

## Washtenaw Community College Comprehensive Report

### WAF 126 Introduction to Welding Processes II Effective Term: Winter 2022

#### Course Cover

**College:** Advanced Technologies and Public Service Careers

**Division:** Advanced Technologies and Public Service Careers

**Department:** Welding and Fabrication

**Discipline:** Welding and Fabrication

**Course Number:** 126

**Org Number:** 14600

**Full Course Title:** Introduction to Welding Processes II

**Transcript Title:** Intro to Weld Processes II

**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:**

#### **Outcomes/Assessment**

**Rationale:** The current assessment outcomes 3-5 are being updated to match the final welds in the course. The students are given a choice of which position to complete their final welds. This is a total of 9 welds to score and assess at the end of the class. The way these outcomes are currently written, it doubles the number of welds to be scored and documented for assessment. Eighteen is unnecessary, nine is enough to evaluate student performance and for a department to manage collaboration between all sections.

**Proposed Start Semester:** Fall 2021

**Course Description:** In this course, students are introduced to the following welding processes: Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW). Multiple weld joints are covered in the flat (1F/G) and horizontal (2F/G) positions on plate and sheet metal.

#### 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

**Prerequisite**

WAF 109 minimum grade "C"; allow concurrent enrollment

**General Education****Request Course Transfer****Proposed For:**

Eastern Michigan University

Ferris State University

Other :

**Student Learning Outcomes**

1. Recognize and apply welding vocabulary.

**Assessment 1**

Assessment Tool: Outcome-related questions on the written exam

Assessment Date: Fall 2024

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 80% or higher.

Who will score and analyze the data: Departmental faculty

2. Recognize and interpret welding theory.

**Assessment 1**

Assessment Tool: Outcome-related questions on the written exam

Assessment Date: Fall 2024

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 80% or higher.

Who will score and analyze the data: Departmental faculty

3. Perform a groove, lap and tee weld in the flat or horizontal position on carbon steel with the SMAW process.

**Assessment 1**

Assessment Tool: SMAW welded samples

Assessment Date: Fall 2024

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 D1.1 AWS welding code.

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

Who will score and analyze the data: Departmental faculty

4. Perform a groove, lap and tee weld in the flat or horizontal position on carbon steel with the GMAW process.

**Assessment 1**

Assessment Tool: GMAW welded samples

Assessment Date: Fall 2024

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 welding code.

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

Who will score and analyze the data: Departmental faculty

5. Perform a groove, lap and tee weld in the flat or horizontal position on carbon steel with the FCAW process.

#### **Assessment 1**

Assessment Tool: FCAW welded samples

Assessment Date: Fall 2024

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 D1.1 AWs welding code.

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

Who will score and analyze the data: Departmental faculty

### **Course Objectives**

1. Recall and demonstrate proper safety measures with arc welding equipment.
2. Properly set up arc welding equipment for use.
3. Weld a groove joint in the flat and horizontal positions with the SMAW process on carbon steel plate.
4. Weld a lap joint in the flat and horizontal positions with the SMAW process on carbon steel plate.
5. Weld a tee joint in the flat and horizontal positions with the SMAW process on carbon steel plate.
6. Weld a groove joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
7. Weld a lap joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
8. Weld a tee joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
9. Weld a groove joint in the flat and horizontal positions with the FCAW process on carbon steel plate.
10. Weld a lap joint in the flat and horizontal positions with the FCAW process on carbon steel plate.
11. Weld a tee joint in the flat and horizontal positions with the FCAW process on carbon steel plate.
12. Perform a surfacing weld in the flat and horizontal positions on carbon steel plate with the SMAW, GMAW, FCAW processes.
13. Perform a surfacing weld in the flat and horizontal positions on carbon steel plate with the GMAW process.
14. Perform a surfacing weld in the flat and horizontal positions on carbon steel plate with the FCAW process.

### **New Resources for Course**

### **Course Textbooks/Resources**

Textbooks

Manuals

Periodicals

Software

### **Equipment/Facilities**

Level III classroom

<b><u>Reviewer</u></b>	<b><u>Action</u></b>	<b><u>Date</u></b>
<b>Faculty Preparer:</b> <i>Amanda Scheffler</i>	<i>Faculty Preparer</i>	<i>Aug 19, 2021</i>
<b>Department Chair/Area Director:</b> <i>Bradley Clink</i>	<i>Recommend Approval</i>	<i>Aug 19, 2021</i>
<b>Dean:</b> <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>Aug 22, 2021</i>
<b>Curriculum Committee Chair:</b> <i>Randy Van Wagnen</i>	<i>Recommend Approval</i>	<i>Oct 27, 2021</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Oct 28, 2021</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Oct 29, 2021</i>