Washtenaw Community College Comprehensive Report

WAF 215 Advanced Gas Tungsten Arc Welding
Effective Term: Winter 2012

Course Cover

Division: Vocational Technologies
Department: Welding and Fabrication
Discipline: Welding and Fabrication
Course Number: 215
Org Number: 14610
Full Course Title: Advanced Gas Tungsten Arc Welding
Transcript Title: Adv 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 title
Course description
Pre-requisite, co-requisite, or enrollment restrictions
Outcomes/Assessment
Objectives/Evaluation
Rationale: Regular three year review
Proposed Start Semester: Winter 2012
Course Description: This course is designed for the advanced gas tungsten arc welding (also referred to as TIG) student. Welding is done on ferrous and non-ferrous materials in horizontal, vertical and overhead positions on plate and tubular materials. Welding theories and advanced welding techniques are addressed along with filler metal classification, identification and proper selection for specific applications. The title of this course was previously Welding V Advanced GTAW and GMAW.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 30 **Student:** 30
Lab: Instructor: 90 **Student:** 90
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 120 **Student:** 120
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

Prerequisite
Academic Reading and Writing Levels of 6
and
Prerequisite

WAF 103 minimum grade "C"
or
Prerequisite
WAF 105 minimum grade "C"

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Recognize and apply welding vocabulary.
   Assessment 1
   Assessment Tool: Written exam
   Assessment Date: Fall 2012
   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 2012
   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 vertical and overhead positions on ferrous and non-ferrous materials.
   Assessment 1
   Assessment Tool: Welded samples
   Assessment Date: Fall 2012
   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 AWS D1.2 and D1.6 code.
   Standard of success to be used for this assessment: 80% of students will create welds in accordance with AWS D1.2 and D1.6 code.
   Who will score and analyze the data: Departmental faculty

4. Gas tungsten arc weld tubular materials in the flat and horizontal positions.
   Assessment 1
   Assessment Tool: Welded samples
   Assessment Date: Fall 2012
   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 AWS D1.2 and D1.6 code.
Standard of success to be used for this assessment: 80% of students will create welds in accordance with AWS D1.2 and D1.6 code.
Who will score and analyze the data: Departmental faculty

Course Objectives

1. Demonstrate proper welding safety to industrial standards.
   Matched Outcomes
2. Work using proper welding safety.
   Matched Outcomes
3. Properly set up TIG welding equipment for use.

   Matched Outcomes
4. Work using proper welding safety.
   Matched Outcomes
5. Explain the procedure for selection of filler wire.
   Matched Outcomes
6. Describe the preparation of tungsten electrodes for AC and DC.
   Matched Outcomes
7. Weld a butt, lap, tee and outside corner joint on aluminum in the flat and horizontal positions.

   Matched Outcomes
8. List the lens shades used for various GTAW amperages.

   Matched Outcomes
9. Weld a butt, lap, tee and outside corner weld on steel in the flat and horizontal positions.

   Matched Outcomes
10. Describe the set up procedure for a flat position tee joint.

    Matched Outcomes
11. List the color code markings for tungsten electrodes.
    Matched Outcomes
12. Weld a butt, lap and tee joint on aluminum in the vertical and overhead positions.

    Matched Outcomes

13. Weld a butt, lap and tee joint in the flat and horizontal positions on stainless steel.

    Matched Outcomes

14. Weld a butt, lap and tee joint in the vertical and overhead positions on stainless steel.

    Matched Outcomes

15. Discuss the applications of stainless steels.

    Matched Outcomes

16. Describe the necessary heat settings and arc length used for the lap joint.
    Matched Outcomes

17. Discuss the use of backup bars and the effects they have.
    Matched Outcomes

18. Weld a tubular joint in the 1GR position on steel.

    Matched Outcomes

19. Weld a tubular joint in the 2F position.

    Matched Outcomes

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Amanda Scheffler	*Faculty Preparer*	*Aug 08, 2011*
Department Chair/Area Director:		
Glenn Kay II	*Recommend Approval*	*Oct 05, 2011*
Dean:		
Ross Gordon	*Recommend Approval*	*Oct 18, 2011*
Vice President for Instruction:		
Stuart Blacklaw	*Approve*	*Nov 15, 2011*