

Washtenaw Community College Comprehensive Report

WAF 126 Introduction to Welding Processes II Effective Term: Spring/Summer 2025

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

Objectives/Evaluation

Rationale: Change outcomes to better define the scope of the students work.

Proposed Start Semester: Winter 2024

Course Description: In this course, students will continue their study of welding theory and vocabulary, and will be 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 quizzes and exam

Assessment Date: Winter 2025

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: Winter 2025

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, tee, and corner weld in the flat and horizontal position on carbon steel with the SMAW process.

Assessment 1

Assessment Tool: SMAW welded samples

Assessment Date: Winter 2025

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, and corner weld in the flat and horizontal position on carbon steel with the GMAW process.

Assessment 1

Assessment Tool: GMAW welded samples

Assessment Date: Winter 2025

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, tee, and corner weld in the flat or horizontal position on carbon steel with the FCAW process.

Assessment 1

Assessment Tool: FCAW welded samples

Assessment Date: Winter 2025

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 corner joint in the flat and horizontal positions with the SMAW process on carbon steel plate.
7. Weld a groove joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
8. Weld a lap joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
9. Weld a tee joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
10. Weld a groove joint in the flat and horizontal positions with the FCAW process on carbon steel plate.
11. Weld a lap joint in the flat and horizontal positions with the FCAW process on carbon steel plate.
12. Weld a tee joint in the flat and horizontal positions with the FCAW process on carbon steel plate.
13. Perform a surfacing weld in the flat and horizontal positions on carbon steel plate with the SMAW, GMAW, FCAW processes.
14. Perform a surfacing weld in the flat and horizontal positions on carbon steel plate with the GMAW process.
15. Perform a surfacing weld in the flat and horizontal positions on carbon steel plate with the FCAW process.
16. Weld a corner joint in the flat and horizontal positions with the GMAW process on carbon steel sheet metal and plate.
17. Weld a corner joint in the flat and horizontal positions with the FCAW process on carbon steel plate.

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>Alexander Pazkowski</i>	<i>Faculty Preparer</i>	<i>Aug 14, 2023</i>
Department Chair/Area Director: <i>Glenn Kay II</i>	<i>Recommend Approval</i>	<i>Aug 16, 2023</i>
Dean: <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>Aug 17, 2023</i>
Curriculum Committee Chair: <i>Randy Van Wagnen</i>	<i>Recommend Approval</i>	<i>Jan 10, 2025</i>
Assessment Committee Chair: <i>Jessica Hale</i>	<i>Recommend Approval</i>	<i>Jan 22, 2025</i>
Vice President for Instruction: <i>Brandon Tucker</i>	<i>Approve</i>	<i>Jan 30, 2025</i>

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

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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

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