

Washtenaw Community College Comprehensive Report

UAT 288 Shielded Metal Arc Welding (UA 8012) Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 288

Org Number: 28200

Full Course Title: Shielded Metal Arc Welding (UA 8012)

Transcript Title: Shielded Metal Arc Weld (8012)

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Web Page

Reason for Submission: Course Change

Change Information:

Consultation with all departments affected by this course is required.

Course title

Course description

Outcomes/Assessment

Objectives/Evaluation

Rationale: Update United Association course

Proposed Start Semester: Fall 2020

Course Description: In this course, students will develop the skills and techniques used for Shielded Metal Arc Welding (SMAW) of alloy and heavy wall piping materials. Students will recognize the current methods and advanced techniques to the SMAW process for variable thicknesses of pipe. Students will demonstrate these techniques in a hands-on lab application. The title of this course was previously Shielded Metal Arc Welding. Limited to United Association program participants.

Course Credit Hours

Variable hours: No

Credits: 1.5

The following Lecture Hour fields are not divisible by 15: Student Min ,Instructor Min

Lecture Hours: Instructor: 22.5 Student: 22.5

The following Lab fields are not divisible by 15: Student Min, Instructor Min

Lab: Instructor: 1.5 Student: 1.5

Clinical: Instructor: 0 Student: 0

Total Contact Hours: Instructor: 24 Student: 24

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. Identify techniques and fundamentals of Shielded Metal Arc Welding.

Assessment 1

Assessment Tool: Outcome-related written exam questions

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 sheet

Standard of success to be used for this assessment: 80% of the students will score 80% or higher.

Who will score and analyze the data: U.A. instructors

2. Demonstrate weld joint preparation for different thicknesses of heavy-wall pipe welding.

Assessment 1

Assessment Tool: Demonstration

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: Skills checklist

Standard of success to be used for this assessment: 80% of the students will score 80% or higher.

Who will score and analyze the data: U.A. instructors

3. Demonstrate techniques using rod filler material in all welding positions.

Assessment 1

Assessment Tool: Demonstration

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: Skills checklist

Standard of success to be used for this assessment: 80% of the students will score 80% or higher.

Who will score and analyze the data: U.A. instructors

Course Objectives

1. Explain and demonstrate how to set up shielded metal arc welding equipment and select necessary components.
2. Describe shielded metal arc welding equipment and their functions.
3. Describe and exhibit proper safety measures when doing shielded metal arc welding.
4. List variables in SMAW.

5. Identify the safety requirements and the personal protection equipment (PPE) needed to perform SMAW.
6. Discuss different types of welding techniques.
7. Discuss essential and non-essential variables in the welding process in accordance with Welding Procedure Specifications (WPS).
8. Identify types of weld joints and the bevel preparations needed.
9. Discuss techniques of root pass welding.
10. Discuss the importance of "land" and "gap" in a weld joint.
11. Compare and contrast welding techniques of lacing, weaving, oscillating, and dragging.
12. Discuss rod angle and arc length when depositing filler metal.
13. Discuss the correlation between rod diameter and amperage settings.
14. Discuss and perform Oxy-Fuel cutting for weld preparation.

New Resources for Course

Course Textbooks/Resources

Textbooks

ATP Staff. *Welding Practices and Procedures for the Pipe Trades* , First ed. American Technical Publishers, 2017

Manuals

Periodicals

Software

Equipment/Facilities

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Tony Esposito</i>	<i>Faculty Preparer</i>	<i>May 01, 2020</i>
Department Chair/Area Director: <i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>May 07, 2020</i>
Dean: <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>May 27, 2020</i>
Curriculum Committee Chair: <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Sep 25, 2020</i>
Assessment Committee Chair: <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Sep 30, 2020</i>
Vice President for Instruction: <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Oct 06, 2020</i>