Washtenaw Community College Comprehensive Report

WAF 125 Introduction to Welding Processes I
Effective Term: Winter 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: 125
Org Number: 14600
Full Course Title: Introduction to Welding Processes I
Transcript Title: Intro to Weld Processes I
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: Including a corner joint in addition to the lap, tee and groove joint will increase the success of our students in our more advanced courses which covers all the aforementioned joints. This was an oversight that needs to be corrected to better ensure our intro students have knowledge in and practice of all four joints prior to moving forward through the program.
Proposed Start Semester: Winter 2024
Course Description: In this course, students will be introduced to the following welding processes: Oxy-Fuel Welding (OFW), Oxy-Fuel Cutting (OFC), Brazing, Gas Tungsten Arc Welding (GTAW) on carbon steel, aluminum, stainless steel plate and sheet metal. This will include the Flat (1G/F) and horizontal (2G/F) positions. Surfacing (Pad welding) will also be performed in the GTAW process.

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
Wayne State University
Other :

Student Learning Outcomes

1. Recognize and apply welding vocabulary.
   Assessment 1
   Assessment Tool: Outcome-related 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

2. Recognize and interpret welding theory.
   Assessment 1
   Assessment Tool: Outcome-related 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. Safely perform a groove, lap, tee and corner weld on steel in the flat and horizontal positions with the OFW process, and on carbon steel, stainless steel and aluminum with the GTAW process.
   Assessment 1
   Assessment Tool: Outcome-related 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 welds in accordance with AWS welding codes.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Recall and demonstrate proper safety measures with Oxy-fuel equipment.
2. Properly set up Oxy-fuel equipment for use.

3. Recall and demonstrate proper safety measures with GTAW equipment.
4. Properly set up GTAW equipment for use on steel and aluminum.
5. Run a bead on steel sheet metal with the OFW process.
6. Weld a groove weld on steel sheet metal in the flat and horizontal positions with the OFW process.
7. Weld a lap joint on steel sheet metal in the flat and horizontal positions with the OFW process.
8. Weld a tee joint on steel sheet metal in the flat and horizontal positions with the OFW process.
9. Weld a corner joint on steel sheet metal in the flat and horizontal positions with the OFW process.
10. Braze a groove joint on steel sheet metal in the flat and horizontal positions.
11. Perform straight, beveled and circular cuts on steel plate with OFC equipment.
12. Weld a groove joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
13. Weld a lap joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
14. Weld a tee joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
15. Weld a corner joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
16. Perform a surfacing weld on steel plate in the flat position with the GTAW process.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Glenn Kay II	*Faculty Preparer*	*Aug 12, 2023*
Department Chair/Area Director:		
Glenn Kay II	*Recommend Approval*	*Aug 14, 2023*
Dean:		
Jimmie Baber	*Recommend Approval*	*Aug 17, 2023*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Jun 27, 2024*
Assessment Committee Chair:		
Jessica Hale	*Recommend Approval*	*Jul 05, 2024*
Vice President for Instruction:		
Brandon Tucker	*Approve*	*Jul 05, 2024*

Washtenaw Community College Comprehensive Report

WAF 125 Introduction to Welding Processes I
Effective Term: Fall 2016

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: Welding and Fabrication
Discipline: Welding and Fabrication
Course Number: 125
Org Number: 14600
Full Course Title: Introduction to Welding Processes I
Transcript Title: Intro to Weld Processes I
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: New Course
Change Information:
Rationale: This course is being created to update the WAF program so it meets current industry needs.
Proposed Start Semester: Fall 2016
Course Description: In this course, students are given an introduction to the following welding processes: Oxy-Fuel Welding (OFW), Oxy-Fuel Cutting (OFC), Brazing, Gas Tungsten Arc Welding (GTAW) on carbon steel, aluminum, stainless steel plate and sheet metal. This will include the Flat (1G/F) and horizontal (2G/F) positions. Surfacing (Pad welding) will also be performed in the GTAW process.

Course Credit Hours

Variable hours: No
Credits: 2
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Total Contact Hours: Instructor: 60 **Student:** 60
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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: Written exam
   Assessment Date: Fall 2019
   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: Written exam
   Assessment Date: Fall 2019
   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. Safely perform a groove, lap and tee weld on steel in the flat and horizontal positions with the OFW process.
   Assessment 1
   Assessment Tool: Welded samples
   Assessment Date: Fall 2019
   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 welds in accordance with AWS welding codes.
   Who will score and analyze the data: Departmental faculty

4. Safely perform a groove, lap and tee weld in the flat and horizontal positions on carbon steel, stainless steel and aluminum with the GTAW process.
   Assessment 1
   Assessment Tool: Welded samples
   Assessment Date: Fall 2019
   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 applicable AWS welding codes.
   Standard of success to be used for this assessment: 80% of students will create welds in accordance with AWS welding codes.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Recall and demonstrate proper safety measures with Oxy-fuel equipment.
2. Properly set up Oxy-fuel equipment for use.
3. Recall and demonstrate proper safety measures with GTAW equipment.
4. Properly set up GTAW equipment for use on steel and aluminum.
5. Run a bead on steel sheet metal with the OFW process.
6. Weld a groove weld on steel sheet metal in the flat and horizontal positions with the OFW process.
7. Weld a lap joint on steel sheet metal in the flat and horizontal positions with the OFW process.
8. Weld a tee joint on steel sheet metal in the flat and horizontal positions with the OFW process.
9. Braze a groove joint on steel sheet metal in the flat and horizontal positions.
10. Perform straight, beveled and circular cuts on steel plate with OFC equipment.
11. Weld a groove joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
12. Weld a lap joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
13. Weld a tee joint on carbon steel, stainless steel and aluminum in the flat and horizontal positions with the GTAW process.
14. Perform a surfacing weld on steel plate in the flat position with the GTAW process.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Reviewer	Action	Date
Faculty Preparer:		
Amanda Scheffler	*Faculty Preparer*	*Aug 30, 2015*
Department Chair/Area Director:		
Glenn Kay II	*Recommend Approval*	*Aug 30, 2015*
Dean:		
Brandon Tucker	*Recommend Approval*	*Oct 06, 2015*
Curriculum Committee Chair:		
Kelley Gottschang	*Recommend Approval*	*Nov 30, 2015*
Assessment Committee Chair:		
Michelle Garey	*Recommend Approval*	*Dec 07, 2015*
Vice President for Instruction:		
Michael Nealon	*Approve*	*Dec 14, 2015*