Washtenaw Community College Comprehensive Report

UAT 249 Methods in Teaching Arc Welding
Effective Term: Spring/Summer 2014

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: United Association Department
Discipline: United Association Training
Course Number: 249
Org Number: 28200
Full Course Title: Methods in Teaching Arc Welding
Transcript Title: Methods in Teaching Arc Weldin
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
- **Course description**
- **Credit hours**
- **Total Contact Hours**
- **Outcomes/Assessment**
- **Objectives/Evaluation**

Rationale: Course update
Proposed Start Semester: Spring/Summer 2014
Course Description: In this course, students will learn about methods of teaching the fundamental theories and practical applications of arc welding. Following a review of arc welding techniques and practical applications, students will develop welder training programs specific to local industry. Training program topics to be covered include: principles of basic welding, metallurgy, shielded metal arc welding, gas tungsten arc welding, gas metal arc welding, flux core arc welding, oxy-fuel cutting and setting up welding equipment for production welding and performance qualifications. Related topics include F numbers, shielding gases, welding electrode classifications, process definitions and theories, consumable selection, storage and handling procedures. Students taking this course should have working knowledge of arc welding. Limited to United Association program participants.

Course Credit Hours

Variable hours: No
Credits: 1
Lecture Hours: Instructor: 15 **Student:** 15
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0
Other: Instructor: 5 **Student:** 5

Total Contact Hours: Instructor: 20 **Student:** 20
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

Below College Level Pre-Reqs

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Explain the central concepts and skills of arc welding, utilizing UA approved materials.
   Assessment 1
   Assessment Tool: Class presentation
   Assessment Date: Spring/Summer 2014
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 75% of students will score 75% or above.
   Who will score and analyze the data: Departmental faculty

2. Demonstrate methods of teaching on arc welding processes and applications.
   Assessment 1
   Assessment Tool: Presentation
   Assessment Date: Spring/Summer 2014
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 75% of students will score 75% or above.
   Who will score and analyze the data: Departmental faculty

3. Set up welding equipment and perform welds for a performance qualification.
   Assessment 1
   Assessment Tool: Welding project
   Assessment Date: Spring/Summer 2014
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: rubric
   Standard of success to be used for this assessment: 75% of students will assemble equipment in accordance with ANSI Z49.1 standards. 75% of welds will be in accordance with ASME B31.1 code.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Develop concepts and strategies needed to teach apprentices the theories and principles of welding and metallurgy on carbon steel, stainless steel, and aluminum.
   Matched Outcomes
2. Develop concepts and strategies needed to teach apprentices how to recognize the different welding processes and applications.
   Matched Outcomes
3. Develop concepts and strategies needed to teach apprentices how to perform various welding processes, such as shielded metal arc welding, gas tungsten arc welding, gas

metal arc welding, and flux core arc welding.
Matched Outcomes

4. Demonstrate how to cut and weld using oxy-fuel equipment.
Matched Outcomes
5. Demonstrate appropriate use and knowledge of course materials.
Matched Outcomes
6. Develop concepts and strategies needed to teach apprentices how to program welding equipment for production welding and performance qualifications.
Matched Outcomes
7. Develop concepts and strategies needed to teach apprentices how to identify and match F numbers to filler materials.
Matched Outcomes
8. Develop concepts and strategies needed to teach apprentices how to identify shielding gas uses for related welding processes.
Matched Outcomes
9. Develop concepts and strategies needed to teach apprentices how to recognize welding electrode classifications.
Matched Outcomes

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom
Other: 230/460 1/3PH Power outlets, 3 of them

Reviewer	Action	Date
Faculty Preparer:		
Amanda Scheffler	*Faculty Preparer*	*Jun 27, 2013*
Department Chair/Area Director:		
Scott Klapper	*Recommend Approval*	*Feb 03, 2014*
Dean:		
Marilyn Donham	*Recommend Approval*	*Feb 05, 2014*
Vice President for Instruction:		
Bill Abernethy	*Approve*	*Mar 31, 2014*