

**Course Assessment Report**  
**Washtenaw Community College**

Discipline	Course Number	Title
Welding and Fabrication	104	WAF 104 07/11/2017- Soldering and Brazing
Division	Department	Faculty Preparer
Advanced Technologies and Public Service Careers	Welding and Fabrication	Glenn Kay II
Date of Last Filed Assessment Report		

**I. Assessment Results per Student Learning Outcome**

Outcome 1: Recognize and apply welding vocabulary.

- Assessment Plan
  - Assessment Tool: Written exam
  - Assessment Date: Fall 2012
  - 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 90% or higher
  - Who will score and analyze the data: Departmental faculty

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2016	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
17	12

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

Students enrolled dropped the class before the beginning of the semester.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students assessed were face-to-face.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice quizzes were used in Blackboard and scored by an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: No

-75% of the students scored 90-100%

-25% of students scored 80-89%

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

According to an item analysis on quiz #1 from Blackboard, students typically did well on understanding and applying welding vocabulary, and understanding the different types of flames used with the welding, soldering and brazing processes.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Students struggled with identifying the different types of gasses used with the welding, soldering and brazing processes. Students also struggled with identifying the correct welding postions which could be related to having a "multiple choice" or "check all that apply" quiz question. Plans to improve would include eliminating a "check all that apply" question and instead breaking it down to an individual question for each differnt type of gas.

## Outcome 2: Recognize and interpret welding theory.

- Assessment Plan

- Assessment Tool: Written exam
- Assessment Date: Fall 2012
- 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 90% or higher
- Who will score and analyze the data: Departmental faculty

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2016	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
17	12

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

Students enrolled dropped the class before the beginning of the semester.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students assessed were face-to-face.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice quizzes were used in Blackboard and scored by an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: No

-75% of the students scored 90-100%

-25% of students scored 80-89%

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

The students did well with understanding the different types of gas/flame mixtures and the benefits of soldering and brazing. The students also did well with knowing how to properly prepare the material before welding, soldering or brazing took place.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Students struggled with recognizing the different types of nonferrous filler materials used for brazing and which filler materials achieve and do not achieve capillary action. Brazing fluxes were also difficult for students to understand, a combination of which filler material had flux applied or baked on and which fillers materials have them chemically mixed in the filler material. Improvement in order to meet standard of success can be made by eliminating true/false answers for this content and have it listed where you can match the type of filler with the type of required flux.

### Outcome 3: Solder and braze a copper tubing project.

- Assessment Plan
  - Assessment Tool: Copper tubing project hydro pressure test
  - Assessment Date: Fall 2012
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: The project will be scored as pass or fail depending on the project holding pressure.
  - Standard of success to be used for this assessment: 80% of students will complete a copper tubing project with no leaks.
  - Who will score and analyze the data: Departmental faculty
  
- 1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2016	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
17	12

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

Students enrolled dropped the class before the beginning of the semester.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students assessed were face-to-face.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Students' practical objectives were scored in accordance to the American Welding Society (AWS) codes and standards.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

If students completed 100% of the welding objectives on the course objective sheet, they received 100% for that portion of the course.

If students had four or less incomplete welds, they would only receive partial credit for that portion of the course.

92% of the students assessed received 100% on this portion.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

The soldering and brazing project is pass/fail; 11 of the 12 students assessed passed, and one student failed.

- Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

While students met the standard of success for the soldering and brazing project, we could consider evaluating the project differently than just a pass/fail evaluation.

## II. Course Summary and Action Plans Based on Assessment Results

- Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

Based upon BlackBoard and student project results, I feel that this course meets the needs of students. They leave the course ready and able to apply the practical learning they received in their upcoming courses that further utilize this process, as well as in real world applications.

- Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

This information will be shared, including the action plan, with Departmental Faculty during Departmental meetings this Fall.

- Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	Update the fundamentals and the theory practice quiz by breaking up "check all that apply questions" with individual questions.	An expanded, more direct approach to quiz questions rather than combining them all into a few questions will help ensure understanding and eliminate confusion.	2018

- Is there anything that you would like to mention that was not already captured?

Not at this time.

### III. Attached Files

[WAF 104 Final Project Outcome](#)

[WAF 104 Quiz Scores](#)

**Faculty/Preparer:** Glenn Kay II **Date:** 08/15/2017

**Department Chair:** Glenn Kay II **Date:** 08/17/2017

**Dean:** Brandon Tucker **Date:** 08/20/2017

**Assessment Committee Chair:** Michelle Garey **Date:** 11/28/2017