



COURSE OUTLINE

MTF0105

Prepared: Dave Holley Approved: Corey Meunier

Course Code: Title	MTF0105: GAS SHIELDED SEMI-AUTOMATIC WELDING I		
Program Number: Name	1120: COMMUNITY INTEGRATN		
Department:	C.I.C.E.		
Semester/Term:	17F		
Course Description:	Describe the fundamentals, construction features and consumables of the Gas Metal Arc Welding (GMAW) process in accordance with government safety regulations, manufacturer's recommendations and approved industry standards. 		
Total Credits:	2		
Hours/Week:	3		
Total Hours:	3		
Essential Employability Skills (EES):	#5. Use a variety of thinking skills to anticipate and solve problems. #8. Show respect for the diverse opinions, values, belief systems, and contributions of others. #10. Manage the use of time and other resources to complete projects. #11. Take responsibility for ones own actions, decisions, and consequences.		
Course Evaluation:	Passing Grade: 50%, D		
Other Course Evaluation & Assessment Requirements:	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. Valid reasons would include: Doctors note Family Death or Serious Illness supported by a written note.		
Evaluation Process and	<table border="1"> <thead> <tr> <th>Evaluation Type</th> <th>Evaluation Weight</th> </tr> </thead> </table>	Evaluation Type	Evaluation Weight
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Grading System:

Flat CWB	20%
Flat Lap	15%
Flat Tee	15%
Horizontal CWB	20%
Horizontal Lap	15%
Horizontal Tee	15%

Books and Required Resources:

Welding Skills by B. J. Moniz
Publisher: ATP Edition: 5
ISBN: 978-0-8269-3084-2

Course Outcomes and Learning Objectives:

Upon successful completion of this course, the CICE student, with the assistance of a Learning Specialist will acquire varying levels of skill development relevant to the following learning outcomes:

Course Outcome 1.

A curriculum has been designed to:

- Provide a combination of theoretical knowledge and practical (hands on) skill in the safe use and operation of typical Gas Metal Arc welding equipment.
- To develop the clients welding skill to the point where he/she can pass the pre-qualified CWB plate test in the specified position

Learning Objectives 1.

1. Demonstrate by means of practical shop assignments, a sound working knowledge of both Personal and Shop Safety.

Potential Elements of the Performance:

- identify proper work boots, gloves and eye protection
- identify recommended fabrics and materials for personal protective clothing
- identify and select proper shades of welding lenses
- identify, select and adjust welding helmets for proper fit and vision
- locate and identify shop lighting and ventilation switches
- locate and identify emergency exits
- understand procedures for evacuation of shop areas in the case of emergencies



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2. Demonstrate the ability to set up and operate a typical GMAW workstation.

Potential Elements of the Performance:

- identify proper eye, hand and face protection
- identify proper footwear and clothing
- identify potential fire, fume and explosion hazards associated in the Gas Metal Arc machine
- briefly describe the differences between a constant current and a constant voltage welding machine
- explain why a constant voltage machine is used for the GMAW process
- identify electrode types, sizes according to CSA / AWS specification
- identify various shielding gases and their potential use(s)
- perform a routine inspection of assigned workstations to determine the condition of wire feeder, cables, torch body, hoses and regulators
- report / correct deficiencies prior to the commencement of work
- describe procedures for setting shielding gas flow rate, voltage, wire feed speed and visible (electrode) stick-out distance
 - describe techniques for arc ignition, setting gun angle and travel speeds

3. Demonstrate the ability to perform GMAW procedures as well as

Identify and Correct Weld Defects.

Potential Elements of the Performance:

- produce fillet and groove welds on both thin gauge and thick metals
- perform adjustments to voltage and wire feed speed in accordance with the demands of base metal thickness and joint design
- change / replace rolls of electrode wire
- perform in-service adjustments to wire drive rolls, contact tip and nozzle

4. Demonstrate the level of skill required to pass a pre-qualified CWB Plate Test Assembly in the specified position.

Potential Elements of the Performance:

- prepare test plate assemblies as per W47.1 specifications relating to:
 - o thickness, width and length dimensions
 - o root opening
 - o bevel angle
 - o number and location of bend test coupons
- o S – class vs. T – class qualification
 - weld the test plate assemblies as per W47.1 specifications relating to:
 - o number and location of stop / restarts
 - o weld bead sequence
 - o dimensions of completed weld
 - o acceptable vs. unacceptable visual defects



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- prepare bend test coupons as per W47.1 specifications relating to:
 - o minimum coupon width
 - o minimum coupon thickness
 - o shape of flame cut edges and corners
 - o acceptable vs. unacceptable dimensions for test defects
 - understand W47.1 specifications relating to:
 - o period of welder qualification
 - o conditions of welder qualification
 - o qualified welding process

CICE Modifications:

Preparation and Participation

1. A Learning Specialist will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

A. Further modifications may be required as needed as the semester progresses based on individual student(s) abilities and must be discussed with and agreed upon by the instructor.

B. Tests may be modified in the following ways:

1. Tests, which require essay answers, may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests, which use fill in the blank format, may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

C. Tests will be written in CICE office with assistance from a Learning Specialist.

The Learning Specialist may:



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1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

D. Assignments may be modified in the following ways:

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

The Learning Specialist may:

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

E. Evaluation:

Is reflective of modified learning outcomes.

NOTE: Due to the possibility of documented medical issues, CICE students may require alternate methods of evaluation to be able to acquire and demonstrate the modified learning outcomes

Date:

Wednesday, September 6, 2017

Please refer to the course outline addendum on the Learning Management System for further information.