



**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 controlled Plasma cutting table and Coordinate drive track cutter processes.

**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 and Oxy/fuel gas 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.
- Hypertherm plasma unit.

**4. Operate Desk CNC Software**

Potential 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.

**5. Demonstrate the ability to produce templates for cutting.**

Potential Elements of the Performance:

- Complete traceable drawing that conforms to part requirements.
- Calculate kerf for inside and outside cuts to ensure correct dimensions.
- Conserve material with layout techniques.
- Use multiple cutting attachments to complete production requirements.
- Clean finished components for fabrication.

**III. TOPICS:**

1. Personal Protective Equipment and Safety
2. Plasma and Oxy/Fuel
3. Start-up sequence and procedures
4. Operate Desk CNC Software
5. Produce templates

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

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

## V. EVALUATION PROCESS/GRADING SYSTEM:

### Part 1 – Notes:

1. Late hand in penalties will be 10% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
2. If a student misses a test/lab he/she must have a valid reason (i.e. medical or family emergency – documentation shall be required). In addition, the instructor MUST be notified PRIOR to the test or lab sitting. If this procedure is not followed the student will receive a mark of zero on the test/lab with no make-up option.
3. Re-writes are NOT allowed for any written assignment, quiz or test.
4. Repeats are NOT allowed for any shop test.
5. 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:

| <b><i>Factor</i></b> | <b><i>Value</i></b>    |
|----------------------|------------------------|
| Shop Assignments     |                        |
| Practical Tests      | 100 %                  |
| Attendance           | -1% per Unexcused Hour |
| Late                 | -1% per Late           |
| Shop Clean-up        | -1% per Incident       |

The following semester grades will be assigned to students:

| <b>Grade</b> | <b><u>Definition</u></b>   | <i>Grade Point<br/>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:

### **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.