

I. COURSE DESCRIPTION:

Describe the fundamentals and the selection of consumables for the Flux Cored Arc Welding (FCAW) process and Metal Cored Arc Welding (MCAW) process.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. **Define the fundamentals of the Flux Cored Arc Welding (FCAW) process and the Metal Cored Arc Welding (MCAW) process.**
 - Metallic transfer
 - Construction of the tubular wire
 - Gas shielding
2. **Explain the function of the components of the Flux Cored Arc Welding (FCAW) process and the Metal Cored Arc Welding (MCAW) process.**
 - Fundamentals and characteristics of the Constant Current power source
 - Fundamentals and characteristics of the Constant Voltage power source
 - Electrode wire classification
 - Mechanical feeders
 - Gas shielding
3. **Describe the selection of the welding parameters and consumables necessary for the Flux Cored Arc Welding (FCAW) process and the Metal Cored Arc Welding (MCAW) process.**
 - Material thickness
 - Position of welding
 - Voltage
 - Wire feed speed
 - Wire type and size
 - Drive rolls
 - Contact tips
 - Selection of shielding gas
 - Types
 - Flow rate
 - Gun angle
 - Direction of travel

III. TOPICS:

1. (FCAW) and (MCAW) fundamentals.
2. (FCAW) and (MCAW) components.
3. (FCAW) and (MCAW) welding parameters and consumables.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Alberta ILM – 120203 b, 120301 (a,b,c), 120302 a

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

Valid reasons would include:

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

FINAL COURSE GRADES:

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

Factor	Value
Shop Assignments and Practical Tests	100%
Attendance	-1% per Unexcused Hour
Shop Clean-up	-1% per Incident

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>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:

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.