

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Fabrication II

**CODE NO. :** MTF 201                      **SEMESTER:** THREE

**PROGRAM:** Metal Fabrication Technician

**AUTHOR:** Steve Witty

**DATE:** Sept 2010      **PREVIOUS OUTLINE  
DATED:** N/A

**APPROVED:**

*“Corey Meunier”*  
CHAIR    Date

**TOTAL CREDITS:** FIVE

**PREREQUISITE(S):** MTF 131 – Fabrication 1

**HOURS/WEEK:** FIVE

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**For additional information, please contact Corey Meunier, Chair**  
**School of Technology & Skilled Trades**  
**(705) 759-2554, Ext. 2610**

**I. COURSE DESCRIPTION:** Demonstrate the ability to utilize shop machinery and equipment to safely prepare fabrication and detail materials.

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

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

**1. Demonstrate safe operation of fabrication machinery.**

- Rolls
- Ironworkers
- Shears
- Benders
- Break press
- Drilling machines
- Fitting tools
- Transfer part numbers

**2. Operate thermal cutting processes to generate shapes.**

- Freehand shape cutting
- CNC profile cutting

**3. Assemble components and sub assemblies.**

- Sequence of assembly
- Alignment
- Seam alignment tools
- Jigs and fixtures
- Tack welds
- Fasteners
- Bracing
- Torque values

**4. Develop jigs and fixtures.**

- Critical dimensions
- Datum locations
- Material selection
- Fabrication
- Clamping
- Forming and shaping
- Part removal
- Accessibility

**5. Demonstrate complex assembly techniques.**

- Prepared joint data
- Proper seam alignment on vessels
- Tack location and process
- Temporary restraint
- Pipe diameter alignment
- Backing rings
- Oblique pipe intersections
- Structural intersections / HSS intersections
- Tightening sequence / bolting
- Alignment of multi-segment cones
- Dimensional control of framed structural platform
- Standard tolerance of structural shapes
- Economic and safe sequencing
- Pre-welding requirements
- Accessibility of weld joints
- Ongoing third party checks
- Accommodation of part variation while maintaining overall dimensions
- Alignment and dimensions using heat or mechanical means
- Trial assembly of completed sub-components

**III. TOPICS:**

1. Safe demonstration of shop machinery.
2. Operation of thermal cutting equipment.
3. Component assembly.
4. Jig and fixture development and use.
5. Complex assembly techniques.

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

1. **Metal Trades Handbook**

## V. EVALUATION PROCESS/GRADING SYSTEM:

### Part 1 NOTES:

1. Re-writes are NOT allowed for any written assignment, quiz or test.
2. Repeats are NOT allowed for any shop test
3. Course attendance is mandatory. One percent (1 %) per hour will be Deducted from the final course grade for unexcused\* absence.

**[Any absence without a written, valid reason will be deemed unexcused.]**

Valid reasons would include:

- Doctor's note
- Apprenticeship Ministry note
- Family Death or Serious Illness supported by a written note.

### Part 2 Final Course Grades:

The final course grade will be determined by means of the following list of weighted factors:

<u>Factor</u>	<u>Value</u>
Shop Assignments	65 %
Practical Tests	35 %
Attendance	-1% per Unexcused Hour
Late	-1% per Late
Shop Clean-up	-1% per Incident

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
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:

### **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 been closed, the learning process has begun. Late arrivers will not be granted admission to the room.***

## VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.