

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** Steamfitting Practical  
**CODE NO. :** STM 651 **SEMESTER:** Fall 05  
**PROGRAM:** Steamfitting Basic - 6230  
**AUTHOR:** Brian Mick  
**DATE:** April 2005 **PREVIOUS OUTLINE DATED:**  
**APPROVED:**

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**DEAN** **DATE**

**TOTAL CREDITS:** 6  
**PREREQUISITE(S):**  
**HOURS/WEEK:** 6

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*For additional information, please contact Colin Kirkwood, Dean*  
*School of Technology, Skilled Trades & Natural Resources*  
*(705) 759-2554, Ext. 688*

## 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 threaders, 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, malleable iron, 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 in order to complete a specified practical assignment.

Potential Elements of the Performance:

- Join piping together by one or all of the following:

- threading
- 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, press fit, soldering ( hard and soft ) fusion welding, pipe and tube bending.

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

Basic Steamfitting Workbook

Calculator

IPT hand book for piping

Participation in STM651 requires the use of **safety boots** and **safety glasses at all times**, gloves and coveralls (no polyester materials). These items are not supplied by Sault College.

Use of full face shields and welding gloves are required to be worn when the work being performed dictates.

### V. EVALUATION PROCESS/GRADING SYSTEM:

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

Specific practical assignment 70%

Attendance 15%

Shop safety 15%

The following semester grades will be assigned to students in other than post secondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
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.	
NR	Grade not reported to Registrar's office.	

## VI. SPECIAL NOTES:

### Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493 so that support services can be arranged for you.

### 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.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. 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.

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.

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

**VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.