PCCUA ASSESSMENT FORM

Division: Applied Technology
Program: Welding-IMPROVED ASSESSMENT PROCESS
Date: 2024-25 Academic Year

PCCUA ASSESSMENT GUIDING QUESTIONS

Please respond based on the departmental discussion of the program assessment and how those outcomes reflect what students are learning and what needs to happen to improve student learning. You may provide this in a narrative or bulleted format. However, you must respond to each question and these responses should be based on your program assessment discussions. Please respond in red font.

Program Student Learning Outcomes

A. Are the intended educational (learning) outcomes for the program appropriate and assessed appropriately?

Skills trade programs operate differently from traditional academic programs. Some industries require only fundamental job-ready skills, while others expect industry-specific certifications. Student proficiency is verified through competency exams aligned with welding disciplines.

B. How are the faculty and students accomplishing the program's student learning outcomes?

Faculty and students accomplish the program's student learning outcomes through structured, hands-on laboratory instruction. Each lab activity is competency-based and requires students to demonstrate mastery of specific skills before advancing. Instruction and practice are intentionally sequenced so that each skill builds upon previously learned competencies, allowing students to progressively develop confidence and technical proficiency. This approach ensures that students establish a strong foundation and are adequately prepared for increasingly complex welding tasks.

C. How are the program meeting market/industry demands and/or preparing students for advanced study?

The program meets current market and industry demands by providing students with comprehensive training in essential welding skills required for workforce competency. Students have opportunities to advance their training by earning welder certifications in one or more major welding processes. In addition, after completing the required field experience, students may pursue advanced study by enrolling in the American Welding Society's Certified Welding Inspector (CWI) course. Successful completion of the course qualifies students to sit for the CWI examination, preparing them for leadership and inspection roles within the welding industry.

D. Do course enrollments and program graduation/completion rates justify the required resources?

Yes. Course enrollments and program completion rates support the continued investment in resources required for the welding program. Welding instruction is entirely hands-on and depends on specialized, industry-standard equipment, materials, and consumables. These resources are essential for students to develop the skills necessary to meet workforce expectations and qualify for employment. Student outcomes further justify these costs, as program completers demonstrate job-ready competencies and many secure employments in the welding industry. The combination of sustained enrollment, successful completion, and positive employment outcomes confirms that the resources allocated to the program are necessary and effectively support student success and workforce preparation.

E. Based on the Program SLO's how well are students learning at the course and program level? Based on your assessment outcomes, how do you know this?

Students are learning effectively at both the course and program levels, as demonstrated through daily hands-on welding performance assessments. Skills are evaluated using standardized rubrics that measure mastery and progression to more advanced tasks. Assessment results show that students consistently meet required competencies before advancing, confirming alignment with program SLOs and industry standards.

F. What are the changes you need to make to improved student learning?

Increasing access to additional lab time is necessary to improve student learning in the welding program. Welding is a performance-based skill that requires repeated, structured practice to develop precision, coordination, and muscle memory. Expanded lab opportunities allow students to reinforce foundational skills, gain confidence, and achieve greater consistency in their work. This increased practice better prepares students for advanced welding processes and the performance expectations of the industry.

G. What are the weak areas demonstrating a need for improvement?

Some welding students enter the program with skill gaps that can affect their progress and overall success. These areas include limited additional lab practice time, which is essential for developing proficiency and muscle memory; deficiencies in basic math skills needed for measurements, layout, and blueprint interpretation; and challenges with reading and understanding technical documents, safety procedures, and industry standards. In addition, some students are not consistently prepared for class with required materials and proper safety attire, which can impact both learning and lab safety. Addressing these areas will improve skill mastery, program outcomes, and student readiness for employment in the welding industry.

H. What are the strengths identified through assessment?

Assessment results indicate that students consistently progress to the next level of welding coursework, demonstrating successful skill acquisition and readiness for advanced instruction. Students also show a strong commitment to learning by seeking additional hands-on practice through participation in welding lab sessions beyond their scheduled class time. This initiative reflects high levels of engagement, motivation, and a desire to achieve greater technical proficiency. Furthermore, student requests for an advanced blueprint reading course highlight their growing awareness of industry expectations and their interest in strengthening technical and analytical skills needed to meet the increasing complexity of modern welding applications. These outcomes reflect a strong learning culture and alignment with workforce demands.

Program Curriculum

A. Is the program curriculum appropriate to meet current and future market/industry needs and/or to prepare students for advanced study? Is that reflected in the assessment outcomes?

Yes. The curriculum aligns with industry needs by providing students with essential welding skills required for workforce competency. Students may advance by earning certifications in major welding processes and, after completing required field experience, pursue advanced study through the American Welding Society's Certified Welding Inspector (CWI) course. Assessment outcomes confirm that students are developing the skills and knowledge necessary to meet industry standards and advance professionally.

B. Are program exit requirements appropriate?

Yes. Students must master a core set of laboratory competencies in each welding class, all of which are aligned with industry standards to ensure workforce readiness. These competencies are consistent across courses, reflecting the enduring expectations of professional welding practice. Instruction and assessment are guided by the American Welding Society (AWS) D1.1 Structural Welding Code, ensuring that students develop the skills, safety awareness, and technical knowledge that meet the rigorous standards expected by employers.

C. Are students introduced to experiences within the workplace and introduced to professionals in the field?

Yes. Students gain exposure to real-world workplace experiences in the welding lab and through visits from professional welders, who share industry expectations and potential employment opportunities. Instructors provide insights from their own professional experience, and former students often return to share career experiences and guidance. These interactions help students build practical knowledge, professional networks, and an understanding of career pathways in the welding industry.

D. Does the program promote and support interdisciplinary initiatives?

While all welding students are held to the same core competencies, the program fosters interdisciplinary awareness by integrating skills relevant to related technical fields, such as blueprint reading, measurement, and safety practices. Collaborative projects and lab exercises simulate real-world scenarios where welding intersects with other trades, helping students understand the interconnected nature of technical professions while maintaining consistent standards.

E. Does the program support the college STACC skill development expected of all PCCUA graduates? Explain how you know this through assessment.

The welding program actively supports the STACC skill development goals by ensuring students consistently apply industry-standard tools, techniques, and practices throughout their coursework. Uniform use of trade tools fosters proficiency, safety, and adherence to professional standards. Student mastery is systematically evaluated through hands-on performance assessments, competency tests, and rubric-based grading. These assessments provide clear evidence that students are developing the technical, problem-solving, and critical thinking skills emphasized in the STACC framework. Results indicate that students consistently meet or exceed program competencies, demonstrating that the program effectively reinforces the foundational skills expected of all PCCUA graduates.

F. Does the program provide respect and understanding for cultural diversity as evidenced in the curriculum, in program activities, in assignment of program responsibly and duties; in honors, awards and scholarship recognition; in recruitment?

The welding program fosters respect and understanding for cultural diversity through a collaborative learning environment where students work together on class projects, promoting teamwork and mutual respect. All students are held to the same standards and complete the same competencies, ensuring equity in skill development and opportunity. Program responsibilities, assignments, and recognition—including awards and scholarships—are based on performance and achievement rather than personal characteristics. Recruitment efforts are inclusive, welcoming students from diverse backgrounds, reflecting the program's commitment to equity, collaboration, and preparation for a professional workforce.

Budget Requests Forms

Are more resources needed. If so, has there been an effort to acquire these resources through the college budgeting process?

Yes. The welding industry is rapidly evolving, with modern machines incorporating advanced microprocessors and computerized controls. To ensure students develop relevant, up-to-date skills, the program must maintain equipment that meets current industry standards. Phillips Community College has consistently updated welding equipment through the college budgeting process, providing students with the tools necessary to build proficiency and remain competitive in a constantly changing technical field.

What program requests did you make for the next year which are tied to needs related to assessment outcomes?

To support student success and address assessment findings, the welding program has requested funding for ongoing upgrades to welding machines and replenishment of essential consumables. Updated equipment ensures students train on industry-standard tools, while a steady supply of materials—such as welding rods, shielding gases, and safety gear—supports uninterrupted hands-on learning. These resources are vital for students to meet program competencies and achieve the skill levels required for workforce readiness.

STUDENT SUCCESS
GRADUATES PER YEAR

CERTIFICATE	WELDING FOCUS	2025	2024	2023	2022	2021	2020	2019	2018
TC	**Welding Technology**	7	8	7	4	8	8	2	11
CP	**General Welding Techniques**	12	20	15	13	18	27	26	10
CP	**Inert Gas Welding**	17	18	15	11	18	18	12	17
CP	**Mild Steel Welding**	20	20	15	14	26	27	23	15
TOTAL AWARDS	**All Welding Awards**	56	66	52	42	70	80	63	53

Note: The Mild Steel Welding and the General Welding Techniques are the most common certifications. Most students acquire both. Often, students are offered employment with two certificates and choose to take a job instead of completing their TC. Note a drop in completions when we reduced the number of nights courses were available (2022-instructor retired)

Welding
Fall 2024 and Spring 2025

COURSE	Course SLOs	Program SLOs	Benchmarks	Assessment	STACC	Assessment Results	Action
WG 115 WELD 11595 Introduction to Welding	Students will be able to make welds with arc welding and gas metal welding equipment	3 Students will use SMAW, TIG and MIG machines in both pipe and plate welding	70% of the students will score 70% or higher	Students will use SMAW, TIG and MIG machines in both pipe and plate welding	Technology Utilization	70% of the group will score 80% or higher. There is little room for error in this filed because of safety 82% 31 of 38 Students	Meets Expectations
WG 125/WELD 12595 Arc Welding I	Students will be able to construct a lap joint, tee joint, corner joint and a square butt joint in flat and horizontal positions	3 Students will use SMAW, TIG and MIG machines in both pipe and plate welding	70% of the students will score 70% or higher	Students will use SMAW, TIG and MIG machines in both pipe and plate welding	Technology Utilization	70% of the group will score 80% or higher. There is little room for error in this filed because of safety 77% 13 of 17 Students	Just missed meeting expectations because the average score for this group was 77%. Focus on a stronger review for this and possible more practice time.

	Name the two types of operating adjustments found on arc welding machines.	4 Students will be able to explain the physical aspect of different metals	70% of the students will score 70% or higher	Students will be able to explain the physical aspect of different metals	Social & Community Responsibility	82% 14 of 17 Students	Meets Expectations
WG 133/ WELD 13593 or WG 163/WELD 16595 Welding Blueprint Reading or Basics of Blueprint	Students will understand blueprint terminology	4 Students will be able to explain the physical aspect of different metals	70% of the students will score 70% or higher	Students will be able to explain the physical aspect of different metals	Social & Community Responsibility	70% of the group will score 80% or higher. There is little room for error in this field because of safety. issues. 100% 8 of 8 Students Only a few students take this course because it is a TC course.	Meets Expectations
	Students will be able to read and understand blueprints	1 Students will achieve a complete understanding of welding symbols and print drawing and reading	70% of the students will score 70% or higher	Students will achieve a complete understanding of welding symbols and print drawing and reading	Communication	70% of the group will score 80% or higher. There is little room for error in this field because of safety. 100% 8 of 8 Students	Meets Expectations
	Students will be able to work with clients on specific projects	5 Students will work with a variety of clients	70% of the students will score 70% or higher	Students will work with a variety of clients	Commitments to diversity, equity and inclusion within the context of cultural engagement and understanding	70% of the group will score 80% or higher. There is little room for error in this field because of safety. 100% 8 of 8 Students Only a few students take this course because it is a TC course.	Meets Expectations
WG 135/WELD13595 ARC Welding II	Construct a lap joint, tee joint, corner joint and a	3 Students will use SMAW, TIG and	70% of the students will	Students will use SMAW, TIG and MIG	Technology Utilization	70% of the group will score 80% or higher. There	Meets Expectations

	square butt joint in the vertical and overhead positions	MIG machines in both pipe and plate welding	score 70% or higher	machines in both pipe and plate welding		is little room for error in this field because of safety. 100% 7 of 7 Students Only a few students take this course because it is a TC course.	
	Students will determine different welding techniques needed for specific projects	2 Students will use the correct procedure in setting up equipment and the skills used in welding	70% of the students will score 70% or higher	Students will use the correct procedure in setting up equipment and the skills used in welding	Analytical & Critical Thinking and Reasoning	70% of the group will score 80% or higher. There is little room for error in this field because of safety. 100% 7 of 7 Students Only a few students take this course because it is a TC course.	Meet Expectations
WG 145/WELD 14595 Inert Gas Welding I	Construct a mild steel lap joint, tee joint, corner joint and square butt joint in the flat and horizontal positions with the gas metal arc welding process	3 Students will use SMAW, TIG and MIG machines in both pipe and plate welding	70% of the students will score 70% or higher	Students will use SMAW, TIG and MIG machines in both pipe and plate welding	Technology Utilization	70% of the group will score 80% or higher. There is little room for error in this field because of safety. 100% 11 of 11 Students	Meets Expectations
WG-165/WELD 16595 Inert Gas II	Students will demonstrate welding applications of ferrous, nonferrous, stainless steel and alloy metals in the vertical and overhead positions.	3 Students will use SMAW, TIG and MIG machines in both pipe and plate welding	70% of the students will score 70% or higher	Students will use SMAW, TIG and MIG machines in both pipe and plate welding	Technology Utilization	70% of the group will score 80% or higher. There is little room for error in this field because of safety. 90% 10 of 11 Students	Meets Expectations
WG-155/15595 Pipe Welding	Students will construct single vee joints (with no	3 Students will use SMAW, TIG and	70% of the students will	Students will use SMAW, TIG and MIG	Technology Utilization	IS Course 100% 1 of 1	Meets Expectations

	backup) in the flat, horizontal, vertical and overhead positions. Then progress into different piping positions	MIG machines in both pipe and plate welding	score 70% or higher	machines in both pipe and plate welding		Students	
WG-175/WELD 17595 Certification Welding	Students will study and practice the qualifications to take the American Welding Society performance tests.	3 Students will use SMAW, TIG and MIG machines in both pipe and plate welding	70% of the students will score 70% or higher	Students will use SMAW, TIG and MIG machines in both pipe and plate welding	Technology Utilization	0 Students	No Students/Note required.

Note: if a course is not listed for a term, it means that course was not offered that term.
Note 2: It is impossible to extricate SLOs from courses. Although all skills are integrated in all classes, some courses specifically focus on certain skills tied to the PLOs.