

External Review Report
Welding Technology Program – TAACCCT 4 AAMMP-Up Grant
Pima Community College
External Evaluator: Curtis Casey AWS CWI/CWE

External Review Report Outline:

- Introduction
- Program Description
- Evaluator Credentials and Professional Qualifications
- Review Methodology (Rubric)
- Rubric scores
- Rubric score rationale
- Analysis of program achievements
- Strengths of program
- Recommendations on strengthening relationships with employers
- Exhibits

Introduction:

AAMMP Up Program Manager Jessica Normoyle contacted reviewer/evaluator Curtis Casey via email on 30 March 2018 to inquire about performing a third-party review of the Pima Community College Welding Program to meet the closing requirements of the TAACCCT-4 grant. After agreeing to do the review and the report Curtis arranged a face to face meeting on 2 May 2018 with Jessica to discuss the specifics of the evaluation rubric, to meet and interview instructors Ken Bice and John Mount and to tour the existing welding facilities.

The following is an agreed upon rubric and score rationale which will serve as the third-party review program report.

Program Description:

The Pima Community College Welding program supports 4 stackable certificates and 1 Applied Associates of Science. In 2015, the College was awarded a DOL funded TAACCCT 4 Grant to better serve TAA-eligible workers, veterans, low-skilled, unemployed, and under-employed individuals. The key tasks included supporting the development of aviation curriculum, working with local industry partners to ensure that the program meets local needs, and supporting students through course completion and employment.

For the Welding program, grant funds were used to develop stackable certificates, to purchase new welding equipment, welding tables, tools, lab supplies, and to support student service programs.

Evaluator Credentials and Professional Qualifications: (Biography: exhibit H)

American Welding Society Certified Welding Inspector
American Welding Society Certified Welding Educator
AWS Certified Welder
NCCER Auditor
Mesa Community College Welding Instructor

Review Methodology:

The evaluator will provide the following: site visit to evaluate the physical space of the Welding program, a completed rubric that evaluates program efficacy, and an analysis of the program's achievements. Evaluator will also provide recommendations focused on strengthening the program and relationships with employers.

The rubric provided below is the foundation of the evaluation process. The scale and definitions are as follows:

Exceptional: Review component is a “best practice” and represents a model for replication.

Very good: Review component is complete and effective.

Good: Review component is adequate but presents opportunities for improvement.

Ineffective: Review component is weak and in need of significant improvement.

Insufficient Evidence: Review component was not covered or information provided in the documents was insufficient for assessment.

Rubric Scores:

Section 1: Syllabus/ Course Outline					
Topic	Exceptional	Very good	Good	Ineffective	Insufficient
1-Course Outcomes/SLOs are clearly stated.		X			
2-Syllabus includes basic element of the course (e.g. course title, credits, goals, objectives, learning outcomes, prerequisites, course description).	X				
3-Course schedule is appropriately paced.			X		
4-Course content is appropriate and includes industry standards	X				
5-The course organization and design is clear, coherent, and structured in an appropriate way.		X			
6-The learning activities and/or labs promote the achievement of the stated learning objectives.	X				
7-Comments:					

Section 2: Assessments and Instructional materials					
Topic	Exceptional	Very good	Good	Ineffective	Insufficient
1-Curriculum aligns with industry standards and instructional materials are current.		X			
2-Instructional materials and lab meet/reflect current industry practices and standards.	X				
3-Learning activities promote achievement of stated module/unit objectives and support student success.		X			
4-Assessments are present and appropriate to content.		X			
5-All appropriate safety equipment and protocols are taught and used in the classroom.		X			
6-Comments:					

Section 3: Industry alignment					
Topic	Exceptional	Very good	Good	Ineffective	Insufficient
1-Course materials, activities, and learning outcomes are applicable to the target industry.	X				
2-The laboratories and physical spaces provide students with access to industry standard tools and equipment.			X		
3-Instructional materials and lab meet/reflect current industry practices and standards.		X			
4-Assessments reflect industry expectations and include authentic measures of student skills.	X				
5-Comments:					

Analysis and Recommendations:

<p>Section 4: Evaluation outcomes</p>	
<p>1-Program Strengths:</p>	<p>Welding instructors- The qualifications and experience of both Ken Bice and Jon Mount are a definite asset to the PCC welding program. Their dedication to student success given the limited space environment is evident in the welding course student completion date reports. Fall 2016 shows a student success rate of 77.2%, Spring 2017 shows a student success rate of 84.8% and in Fall 2017 a student success rate of 89.9% all indicating steady improvement in the last three semesters</p> <p>Refer to Section 4 paragraph one (1) for additional strengths.</p>
<p>2-Recommendations for program improvement:</p>	<p>Additional facility space is the primary program improvement recommendation as recommended in section 2 item 6 and section 3 items 1 and 2 of this report.</p>
<p>3-Analysis of program achievements:</p>	<p>The consistent 6% improvement per semester in student success completion percentages as shown in Welding Course Completion Data from Fall 2016-Fall 2017 is an indicator that the welding program is achieving quick success in student completion rates.</p> <p>Refer to Section 4 paragraph three (3) in the body of the report for additional program achievement as outlined by Jonathon Mount (PCC Welding Instructor)</p>
<p>4-Recommendation for strengthening relationships with employers:</p>	<p>Use the resources within the welding advisory committee to enlist additional industry members.</p> <p>Continue developing job shadowing and internship opportunities with local welding companies.</p>
<p>Comments:</p>	

Rubric Score Rationale:

Section 1: Syllabus/Course Outline

1- Course Outcomes/SLO's are clearly stated: **Very Good**

- a. Review of the welding course syllabi exhibited outcomes that were clearly stated with no question about what was expected of the student to be successful in the course. Reference WLD110 Student Learning Outcomes (exhibit A):

Reviewer audited courses WLD 115, WLD 160, WLD 250, WLD 261, WLD 262, WLD 263 with same results.

2- Syllabus includes basic element of the course (e.g. course title, credits, goals, objectives, learning outcomes, prerequisites, course description): **Exceptional**

- a. Review of the welding course syllabi proved that the basic elements as described above are complete, easy to read, and should be replicated by other institutions. Reference WLD 160 Arc Welding syllabus (exhibit B):

Reviewer audited courses WLD 110, WLD 115, WLD 250, WLD 261, WLD 262, WLD 263 with same results.

3- Course schedule is appropriately paced: **Good**

- a. Review of course syllabi and through interviews of the instructors the only evidence that a course was appropriately paced is the class progress sheet posted in the laboratory. A weekly lesson plan summary or outline will ensure that instructors and students are on pace to complete all required course learning outcomes. Reference WLD 250 progress sheet (Exhibit C):

Reviewer recommends a basic outline and schedule of courses as shown below to ensure courses are paced consistently: Reference Lesson plan outline sample (Exhibit D):

4- Course content is appropriate and includes industry standards. **Exceptional**

- a. Review of course outcomes shows that Pima Community College is consistent with industry recommendations specifically AWS EG2.0 Guide for the training welding personnel level 1 – Entry Welder. See Key indicators (SLO) for Shielded Metal Arc Welding (Exhibit E):

PCC 100 level courses meet and exceed industry standards for entry level welders and prepare students for higher level skills using the 200 level courses.

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- 5- The course organization and design is clear, coherent and structured in an appropriate way: **Very Good**
 - a. With the use of lesson plans and weekly class outlines the course design could be exceptional.
- 6- The learning activities and/or labs promote the achievement of the stated learning objective: **Exceptional**
 - a. As shown above, the class progress chart makes it very clear to the student from the start of class each of the lab assignments that are required to be completed by the end of the semester.
- 7- Comments: As mentioned earlier in #3 pacing of the course schedule, a lesson plan outline/schedule would assure that all outcomes are presented by the instructor and received by the student in a paced manner. This will promote consistent instructional delivery among all instructors, adjunct or full-time faculty.

Section 2: Assessments and Instructional materials

- 1- Curriculum aligns with industry standards and instructional materials are current: **Very Good**
 - a. A common resource used by training institutions both public and private schools to determine “industry standards” is the Guide for the Training of Welding Personnel: Level 1-Entry Welder (AWS EG2.0:2008). This guide was developed through the American Welding Society with a grant by the Department of Education in 1992 to give industry trainers a list of requisite skills and knowledge to prepare individuals for entry into the welding workforce.
 - b. The list of recommended skills are identified in 9 areas: 1-Occupational Orientation, 2-Safety and Health of Welders, 3-Drawing and Welding Symbol Interpretation, 4- Shielded Metal Arc Welding (SMAW), 5- Gas Metal Arc Welding (GMAW), 6- Flux Cored Arc Welding (FCAW-G, FCAW-S), 7-Gas Tungsten Arc Welding (GTAW), 8- Thermal Cutting Process including Manual Oxyfuel Cutting, Mechanized Oxyfuel Cutting, Plasma Arc Cutting, and Air Carbon Arc Cutting, 9-Welding Inspection and Testing.
 - c. In review of each welding course outline taught at PCC, WLD110 Basic Arc and Oxyacetylene Welding is an example of a course that exceeds recommended industry standards by teaching the Oxy-acetylene welding process. However, in review of each welding course outline there is no reference to the thermal cutting process Plasma Arc Cutting (PAC). This process may be taught informally in the lab, but it is recommended that formal training with competency verification through assessments be included in one of the 100 level courses.

- 2- Instructional materials and lab meet/reflect current industry practices and standards: **Exceptional**
 - a. Review of the required text books of each course indicates very good alignment with AWS EG2.0:2008 in all areas with the exception of Plasma Arc Cutting as mentioned in the previous paragraph. Reviewed textbooks for WLD 110, WLD 160, WLD 261, WLD 262.
 - b. Lab assignments as posted in the shop are congruent with industry standards as identified in AWS EG2.0:2008 (Entry Level) and AWS EG3.0-96 Guide for the Training and Qualification of Welding Personnel: Level II- Advanced Welders.
 - c. WLD 250 Pipe Welding is an advanced level course teaching skill sets above and beyond entry level expectations.

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- 3- Learning activities promote achievement of stated module/unit objectives and support student success: **Very Good**
 - a. Posted lab assignments of each class identify the objectives of the course from start to finish which gives the student a public checkoff list of assignments which need to be completed to meet the requirements of the course. This can be viewed as motivation through peer observations to promote student success.

- 4- Assessments are present and appropriate to content: **Very Good**
 - a. Publicly posted lab assignments and completion verification marks “X” are ever present in the shop/lab. They step the student through incremental levels of progression in the appropriate welding process, demonstrating common joint configurations while progressing in skill levels by challenging the student in all common joint positions. The upper level course competencies lead the student to industry certification practice assignments which prepare them for specific industry certification tests.

- 5- All appropriate safety equipment and protocols are taught and used in the classroom and laboratory: **Exceptional**
 - a. Course WLD 110 Basic Arc and Oxyacetylene Welding course learning outcome #1 states: Describe the health, safety, and environmental practices used in the arc and oxyacetylene welding process. Additionally, review of the textbooks shows a complete chapter on process safety as it applies to the specific welding processes.
 - b. Appropriate safety protocols are emphasized in the classroom and evidence during the welding facility tour during class time demonstrated that each student had proper personal protective equipment appropriate to the lab environment. This included, safety glasses, face shields, welding helmets, gloves, welding jackets, appropriate clothing and sturdy work boots. It was evident that safety practices are taught and practiced within the facility and during course work.

- 6- Comments: A formally written course learning outcome is recommended to include Plasma Arc Cutting in either WLD 110 or WLD 160. Review of the WLD 110 lab assignment chart indicates a line item for plasma cutting which shows that students are learning about the process and developing a limited skill set.

Section 3: Industry alignment

- 1- Course materials, activities and learning outcomes are applicable to the target industry:

Exceptional

- a. Documented welding advisory minutes on September 19, 2017 show evidence of Pima Community College's due diligence to ensure that learning outcomes are applicable to their target industry, reference paragraph C-Program Relevancy, currency and effectiveness and para D-Student Learning Outcomes (exhibit F):
 - b. Welding Department Chair Kenneth Bice reviewed the current curriculum with advisory members with no change suggestions by the committee. He also asked committee members to "review Student Learning Outcomes for WLD 110 and 115 and to make four statements about what a student should know from an employer standpoint". This collaboration between area constituents on the advisory committee and PCC welding program personnel are essential to ensure ways to identify and improve student learning based on employer expectations.
 - c. Advisory committee attendees represent a sufficient cross section of welding industry partners to ensure well-rounded recommendations.
- 2- The laboratories and physical spaces provide students with access to industry standard tools and equipment. **Good**
- a. A tour of the physical facility demonstrated that PCC had an adequate amount welding equipment positioned into small cramped welding booths. There are a sufficient number of hand and power tools along with state of art welding machines including robot fixturing and welding cells. Fabrication equipment was available to the students underneath a shaded awning structure outside of the main welding shop.
 - b. It was noted during the tour that any specialty equipment had to be rolled in and out of the shop before and after class to make room for the course work to be accomplished. Because of inadequate facility space this practice of moving equipment around to accommodate student work is inefficient and can reduce the life cycle of equipment.
 - c. It is recommended that a facility with enough space to house the current inventory of equipment and tools be provided to improve the whole training experience of the student. This will enhance safety of both student and instructor, improve the maintenance and care of sensitive equipment, and provide an atmosphere of professionalism for the program.

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3- Instructional materials and lab meet/reflect current industry practices and standards:

Very good

- a. Instructional materials, equipment and tools currently meet industry practices and standards.
 - b. Laboratory space does NOT meet industry standards, Annex C of AWS EG.2.0.2008 Recommendations for Facility Planning recommends a minimum of 100 square feet per individual with a preferred space of 150 square feet. EG.2 Annex C2 suggests that the total number of work stations should exceed the number of welding personnel enrolled (preferably by 25% more). Each welding booth should be 6 ft. x 6 ft constructed with fire resistant material with walls open at least 12 inches from the bottom to permit air circulation. A minimum of one 10 ft. x 10 ft. demonstration area should be available for every 20 welding personnel.
 - c. AWS EG.2 also makes recommendations for classroom, office, storage, personnel changing, lighting, electricity, ventilation and heating. The suggestion for total number of welding machines is at least thirteen (13) multi-process constant current/constant voltage power sources for SMAW, GMAW, GTAW and FCAW and thirteen (13) constant current AC/DC power sources with high frequency for GTAW should be provided for every 20 welding personnel. Five (5) oxyfuel gas cutting/heating/welding torches should be provided for every 20 welding personnel. Two (2) plasma arc cutting machines and two (2) air carbon arc cutting torches should be provided for every 20 welding personnel.
- 4- Assessments reflect industry expectations and include authentic measures of student skills. **Exceptional**
- a. Review of the course competencies and the public lab assignment sheet for WLD 250 Pipe welding show industry standard assessment practices are in place for completed pipe assignments. Specifically noted are the 6G Pipe bends including root bends, face bends and nick break test. These tests are the actual qualification tests taken directly from the applicable pipe welding codes to qualify welding personnel and welding procedure specifications.
 - b. Similar assessment practices are evidenced in WLD 261 and WLD 262 requiring test specimen preparation and destructive bend tests in accordance with known industry standards and practices.
- 5- Comments: Given the limited space and dated facilities currently used by Pima CC welding department, the course content and delivery are very good to exceptional due primarily to the adaptive techniques used by the welding faculty to ensure a comprehensive education for PCC students. The facility space is not adequate for the number of students and equipment. The facility tour showed a stark contrast from the updated, well equipped machine shop to the east and the state of the art automotive shop to the west of the welding shop. The welding facility in the middle of the other shops

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lacked adequate space for instruction and equipment placement. It is suggested that PCC review the recommendations of AWS EG2.0:2008 Annex C and C2 for a proper facility to house the welding program.

Section 4: Evaluation outcomes

1- Program Strengths:

- a. Welding instructors- The qualifications and experience of both Ken Bice and Jon Mount are a definite asset to the PCC welding program. Their dedication to student success given the limited space environment is evident in the welding course student completion data reports. Fall 2016 shows a student success rate of 77.2%, Spring 2017 shows a student success rate of 84.8% and in Fall 2017 a student success rate of 89.9% all indicating steady improvement in the last three semesters. Ref. Fall 2017 Welding Course Completion Data report (exhibit G)
- b. Clear and concise degree paths including stackable certificates enabled 80 students to earn at least one certificate prior to completion.
- c. Welding and fabrication equipment is state of the art and plentiful for student population including the addition of a welding robot and CNC plasma cutters.

2- Recommendations for program improvement:

- a. Additional facility space is the primary program improvement recommendation as recommended in section 3 items 1 and 2 of this report. Refer to AWS EG2.0:2008 Annex C and C2.
- b. Provide definitive lesson plan summaries to ensure that all lab assignments from the welding course syllabus are presented, scheduled, and accomplished in each course. Ensure that Plasma Arc Cutting is included in the applicable course outline

3- Analysis of program achievements:

- a. Welding Instructor Jonathan Mount contributed his first-hand assessment of the achievements from the grant funding as outlined below:
 - i. The grant enabled staff to bring back four (4) stackable welding certificates which impact student achievement, completion rates and success for student not seeking an AAS degree.
 - ii. The funds helped PCC to increase outreach to the local community which brought new business to the PCC welding advisory committee. This outreach to local business allowed the welding department an opportunity to talk with and tour local fabricator which helped the department make changes to certain classes to meet industry demands. Due to those changes PCC welding increased their student's opportunities for direct employment and job shadowing at employer work places.
 1. A byproduct of the outreach efforts helped to increase material donations from local businesses.

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- iii. Over a two (2) year period the grant helped fund a free Math Boot Camp for students who needed extra help or a refresher course prior to enrolling in math GTM 105.
 - iv. With grant funding PCC initiated a soft skills component to the welding program offering a free resume development clinic and mock interviews to students over a two (2) year period. It also provided thumb (USB) drives and portfolios to the students who attended the workshops.
 - v. The grant funding allowed the department to purchase an outside awning which impacted student safety and overall the overall laboratory footprint.
 - 1. New welding and fabrication equipment was also purchased.
 - vi. Academic services, such as program advisory and counseling was enhanced because of the grant funds. Additionally, job fairs and the Arizona Construction Career days event was promoted with help from the grant.
- b. The steady 6% improvement per semester in student success completion percentages is an indicator that the welding program is continually improving.
- 4- Recommendation for strengthening relationships with employers:
- a. Use the resources within the welding advisory committee to enlist additional industry members. Also, enlist someone from the college to sit on the advisory committee as a “navigator” or liaison to industry. See below:
 - i. Refer to Connecting community colleges with employers: A toolkit for building successful partnerships by Elizabeth Mann July 2017
 - ii. Provide a “navigator” to serve as a liaison to industry partners who can help industry partners navigate the college environment, identify shared norms and missions, and help the college identify labor needs of local industries.
 - b. Continue developing job shadowing and internship opportunities with local welding companies. Refer to the following web address for recommendations for setting up a successful job shadowing program.
<http://www.educationplanner.org/counselors/job-shadowing.shtml>

5- Comments: None

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Exhibits:

Exhibit A - WLD110 Student Learning Outcomes

Student Learning Outcomes

Course Learning Outcomes:

Upon successful completion of this course, the student will be able to:

1. Describe the health, safety, and environmental practices used in the arc and oxyacetylene welding processes.
2. Describe the welding terminology used in the arc welding and oxyacetylene welding process.
3. Identify and describe the proper handling and assembly of arc and oxyacetylene welding equipment.
4. Demonstrate oxyacetylene flame cutting procedures and arc welding techniques.
5. Describe and demonstrate welding of steel with the arc and oxyacetylene welding processes.
6. Describe the welding machines and polarities used in the arc welding process.
7. Identify the applications of filler metals and electrodes used in the arc and oxyacetylene welding processes.
8. Demonstrate welding in flat, vertical, horizontal, and overhead positions used in the arc and oxyacetylene welding processes.
9. Demonstrate hand and track torch techniques for oxyacetylene cutting.

Exhibit B - WLD 160 Arc Welding syllabus

WLD 160 Arc Welding

Credits: 4.00

CRN 20277 Spring 2018

Instructor Information

Instructor Name: Ken Bice

Instructor Phone: (520) 206-7159

Instructor Email: kbice@pima.edu

Instructor Website: (optional) ABC

Office Location/Hours: ST220 MW 8 - 9 & TTh 8:00 – 8:30; 11:30-12:00; 3-3:30

Department Chair or Dean Phone: 206-7134

Other Contact Resources: Lab 206-7197

Course Information

Course Description: : Principles and techniques of joining metals with an electric arc as the source; Includes arc welding uses, safety, techniques, flame cutting, joint design, welding costs, electric currents and power sources, carbon arc cutting, filler metal selection, hard facing, and metal identification.

Prerequisite(s): WLD 110.

Information: Prerequisite may be waived with welding industry experience.

Expectation of coursework hours: Students should spend a minimum of 64 hrs on homework and research.

Course Meeting Days/Time: TTh 8:30-11:20

Course Delivery/Modality: Classroom theory (lecture) and Lab application

Required Textbook: NCCER Level I 5th ed

Other Required Materials: Clear safety glasses, welding gloves and hat

Optional/Recommended Materials: Welding hood, small grinder, welders respirator

Exhibit C - WLD 250 class progress sheet -

WLD250
 SPRING 2015 - ITT campus
 Department: WLD
 WELDING DEPARTMENT
 M-W 1:30-2:00 / 5:00-5:30

STUDENTS	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	UNIT 6	UNIT 7	UNIT 8	UNIT 9	UNIT 10	UNIT 11	UNIT 12	UNIT 13	UNIT 14	UNIT 15	UNIT 16	UNIT 17	UNIT 18	UNIT 19	UNIT 20
1 DENSON AIDAN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 CARRERA ADEL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3 DRAZLO ERIC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4 LUI JOHN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5 NICHOLSON ROBERT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6 RAPP MATTHEW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7 RUIJERA LEONARDO	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8 SERENAT FAITH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9 SMITH CAUSEY	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10 SMITH CHRIS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11 VILLANOVA ERIC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12																				
13																				
14																				
15																				

Exhibit D - Lesson plan outline sample

WLD 101 Week 1.1 Lesson Plan

1. Introduction/sign in
2. Orientation
 - a. Course objectives
 - b. Schedule
 - c. Progress chart/Training record/
3. Student questionnaire
 - a. Establish Table Teams or partners for semester tests and assignments
4. Safety Video
5. Lab tour
6. Welding supplies
7. Textbooks
 - a. New Lessons in Arc Welding
 - b. OA Handbook
8. Homework Get books, Search youtube for welding safety

WLD 101 Week 1.2

1. Attendance/Homework discussion on welding safety videos
2. Show WMV on OFCutting
3. LAB: Demonstrate OA setup, manual straight cuts and bevels with track torch
4. Layout cutting assignment PAT on paper
5. Best practices
6. Homework OA Handbook ch 2,6,7, Arc 1.1

Exhibit E - Key indicators (SLO) for SMAW per AWS EG2.0

4. Shielded Metal Arc Welding (SMAW)

1. Performs safety inspections of SMAW equipment and accessories.
2. Makes minor external repairs to SMAW equipment and accessories.
3. Sets up for SMAW operations on carbon steel.
4. Operates SMAW equipment on carbon steel.
5. Makes fillet welds in all positions on carbon steel.
6. Makes groove welds in all positions on carbon steel.
7. Passes SMAW welder performance qualification test (2G and 3G, uphill, limited thickness test plates) on carbon steel.

Exhibit F – Welding advisory committee meeting minutes



Welding–Downtown Campus

Occupational Program External Advisory Committee Meeting

**September 19, 2017
5:30 P.M. – 7:30 P.M.
Room: CC 181
MINUTES**

Chairperson: Nelson Brown

Recorder: Marcia Wojsko

<u>MEMBERS PRESENT</u>	<u>REPRESENTING</u>
Mark Bovell	Bovell Builders
Britta Homelvig	JobPath
Nelson Brown	J.B. Steel
Gubby Gulbranson	Barker Steel Construction Co., Inc.
Sarah Henderson	JobPath
Cody Jones	Barker Steel Construction Co., Inc.
Kevin Westfall	CAID Industries
<u>Campus/Program Representatives</u>	<u>Pima Community College / Program</u>
Denise Kingman	Program Manager, Career Services
Kenneth Bice	Chair, Welding
Jon Mount	Faculty
Lindsey Moreno	Senior Academic Advisor for the Applied Technology Division

C. Program Relevancy, Currency and Effectiveness

Kenneth Bice and members reviewed the current curriculum with no change suggestions. Ken Bice discussed block scheduling due to start in Fall 2017 and the possibility of changing to an 8 week course length instead of 16 weeks. Ongoing work includes a Course Analysis comparing each course to other similar courses across the state and nation. Jon Mount discussed basic and advanced special projects such as stainless steel. Students learn better if they are in class every day instead of once a week and scheduling will help resolve some of these challenges. Mark Bovell asked about demographics. Ken Bice indicated the majority of students are young and also contain older military. Jon Mount shared many students seek evening classes since they work during the day. Kevin Westfall shared CAID Industries will pay for evening classes.

D. Student Learning Outcomes

Kenneth Bice continued the student learning outcomes discussion from the previous meeting. The student learning outcomes are measured for each course and program to identify ways to improve teaching and learning. One step in this process is to ensure course outcomes meet employer expectations for new employees. Ken Bice asked the committee members to review WLD110 Basic Arc and Oxyacetylene Welding and WLD115 Blueprint Reading/Estimating and make four statements about what a student should know from an employer standpoint. One example given, whether to cut back oxy, it is a slow process and arc welding is a lot quicker when changing from flat to horizontal.

Exhibit G- Welding Course Completion Data

Fall 2017 Enrollment and Success Counts by Student Demographics

Ethnicity Detail	Enrollment: End of Drop/Add Period	Enrollment: Census Date	Attrition Rate: Drop/ Add Date to Census Date	Course Completion	Successful Completion	Success Rate
American Indian/Alaskan Native	3	3	0.0%	3	3	100.0%
Asian	2	2	0.0%	2	2	100.0%
Hispanic	76	75	1.3%	72	67	88.2%
Native Hawaiian or Pacific Islander	2	2	0.0%	2	2	100.0%
Race and Ethnicity Unknown	4	4	0.0%	4	4	100.0%
Two or More Races	5	5	0.0%	5	5	100.0%
White, Non-Hispanic	87	82	5.7%	79	78	89.7%
	179	173	3.4%	167	161	89.9%

Enrollment and Success Counts by Race/Ethnicity

Exhibit H – External Evaluator Biography

Biography

As a certified welder in the US Navy, Curtis started his welding career working on nuclear submarines in Guam and San Diego. He has been a Certified Welding Inspector and Educator through the American Welding Society since 1983 working with the nuclear, aerospace, structural steel and construction industries. In 1995 he started teaching his craft at a small community college in Show Low, Arizona and is now teaching at Mesa Community College in Mesa, Arizona. As the current owner of Gillett Consulting LLC, Curtis works with various members of the welding community as a consultant, auditor, advisor, trainer, inspector and welder certifier. He is a member of various high school and community college welding advisory committees and serves as a member of the Arizona Department of Education Welding Advisory Committee. He is a regular presenter and facilitator at numerous welding training events for public school educators as well as private industry functions.



Curtis Casey, Evaluator

End of report.