WELDING

PROGRAM REVIEW 14-15

ONE COLLEGE DRIVE
BLYTHE, CA 92225

EXECUTIVE SUMMARY

WELDING

The Welding Technology program is very successful in meeting the needs of students and local businesses. The expansion plans of the program are noteworthy. The faculty has already taken effective steps to increase access to the program by working technicians. Furthermore, we are in the process of developing an AWS certification.

Careful attention must continue to be paid to the cost of the raw materials for the program and opportunities that may exist to mitigate those costs.

Part 1: Mission

State the purpose of program.

The purpose of the Welding Technology program is to provide students with the necessary skills to work in an ever-expanding field. To this end, the Welding program provides students with the basic, entry-level skills, professional development opportunities for working technicians, and certification options.

> *Associate of Science (Occupational) Welding Technology*
> The Associate of Science in Welding Technology is a two year course of study designed to prepare students intending either to continue study at a technical school, or to enter the workforce. The Associate of Science Degree in Welding Technology include general education courses in English, Math, Speech, History, and Health that are, for the most part, articulated within the CSU system, and some are UC articulated as well, making them transferable within the state of California. Non-substantial changes are being made to the associate's degree at this time.
>
> *Certificate in Welding Technology*
> The certificate in Welding Technology is an 18 unit (minimum) course of study designed to prepare students to enter the workforce:
> "The program of studies in Welding Technology is designed to provide comprehensive occupational training in welding methods currently used in the welding fabrication industry. Students will be taught the manipulative skills and the technical knowledge required to operate oxyacetylene, shielded electric arc, MIG, TIG, and semiautomatic flame cutting. They will be prepared for certification as required by employment in the welding industry." (Catalog, Certificate in Welding Technology worksheet)
>
> *Certificate of Career Preparation*
> **In process of being approved by board*
> This welding course will provide an introduction to the discipline of welding technologies and then guides students through various methods and applications of welding. Upon completion students will have the necessary knowledge that will assist them in seeking employment in the field of welding.

In addition to the desirability of the certificate programs, individual WEL courses provide students with practical skills.

Describe how the program supports the overall mission of the College as adopted by the Board of Trustees.

The program supports the overall mission of the College by providing high quality programming in a particular vocational area. WEL courses provide an opportunity for lifelong learning in that they offer the opportunity for professional development and certification to working technicians. In addition, the Welding Technology Program offers training that is career oriented and supports the mission "Palo Verde College provide an exemplary learning environment with high quality

educational programs and services. It promotes student success, lifelong learning and community development. Our goal is to create better futures for our students and our communities."

Describe the unique institutional goal the program achieves.

College's Institutional Goal #1: "*Palo Verde Community College District will deliver and continuously improve upon quality educational programs, emphasizing student learning leading to certification, conferral of associate degrees, transfer to four-year institutions, and personal growth and career enhancement.*"

The program satisfies this institutional goal by providing technical education in the trades. Without the Welding Technology Program the College would not be able to provide the necessary range of technical, and vocational training to students intending to enter ever-expanding, in-demand fields. This division supports Institutional Goal #1, by providing a comprehensive program of study, including Certificates of Preparation and Achievement, as well as an Associate's degree in Welding Technology. Each of these degrees and certificates have been developed in accordance with Career Technical Education Standards leading toward gainful employment, higher education, and career readiness.

Part 2: Accomplishments in Achieving Goals Outlined In the Previous Program Review

---

Describe progress in achieving goals outlined in the previous program review, providing evidence documenting such achievements.

The Welding Technology Department identified the following items that were to be addressed by the division. Refining course outlines and updating certificate and degree programs were identified as a previously listed departmental goal. In addition, SLO creation and assessment were also identified as a goal.

Goals from previous program review:

- The Welding Technology Department has identified measurable SLOs for every Welding course, certificate, and degree. In addition, each courses has program and institutional learning outcomes mapped. This has been an ongoing process at the duration of each semester.

- The Welding Technology Department has also updated curriculum and designed new curriculum leading to a certificate of preparation in Welding Technology.

Explain modifications of goals outlined in the previous program review, providing evidence documenting such modifications.

To date, there has been no need to make significant modifications to the program.

Part 3: Populations Served

Describe the populations served by the program, including special populations.

The Welding program is open to all interested Palo Verde High School and Palo Verde College students, and students enrolling in correspondence education including incarcerated students. During the day, the program serves 50% high school students and 50% adult students, while during the evening; the program serves primarily adult students.

The Welding Technology program serves two important and special populations.
First, the program offers credit courses to high school students who have an interest in vocational education, whether they see Palo Verde College's program as preparatory or terminal. The opportunity to gain welding skills for entry into the workforce or as part of a certificate program is not provided in the community through other agencies. Second, the program provides continuing education to working technicians. That training is not offered in the community through other agencies. In these two cases, the College serves an unmet community need.

All Perkins funded CTE Programs have core indicators which are negotiated with the Chancellor's office which relate to Non-traditional and special population students.

Describe other populations that should be served by the program, and describe plans to serve them in the future.

While the Welding program does serve students of varying needs and interest, the program could enroll a greater number of working, adult students. Faculty identify that this population is currently underserved. The Welding Program will continue to serve incarcerated students through the new course and certificate designed for these students.

Part 4: Curriculum History

List the courses constituting the program. Of the courses constituting the program, list those courses that have not been successfully offered at least once during the preceding six (6) semesters.

Associates in Science: Welding Technology

Course	Title	Units
WEL 100	Oxyacetylene Gas Welding	3
WEL 101	Shielded Metal Arc Welding	3
WEL 102	Basic Gas Metal Arc Welding	3
WEL 103	Basic Gas Tungsten Arc Welding	3

WEL 200	Advanced Metal Arc Welding	3
WEL 201	Advanced Gas Tungsten Arc Welding	3
WEL 202	Advanced Oxyacetylene Gas Welding	3
WEL 203	Consolidated Welding	3

Welding Technologies Electives –
(*Choose a minimum of two courses from the list below*)

WEL ELECTIVE: 100- Level or above	6

Total Required Units 30

Certificate of Achievement: Welding Technology

Course	Title	Units
WEL 100	Oxyacetylene Gas Welding	3
WEL 101	Shielded Metal Arc Welding	3
WEL 102	Basic Gas Metal Arc Welding	3
WEL 103	Basic Gas Tungsten Arc Welding	3

Welding Technologies Electives –
(*Choose a minimum of 6 units from the list below)*

WEL 200	Advanced Metal Arc Welding	3
WEL 201	Advanced Gas Tungsten Arc Welding	3
WEL 202	Advanced Oxyacetylene Gas Welding	3
WEL 203	Consolidated Welding	3

Total Required Units 18

Certificate of Career Preparation: Welding Technology

Course	Title	Units

WEL 120	Introductory Welding Principles & Practices	3
WEL 121	Resistance Welding and Special Welding Applications	3
WEL 122	Principles & Practices of Metal Technology & Professional Welding	3

Total Requirement Units 9

Of the courses constituting the program, list those courses that have not been successfully offered at least once during the preceding six (6) semesters.

All courses in the program are offered within a two-year time frame.

Explain why such courses were not successfully offered. Provide a strategy for improving their success, or explain why they should not be removed from the program.

All courses are currently being offered on the two-year cycle.

Part 5: Course Scheduling and Availability

Describe how effectively the scheduling process of classes in the program:

Optimizes class availability for day students, evening students and distance education students.

Within the Welding program, courses are scheduled at times to allow appropriate instruction methodology. At this time, day courses are scheduled in two-hour blocks. This meets the needs of the student population better than a one-hour block. The night classes are offered in two and a quarter hour blocks to accommodate the schedules of working technicians, the primary enrollees in these courses.

Within the Welding program, courses are adequately sequenced for both day and evening students. The Welding faculty, in developing a schedule of classes, adheres to the department's two-year plan. A core sequence of courses is offered each semester, and elective courses alternate. The careful attention to scheduling on the part of the faculty ensures that students, given good advising and appropriate preparation, will be able to complete the program within the two-year cycle. . Courses are also offered through the correspondence modality to accommodate incarcerated students and students with scheduling conflicts.

Optimizes student learning.

Courses have all been updated through the curriculum committee with SLO's identified. Through this process student learning can now be assessed, modified, and improved.

Part 6: Student Learning Outcomes

Describe the process by which the program identifies, measures and evaluates student learning outcomes at the course, program and degree levels, and provide evidence that this process is being followed.

The Welding Technology Department has identified SLOs for each course, certificate, and degree that it offers. The Vocational Department constituents meet regularly to discuss Student Learning Outcomes, Assessment tools, best practices, and issues relating to SLO assessment.

The Welding Technology instructor was one of the first programs to successfully assess SLOs. Although during this time, there has been significant changes in the methods of data collection, assessment, and analysis. These changes have occurred because of changes in SLO Leaders and changes in Administration. Presently, the Welding Technology Department attends all SLO training in-service events, and conforms to the standards of SLO Analysis, and PLO and ILO mapping as set forth by the Palo Verde College Administration (2014-present).

Describe the process by which program improvements are made, and provide evidence that this process is being followed.

Since the last Program Review the welding faculty identified prerequisites as prohibitive to working technicians who had not been trained at the College. Course outlines were revised to add more basic information at the beginning of the course to allow prerequisites to be removed. These changes have allowed access to courses by working technicians seeking refresher courses or further training in the field.

Part 7: Program and Course Coverage

Describe how effectively courses in the program are covered by:

Full-time Faculty; Part-time (adjunct)

The Welding program is staffed by one full-time faculty member.

Describe ongoing or projected deficiencies in faculty coverage of courses in the program.

None.

Describe plans to improve program and course coverage, if applicable.

Currently other CTE faculty cover courses on a as needed basis.

Part 8: Professional Development

Describe specific professional development activities in which faculty members in the program participate, and explain how such activities benefit or enhance the program and support and facilitate student learning outcomes.

Instructors routinely participate in professional development in terms of continuing professional education and seminars. Instructors attend yearly new product seminars presented by leading industry equipment manufacturers. The new cutting-edge equipment purchased for the welding shop is a direct result of faculty's attention to trends in the industry, input from the advisory committee and an ongoing commitment to providing the best equipment and techniques to our students.

Welding faculty additionally keeps current in teaching welding through constant curricular and methodological review and revision. Faculty members regularly use research gathered through the internet, advisory committee input, and industry standards as tools in planning and designing the welding courses.

Staff of the Welding Technology program regularly participates in in-service activities, including College Flex Day trainings, College seminars, and other professional growth opportunities offered on campus as time permits. This year the Welding program participated in Career Day on the Palo Verde campus, and the Palo Verde College information booth and displays at the Colorado River County Fair.

Sexual Harassment training has also been completed during this program review cycle.

Describe areas of unmet professional development needs among faculty in the program, if applicable, and outline plans to address those needs.

No unmet professional development needs have been identified at this time.

Part 9: Student Performance and Completion

Display and comment on semester-by-semester course completions in the program over the preceding six (6) semesters.

Welding Technology Course Completion

	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Summer 2014
Total Students	90	100	99	84	101	127	35
Students C/P or better	73	79	79	75	89	103	25
% Completion C/P or better	81%	79%	79%	89%	88%	81%	71%

Display and comment on semester-by-semester degree or certificate completions, if applicable.

It is evident that students pursuing courses in this discipline are finding success. Traditionally most of the courses offered by the Welding Technology department are face to face, new courses are going to be developed for distance education modalities. We believe that student success in these courses is due to the fact that many of the registered students are high school students who enroll in college course during their traditional school day. These students traditionally have much better attendance than their traditional college counterparts. For this reason, students are able to be present for the instruction and assignments that lead to successfully obtaining the skills necessary for passing a course and demonstrating success on SLO assessments.

We have found that student success remains relatively equal regardless of academic year or term.

2011 – 2014 Welding Technology A.S. Degree and Certificate Completion Data

ID	Degree/Cert.	Description	2011 - 2012	2012 - 2013	2013 - 2014
WELDTG	Welding Technology	Associate of Science	-	-	1
WELTG	Metal Fab Technology	Certificate 6.0 – 17.9 units	1	1	-
WELTG	Welding Technology	Certificate 18.0 – 29.9 units	13	15	14
Total			14	16	15

There has been a consistent rate in certificate and degree completion in the Welding Technology Department. During the 2013-14 academic year, the number of certificates conferred for the Certificate of Achievement remaining relatively stable during 2011-2014. The Welding Technology Department has constantly updated its curriculum, textbooks, and meets regularly with the local education agencies (LEAs). Through the continued correspondence with Palo Verde High School, the welding technology department has gained consistent enrollment of concurrently enrolled high school students. The department believes that the consistent certificate completion is mainly due to the consistent enrollment of Palo Verde High School students. The Welding Technology department expects to see more program completers in the next program review. This will be in part to the new curriculum that has been developed leading to a certificate of preparation in welding technology. These courses have been developed for the distance education modality.

Part 10: Enrollment and Financial Trends

Display and comment on year-by-year enrollments in the program over the preceding six (6) semesters.

Spring 2012		Spring 2013		Spring 2014	
Course	Enrollment	Course	Enrollment	Course	Enrollment
WEL 102-01	18	WEL 102-01	23	WEL 102-01	26
WEL 103-01	22	WEL 103-01	17	WEL 103-01	23
WEL 103-02	19	WEL 103-02	9	WEL 103-02	14
WEL 202-01	23	WEL 202-01	17	WEL 202-01	18
WEL 203-01	21	WEL 203-01	17	WEL 203-01	19
Total Spring 2012	103	Total Spring 2013	85	WEL 120-01	28
				Total Spring 2014	128
Fall 2012		**Fall 2013**		**Fall 2014**	
Course	Enrollment	Course	Enrollment	Course	Enrollment
WEL 100-01	23	WEL 100-01	26	WEL 100-01	25
WEL 101-01	25	WEL 101-01	25	WEL 101-01	24
WEL 102-01	12	WEL 102-01	14	WEL 201-01	19
WEL 200-01	24	WEL 200-01	20	WEL 200-01	26
WEL 201-01	24	WEL 201-01	22	WEL 120-01	25
Total Fall 2012	108	Total Fall 2013	107	WEL 120-02	20
				WEL 102-01	15
				Total Fall 2014	154

Enrollment in the Welding Courses over the past six semesters has been strong. What we have found is that there is not a lot of students beginning the course and quitting during the middle of the semester. Though this does occur, having a large concurrently enrolled high school population helps keep students involved from start to finish. Enrollment trends demonstrate that students are still enrolled in all levels of courses in this discipline.

Display and comment on year-by-year expenses incurred by the program over the preceding five (5) years, as to: supplies, contracts, capital outlay and other non-salary expenses.

	Salaries	Benefits	Supplies	Contracts	Capital	TOTAL	FTES	Rate	Income	Profit
2013-2014	$ 104,783	$ 28,852	$ 17,256	$ -	$ 3,060	$ 153,951	42.13	$ 4,564.83	$ 192,316.28	$38,365.28
2012-2013	$ 93,642	$ 27,013	$ 10,302	$ 910	$ 19,062	$ 150,929	32.83	$ 4,564.83	$ 149,863.36	$-1,065.64
2011-2012	$ 98,196	$ 30,239	$ 5,656	$ 200	$ -	$ 134,291	33.00	$ 4,564.83	$ 150,639.39	$16,348.39
2010-2011	$ --------	$ ----------	$ ---------	$ --------	$ ----------	$ ----------	45.17	$ 4,564.83	$ 206,193.37	$ ----------
2009-2010	$ 109,675.39	$ 26,839.32	$ 12,407.03	$ -------	$ ---- ---	$ 148,921.74	47.50	$ 4,564.83	$ 216,829.42	$ 67,907.68

*Information for 2010 – 2011 was not obtained after request.

Part 11: Faculties and Equipment

Are current facilities, such as classrooms, offices and equipment, adequate to support the program? Explain.

The Palo Verde College Welding Technology Department, in conjunction with the Automotive Technology Department are requesting use of the TB 117 classroom when it is vacant of the Building Technologies Program to support the growth of the program and to meet the needs of the local employment agencies and the local trade advisories. For this reason, the Welding Technology advisory also requested a designated secured welding testing facility (AWS Testing). In order to grow the program and meet the needs of the local industries and trade advisory committee members, the Welding Tech Program would like to obtain a portion of the TB 117 classroom when it becomes vacant of the BCT program.

Is available dedicated space adequate to support the program? Explain.

The facilities available support the program at its current capacity, but additional space would be required to grow the program as recommended by the local employment agencies and trade advisory members.

Is available equipment adequate to support the program? Explain.

The available equipment is adequate to support the program at its current capacity. But in order to grow the program as discussed by the advisory committee members, additional equipment will be needed for the AWS testing facility regulations. This would include secure locations, designated testing area (such as TB 117), and welders. To support this, the welding technology program has participated in the Prop 39 grant to obtain welders to support this goal.

Describe plans for future changes in support facilities or equipment.

No further plans at this time.

Part 12: Strengths and Weaknesses

List and comment on the major strengths of the program.

The major strengths of the department are as follows:

- Certificates are received after completing the 18 unit program.
- New classrooms and lab area.
- Program directed toward the A.W.S. D1.1 Certification.
- Updated course outlines and syllabus.
- Lecture/Lab hours enforced to meet the college standards.
- The students are ready for their certification test after completing the program.
- Student tracking program.
- Enrollments are stable.
- Looking for the best prices on supplies (material, class equipment, etc.).
- Working with the Advisory Committee for program direction (AWS Certification).
- Purchased C.D. Rom programs to update our computer technology in welding.
- Purchased new welding texts and workbooks.
- Develop work experience programs with local industries.
- Full time counselor to aid the students.
- New welding simulating software for students.

List and comment on the major weaknesses of the program.

- Major weaknesses include recent global trends affecting material and supply costs. Due to increase in costs of materials and supplies, each year, projects have to get cut back in quantity and scope due to this issue.

- I-10 Speedway closure

Part 13: Plans to Remedy Weaknesses

Identify specific steps to correct identified weaknesses and provide them timeline by which they are to be corrected.

Inherently, CTE programs have a greater cost than their academic counterparts. For this reason, all programs took a cut in recent years, but restoration of these funds will be imperative as student learning outcomes and local employment requires more experience practically working with various welding media.

Recent global trends have increased the cost of steel 400 percent. The materials cost of this program to the College is already high, relative to supplies budgets of other programs within the Division. If supply increases go unchecked in the world market, some instruction in the Program could be impacted. Faculty are currently taking these trends into consideration and discussing some potential solutions, including purchasing scrap steel and forming a partnership with Morgan Corporation.

The only way to remedy the I-10 speedway closure, is to have an outside agency such as Palo Verde College donate the money (roughly $60-70,000) to repair the track and re-establish the powerful connection that the PVC Automotive & Welding Department, Lucas Oil, I-10 Speedway, and members of the community have.

Part 14: Plans To Advance the Program

Describe other plans that will advance the program.

1. The addition of 4 fabrication classes
2. Discussions are ongoing about the fabrication classes and the possibility of a metal fabrication certificate
3. A contract with American Welding Society for Certification Testing, research is ongoing due to advancement in the field.
4. Continue assessing, revising, and updating SLO's PLO's as they relate to the institutional Learning Outcomes.
5. Use a section of TB 117, specifically for ASW testing.