

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: CNC Plasma Cutting

CODE NO. : MTF 234

SEMESTER: 4

PROGRAM: Metal Fabricator Technician

AUTHOR: Steve Witty

DATE: Dec 2010

PREVIOUS OUTLINE DATED: N/A

APPROVED:

“Corey Meunier”
CHAIR

DATE

TOTAL CREDITS: 1

PREREQUISITE(S): N/A

HOURS/WEEK: 1

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For additional information, please contact Corey Meunier, Chair
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I. COURSE DESCRIPTION:

A trades curriculum that has been designed to provide students with a combination of theoretical knowledge and hands on skill in relation to the safe use and operation of the CNC Plasma Cutting process.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. *Define safety related concepts.*

Potential Elements of the Performance:

Personal protection

- electrical safety
- grounding
- bonding
- radiation
- heat
- noise
- fumes
- high open circuit voltage
- compressed air pressure

2. *Explain the features of plasma arc cutting equipment.*

Potential Elements of the Performance:

- Types of Power Supplies
- Torch models
- Gauge settings
- Hoses
- Fittings
- Tips and consumables
- Pressures
- Speed of travel
- Types of cuts
- Material types
- Material thickness
- Piercing
- Quality control

3. Complete equipment start-up sequence and procedures.Potential Elements of the Performance:

- Turn on desktop computer.
- Confirm torch consumables match material thickness and cut quality desired for part.
- Verify air/gas supply.
- Power-up
- -THC (height control).
- -Main control box.
- -Hypotherm plasma unit.

4. Operate Desk CNC SoftwarePotential Elements of the Performance:

- Initiate Desk CNC software.
- Follow operations instruction manual.
- Verify torch coordinates
- Ensure all safety screens or shields are in place
- Check measurements of cut piece
- Cut full quantity
- Follow proper shut-down procedures.

III. TOPICS:

1. Personal Protective Equipment and Safety
2. Plasma Features
3. Start-up sequence and procedures
4. Operate Desk CNC Software

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Impact Resistant Safety Glasses (CSA Approved)
- High Cut (6 inch) Safety Work Boot (CSA Approved)
- Weld Gloves (CSA Approved)
- Modules: Handouts

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
- 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:

Factor	Value
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:

Grade	Definition	Grade Point Equivalent
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.