

PROGRAM REVIEW Fall 2020

Program: Welding Technology

Division: PATH

Date: Fall 2020

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Section One: Program Snapshot [Program Review Committee]

No Significant Changes Option

Contact person: Scott Miner – Welding Faculty

By marking an X in the box above, the writers of this Program Review indicate that there have been no significant changes to their program or their program's needs in the past year. In this case, programs may opt not to complete Program Review Section One: Program Snapshot.

Programs must still complete all other sections (as applicable).

Please note: Choosing this option means that your program's information may not be included in the yearly Division Summary.

The No Significant Changes Option may only be used for two years in a row; after two years, programs must complete a full Program Review including the Program Snapshot. Our program's most recent Program Snapshot was submitted in the following semester: Fall 2019

A. Accomplishments: What plans were achieved during AY19-20? You may describe achievements that were or were not planned in earlier Program Review. Your response may include actions regarding COVID-19. Please highlight any positive impacts to students.

One of the greatest accomplishments in this past year has been our work with the district office, Administrators and Ironworkers local 790 staff to onboard one degree and four certificates for their apprenticeship program. In the fall of 2020, 25 student apprentices enrolled in college courses based upon the new APIW rubric. The Ironworkers utilize the campus facilities from 6 to 9 PM every Wednesday night. Their union apprenticeship instructors are now faculty members, and all of their apprentices are enrolled as Las Positas College students. We look forward to fostering this relationship and turning it into a long term partnership that is a win for the college, a win for the district and a win for the Union. This is the first of its kind degree offered at college that requires four years to complete. When done a student should receive a degree and four certificates. We expect to see increased FTES on campus as a result of this.

Welding faculty helped Mount Diablo State Park and the Save Mount Diablo organization repair handrail at the top of Mount Diablo 4000 feet above the Las Positas College campus. To try to create an educational experience the work was live streamed down the mountain to students that were at home and shelter in place conditions. Students joined in and ask questions as well as discuss the project in the days before and after it was completed. A number of the students have reported that they drove to the top of the mountain once the state park reopened to see the work the instructors had done, noting that they had never been to the summit of Mount Diablo before.

Las Positas College faculty in conjunction with Save Mount Diablo, and a Eagle Scout from Danville, constructed 12 bench bases to be installed at the CAL state east bay campus located in Concord. The steel bases were going to be combined with wood to complete the project for use. This is another great example of a service learning opportunity engaging with the community and fellow educational institution.

We assisted a former welding camp student with a UC Berkeley mechanical engineering project. This student had previously taken courses at Las Positas, and was finishing his bachelors degree at UC Berkeley when he was confronted with a welding problem and challenge that needed addressed for his project. He reached out to college faculty and made arrangements to bring the project to campus so that it could be completed using the help of welding students and faculty. This is a great example of service learning, project-based learning that we try to deploy throughout our program.

Providing service learning, project-based learning opportunities within our WLTD 71 welding for the art course, has led to numerous public art projects installed around campus for the enjoyment of all students, employees and visitors. Every semester that this course is offered one of the items that we manufacture is a group project public art installation. Over the last few semesters we have begun adding animal silhouette to the open spaces around campus to remind us of the residents that once lived here and still occasion our wonderful location against the hills. Professionally done examples can be seen in downtown Pleasanton similar in nature. Our goal is to teach students that public art is something that everybody can participate in, and everybody can enjoy when done in the way that meets our budget in the location.

A collaboration between Alameda County Vector Control and the Las Positas College Welding department created the first of its kind device intended to separate humans walking on a sidewalk with a beehive only a few feet away. Alameda County in conjunction with the city of Pleasanton, and the homeowner (welding faculty) worked to create a device that would allow the peaceful coexistence of both humans in the bee population located in a very old tree. The device has been designed, built and installed by welding and vector control personnel. Public service information has been placed next to the bee diversion device to allow the public to understand what it is that they are looking at. According to Alameda county vector control personnel, who have done scientific research and discovery on this topic, claim that they cannot find of any other example of where a similar device has been fabricated design or deployed and used such as this in an attempt to save the beehive and not have it destroyed or removed because of it's proximity and location to a space frequented by humans. We are happy to report that both the bees and the humans are peacefully coexisting in the environment and the diversion device appears to be a success. There is discussion about further collaborations on other beehives located elsewhere within the county jurisdiction.

Another personal accomplishment by welding faculty was the rapid adjustment to online learning in a welding lab hands-on course environment. Not only were we teaching welding courses at that time, we were offering our WLDT 10 machining course for only the second time as well and had to move to remote learning before moving on to the major pieces of equipment. Welding faculty utilized multiple cameras and live online demonstrations to keep students engaged and enthused

about the topic while stuck at home in their chair or couch. The instructors utilized the knowledge they had from watching cooking shows and how those are televised, as a technique to transmit the welding course lab material. We used one camera that was directly above so that you could look down and see what was going on, another camera further away so that you could see the arms and hands and body position, and one that was further away that could show the entire person in combination with the machine and work piece. Using this cooking show mentality proved to be successful to keep students engaged and enthused prior to returning to hands on activities during the month of June.

Another accomplishment and something that was done by a few other programs on campus last spring was to suspend classes on 1 May. We resumed courses on June 1 and ran for an additional three weeks into June to accommodate hands-on learning for students on campus. Welding was some of the first programs for students to enact the safety protocols for face-to-face classes. We have been diligent and continue to follow the same practices during the fall semester that were piloted during the three week summer session. During that three week summer session over 108 hours of laboratory time was made available up to 12 students at a time performing skills from beginning welding to advanced machining projects simultaneously handled by full-time and adjunct faculty, in a students first format. Online sign ups were utilized to minimize contact and to identify who was coming prior to arriving on campus. Students were assigned workstations, and there was a half hour break for cleanup in between any group of students that came in to the lab. Because we had 24 workstations in maximum 12 students at a time we focused on making sure that students did not use the same workstation that somebody had previously done during the prior three hour work session. We are honored and thankful to be able to work on campus under these trying conditions and will continue to follow the correct protocols to keep all students faculty and staff safe and protected to the best of our abilities.

Unfortunately our planned welding camp for high school students had to be canceled for the summer of 2020. Not only was that going to be the sixth time we offered that on campus bringing in our 150th summer time student, we were also planning to collaborate with LLNL manufacturing technology to offer a hands-on component to their planned summer camp as well. Unfortunately the shut down conditions spoiled those plans and that could not occur. There are preliminary discussions on attempting to possibly make this occur in the summer of 2021 provided that the conditions that allow it to operate in a safe manner exist.

Kinesiology faculty required the need to mount some digital clocks at the swimming pool deck located on campus. Upon inquiry it was found that the specific mounting hardware needed for use at the swimming pool deck was neither available or extremely expensive. Kinesiology faculty reached out to welding faculty to see if there was a solution that they could participate in. After collaborations between faculty a service learning/project learning activity was developed for our layout and fitting class. Using entirely student labor and equipment on campus we manufactured custom digital clock mount hardware for used outdoors at the swimming pool deck. Not only did we save the kinesiology program vital budget dollars, we created something that they could not purchase, as well as turned it into a learning opportunity for students to help others using their hands on skills. The clocks have been installed and the mounts appear to be highly successful.

The welding department continues to sponsor and operate the welding club on campus. Our welding club has been an operation for more than 10 years and is well-funded and provides students with unique opportunities to learn and explore outside of the normal classroom environment. The welding club has between 30 and 40 students.

In an effort to reach out to the community and students, welding in association with the campus outreach specialist ran an online outreach event last spring in an event that was televised live and was recorded for future use. During that online session tours of the lab, as well as current and former students participated in a panel that answered questions. The online activity was well received and has been recorded for future use on our website, it is our hope that we can do something like this again in the future and make this an ongoing effort to reach out to students that may be encouraged to join our program.

First offering of welding 73 welding workplace safety in fall of 2020. This is a new class that has been developed to provide students with an OSHA construction safety industry certification at the completion of the course. The OSHA 10 card that each student will receive is a lifetime certification showing that they have received some baseline safety knowledge that will protect themselves and others on the workplace in the future. Some employers require a student or future employee to have this OSHA 10 card prior to becoming employed

Planning for a 21st century advanced manufacturing training facility is something that is ongoing and continuing. For sometime now we have been involved with discussions with the building architect as well as the district construction management personnel to define what the future building will look like. It has been a process that has involved tremendous amount of time in meetings to accomplish what was needed. We will leave that the facility as planned will meet the current and future needs of our program and most importantly the community. The new facility will allow us to expand into areas of advanced manufacturing in machining that was never possible due to the fact that we were landlocked with no room for expansion for the previous 40 years

Welding is the only program that consistently participates in the TEC (Tri Valley Educational Collaborative). We have participated in that group since our first job fair that we attended in 1996. It is this group that helped support the beginning of our Welding Camp program. Through this program we have also worked with welding classroom and welding stations at Livermore High school to help improve the equipment and facilities there for high school students in the past using ROP grant funds.

WLDT 70 Intro to Welding class taught at Livermore High school by high school faculty in an after school format. We were one of the first programs to pursue teaching classes on the high school campus a few years ago. Furthermore to this point we are the only hands-on classes that are offered on a high school campus anywhere in the tri Valley. This class was originally piloted and taught by full-time LPC welding faculty as an evening class. Eventually the class was transferred to a faculty member that is a teacher at the high school, and the class transitioned from an evening course to a two afternoon a week course that is taught in an afterschool format from 3:30 to 5:20 two days a week in the welding lab at the high school. We are very proud of the collaboration that

we had with Tri Valley ROP, Livermore High school, our advisory board, and Livermore High school faculty. This course along with our welding camp is a key feeder component to our welding program and guided pathways.

Welding faculty participated in the external advisory board, Cal Poly San Luis Obispo, Materials Engineering ABET accreditation visit. As a former alumni and external advisory board member, the full-time faculty member assisted in a meeting between former students, current students and accreditation personnel. This is the second time in the last 10 years that LPC welding faculty has helped in this leadership role in getting a CSU engineering department it's accreditation.

One of the greatest hidden accomplishments of the welding program is our efforts around recycling. For 40 years every student project, and all of the work that we do in our hands-on laboratories, is recycled and renewed into products of all types shapes and forms. Our carbon steel, aluminum, stainless steel and and copper are all recycled with a metal recycler. It is this an ending loop of metals in their ability to be melted down and reformed into new shapes and new products is a concept that many people do not see when they look at the program that we offer here at the college. Who would think the welding program would teach students about ecology and the idea of recycling and the fact that steel is known as a green material. It is a green material because of its ability to be recycled again and again, unlike a piece of wood that can only be used one time and then must be disposed after that uses complete.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW			
<input checked="" type="checkbox"/>	Community Partnerships/Outreach	<input checked="" type="checkbox"/>	Facilities, Supplies and Equipment, Software		LPC Planning Priorities	<input checked="" type="checkbox"/>	Services to Students
<input checked="" type="checkbox"/>	Course Offerings		Financial/Budgetary	<input checked="" type="checkbox"/>	LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items	<input checked="" type="checkbox"/>	Human Resources		Pedagogy		Student Equity
<input checked="" type="checkbox"/>	External Factors	<input checked="" type="checkbox"/>	Learning Support	<input checked="" type="checkbox"/>	Professional Development	<input checked="" type="checkbox"/>	Technology Use

B. Challenges, Obstacles and Needs: Describe any significant challenges, obstacles or needs for your program. Your response may include issues regarding COVID-19. Please highlight any negative impacts for students.

Up until the Covid shut down one of the biggest challenges we had, was trying to keep students enrolled fully in classes until they completed their certificate of degrees because the job market for manufacturing skilled labor was so robust, that many students would not stay until the end and would pursue work.

The great job market also cut down on the people that had the time or that were not fully employed to come back and re-trained or to add additional skills to their personal toolset and expand their careers in their current occupation.

In the IR data section of this PR further challenges associated with specific courses and weekend courses as well as declining ET enrollment. The same information will not be repeated here to remain concise.

Having the Instruction Equipment requests turn in date due the 3rd week of the semester for a one person department is very challenging. A few years back, the date was shifted from an October due date. This year we would have liked to turn in equipment requests for some needed items, but all the activities with multiple pressures made this impossible.

Ongoing maintenance and repairs in the welding lab. This has been discussed with multiple Deans.

Ability to perform outreach and advertise our program in the community. Trying to create avenues to market our programs is challenging. Trying to reach out to talk to potential students about our programs is a challenge. It takes tremendous time and effort to make a meaningful dent in either of these. Creating time to visit employers can be challenging with all the additional duties outside of class time in a one person lab heavy program. There are only so many hours in the day,

Absorbing new technology and evolution in manufacturing equipment and industry practices. Technology is evolving and the future of our program depend upon staying abreast of these trends and emerging technologies.

Increasing costs of materials, equipment, supplies and compressed gasses.

Our biggest challenge is trying to make nonwelding people including campus leaders understand what we do, our important role in our modern way of life, national defense, public safety as well as manufacturing and our national economy. If all welding was removed, life as we know it would never exist. You cant dice to the bottom of the ocean made with something made with a hammer and nails, you don't travel to outer space in something made of concrete, and toy cant transport liquids and gasses in a cardboard tube. To have the things we view as part of our modern society, welding must exist and the people that do it, or we will have to return to the ways of the hunter, the gatherer or the cave man.

Mark an X before each area that is addressed in your response.			Definitions of terms: https://bit.ly/2LqPxOW				
	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software		LPC Planning Priorities		Services to Students
X	Course Offerings	X	Financial/Budgetary		LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items	X	Human Resources		Pedagogy		Student Equity
X	External Factors	X	Learning Support	X	Professional Development	X	Technology Use

C. IR Data Review: Describe any significant trends in your program's data from the office of Institutional Research and Planning. (Note: Not all Programs have IR data available; if your program does not have a data packet or dashboard data, you may note that in the response box.) You may also discuss any other data generated for your program by the Office of Institutional Research and Planning.

IR Data packets are available here: <https://bit.ly/2IYaFu7>

Course Success Rates Dashboard can be found at the bottom of this page: <https://bit.ly/2Y9vGpl>

For assistance with this question, contact the Director of Institutional Research and Planning.

<https://bit.ly/3fY7Ead>

The three significant portions of the IR data that need discussion and explaining are the headcount and enrollment, productivity and fill rate, all which have seen a declining trend the last 3-4 years.

With respect to headcount and enrollment, there are a couple of significant factors that play into the trend line that we see in the data. The two factors are the robustness of the manufacturing economy prior to the virus shut down, and an increasingly declining enrollment of engineering technology students, that once filled many seats in welding courses, even some that were specifically run to service their cohort based learning community.

Up until March 2020, the previous 2 to 3 years had seen an incredible economy around manufacturing, specifically in the bay area and California. As such, there were two significant factors that played out in the student enrollment numbers. First because of the robust economy, we saw fewer students that were currently in the workforce returning to take extra classes and additional training. Rather, because of the robust economy in manufacturing workforce people who would be students would tend to work extra hours at their job place, as opposed to taking another class to increase their skills or job preparedness. We still saw students that filled this demographic, but it appeared as though there was fewer because of the robust economy. The second factor that played in to this based on the robust economy, was the ability of lower skilled students to obtain manufacturing jobs readily in the workforce. Because of all of the opportunities available in the manufacturing workforce, students were increasingly obtaining employment without fulfilling all of the requirements of the certificate or the degree. Typically we are seeing more students that get work prior to completion of their certificate or their degree, thus decreasing the time they have to take classes, and extending the time needed to complete their certificate or degree. Unfortunately some take the wrong path and see the employment opportunities and fail to think of the long-term benefits of having a certificate or a degree and fail to return and complete. this is clearly an area of opportunity for outreach and inreach to increase headcount in the future. This is something that the department is actively working on with campus out reach specialist to get out the word about our program, certificate, and degree. Additional help would come in the form of a specialized CTE counselor in our counseling office on campus. We believe that without a specialized dedicated CTE counselor that welding and many other programs on campus are missing students that may benefit from our program, but are instead being funneled into other programs that may be less beneficial. One example of this is the lack of veterans students that we see in or in the welding program over the last five years. Many of the veterans come out of the service with welding and manufacturing experience, but since the inception of the engineering technology program, veterans are being coached to go into the engineering tech program as opposed to welding and manufacturing. What we are seeing an increasing amount is those veteran students that do take the engineering technology program, additionally complete a Welding degree or certificate. Many of them explain, that they really like the hands-on environment, learn by doing, teamwork and camaraderie of other fellow students that we offer in Welding Technology. Some students explain that the engineering technology program has some core courses that they find difficult, or feel less enthusiastic about and feel manufacturing is where their interest actually lies.

The engineering technology program was started in 2014 by engineering and welding faculty. The original program was singularity focused on creating students that were prepared to enter the LLNL technologist work force. It was a cohort-based program with accelerated contextualized mathematics classes, contextualized physics, and contextualized welding courses. WLDT 79, WLDT 63, WLDT 62A, WLDT 62AL and a new specialized LLNL/STEM request WLDT 10 Machining for the Metal Trades 4 unit class became part of the enrollments. 2014 saw 15-18 ET students enrolled in taking 4 - 5 WLDT courses, initially in Cohort based format with an instructional specialist that came to the classes, and provided student support, but only ET students. This ramped to higher numbers in 2015 as the Veterans office and Student support specialist did a full court press recruiting for the program, explaining to students that you also got an internship at LLNL. At one point we even added a third WLDT 62AL cohort specific class that was the first time we offered three sections of that course. We had almost 60 students in a lecture class to support the three sections, something that never had more than 25-30 students. Leaving out all the details, as ET recruitment declined along with loss of the Student Support Specialist, Kelsey, internship opportunities dropped off as well. That left the Veterans office as the lone recruiter for ET. Thus all vets interested in hands on opportunities are funneled into that program predominantly, and we see fewer and fewer Veterans coming to manufacturing as a first choice unfortunately. Our plans section of this PR explain the fact we are trying internally to set up a workshop based recruitment activity focused on veterans. We need to get them in the shop, because we are unsure how many are being presented the opportunities we offer to earn a living wage and a rewarding career. The lack of dedicated CTE counseling faculty resources plays into this as well, compounding the issue.

Example, WLDT 10 a now 4 unit machining class, specific to the ET had the cap on the class reduced to 20 since its inception because we only have 4 mills, 2 lathes, a third I brought from home, and 6 drill presses all stuffed into the corner of the welding lab, in a space previously a gas welding space. Two years ago when the class was offered for the first time we had 23 students. Last year when we offered the class we had approximately 12 ET students. As of right now it appears as though we have six confirmed going into the spring of 2021. Transitioning from the cohort based learning community of 2014 to the non cohort fall of 2019 has seen a huge change in what were once robust enrollments for ET students entering WLDT courses. Another factor, in 2018, the degree was changed that included of a new Engineering 50 course that could sub for two of the WLDT course 79 and 63. These courses are another example of how our department has had to respond the the ET program at the discipline planning level. 79 was never offered prior to ET, we offered it every fall for the last 5 years to support first year ET students. 63 was previously only offered for WLDT students every other year. Since 2015 we have offered every spring in support of ET, including massive contextually focused efforts to make it a "capstone" type class where students used all their skills to fabricate a functioning welded steel pressure vessel that students took home at the completion of the course. Seeing the writing on the wall the last few years in declining ET headcount, in last years discipline plan we eliminated the 79 and 63 courses from this years roster. We replaced it with. WLDT 66 class that we had not offered since ET came online at the college. That is one travesty that we regret, we were using CAH given to us by the CEMC for WLDT classes and we ran ET focused WLDT courses and took our eye off our core consumer, WLDT students. Not offering the required WLDT 66 class was a mistake.

WLDT 2008 = Headcount 128, Enrollment 215, worst economy since the depression

WLDT 2012 = Headcount 109, Enrollment 211, prior to the inception of ET program
WLDT 2019 = Headcount 110, Enrollment 189, latest data available, declining ET #'s

These numbers represent the consistent core group of WLDT students we have served for 40 years. The surge and resulting decline in the past 5 years is a phenomenon associated with operations by the STEM division ET program, outside of our control.

With respect to productivity and fill rates, similar factors are mentioned above that influence these two factors.

Additional factors that play into this are seeing in two specific areas.

Because of seeing fewer students in the advanced courses over the last year or two because of the robust economy, we have seen fewer students taking the Saturday class we offer in the advanced and beginning pipe welding courses. These Saturday classes are positioned for working people and people where evening classes are not practical. In an attempt to reverse the low enrollment numbers for our Saturday classes we have planned in the Spring of 2021 to take a semester off on the Saturday pipe welding classes and try out a pilot of our very popular WLDT 71 Welding for the Arts Class on Saturday. We have been asked in the past by community education and other students to offer this class on a Saturday as we only offer it through the week during the day traditionally. It is our plans and goals to market this to the local and extended arts community and hoping to draw into the college a different demographic that might not normally show up to take a traditional welding class focused on careers. We like this class as it specifically is the course that has the highest percentage of female students in any welding class that we offer, sometimes approaching 25%. Other traditional welding courses rarely see more than 5% female headcount. We're hoping that this change in fresh direction on Saturdays can bring a new group of people and a renewed spirit to the welding lab on the weekend. The welding department is very proud of our weekend courses and wish to remain for this to be a robust part of our program. We feel honored to be one of the few programs, that offer Saturday courses on campus and have done so for years. Doing so makes us a great example of stewardship of the assets and facility that we have been blessed to have and operate. We have one of the best welding laboratories in the entire bay area community college system, and we look forward to continuing the tradition as we move up the hill to the advanced manufacturing and transportation facility.

Another area that has been somewhat disappointing has been the productivity around our laser welding courses. Based upon input from industry and trends in manufacturing, Las Positas College Welding faculty developed a laser welding course the first of its type in any California Community College. We recruited a first class instructor who is a welding engineer at a local medical device manufacture. We are still scratching our head and trying to come up with a core reason why these classes have not been better enrolled. Some students think Darth Vader and Luke Skywalker are somehow part of the curriculum.....One other possibility that we believe is that this course is unlike any other welding course that we have required in the past the need for a technical math strongly suggested prerequisite. We believe that the math message associated with this course discourages many traditional welding students from taking this, as many struggle with technical math, when trying to complete their degree and certificate. We are not going to touch the topic as

to whether that is an issue with the students as a whole or the delivery of the technical math element.

MATH offers a contextualized math course for welding students, unfortunately students report that the math instructors cannot explain or answer their welding math questions as they relate to things they experience hands on in our lab. Potential development of a course taught by welding faculty based on measuring tools and calculations as a substitute for this may take place in the future. After discussion and consideration with the teaching faculty modifying the course to illuminate the need for the math prerequisite, will be possible based on the lecture material covered. It is also thought that inclusion of laser cutting technology into the course will better expose the students to the full breadth of the use of lasers in manufacturing, and thus create greater appeal for existing students and students that come from the existing employer workforce to learn new technologies and new types of equipment. Development work pending.

With respect to the student demographics around gender and age, for the most part it has remained relatively consistent over time. Some changes include a declining female headcount from fall of 2015 to fall of 2019. This is reflective of the declining female students that were enrolled in engineering technology program. Females are one of the groups that we specifically target for welding courses as the students are not well represented in the industry employment profile. Welding faculty like to say that we have exhausted 50% of the population, and it's now time to go after the other 50%!

One of the unique and entertaining factors of our department is the vast age range of students in the classes. We have everything from concurrent enrollment homeschooled students that are barely 16 years old, and we've got people that are pushing 65 and 70 that are retired and coming back to explore a long standing desire to learn about welding or manufacturing, or maybe just to keep their hot rod running, or to build their next invention. The older students have declined greatly after course repeating was eliminated some years back.

With respect to student demographics around race and ethnicity, things have remained relatively consistent over time and for the most part reflect the demographics of the surrounding community. For example, we see the headcount of white students decline over time. We see African-American students around 2 to 3%. The surrounding tri Valley community has about 2 to 3% African-Americans. Just like the balance of the college over time, we have seen increased enrollment in Latino students, many of them coming from locations east of campus. Over time we have seen Asian student headcount increase as well.

One of the most interesting and unseen or apparently untracked demographic that we are seeing an increase numbers in our welding courses are concurrent enrolled students that are homeschooled. In a homeschool environment a student in high school does not have an opportunity to take shop classes as a traditional student may taking a class at Granada or Livermore High school. Concurrent enrollment allows homeschooled students the opportunity to take a shop class, while at the same completing courses towards their certificate and or degree. This semester I currently know of four students that meet this demographic. The other surge in young students and concurrent enrollment students can be attributed to our welding camp courses that we have an offered every summer for the last five years. In the last two years this has been converted to a credit bearing one unit two week long course each summer. This course get high school students onto the

campus, get them a report card, a transcript, a student ID card and most importantly identify is a LPC student prior to graduating from high school. Many students have used this anchor one unit course as a springboard into their LPC career even if they choose not to pursue welding. I am personally amazed at how many students whether they take a welding class or not, come back and return to the department to take another course or just say hello. Recently we just completed a welding project for a former welding camp student that was finishing up his mechanical engineering degree at UC Berkeley and needed some help finishing up his capstone project.

With respect to student enrollment status, statistics show that we have a huge quantity of continuing students many which come back to take welding classes again and aging, including once they become employed. The percentages have remained relatively stable over time with the most notable increase being the 1% to 4% increase in concurrent enrollment students as mentioned above.

With respect to student unit load, our program primarily services part-time students as a majority. We typically are not a program that is included in a transfer student's plan of attack prior to moving on to a UC or CSU. As such we typically don't see many full-time students unless they are going into an engineering transfer pathway, or want to just come take welding for some other personal reason.

We do not have any data as of yet with respect to online education as we went to an emergency mode in the spring of 2020 and have only offered our first completely DE classes in the fall of 2020. There currently is no plans to offer any DE courses in the spring of 2021.

Student educational goals have remained consistent over time with a noticeable decrease over the last five years of transfer oriented students, some of these associated with engineering tech students that change their mind once they got into the program and continued on to pursue engineering transfer as opposed to the engineering tech AS degree. We see large segments of students that are focused on occupational certificate or job trainings, as well as students that are undecided and are in the welding program to explore whether or not this is a career that they may choose to follow, or a hobby they may pursue.

Students performance and grades have been consistent over time with many students excelling in completing industry standard welding certifications upon completion of core courses. CSLO and PLO's are based on industry certification tests.

With respect to the enrollment management part one, these are the factors that were discussed above with respect to declining enrollment and headcount, so we will not comment further here on this specific topic as we feel that it was covered earlier in this discussion. The lack of full classes in the area of weekend, laser and ET support courses has been the core of this decline

With respect to the enrollment management part two, The change in full-time faculty number is due to the fact that the welding instructor formally served as the Director of Student Life from 2014-2017 in a part-time capacity. That ended in the fall of 2017.

And finally, we can see the college readiness math proficiency numbers as an area of concern for incoming Welding Students. There is a wide range of students that are college level ready, and there are ones that have not attempted any math courses at all, so courses must be taught in a way to make it challenging and encouraging for students of a vast array of mathematics backgrounds and knowledge. This is also a reason why we feel that creating a measurements and calculations course taught by welding instructors specifically contextualized for the students and taught in the welding lab using welding equipment is truly the most valuable mathematics course that any student can walk out of here with, and as such will pursue this going forward into the future.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW			
X	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software		LPC Planning Priorities	X	Services to Students
X	Course Offerings		Financial/Budgetary	X	LPC Collaborations	X	SLO/SAO Process
	Curriculum Committee Items	X	Human Resources	X	Pedagogy	X	Student Equity
x	External Factors	X	Learning Support		Professional Development		Technology Use

D. Short Term Planning: What are your most important plans, either new or continuing, for next year? Describe plans starting now and continuing through AY 21-22. (Optional: You may also describe long-term plans if desired.)

As was stated last year, after being in the same facility for 40 years, in the fall of 2023 welding along with Automotive, Fire, AJ and EMT programs will be entering new facility supported by Measure A bond dollars at the top of the Campus Loop Road.

Continuing to work with the architects and district construction management personnel have been ongoing.

We plan to hopefully again offer our successful, and first of its kind, on campus welding camp in the summer of 2021. The welding department was the first program on campus to run a summer camp for high school students. The summer of 2020 would have been our sixth consecutive summer offering the camp program and would have been the 150th high school student if it had not been canceled.

There were additional plans to partner with the Lawrence Livermore national laboratory's machine technology program to offer a separate lab sponsored hybrid summer camp where the students would spend part of their time at the lab and part of their time at the college doing hands-on activities. The virus activities put a damper on those plans as well.

We have begun to reach out to DSPS personnel regarding the possibility of creating a workshop for DSPS students to potentially explore activities and careers in a manufacturing environment.

Welding Faculty have attended a couple discussions about these types of students that excel in a manufacturing environment.

One college location set up a program for autistic people to operate automated CNC machines as an example. I don't think we are looking to go that big.

But as the one person put it.....

"We label this group as disabled, when in fact they excel at many things, often the disability only limits one aspect of their life. Often time these students have unique abilities that are adept to the manufacturing environment, ranging from simple to complex tasks."

This semester, we have some DSPS students and they are really doing well.

The idea to just hold a short one-day workshop for 3-4 hours on a Friday for 6-12 students just to see if there is an appeal to this group in a broader way. Perhaps they could participate in the Welding Camp next summer, or we run one just for DSPS.

There is a lifeline to living wages if these students can apply their unique abilities in the manufacturing environment.

We currently have plans to try to offer some type of workshop series based on the veterans student body on our campus. Operation Fab Shop (OFS) as we are hoping to call it will be a unique opportunity for current welding students veterans with welding skills to introduce our shop, our industry, and our technology to other veterans that may not have been exposed to it previously. Veterans returning from service, or looking to change directions often find the environment, and student teamwork interactions to be similar to what they did in the military. All hands and heads focused on one task, completion and success. These types of students revel in the "mission accomplished" aspect of Service Learning and Project Based learning. We are going to try to take some of our learnings from the exploratory work that we did around possibly having in on campus maker space, and use that information to benefit veterans in a way that hopefully provides them some direction and meaning when they are looking as to how to spend their lives moving forward in a productive way after leaving the military. One of our student veterans is working on a business plan to reach out to the VA with the potential of being a model program to help able and disabled veterans.

Service learning will continue to be a focus of activities in the welding department. Teaching students how to use their welding skills to support or benefit others is a key aspect that we try to encourage all students to participate in. It is one thing to come to our department and learn a skill that allows us to go out and gain employment or produced objects or items that need particular needs. It takes the learning experience one step further when we teach students how they can use their skills to benefit others in some small or large way. Service learning teaches students the emotional aspect of using their skills to benefit others and the good feeling and sense of empathy towards others that it brings about. it's especially important when we have the opportunity to help others that are less fortunate than ourselves.

Project-based learning will continue to be a important part of everything that we do. Project-based learning make students think deeper about what they're doing in about the skills that they are developing. Project-based learning brings a higher level thought process into a laboratory classroom. Through forethought and planning, Project baseline learning focuses students efforts on

preparation and thinking ahead rather than to react to things as they approach them. Most of the projects that we used in class have some practical application, so it is great to see students walk out of the classroom with something that they can use in their daily life. It quite often allows the student to remember their classroom experience during and after the class has completed. We find quite often that students gift the item that they have made to another family member or friend, which adds another emotional dimension to our projects that we could not write into the assignment even if we chose to. Project-based learning has been a success in the department overtime, and as such we will continue to do this as an important aspect of the work that we do with students. Project-based learning also teaches students an entrepreneurial spirit, the idea that they can actually manufacture something and sell it to another person. A great example of our project-based learning, and service learning activities are the deer that have been made by students and installed near the track and field complex on campus. As part of the lone general education course that we offer, WLDT 71, Welding for the Arts. Upon completion, students reflect on this work and share how it makes them feel and if they would be inclined to do something like this again in the future that benefits others. We are still waiting for the first student to say that the experience did not make them feel better about themselves, or that they would be unwilling to do that again for the benefit of others. When we can take a cold hard piece of steel, and turn it into an emotional experience that embody self reflection, we think as educators, we have hit a home run.

Our plans are to continue on the path of kinesthetic learning as opposed to audio visual or written, which is all that online education can offer. As much of the campus in many of the programs have transition to 100% or large majority of online education, the welding department must remain focused on kinesthetic learning as this is the primary mode for learning the skills of our trade. Just because the world got turned upside down because of the virus, that didn't change the melting point of steel, the danger associated with hand and power tools, the flammability or danger of gases, the ability to work in extreme environments using specialized personal protective equipment, or performing tasks that require specialized hands-on skills. We can watch videos of welding and listen to speakers all day long, and pick up theory material. There is no way without welding equipment, personal protective equipment, materials and supplies, that a person can pick up the skills necessary to perform the actual work themselves. Nobody can watch a YouTube video, and show up to try to weld for the first time and pass an industry standard certification test. It is only through practice and repetition, like a fine musician, or a professional athlete, does one skills and ability develop to a level that is acceptable by our industry. Welding is a learn by doing process. Someone can tell us how to climb a sheer rock face, walk across the tight rope, or walk into a burning building, but until you actually perform these tasks yourself you never really understand what it is the person is explaining to you until you have personally experienced it yourself in a real time real life environment. The same is of welding and many aspects of manufacturing.

Continuing to update our equipment in laboratory is a key component of our ongoing planning process. Welding equipment is subjected to significant amount of use and abuse in the classroom environment. The manufacturing technology is a rapidly evolving workplace especially in the area of robotics and automation. Having a comprehensive maintenance plan is imperative to ensure a safe environment for all whom enter. Improvements in this area must be made by staff that are responsible for serviceing the equipment. Updating existing equipment, as well as adding new

capabilities to the lab is always a priority. Safety equipment and safety systems are always a need, as well as equipment for handling and manipulating materials. As such it is important that the department continue to stay abreast of changes in technology. Furthermore our instructors must stay abreast and remain trained and current in these emerging technologies as well, which requires the need for constant professional development and ongoing lifelong learning not just for the student but for the faculty and staff as well.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW			
<input checked="" type="checkbox"/>	Community Partnerships/Outreach	<input checked="" type="checkbox"/>	Facilities, Supplies and Equipment, Software	<input checked="" type="checkbox"/>	LPC Planning Priorities	<input checked="" type="checkbox"/>	Services to Students
<input checked="" type="checkbox"/>	Course Offerings		Financial/Budgetary	<input checked="" type="checkbox"/>	LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items	<input checked="" type="checkbox"/>	Human Resources	<input checked="" type="checkbox"/>	Pedagogy	<input checked="" type="checkbox"/>	Student Equity
<input checked="" type="checkbox"/>	External Factors	<input checked="" type="checkbox"/>	Learning Support	<input checked="" type="checkbox"/>	Professional Development	<input checked="" type="checkbox"/>	Technology Use

Section Two: Institutional Planning Topics (Required for All Programs)

A. Equity [Student Equity and Achievement Committee]: Please describe any recent actions your program has taken to increase equity and/or any challenges your program faces in promoting equity and equity-based decision-making? Areas to consider include students impacted by race/ethnicity, gender, sexuality, age, or disability status, as well as students who are disproportionately impacted due to the shift to remote instruction.

For assistance with this question, contact the Director of Student Equity and Achievement. [<https://bit.ly/3fY7Ead>]

In the area of equity, welding has had a focus for a long time, long before it became a fad or something that was a movement, or in the daily news. Ever since the welding and automotive programs were involved in the Cal Woman Tech NSF funded program in 2008, we have consistently focused on trying to attract the under represented talent that exists in females. One of the problems with that is that most parents don't spend 18 years raising a daughter to go into the skilled trades, unless the parents are in the skilled trades. Unfortunately, many females that could have a profitable rewarding career are missing out, following paths others seemingly define for them. For that reason alone, many of the females we see have already tried something else, it did not work out, and they are falling back on this as an alternative as opposed to a first choice where, the image of the industry, counseling and parental guidance are not currently providing positive reinforcement. In welding we think that we have exhausted 50% of the population, and it is now time to go after the other 50%.

B.

SLOs/SAOs [SLO Committee]:

You should complete ONE of the following three sections. Please choose the option that is most appropriate for your program:

B1: Instructional Programs with PSLOs

B2: Instructional Programs without PSLOs or with Special Circumstances

B3: Non-Instructional Programs

Skip to the section you chose. If you are not sure which option to pick, contact the SLO Committee Chair or Program Review Committee Chair for assistance.

B1: Instructional Programs with PSLOs

In this year's Program Review, and in support of Accreditation, we would like a snap-shot on how your program plans to collect, discuss and report assessment findings to develop best practices for teaching and student learning ("closing the loop").

As a program, please select one PSLO for a degree or certificate to focus on. This PSLO should reflect one area of your program that you would like to investigate in depth. For example, your selection may focus on an area to improve student success, to update pedagogy, equity issues, or to examine a new degree/certificate, etc.

In this section, describe your plan for assessment data to be collected, analyzed and discussed, and reported out in next year’s Program Review. Your plan should identify the CSLOs that feed into your selected PSLO so that a complete data set is collected. You may choose to do this over one or two semesters. In next year’s Program Review, you will be asked to summarize your SLO assessments, analysis of those findings, and proposed changes that may be implemented to improve teaching and student learning.

For assistance with these questions, contact the SLO Committee Chair. [<https://bit.ly/3fY7Ead>]

B1a. In the space below, insert the complete wording of the PSLO and potential reason(s) for selecting it for analysis.

Upon completion of the AS and/or COA students have the skills necessary to pass an American Welding Society standard welding certification tests.

Industry Certifications for students is what we strive to be the pinnacle of what we teach.

B1b. In the table below, list the CSLOs that feed up to the identified PSLO and check the semester or semester(s) that the CSLO will be assessed and data entered into eLumen. (If this different than the submitted SLO template plan, please update and resubmit the template plan. Send the updated template to mwiest@laspositascollege.edu and ahight@laspositascollege.edu)

Complete Name of CSLO	Fall 2020	Spring 2021	Summer 2021
Upon completion of WLDT 61AL, a student should be able to demonstrate skills required to pass AWS D1.1 - 1G limited thickness A36 steel test plate using SMAW.	XXX		
Upon completion of WLDT 62AL, a student should be able to demonstrate skills required to pass AWS D1.1 - 1G limited thickness A36 steel test plate using GTAW.		XXX	
Upon completion of WLDT 61AL, a student should be able to demonstrate skills required to pass an AWS D1.1 - 1G limited thickness A36 steel test plate using FCAW.			XXX

B1c. When will analysis and discussion of the assessment data be completed (during next year’s Program Review is an option)? The reporting out of the “closing the loop” analysis will be part of next year’s Program Review.

During next year’s program review

Section Three: Curriculum Review (Programs with Courses Only)

For assistance with this section, contact the Curriculum Committee Chair. [<https://bit.ly/3fY7Ead>]

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

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

A. Title V Updates [Curriculum Committee]: Are any of your courses requiring an update to stay within the 5 year cycle? List courses needing updates below. Reminder: updates to course title or units, and course deactivations, will require updating any program they are associated with. List programs requiring updating in question (B).

None

B. Degree/Certificate Updates [Curriculum Committee]: Are there any programs requiring modification? List needed changes below.

None

C. DE Courses/Degrees/Certificates [Distance Education Committee]: 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.

None