PROGRAM REVIEW Fall 2017

Program: WLDT - Welding Technology Division: CATSS – Don Carlson, DEAN Date: Fall 2017 Writer(s): Scott A Miner – Welding Faculty SLO/SAO Point-Person: Scott A Miner – Welding Faculty

Section One: Program Snapshot

A. Data Review: Describe any significant changes to your program's data since last year's Program Review Update (Fall 2016).

Possible sources of relevant information might include, but are not limited to, the following:

- Data generated by your program
- Data from the Office of Institutional Research (<u>https://goo.gl/WuR9cQ</u>)
- CEMC Data
- Labor Market Data
- SLO/SAO Data
 - Our department is <u>very proud</u> of our Fall 2016, 537.5 productivity number considering we teach primarily CTE lab classes with more than 1,100+ WSCH, 90%+ retention rate and 100%+ fill rate.
 - In Spring 2017, our 434 productivity number was a decrease because in the Spring we
 offer more advanced courses that have lower individual fill rates. We continued to teach
 primarily CTE lab classes with more than 1,100+ WSCH, 90%+ retention rate and
 100%+ fill rate as well. We try to pack in as many students as safely possible to get the
 greatest utilization we can from the college equipment we are honored to be stewards
 for.
 - Student Headcount remained consistent.
 - Course enrollments increased slightly
 - Female enrollment declined which could be due to offering more career oriented course sections and fewer Welding for the Arts (WLDT 71) GE sections which are ~ 20% Female. There was a corresponding increase in Male students.
 - While overall headcount for students 25 and older remained consistent, there was a shift to slightly older students 30 and above.
 - While diversity does exist in the department's students, White, Latino and Multicultural students are the majority as has been in the recent past.
 - The enrollment status of the students is similar in the past years, with an increase in the number of returning students.
 - With respect to educational goal, there has been a slight decrease in Transfer and AS headcount with a corresponding increase in Job Training goals.
 - We are seeing slight increases in the student's educational level of a BA/BS or higher, and increase of High School students with a slight decrease in students who identify as Freshmen.
 - We saw a slight increase in Student Success and a slight decrease in Completion Rate.
 - The labor market for our skilled trade is strong with many employers contacting the college to seek entry level skilled hands. Some employers have presented at the college about their opportunities for employment.
 - Many students are finding part-time welding jobs that fit around their schedule in the \$16-25/hour range.

• Union apprenticeship programs are actively seeking candidates and some students have found success. Math is the barrier to most that follow this route.

B. Changes to Program and Needs: Describe any significant changes to your program or your program's needs since the previous Program Review Update (Fall 2016).

Community Partnership/Outreach Participated in the first ever Livermore Innovation Fair. Our		Mark an X next to each area that is addressed in your response.	
department manufactured and passed out to the public,	Definitions of terms:		
student hand-made Rosie the Riveter bracelets	-	//goo.gl/23jrxt	
manufactured from recycled/upcycled copper water pipe.	<u>intpo.</u>		
Students demonstrated sustainability, manufacturing and	Х	Community	
metallurgy all in one simple project. Our booth was in front		Partnerships/Outreach	
of the Bankhead Theater.	Х	Curriculum*	
Manufactured a large aluminum frame for use by the	Х	Enrollment Management	
Valley Spokesmen Bicycle Club. Student veterans in the	Х	External Factors	
engineering tech program and welding students	Х	Facilities,** Supplies and	
collaborated to complete the project. The club reached out		Equipment (Including	
to the college as they were unable to find exactly what		Software)	
they wanted and the custom made part form a commercial	Х	Financial/Budgetary	
operation would have been cost prohibitive. This was a	Х	Human Resources	
service learning opportunity that paid many rewards.	Х	Learning Support	
The department did some welding on components for the	Х	LPC Planning Priorities	
Save Mount Diablo organization. The steel components		https://goo.gl/LU99m1	
were for one of the many opens spaces they are	Х	Pedagogy	
caretakers for in the east bay. An Eagle Scout project to	Х	Professional	
help build benches for the East Bay Regional Park system		Development	
has followed as well, with contacts from Save Mount	Х	Services to Students	
Diablo.	Х	SLO/SAO Process	
Worked with Tri Valley ROP to offer WLDT 70 Intro to	Х	Technology Use	
Welding in the Livermore High School welding lab. The	*Curriculum will also be		
focus is on attracting students into welding as well as		ssed in Part 2 (Curriculum	
offering then a viable afterschool program. This class is	Revie		
now being taught for credit by the high school Agriculture	**Facilities will also be		
instructor.	addre	ssed in Question H.	
Curriculum			
The AS Degree and Certificate were updated in the Spring			
of 2017. 19 course outlines were updated in Spring 2017.			
6 new courses were created including Construction Safety,			
where a student will earn an OSHA 10 certification in			
construction safety, a wallet card good for life, in more			
ways than one. One class in Blueprint Reading for			
Industry, and 3 more in Beginning through Advanced			
Laser Welding. Finally, the first of its kind at LPC, Welding			
Summer Camp, where high school students can earn one			
unit of welding college credit towards their degree in a			
summer welding lab experience manufacturing a smoker			

BBQ. In all 25 course outlines were created or updated	
last year.	
Articulated three of our WLDT courses with the	
Engineering program at San Francisco State. SF State has	
very few manufacturing labs on campus and has students	
travel off site to take labs. Our classes will offer LPC	
Transfer students a leg up on their counterparts at other	
schools that don't offer manufacturing class material.	
Enrollment Management	
Added one more section of the WLDT 62AL lab classes	
exclusively has helped with the impacted 62AL labs. The	
additional section of the class filled to about 90% capacity.	
External Factors	
Passage of Measure A may make some of the long term	
facility needs of the department a reality in the future.	
Specifically new lab space to replace our existing 40+ year	
old welding lab. An outdoor yard covered from the weather	
would be the hope as well. Both areas are described in the 2012 FMP and in previous program reviews and updates	
dating back to 2007. The needs for also Advanced	
0	
Manufacturing spaces(makerspace?) for machine shop work, additive manufacturing and CNC equipment is also	
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showing strong desire from advisory board/industry in	
welding and engineering technology. Students are asking	
about these technologies.	
Facilities/Equipment	
Our essential needs for facilities are listed above and will	
be restated in section H below. With respect to equipment,	
Our desire for a robotic welding cell is still strong. The cost	
is about \$90K. New equipment as replacements to cut	
plate and sheet metal would be desirable, both manual	
and automated. We have constant voltage and constant	
current welding power supplies in need of replacement as	
they wear out. There is a constant need for hand tools and	
measuring equipment. New tools to support our emerging	
laser welding classes would be a plus. We have hopes to	
expand upon the few machine tools we have to an	
introductory machine shop class to serve many trades.	
Equipment for pipe and tubing as well as layout equipment	
too. Manufacturing equipment used to support our	
manufacturing processes class series will increase student	
success. Finally, the need for Safety equipment and	
upgrades is constant.	
Financial/Budget	
We have added a few sections and headcounts have	
increased over the last few years, but the budget has	
remained the same. Gas costs, our primary expense have	
increased and any help would be appreciated. Our	
materials fees for students are working well for metal	
supplies and no need to increase those are needed at this	
time.	
Human Resources	
We have request through the non instructional position	
request process for increasing our existing 24 hour	

C. Reflection: What plans from the <u>2016 Program Review Update</u> or any <u>previous Program</u> <u>Reviews/Updates</u> have been achieved and how?

Curriculum	Mark an X next to each area that	
The AS Degree and Certificate were updated in the Spring	is addressed in your response.	
of 2017. 19 course outlines were updated in Spring 2017.	Definitions of terms:	
6 new courses were created including Construction Safety,	https://goo.gl/23jrxt	
where a student will earn an OSHA 10 certification in		
construction safety, a wallet card good for life, in more		Community
ways than one. One class in Blueprint Reading for		Partnerships/Outreach
Industry, and 3 more in Beginning through Advanced	х	Curriculum*
Laser Welding. Finally, the first of its kind at LPC, Welding	Х	Enrollment Management
Summer Camp, where high school students can earn one		External Factors
unit of welding college credit towards their degree in a		Facilities,** Supplies and
summer welding lab experience manufacturing a smoker		Equipment (Including
BBQ. In all 25 course outlines were created or updated		Software)
last year.		Financial/Budgetary
Articulated three of our WLDT courses with the		Human Resources
Engineering program at San Francisco State. SF State has		Learning Support
very few manufacturing labs on campus and has students		LPC Planning Priorities
travel off site to take labs. Our classes will offer LPC		https://goo.gl/LU99m1
Transfer students a leg up on their counterparts at other		Pedagogy
schools that don't offer manufacturing class material.	Х	Professional
 Professional Development 		Development
Department Technician took classes in CNC plasma		Services to Students
cutting. Instructors attended local American Welding		SLO/SAO Process
Society Technical events including the National Welding		Technology Use
Educator Seminar. Instructor attended Cal Poly Materials	*Curriculum will also be	
Engineering Advisory Board meetings. Instructor renewed	addres	ssed in Part 2 (Curriculum
Certified Welding Inspector certification.	Review). **Facilities will also be	
Enrollment Management		
Added one more section of the WLDT 62AL lab classes	addres	ssed in Question H.
exclusively has helped with the impacted 62AL labs. The		
additional section of the class filled to about 90% capacity.		

D. Impacts to Students (Optional): Discuss at least one example of how students have been impacted by the work of your program since the last Program Review Update (only if you did not already answer this in Questions A, B or C).

Curriculum	Mark an X next to each area that is addressed in your response.		
We have updated our curriculum to bring everything current with industry standards. We are proud of our 6 new course offerings. Beginning, Intermediate and Advanced Laser		Definitions of terms: https://goo.gl/23jrxt	
Welding will open up the doors to new tech jobs in the area of advanced manufacturing, advanced materials and biomanufacturing. Our Welding Summer Camp class offers High School students the opportunity to earn college credits during a series of summer workshops focused on manufacturing. Our Construction Safety short-course serves an industry need for anyone wishing to work in or around the construction trade. OSHA certification in safety will be a take-		Community Partnerships/Outreach	
	Х	Curriculum*	
		Enrollment Management	
		External Factors	
		Facilities,** Supplies and Equipment (Including Software)	
away for every successful student. Finally, the Print Reading		Financial/Budgetary	

for Industry class will serve the needs of welding, auto,	Human Resources
engineering and engineering tech students.	Learning Support
	LPC Planning Priorities
	https://goo.gl/LU99m1
	Pedagogy
	Professional
	Development
	Services to Students
	SLO/SAO Process
	Technology Use
	*Curriculum will also be
	addressed in Part 2 (Curriculum
	Review).
	**Facilities will also be
	addressed in Question H.

E. Obstacles: What obstacles has your program faced in achieving plans and goals?

Facility	Mark an X next to each area that	
Aging facility with limited space and infrastructure.	is addressed in your response.	
Budgetary		
Inflation in the cost of shielding gasses, increased	Definitions of terms:	
students, increased usage.	https:	//goo.gl/23jrxt
Enrollment Management		
Pipe welding section cancelled, pushed some students		Community
back 8 months to a year in graduation/completion. May		Partnerships/Outreach
need to add CAH for additional WLDT 63 section Layout		Curriculum*
and Fitting to accommodate engineering tech student as	Х	Enrollment Management
well as welding enrollments.		External Factors
Human Resources	Х	Facilities,** Supplies and
Could use the extra support in the evenings and weekends		Equipment (Including
with extra 16 hours a week to bring our instructional		Software)
assistant on full time.	Х	Financial/Budgetary
Technology	Х	Human Resources
Lack of robotic welding and other orbital welding		Learning Support
automation technology. CNC Equipment of all types.		LPC Planning Priorities
		https://goo.gl/LU99m1
		Pedagogy
		Professional
		Development
		Services to Students
		SLO/SAO Process
	Х	Technology Use
	*Curri	iculum will also be
	addre	essed in Part 2 (Curriculum
	Review).	
		ilities will also be
	addre	essed in Question H.

F. Short Term Planning: What are your most important plans (either new or continuing) for next

year?

	-	
 Rolling out our new courses, degree, and certificate. Developing career certificates focused on specific welding technologies and welding inspection. 	Mark an X next to each area that is addressed in your response.	
 Developing the infrastructure to support an American 	Defin	itions of terms:
 Developing the initialitation of support an American Welding Society Accredited Testing Facility Increasing the use of Canvas in our teaching 		://goo.gl/23jrxt
 Maintaining a safe workplace 		Community Partnerships/Outreach
	Х	Curriculum*
	Х	Enrollment Management External Factors
	Х	Facilities,** Supplies and
		Equipment (Including Software)
		Financial/Budgetary
		Human Resources
	Х	Learning Support
		LPC Planning Priorities
		https://goo.gl/LU99m1
		Pedagogy
	Х	Professional
	X	Development
	Х	Services to Students
		SLO/SAO Process
	Х	Technology Use
	*Curriculum will also be addressed in Part 2 (Curriculur	
	Revie	/
		cilities will also be
	addre	essed in Question H.

G. Long Term Planning (Optional): Please detail any long-term plans for the next 3-5 years. (Only if you have significant plans, such as implementation of a grant project, creation of long-term initiatives including those using restricted funds such as Equity or SSSP, construction and outfitting of a new building).

Passage of Measure A may make some of the long term facility needs of the department a reality in the future. Specifically new lab space to replace our existing 40+ year old welding lab. An outdoor yard covered from the weather would be the hope as well. Both areas are described in the 2012 FMP and in previous program reviews and updates dating back to 2007. The needs for Advanced Manufacturing spaces(makerspace?) for machine shop work, additive manufacturing and CNC equipment is also showing strong desire from advisory board/industry in welding and engineering technology. Students are asking about these technologies.	Mark an X next to each area that is addressed in your response.	
	Definitions of terms: https://goo.gl/23jrxt	
		Community Partnerships/Outreach Curriculum*
		Enrollment Management
		External Factors
	Х	Facilities,** Supplies and Equipment (Including Software)
		Financial/Budgetary
		Human Resources

	Learning Support
	LPC Planning Priorities
	https://goo.gl/LU99m1
	Pedagogy
	Professional
	Development
	Services to Students
	SLO/SAO Process
	Technology Use
*Currio	culum will also be
addres	ssed in Part 2 (Curriculum
Review	,
**Facil	ities will also be
addres	ssed in Question H.

H. Do you have any facilities needs that are currently unmet? If yes, please describe.

Passage of Measure A may make some of the long term facility needs of the department a reality in the future. Specifically new lab space to replace our existing 40+ year old welding lab. An outdoor yard covered from the weather would be the hope as well. Both areas are described in the 2012 FMP and in previous program reviews and updates dating back to 2007. The needs for also Advanced Manufacturing spaces(makerspace?) for machine shop work, additive manufacturing and CNC equipment is also showing strong desire from advisory board/industry in welding and engineering technology. Students are asking about these technologies.

I. Mission: Explain how your program's plans and accomplishments support the mission of Las Positas College:

Las Positas College is an inclusive learning-centered institution providing educational opportunities and support for completion of students' transfer, degree, basic skills, career-technical, and retraining goals.

The welding technology program directly supports the following components of the college mission:

Meets the academic needs of students pursuing welding and more advanced degrees, as well as students interested in completing General Education work

Challenges students intellect by exploring the technical aspects of welding and discovering there is more to it than just a bright light

Prepares students for career entry and advancement as well as retraining of displaced workers Provides a venue to explore creativity and express that through art, while meeting the academic requirements of General Education coursework

Prepares students to meet their personal development goals for career entry and advancement as well as retraining for a career change

Provides the students with a good work ethic and understanding of what is expected in society

and the workplace

Partners with the local business and organizations to promote the welfare of its students and <u>economic health of the Tri-Valley area, our State and our Nation</u> Cultivates in students the willingness to adapt to change in the workplace

Cultivates students to be engaged, responsible and productive contributing members of our community

Cultivates in students the concept of lifelong learning and continuous improvement in everything they do

Excellence in welding, being the best at what we do, is our focal point of everything that we do. Welding demands perfection, we must strive for the best from within, using all the available resources and assets at our disposal. We continue to serve a diverse population both from the students that are following a career pathway intended to finally secure employment in the welding field, to the artist with a grand imagination, to the hobbyist with a hot rod and ambitions to go the speed of sound, to the person that is considering alternate forms of energy that need skills and knowledge to make their dreams become reality, to the person that's just exploring welding and trying to find themselves because they have not felt excepted elsewhere in life and they think there is some spark of hope here. We adapt as needed our teaching style and equipment needs to meet the needs of a diverse range of disabilities or learning difficulties. Welding serves all these needs and countless more. For some, welding is a doorway to another world never imagined, an unknown path to the area of materials engineering, materials science, welding engineering or other engineering, science or advanced technology degrees in other areas .

Welding meets the transfer, degree, career-technical, and retraining goals specifically called out in the college mission.

J. Program-Set Standard (Instructional Programs Only): Did your program meet its program-set standard for successful course completion? YES

If your program did not meet your program-set standard, discuss possible reasons and how this may affect program planning or resource requests.

Not Applicable

K. SLO/SAO Reflection: Describe an example of how your program used course SLO data (CSLOs), Student Service Area Outcome (SAO) data or Program SLO data (PSLOs) from last year (2016-17) to impact student learning or achievement. <u>Focus on PSLOs or CSLOs where you have multiple</u> <u>semesters of data to analyze</u>. (Copy the box below if you would like to discuss multiple examples.) Course Name, Program Name or Student Service Area: Welding Technology Program

Text of the PSLO: Operate Safely in a welding workplace environment.

Describe the quantitative or qualitative results: 0 reportable accidents in welding shop/courses during the reporting period.

Discuss and reflect upon student achievement for this CSLO/PSLO/SAO. Discuss any actions taken so far (and results, if known) and your action plan for the future: We are proud of the safety culture we promote in our classes. A student may struggle to learn how to gain the welding skills, but everyone can be taught to operate safely. We use standard tests supplied by the American Welding Society and spend more than a week of class time devoted to safety before any work in the lab commences. We plan to continue doing what we have done in the past.

What changes in student achievement are evident across the semesters you analyzed? What are some possible explanations for these changes in student achievement? There were no changes to student achievement. When we are talking about Safety, 0 accidents is something that should be maintained not changed, The students have changed in the sense they are now aware of the potential hazards and deploy personal protective equipment to remain safe in class and beyond. We hope we are teaching a skill set that lasts a lifetime.

L. Plans for Analysis of SLO/SAO Data: Identify the PSLOs, CSLOs, or SAOs that your program plans on focusing on the upcoming year with subsequent analysis. (Copy the box below as needed.)

Circle One:

PSLO

Program Name: Welding Technology

Text of CSLO/PSLO/SAO: Skills Necessary to pass an industry standard certification test.

If you plan on analyzing a PSLO, identify the CSLOs that feed into the PSLO that will need to be assessed.

SLO's from WLDT 61AL, 61BL, 62AL, 62BL, 69A & 69B all require one or more welding certification tests at their completion.

Section Two: Curriculum Review (Programs with Courses Only)

The following questions ask you to review your program's curriculum. To see the last outline revision date and revision due date:

Log in to CurricUNET
 Select "Course Outline Report" under "Reports/Interfaces"
 Select the report as an Excel file or as HTML

Curriculum Updates

A. Title V Updates: Are any of your courses requiring an update to stay within the 5 year cycle? List courses needing updates below.

None – All new effective Spring 2018

B. Degree/Certificate Updates: Are any degrees/certificates requiring an update to do changes to courses (title, units) or addition/deactivation of courses? List needed changes below.

None – All new effective Spring 2018

C. DE Courses/Degrees/Certificates: Detail your department's plans, if any, for adding DE courses, degrees, and/or certificates. For new DE degrees and/or certificates (those offered completely online), please include a brief rationale as to why the degree/certificate will be offered online.

Not Applicable

Section Three: CTE Updates (CTE Programs Only)

A. Labor Market Conditions: Examine your most recent labor market data. Does your program continue to meet a documented labor market demand? Does this program not represent unnecessary duplication of other training programs in the college's service area? (Please note: your labor market data should be current within two years. Contact <u>Vicki Shipman</u> or the current CTE Project Manager for access to data).

TOP Code: 0956.50 - Welding Technology

SOC Codes: 51-4121 - Welders, Cutters, Solderers, and Brazers; 51-4122 - Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Summary Based on Demand and Supply: The following tables illustrate the total supply and demand for occupations within the Welding Technology discipline at Las Positas College. The Centers of Excellence Community College Consortia (COECCC) data projects 273 annual Welding Technology based job openings between 2015-2018. The COECCC data reports a total of 69 Welding Technology based completers per year from 2012 to 2016, yielding a demand of 204 openings per year of the combined occupations (SOC Codes). Geographic Coverage: SF Bay Area.

(Source: Data compiled by and used with the permission of the Centers of Excellence Community College Consortia. More information available at www.COECCC.net.).

B. Advisory Boards: Has your program complied with advisory board recommendations? If not, please explain.

We held advisory board meetings in the Fall and Spring. We are pursuing recommendation in the area of technical math class development, further expansion of advanced manufacturing efforts as well as terminal testing for welding certification(s) for all completers of the program. Confirmation from industry that our PSLOs are correctly focused, certification of skills, safety first in everything.

C. Strong Workforce Program Metrics: Utilizing LaunchBoard, review the Strong Workforce Program Metrics. Review the data and then answer the following questions.

(Contact <u>Vicki Shipman</u> or the current CTE Project Manager for help accessing the data).

C1. Does your program meet or exceed the regional and state medians **for increased enrollments**, **completions**, **and/or transfer since your last program review**? If not, what program improvements may be made to increase this metric?

Base Year: 2015-2016

Enrollments: LPC 559; EastBay 483; Entire Bay Area 339; State 340. LPC's enrollments exceed the EastBay, Entire Bay and State.

LPC Completions: LPC 7; EastBay 7; Entire Bay Area 4; State 8. LPC's completions meet or exceed the EastBay, Entire Bay Area however not the State. To increase completions, faculty will encourage students to complete paperwork to earn their certification/degree; faculty will encourage Student Services to effectively implement DegreeWorks; and, our new degree and certificate offerings should clarify and simplify the process of completion by making the certificate and degree more customizable by the student to better suit their interests.

LPC Transfer: There are insufficient data to calculate this metric.

C2. Does your program meet or exceed the regional and state medians for students gaining employment in their field of study? If not, what program improvements may be made to increase this metric?

There are insufficient data to calculate this metric.

C3. Does your program meet or exceed the regional and state medians for student employment rates after leaving the college? If not, what program improvements may be made to increase this metric?

Base Year: 2014-2015

Students employed in the Fourth fiscal quarter: LPC 63%; EastBay 74%; Entire Bay Area 70%; State 67%. LPC's employment rates do not exceed the EastBay, Entire Bay Area, and State. To increase employment rates, the program faculty will reach out to employers in the region to increase opportunities for students. Equally program faculty will encourage the administration at LPC to institutionalize an employment center for students and employers to meet.

C4. Does your program meet or exceed the regional and state medians for increased student earnings and median change in earnings? If not, what program improvements may be made to increase this metric?

Base Year: 2014-2015

Increased Earnings: LPC \$11413; EastBay \$10750; Entire Bay Area \$10087; State \$7623. LPC's increase in student earnings exceeds the EastBay, the Entire Bay Area and the State. To increase earnings, LPC will expand employment opportunities for students with high paying employers. **Median Change in Earnings:** LPC 42%; EastBay 39%; Entire Bay Area 50%; State 54%. LPC's median change in students' earnings exceeds the EastBay however not the Entire Bay Area nor the State. Program faculty will attempt to recruit higher wage employers.