SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	Gas Tungsten Arc Welding (GTAW)		
CODE NO. :	MTF132	**SEMESTER:**	TWO
PROGRAM:	Metal Fabrication Technician & Welding Techniques		
AUTHOR:	Steve Witty		
INSTRUCTOR:	Steve Witty		
DATE:	Jan 2014	**PREVIOUS OUTLINE DATED:**	Jan 2013
APPROVED:	*"Corey Meunier"*		
	CHAIR		**DATE**
TOTAL CREDITS:	TWO		
PREREQUISITE(S):			
HOURS/WEEK:	TWO		

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

I. COURSE DESCRIPTION:

Curriculum based on demonstrating the knowledge and skills required to be competent in the gas tungsten arc welding process while following applicable industry standards and codes.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Describe the power sources required for the gas tungsten arc welding process.

- Constant current power sources.
- Alternating current and direct current.
- Power source requirements.
- Power source options and features.
- Power source set up and maintenance.

2. Describe the process requirements in regards to filler metals, electrodes and shielding gasses.

- Shielding gasses.
- AWS electrode classifications.
- AWS and CSA filler metal classifications.
- Proper selection of filler metals, electrodes and shielding gasses.

3. Understand the proper procedures and requirements for welding of various metals with the gas tungsten arc welding process.

- GTAW aluminum and its alloys.
- GTAW stainless steels and its alloys.
- GTAW mild carbons steels and their alloys.

4. Describe maintenance and trouble shooting of gas tungsten arc welding equipment.

- GTAW torch assembly.
- GTAW flow meters and regulators.
- GTAW hoses and cables

5. Demonstrate the ability to weld with the gas tungsten arc welding process.

- Produce acceptable welds on mild steel.

III. TOPICS:

1. Describe the power sources required for the gas tungsten arc welding process.
2. Describe the process requirements in regards to filler metals, electrodes and shielding gasses.
3. Understand the proper procedures and requirements for welding of various metals with the gas tungsten arc welding process.
4. Describe maintenance and trouble shooting of gas tungsten arc welding equipment.
5. Demonstrate the ability to weld with the gas tungsten arc welding process.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- IPT Metal Trades Handbook
- Welding Skills Textbook/Workbook
- Provided handout materials
- Impact Resistant Safety Glasses (CSA Approved)
- High Cut (6 inch min) Safety Work Boot (CSA Approved)
- Weld Gloves (CSA Approved)

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:

Factor	***Value***
Shop Assignments	100 %
1F Lap Joint Carbon Steel	15 %
1F Tee Joint Carbon Steel	15 %
2F Lap Joint Carbon Steel	15%
2F Tee Joint Carbon Steel	15 %
1F Lap/Tee Joint Aluminum	15 %
1F Carbon/Stainless	15 %
3F Tee Joint Carbon Steel	10%
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%	
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.