use high speed steel tooling to produce flat surfaces on a vertical milling machine, use a machine vise and position cutters using a digital readout. | |

GENERAL EDUCATION

This is not a General Education course.

PROGRAM OUTCOMES

This course contributes to the following Ministry of Colleges and Universities approved program learning outcomes (PLO):

Trades Fundamentals

1. apply relevant mathematical concepts to a variety of trades and technology career options.
5. identify possible future career paths.
7. work independently and in group to accomplish desired goals and tasks.

ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES

This course contributes to the following Ministry of Colleges and Universities approved essential employability skills (EES) outcomes:

8. Show respect for the diverse opinions, values, belief systems, and contributions of others
9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10. Manage the use of time and other resources to complete projects.
11. Take responsibility for one's own actions, decisions, and consequences.

EXTERNAL COURSE ACCREDITATIONS AND CONDITIONS

COURSE EVALUATION

Tests - 10%, Exam - 20%, Practical Project - 70%

PROGRAM SPECIFIC GRADING

Per College Grading System

GRADING SYSTEM

A+:	90-100%	B+:	77-79%	C+:	65-69%	D:	50-54%	S - Satisfactory
A:	85-89%	B:	73-76%	C:	60-64%	F:	0-49%	I - Incomplete
A-:	80-84%	B-:	70-72%	D+:	55-59%			F- Repeat Course, included in GPA
								FS- Failure Supplemental
								FR- Repeat course, excluded from GPA

*For a complete chart of grades and descriptions, please see the Grading Policy.

LEARNING RESOURCES

Other Resources:

Class notes/handouts

Resources listed on the course outline support the achievement of learning outcomes, and may be used throughout the course to varying degrees depending on the instructor's teaching methodology and the nature of the resource.

LEARNING ACTIVITIES

Practice time in lab, lecture, combined theory & practical

DELIVERY MODE

This course may be delivered, in whole or in part, in a number of modalities, including in class, online, hybrid, in a synchronous or asynchronous manner or a combination thereof, as per accreditation and/or regulatory standards where appropriate.

EXPERIENTIAL LEARNING

All full-time programs of study at Canadore College strive to provide students with the opportunity for experiential learning. This course provides students with an experiential learning opportunity through:

Formal Course Projects (EL)

ACADEMIC POLICIES

Canadore College is committed to the highest standards of academic integrity, and expects students to adhere to these standards as part of the learning process in all environments. The College's Academic Integrity policy seeks to ensure that all students understand their rights and responsibilities in upholding academic integrity and that students receive an accurate and fair assessment of their work. Please review the Academic Integrity policy (A-18) and other academic policies found on our website:

<https://www.canadorecollege.ca/about/policies>.

COLLEGE POLICIES

- Protecting human rights in support of a respectful college community

For college policies please see: <http://www.canadorecollege.ca/about-us/college-policies>.

STUDENT SUCCESS SERVICES - Your Success Matters!

Student Success Services provides student-focused services to facilitate students' success in their studies. Staff provide support by reducing and/or removing educational-related barriers through individualized accommodations and supports to students with disabilities.

Please visit our webpage to learn more: <https://www.canadorecollege.ca/support/student-success-services> or look for our events on social media.

To connect with Student Success Services email studentsuccessnow@canadorecollege.ca or call 705.474.7600 ext 5205.

FIRST PEOPLES' CENTRE:

A culturally safe environment offering CONFIDENTIAL student focused services, drop in or make an appointment to access:

- One on one counselling
- Elder in residence program
- Peer tutoring
- Peer mentorship
- Lunch & learn workshops on study skills, self-care, life skills
- Learning Resource Centre

Drop by our offices at C254 College Drive, E101 Commerce Court or call 705 474 7600 Ext. 5961 College Drive / 5647 Commerce Court.

<https://www.canadorecollege.ca/experience/indigenous-student-experience>

WAIVER OF RESPONSIBILITY

Every attempt is made to ensure the accuracy of this information as of the date of publication. The college reserves the right to modify, change, add, or delete content.

HISTORICAL COURSE OUTLINES

Students use course outlines to support their learning. Students are responsible for retaining course outlines for future use in applications for transfer of credit to other educational institutions.