



**I. COURSE DESCRIPTION:**

This course provides apprentices with an introduction to tools and equipment which they may be required to use during their “on the job” portion of their apprenticeship training.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

**1. Use personal protective equipment.**Potential Elements of the Performance:

- select proper safety work boots, eye protection, clothing and gloves

**2. Use hand and power tools.**Potential Elements of the Performance:

- safe and correct use of the following :  
hammers, chisels, tubing cutters, wrap-a-rounds, files, soldering equipment, threading equipment and oxygen/ acetylene equipment.
- safe and correct use of the following:  
power threading machines, roll groover, bending machines, drills, saws, butt fusion equipment(thermoplastics), hot air welding (thermoplastics) pressfit tool.

**3. Identify, select and use a variety of piping materials.**Potential Elements of the Performance:

- identify and select as required:  
copper tube and fittings, malleable iron fittings, steel pipe, steel tube, cast iron fittings and thermoplastics.

**4. Follow written or oral instructions required to perform calculations necessary to complete assigned practical tasks.**Potential Elements of the Performance:

- read and understand sketches provided.
- use required formulas to calculate overall measurements.
- read and apply charts to obtain the correct pipe lengths.
- layout pipe for cutting with:
  - oxygen/acetylene torch
  - pipe cutters
  - tubing cutters
- layout pipe and tubing for bending.

**5. Use a variety of methods required to join pipe and fittings for completion of specific practical assignments.**

Potential Elements of the Performance:

- Join piping by one or all of the following:

- fusion welding
- flared fittings
- compression fittings
- soft solder
- hard solder
- rolled groove

**III. TOPICS:**

1. Protect Self and Others
2. **Safe** and **Proper** use of hand tools, power tools and oxygen / acetylene cutting and welding torches
3. Pipe and fitting materials such as, but not limited to copper, steel, cast iron and thermo plastics.
4. Calculations required for offsets, fitting allowance, thread engagement, fitting fabrication, pipe and tube bending
5. Pipe threading, roll grooving, soldering ( hard and soft ) fusion welding, pipe and tube bending and

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Basic Plumbing Workbook

Calculator

IPT hand book for piping

Measuring tape

Welding gloves (also required for the welding shop)

Participation in PLM661 requires the use of **safety boots (high top recommended)** and **safety glasses** at all times, gloves and coveralls (no polyester materials) when needed. **These items are not supplied by Sault College.**

**V. EVALUATION PROCESS/GRADING SYSTEM:**

The apprentice is evaluated during the shop class and upon completion of the practical assignment/s

Specific practical assignment/s 60%

Attendance 20%

Shop safety 20%

- proper clean – up of work areas and storage of tools in their proper location is considered a integral portion of shop safety.

The following semester grades will be assigned to students:

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

Particular attention to the attendance requirements during the introduction to the apprentices by the Training Consultant for the Ministry of Training, Colleges and Universities must be adhered to for successful completion of the course.