Washtenaw Community College Comprehensive Report

WAF 103 Introduction to Gas Tungsten Arc Welding
Effective Term: Winter 2018

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: Welding and Fabrication
Discipline: Welding and Fabrication
Course Number: 103
Org Number: 14610
Full Course Title: Introduction to Gas Tungsten Arc Welding
Transcript Title: Intro Gas Tungsten Arc Welding
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
Course description
Objectives/Evaluation
Rationale: Update to information in syllabus is needed to comply with three-year assessment cycle.
Proposed Start Semester: Winter 2018
Course Description: In this course, students will be exposed to the gas tungsten arc welding (GTAW) process. The student will weld butt, lap and tee joints in the flat and horizontal positions on mild steel and aluminum. Welding vocabulary, theory and safety precautions will be discussed in the classroom. The student will apply safe work practices, welding techniques and theories related to the composition and properties of these metals. This course is designed for non-welding majors. This class does not meet a requirement for welding certificates or degrees. The title of this course was previously Heli-Arc Welding.

Course Credit Hours

Variable hours: No
Credits: 2
Lecture Hours: Instructor: 15 **Student:** 15
Lab: Instructor: 45 **Student:** 45
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

General Education

Degree Attributes

Statewide articulation approved

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Recognize and apply welding vocabulary.
   Assessment 1
   Assessment Tool: Written exam
   Assessment Date: Fall 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: 80% of students will score 90% or higher
   Who will score and analyze the data: Departmental faculty

2. Recognize and interpret welding theory.
   Assessment 1
   Assessment Tool: Written exam
   Assessment Date: Fall 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: 80% of students will score 90% or higher
   Who will score and analyze the data: Departmental faculty

3. Gas tungsten arc weld a butt, lap and tee joint in the flat and horizontal positions on aluminum and mild steel.
   Assessment 1
   Assessment Tool: Welded samples
   Assessment Date: Fall 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: The welds will be scored as pass or fail in meeting the AWS D1.1 and D1.2 code.
   Standard of success to be used for this assessment: 80% of students will create welds in accordance with AWS D1.1 and D1.2 code.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Recall and demonstrate proper safety measures in gas tungsten arc welding (GTAW).
2. Properly set-up the gas tungsten arc welding equipment for use.
3. Describe the horizontal position in welding.
4. Run a bead on aluminum and mild steel in the flat and horizontal positions.
5. Explain the procedure for selection of filler wire.
6. Describe the preparation of tungsten electrodes for alternating current (AC) and direct current (DC-).
7. Weld a butt joint with complete joint penetration on aluminum and mild steel in the flat and horizontal positions.
8. List the proper lens shades used for various tungsten inert gas (TIG) welding amperages.
9. Weld a lap joint in the flat position on aluminum and mild steel.
10. List the color code markings for tungsten electrodes.
11. Describe the set-up procedure for a flat position tee weld.
12. Weld a tee joint in the flat and horizontal positions on aluminum and mild steel.
13. Weld a lap joint with a shelf in the horizontal position on aluminum and mild steel.
14. Weld a lap joint without a shelf in the horizontal position on aluminum and mild steel.
15. Discuss the use of backing plates and the effects they have.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Alexander Pazkowski	*Faculty Preparer*	*Aug 01, 2017*
Department Chair/Area Director:		
Glenn Kay II	*Recommend Approval*	*Aug 17, 2017*
Dean:		
Brandon Tucker	*Request Conditional Approval*	*Aug 20, 2017*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Oct 23, 2017*
Assessment Committee Chair:		
Michelle Garey	*Recommend Approval*	*Oct 24, 2017*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Oct 25, 2017*