

Washtenaw Community College Comprehensive Report

WAF 111 Oxy-fuel Welding Effective Term: 2012

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: Welding and Fabrication

Discipline: Welding and Fabrication

Course Number: 111

Org Number: 14610

Full Course Title: Oxy-fuel Welding

Transcript Title: Oxy-fuel 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 focuses on the use of oxy-fuel equipment to perform oxy-fuel cutting, brazing and butt, lap, and tee welds in all positions on mild steel. Students will apply safe work practices and welding theory in the laboratory setting. The title of this course was previously Welding I Oxy-Acetylene.

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

WAF 100 minimum grade "C"; may enroll concurrently

or

Prerequisite

WAF 101 minimum grade "C"; may enroll concurrently
or

Prerequisite

WAF 104 minimum grade "C"; may enroll concurrently
or

Prerequisite

WAF 105 minimum grade "C"; may enroll concurrently

General Education

Degree Attributes

High School 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 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. Oxy-fuel weld a butt, lap and tee joint in the basic 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 D1.1 code.

Standard of success to be used for this assessment: 80% of students will create welds in accordance with AWS D1.1 code.

Who will score and analyze the data: Departmental faculty

4. Oxy-fuel weld a butt, lap and tee joint in the advanced vertical and overhead 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 D1.1 code.
 Standard of success to be used for this assessment: 80% of students will create welds in accordance with AWS D1.1 code.
 Who will score and analyze the data: Departmental faculty

Course Objectives

1. Properly set-up oxy-fuel equipment for use, and check for leaks.
2. Demonstrate safety precautions when handling oxy-fuel equipment.
3. Light the torch to demonstrate an oxidizing, carburizing and neutral flame.
4. Run a bead in all positions using filler rod.
5. Explain the effects of expansion and contraction and compensate for expansion and contraction on all butt joints.
6. Weld a butt joint in all positions achieving 100% penetration.
7. Discuss burn away and how it is prevented.
8. Explain why lap joints are avoided when possible.
9. Weld a lap joint in all positions capable of withstanding a bend test.
10. Explain undercutting and how to prevent it.
11. Weld a tee joint in all positions capable of withstanding a bend test.
12. Describe cold lap and its cause.
13. Discuss the use of torch angle and filler rod.
14. Manipulate the torch and filler rod to control cold lap.
15. Describe overhead welding position.
16. Braze a bead and butt joint on steel.
17. Braze a cast iron joint capable of withstanding a destructive test.
18. Make a butt weld on a pipe in the vertical position.
19. Overlap beads on a pipe weld with complete fusion.
20. Make a butt weld on a pipe in the horizontal position.

New Resources for Course

Course Textbooks/Resources

Textbooks
 Manuals
 Periodicals
 Software

Equipment/Facilities

Level III classroom

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer:	<i>Faculty Preparer</i>	<i>Jul 14, 2011</i>
Department Chair/Area Director: <i>Glenn Kay II</i>	<i>Recommend Approval</i>	<i>Oct 05, 2011</i>
Dean: <i>Ross Gordon</i>	<i>Recommend Approval</i>	<i>Oct 18, 2011</i>
Curriculum Committee Chair: <i>Kelley Gottschang</i>	<i>Recommend Approval</i>	<i>Nov 07, 2011</i>
Assessment Committee Chair:		

Rosemary Rader

Recommend Approval

Nov 15, 2011

Vice President for Instruction:

Stuart Blacklaw

Approve

Nov 15, 2011