COURSE OUTLINE

MTF132

Prepared: Dave Holley Approved: Corey Muenier

Course Code: Title	MTF132: GAS TUNGSTEN ARC WELDING 1
Program Number: Name	4051: METAL FABRICATION
Department:	IRONWKR APPR./WELDING RELATED
Semester/Term:	17F
Course Description:	Perform welding procedures using Gas Tungsten Arc Welding (GTAW) process in accordance with government safety regulations, manufacturer`s recommendations, and approved industry standards.
Total Credits:	2
Hours/Week:	2
Total Hours:	30
Vocational Learning Outcomes (VLO's): **Please refer to program web page for a complete listing of program outcomes where applicable.**	**4051 - METAL FABRICATION** #2. Apply knowledge of various welding and metal cutting techniques and theories to produce components and sub-assemblies. #3. Prepare materials by utilizing fabrication machinery and equipment. #5. Understand and use a variety of destructive and non-destructive methods to test welds. #7. Complete all work in compliance with health and safety legislation and prescribed organizational practices and procedures to ensure safety of self and others. #8. Work responsibly and effectively in accordance with government safety regulations, manufacturer's recommendations and approved industry standards.
Essential Employability Skills (EES):	#5. Use a variety of thinking skills to anticipate and solve problems. #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.

[Any absence without a written, valid reason will be deemed unexcused.]

Valid reasons would include:
Doctors note
Family Death or Serious Illness supported by a written note.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
1F Lap Carbon Steel	15%
1F Lap/Tee Aluminum	15%
1F Lap/Tee Stainless Steel	15%
1F Tee Carbon Steel	15%
2F Lap Carbon Steel	15%
2F Tee Carbon Steel	15%
3F Tee Carbon Steel	10%

Course Outcomes and Learning Objectives:

Course Outcome 1.

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.

Learning Objectives 1.

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.

Date:	Monday, December 18, 2017
	Please refer to the course outline addendum on the Learning Management System for further information.