

I. COURSE DESCRIPTION:

This course is a continuation of Machine Shop Practical I. The student will continue to develop the skills required to safely setup and operate various machines used in Machine Shops. Focus will be on enhancing existing skills using lathes, milling machines and other machines used in the manufacture of components.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. *Work safe in a shop environment whether running machines or doing bench work.*Potential Elements of the Performance:

- Use all shop safety rules.
- Wear and use proper safety equipment.
- Operate machines in a safe manner.
- Practice safe working habits.

2. *Use all of the various measuring tools to verify dimensions of machined parts.*Potential Elements of the Performance:

- Use measuring tools such as scales, inside and outside micrometers and vernier calipers.
- Use transfer measuring tools such as inside and outside calipers, telescopic gauges, small hole gauges and dividers.

3. *Setup and Safely operate lathes*Potential Elements of the Performance:

- Use four jaw chucks for centering work
- Select correct speeds and feeds
- Select proper pitches using quick change gear box
- Understand and cut threads using different methods and pitches

4. Setup and safely operate Milling Machines

Potential Elements of the Performance:

- Setup milling machines using various work holding methods
- Select proper speeds and feeds and verify correct cutter rotation
- Perform various operations such as squaring stock
- Learn about keys and keyways and how to successfully setup and cut

5. Select and operate different types of drill presses.

Potential Elements of the Performance:

- Operate sensitive and radial arm drill presses safely.
- Select proper size drills for drilling and tapping.
- Perform operations such as drilling, reaming, and counter boring.
- Perform safe work holding using clamps, vises, angle plates, vee blocks and parallels.

6. Safely operate arbour press

Potential Elements of the Performance:

- Using an arbour press correctly install bushings or bearings
- Learn about internal keyways and how to cut them using an arbour press

7. Safely perform bench work and assembly

Potential Elements of the Performance:

- Assemble machined components
- Make necessary adjustments to allow components to fit together
- Verify accuracy of finished assembled components.

III. TOPICS:

1. Working safely in a shop environment.
2. Use and care of measuring tools.
3. Safe setup and operation of lathes
4. Safe setup and operation of milling machines
5. Safe setup and operation of drill presses
6. Safely operate arbour press
7. Safely perform bench work and assembly

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Technology Of Machine Tools textbook (recommended)
- Scientific calculator (not cell phones)
- Safety glasses
- Safety boots
- Shop coats (Not mandatory but recommended to protect clothing)
- Hair net required when hair is below collar length.
- (Hair may also be put up underneath a ball cap)

NOTE

Students are expected to wear safety equipment in the shop, failure to do so will result in denial to work in the shop on that occasion. While working in the shop do not wear rings or exposed jewellery or shorts.

CELL PHONES MUST NOT BE USED IN THE SHOP.

V. EVALUATION PROCESS/GRADING SYSTEM:

<i>Projects</i>	<i>80%</i>
<i>Housekeeping</i>	<i>10%</i>
<i>Attitude/Participation</i>	<i>10%</i>
<i>Attendance</i>	<i>-1% per Hour</i> <i>(Late = 1 Hour)</i>
<i>Safety Violations</i>	<i>-1% per Occurrence</i> <i>(See notes Below)</i>
 <i>Total</i>	<hr/> <i>100%</i>

NO CELL PHONES ARE PERMITTED IN THE SHOP OR CLASSROOM

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	

CR (Credit)	Credit for diploma requirements has been awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI. SPECIAL NOTES:

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade “C”, (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

It is the departmental policy that once the classroom door has enclosed, the learning process has begun. Late arrivers will not be granted admission to the room.>

Safety:

Sault College recognizes that the Health and Safety of the Students and Staff is of the utmost importance. Recognizing that safety is everyone's responsibility and there is never a reason to compromise safety, is an important step in reducing accidents. To minimize potential hazards in the shop and various labs, safety rules will be strictly enforced.

Students must continuously wear all Sault College required **Personal Protective Equipment (PPE)** while working in the shop or lab as required by the Instructor. Students are required to wearing their required PPE prior to entering the lab. Failure to do this will result in the expulsion from the shop or lab activity and a zero attendance mark will be recorded. A student who repeatedly neglects to wear PPE as required is in violation of the Sault College Academic code of Conduct and may be sanctioned accordingly.(see Student Code of Conduct & Appeal Guidelines). For instance, first violation-verbal warning, second violation –written warning and the third violation-suspension from the Shop or Lab. For each infraction a 1% penalty is applied (as per the Evaluation/Grading System above.)