Instructional Program Review

Program: Welding Technology

Academic Year: 2022 - 2023

Author(s): Kory Konkol

Accepted by Academic Senate: December 14, 2023

Accepted by Consultation Council: January 9, 2023

Accepted by Governing Board: January 10, 2023

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Executive Summary

The executive summary should be a consolidation of key findings, program plans, and participants that contributed to the review

In summary, section 1 (Academic Planning):

Success among students has shown the greatest decrease for 21-22 academic years. The data shows this to be most prevalent in those courses taken by first time students and even more so for those courses that have a lecture component. I can only conclude that we are starting to see some of those students in the welding program that were a result of school lockdowns due to Covid. Personally, I've observed that the majority of students are unprepared for the rigors of college. This is especially true for welding students who think it's going to be an easy grade, much like a shop class in high school.

Retention, overall, the welding programs retention rate at the program level is comparable to that of the college with it being 1.5% lower. Unfortunately, the data only looks at one perspective and doesn't ask the question as to why. Unless we know the "why" students stop attending courses, we can't institute change.

Any equity gaps I find are a result of life choices as every student is given the exact same opportunity to succeed regardless of gender, race or age.

SLO/PSLO data continues to be high due to taking a proactive approach in time management and student awareness. About midway through each semester the students are made aware of how many workdays remain as well as their grade. This information keeps them on track for completing their objectives and passing the class (Pages 9-19)

Job market outlook continues to be strong and shows that 336,000 new welding professionals are needed by 2026, or 84,000 annually (Page 29).

Any program changes and advisory board recommendations can be found in the table on pages 31-33, which is too lengthy to summarize here. Any growth from this point forward is capped by having only one full-time faculty member, which will be addressed in section two.

In summary, section 2 (Human Resource Planning):

At present there is one full-time faculty and one adjunct. Any growth potential for offering any additional courses is now capped as a result of this and is now affecting current scheduling for spring 2023. Due to recent union contractual changes regarding load calculations for lab courses the one full-time faculty will be over 200% load with the current spring 2023 offerings. Given that, a course will need to be removed from the spring 2023 offerings, a first, which will affect the student's ability to graduate in two years. This has never happened before, and the need for another full-time faculty has been pointed out in several prior IPR's. Note, the one adjunct faculty has a full-time job and has limited scheduling opportunities.

In summary, section 3 (Infrastructure Planning):

Infrastructure has been addressed from student surveys dating back to 2015 page 37 and consists of lighting and ventilation as their greatest concerns. More recent surveys points out that only having one robot makes lab classes challenging as the entire class has to share one piece of equipment.

In Summary, section 4 (Program Planning)

Program planning is spelled out in the table found on page 53 and addresses the areas of concern in sections two and three.

Section 1: Academic Planning

Program Overview, Objectives, and Student Learning Outcomes

Describe the program (types of degrees offered, jobs/industries/transfer pathways associated with the program, faculty members in program)

The Welding Technology Program is designed to prepare the student with the necessary skills to acquire an entry-level position in the various industries that require the different welding processes available through the program.

The Welding Program is also designed to assist those already employed in the industry and those in the community to improve their skills.

The Program offers coursework in Robotic Welding, Blueprint Reading, Industrial Safety, Industrial Technology, Oxyacetylene Welding (OAW), Gas Metal Arc Welding (GMAW), Gas Metal Arc Welding Pulse (GMAW-P), Flux Core Arc Welding (FCAW), Flux Core Arc Welding with a gas (FCAW-G), Shielded Metal Arc Welding (SMAW) and Gas Tungsten Arc Welding (GTAW). Also offered is welding qualification testing on plate and pipe that's recognized by the American Welding Society (AWS).

The Welding Technology program currently offers the following degrees and certificates:
A.S. Degree
Two-Year Certificate of Achievement
One-Year Certificate of Achievement
Certificate of Accomplishment

At present the Welding Technology program has one full time faculty, one adjunct faculty and one instructional support specialist.

Describe and evaluate the program objectives against the LCC strategic plan, specifically the mission statement and strategic goals

The Welding Technology Program objectives fall within the vocational mission statement of Lassen Community College (LCC) by offering a wide range of educational opportunities in workforce development and economic potential.

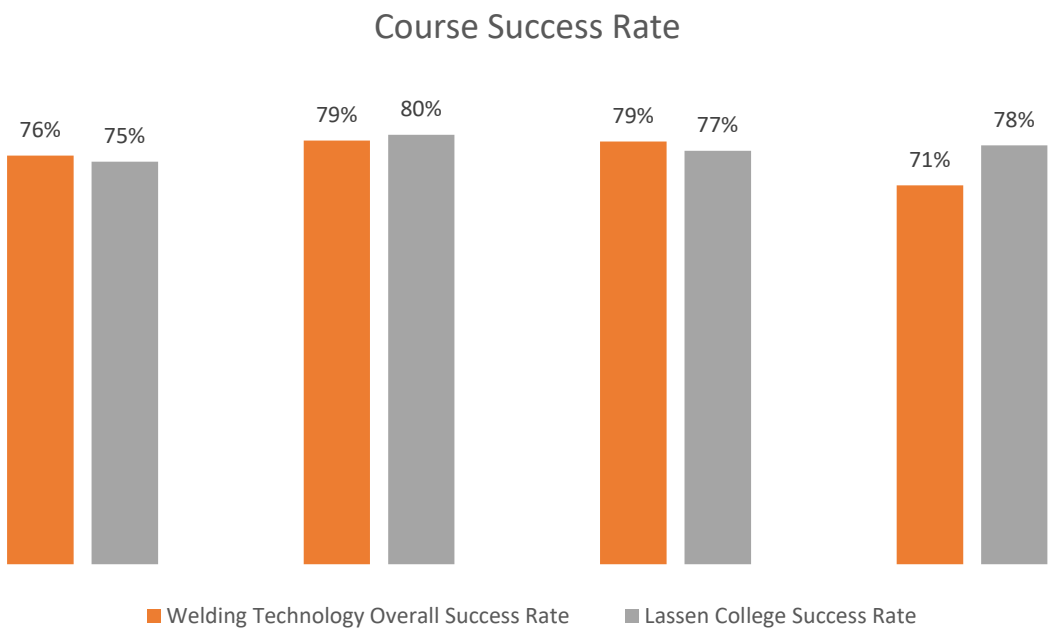
Our program objectives also align with LCC's strategic goals for learning opportunities and student success.

Evaluate any changes in the program since last review. Include summary of Annual Updates completed since last review. Regular program assessment will drive program improvements.

> Since the last IPR (2021), two pieces of software and one piece of hardware have been purchased for our Lincoln/Fanuc robotic welder and installed. These additions are used throughout the industry and will add another level competency for our students who wish to pursue a career in this field.

Student Achievement and Learning Outcomes

Trends and Patterns in Student Achievement



Course Success Rate	2018-19	2019-20	2020-21	2021-22
Program-Level				
Welding Technology Overall Success Rate	76%	79%	79%	71%
Lassen College Success Rate	75%	80%	77%	78%
Course-Level				
IT 22	60%	100%	50%	100%
IT 72	100%	100%	88%	100%
WT 20	71%	78%	75%	47%
WT 21	71%	67%	64%	67%
WT 22	50%	100%	60%	100%
WT 23	100%	100%	100%	100%
WT 31	92%	88%	100%	90%
WT 32	100%	100%	100%	100%
WT 36	75%	83%	67%	45%
WT 37	61%	80%	82%	54%
WT 38	80%	73%	82%	73%
WT 39	79%	67%	75%	80%
WT 42	100%	100%	83%	75%
WT 43	100%	100%	100%	100%
WT 44	100%	33%	100%	100%
WT 45	80%	100%	67%	67%
WT 49	0%	-	-	-
WT 51	50%	60%	60%	38%
WT 52	-	71%	88%	40%

Modality				
Correspondence	-	-	-	-
Face-to-Face	76%	79%	82%	71%
Online	-	-	56%	-
Hybrid	-	-	-	-

Success Rate by Student Demographic	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Program-Level				
Welding Technology Success Rate	76%	79%	79%	71%
Lassen College Success Rate	75%	80%	77%	78%
Gender				
Female	75%	60%	80%	59%
Male	76%	80%	79%	72%
Unreported	-	-	-	-
Ethnicity-Race-Ancestry				
American Indian or AK Native	45%	82%	81%	93%
Asian	67%	0%	-	-
Black or African American	-	-	100%	100%
Filipino	-	-	78%	-
Hispanic or Latinx	0.5	0.70588	80%	0.82353
Pacific Islander	100%	-	-	-
White	82%	77%	75%	58%
Other	-	-	-	-
Unreported	-	95%	86%	67%
Age Group				
17 and Under	100%	100%	91%	89%
18 to 24	73%	84%	74%	69%
25 to 49	77%	68%	83%	71%
50 and Over	88%	57%	86%	57%

Retention Rate	2018-19	2019-20	2020-21	2021-22
Program-Level				
Welding Technology Overall Retention Rate	90%	92%	84%	84%
Lassen College Retention Rate	88%	91%	88%	89%
Course-Level				
IT 22	80%	100%	75%	100%
IT 72	100%	100%	100%	100%
WT 20	86%	94%	75%	68%
WT 21	86%	100%	73%	100%
WT 22	100%	100%	80%	100%
WT 23	100%	100%	100%	100%
WT 31	92%	100%	100%	90%
WT 32	100%	100%	100%	100%
WT 36	100%	83%	67%	73%
WT 37	87%	93%	82%	77%
WT 38	90%	87%	88%	82%
WT 39	86%	83%	83%	90%
WT 42	100%	100%	83%	100%
WT 43	100%	100%	100%	100%
WT 44	100%	50%	100%	100%
WT 45	100%	100%	67%	67%
WT 49	0%	-	-	-
WT 51	75%	90%	70%	63%
WT 52	-	100%	88%	60%
Modality				
Correspondence	-	-	-	-
Face-to-Face	90%	92%	86%	84%
Online	-	-	72%	-
Hybrid	-	-	-	-

Retention Rate by Student Demographic	2018-19	2019-20	2020-21	2021-22
Program-Level				
Welding Technology Retention Rate	90%	92%	84%	84%
Lassen College Retention Rate	88%	91%	88%	89%
Gender				
Female	75%	80%	100%	82%
Male	90%	92%	82%	84%
Unreported	-	-	-	-
Ethnicity-Race-Ancestry				
American Indian or AK Native	91%	91%	81%	100%
Asian	67%	100%	-	-
Black or African American	-	-	100%	100%
Filipino	-	-	100%	-
Hispanic or Latinx	0.75	0.7647059	80%	0.8235294
Pacific Islander	100%	-	-	-
White	92%	93%	83%	76%
Other	-	-	-	-

Unreported	-	100%	86%	100%
Age Group				
17 and Under	100%	100%	100%	100%
18 to 24	86%	94%	79%	79%
25 to 49	97%	86%	91%	87%
50 and Over	100%	86%	86%	71%

Degree and Certificates	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Welding Technology Degrees Awarded	3	2	2	
Lassen College Degrees Awarded	310	260	338	236
Welding Technology Certificates Awarded	1	1	5	1
Lassen College Certificates Awarded	156	128	161	72
Degree or Certificate Program				
AS Welding Technology	3	2	2	1
Cert. of Achievement Welding Tech 1 Year	1	1	3	4
Cert. of Achievement Welding Tech 2 Year			2	2

Achievement
Based on your review of the data trends above (e.g., course success, retention, awards) please provide an analysis of achievement gaps and accomplishments in the program**.**

Course Success
After evaluating the data for the 18 welding courses, I would conclude that those courses taken by first time college students had the lowest success rates on average. For example, WT-20, 36, 37, 51 and 52 are courses taken by first timers. In addition, WT-20, 51, and 52 showed the greatest decrease in success rates, which I would attribute to the fact that these courses, besides having a lab, also have a lecture component, which includes homework and tests. For the years 2018-2021 the data is fairly consistent, but for the 21-22 school year there was a more substantial drop in success rates for the courses listed above. I can only conclude that we are starting to see some of those students in the welding program that were a result of school lockdowns due to Covid. Personally, I'm seeing students who are unprepared for the rigors of college.
Regarding accomplishments, those students who are enrolled in courses which are lab based only continue to do the best. In part most students in CTE programs tend to be kinesthetic learners and the data backs that up.

Retention
Overall, the welding programs retention rate at the program level is comparable to that of the college with it being 1.5% lower. Unfortunately, the data only looks at one perspective and doesn't ask the question as to why. Unless we know the "why" students stop attending courses, we can't institute change. More often than not, we're expected to look at the course level to solve this problem, when in fact we should be looking at the student level. And that's exactly what the data doesn't take into account. So, unless we start to survey students and ask the tough questions, we can't be expected to institute any meaningful change.
To sum it up, the retention data has a direct correlation with course success.

In summary, my evaluation of the data is based on my direct contact with students and my first-hand

knowledge of their lives, given that I'm with them eight hours a day, four days a week. What my first-hand knowledge provides and what the data doesn't, are the hardships and personal problems many of the students' face, which is directly correlated to their success. The following are some of those hardships – divorce, financial, medical, family problems, substance abuse and those coming out of prison, just to name a few. Those that don't have any personal problems just lack the rigor and discipline needed to be successful. Even something as simple as note taking is beyond most students' comprehension even when provided the paper and pen. Overall, if one looks at the program level success rate of the welding program as compared to the college, we're only 1.25% lower. With that, the trends that I'm observing at the program level aren't unique and appear to be a result of our society and culture.

One last note, and something to consider. If I were to make the welding courses so easy in order to drive the success rate of the students higher, would you expect that success to carry over into the welding industry that guides me?

Equity

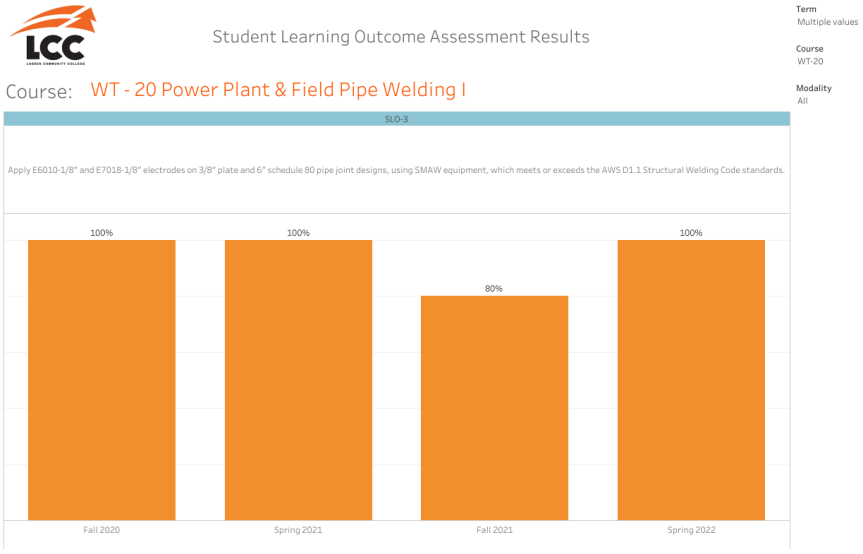
Based on your review of the data trends above (e.g., course success, retention) please provide a narrative to outline opportunities to address any equity gaps.

I can only conclude that equity is referring to demographics by race, gender and age. I find it difficult to provide a narrative speaking to this subject, and with that, every individual enrolled in a course is given the exact same opportunity to succeed regardless of race, gender or age. More often, any equity gaps are a result of life choices and not a result of program deficiencies. One area that I can speak to and is only from observation and experience is by age group. The data shows retention and success to be highest among those 17 and under. I can only attribute this to the fact that younger individuals have fewer problems and responsibilities in life, meaning, they probably still live at home, have fewer bills, and still get their closed washed by their mother. Those in the 18-49 age group have more responsibilities in life, which can get in the way of their education and therefore show lower success and retention rates. Those in the 50+ age group are often retirees and hobbyists and are there for personal development and not a certificate, degree or a job. These individuals have the lowest success and retention rates.

Student Learning Outcomes

SLO assessment is important to maintain and improve an effective learning experience for LCC students. Evaluating SLO results regularly is helpful for evaluating student learning and identifying emerging program needs. There is a link between SLO assessment results, SLO improvement plans and review of curriculum and/or budget requests. Regular program assessment will drive program improvement. These records are maintained in the online Data Management and Visualization tool (TABLEAU) and are available for review by faculty at any time through its self-updating, interactive dashboards, and reports. Feedback and narrative from the Share Point tool will be included in the reports.

*By contract, faculty are required to prepare and submit an SLO Assessment Plan for each class within one week of the first-class meeting and implementation of the assessment method as indicated on the SLO Plan for each class. Submission of the (a) results of the assessment methods and (b) steps taken as result of the assessment withing five (5) District business days after the last scheduled meeting of the class. Both submissions will be made in accordance with District tracking procedures (I.e., may be paper-based or electronic).



Course	SLO	Fall 2014	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-20	SLO-1		100%												
	SLO-2	87%													
	SLO-3			75%	44%	100%	80%	67%	88%	75%	157%	100%	100%	80%	100%

SLO Language is from Fall 2022

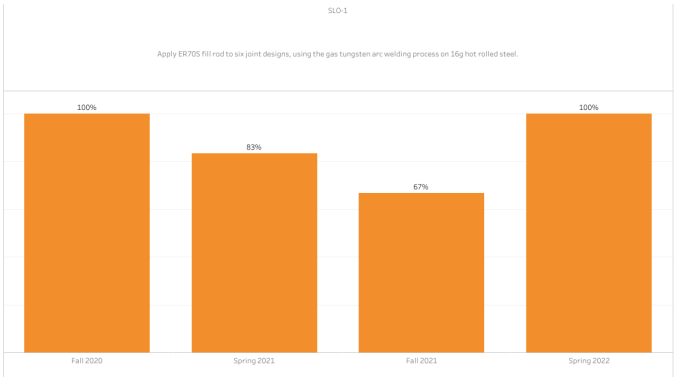
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-21

Modality
All

Course: WT - 21 Power Plant & Field Pipe Welding II



Course	SLO	Fall 2014	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-21	SLO-1		90%	67%	100%	100%	100%	100%	80%	100%	83%	67%	100%
	SLO-3	50%											

SLO Language is from Fall 2022

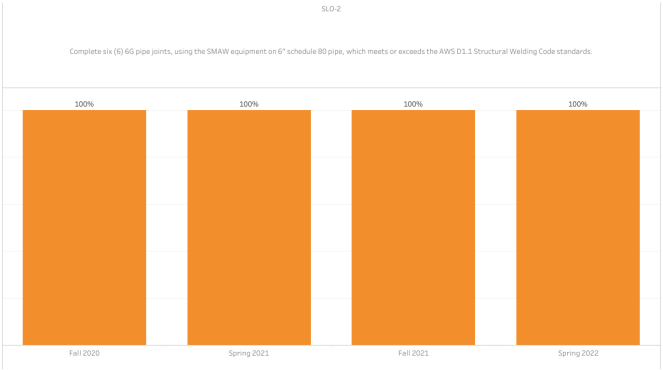
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-22

Modality
All

Course: WT - 22 Power Plant & Field Pipe Welding III



Course	SLO	Fall 2014	Fall 2015	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-22	SLO-1	88%		86%		100%								
	SLO-2							50%	50%	100%	100%	100%	100%	100%
	SLO-3		50%		100%		100%							

SLO Language is from Fall 2022

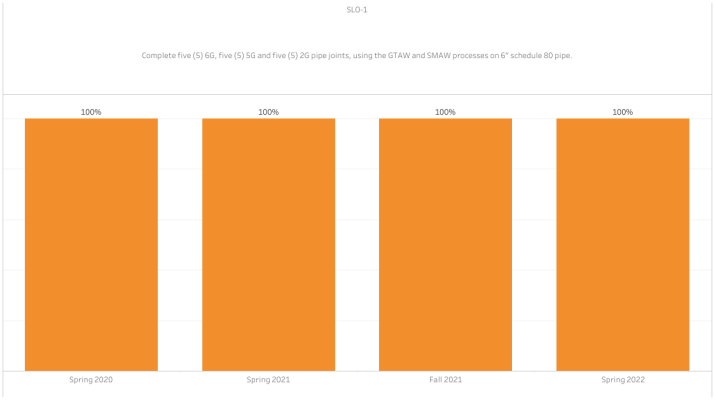
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-23

Modality
All

Course: WT - 23 Power Plant & Field Pipe Welding IV



Course	SLO	Spring 2016	Spring 2017	Fall 2017	Spring 2018	Spring 2019	Fall 2019	Spring 2020	Spring 2021	Fall 2021	Spring 2022
WT-23	SLO-1	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%

SLO Language is from Fall 2022

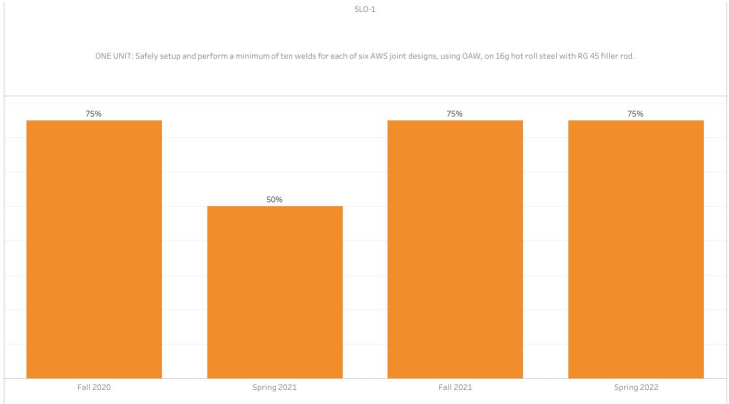
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-36

Modality
All

Course: WT - 36 Welding Theory & Practice - Oxyacetylene



Course	SLO	Fall 2014	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-36	SLO-1	75%			69%	100%	100%		100%	0%	100%	75%	50%	75%	75%
	SLO-2						67%		100%	50%					
	SLO-3		100%	100%											
	SLO-4							100%							

SLO Language is from Fall 2022

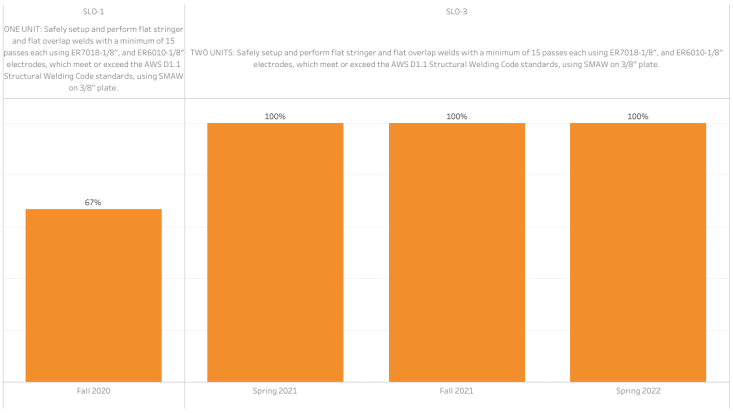
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-37

Modality
All

Course: WT - 37 Welding Theory & Practice – Shielded Metal Arc Welding



Course	SLO	Fall 2014	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-37	SLO-1	82%			78%	100%	83%	100%	100%	67%		67%			
	SLO-3		89%	75%			50%		100%	55%	89%		100%	100%	100%

SLO Language is from Fall 2022

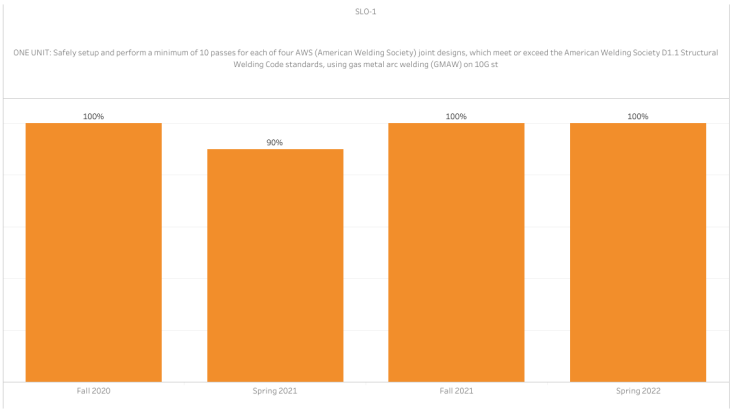
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-38

Modality
All

Course: WT - 38 Welding Theory & Practice – Gas Metal Arc Welding



Course	SLO	Fall 2014	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-38	SLO-1	100%			88%	71%	50%		100%	90%	78%	100%	90%	100%	100%
	SLO-3		92%	80%											
	SLO-7							100%							

SLO Language is from Fall 2022

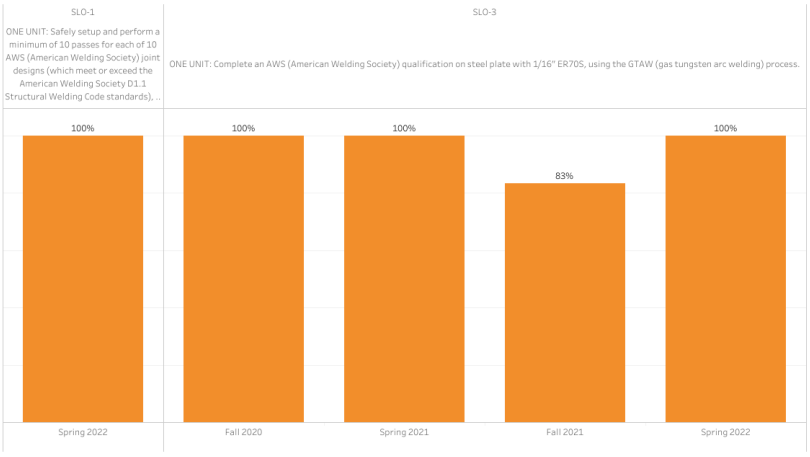
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-39

Modality
All

Course: WT - 39 Welding Theory & Practice – Gas Tungsten Arc Welding



Course	SLO	Fall 2014	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-39	SLO-1	56%			100%	75%	67%	80%	33%	100%					100%
	SLO-3		67%	62%					100%		75%	100%	100%	83%	100%

SLO Language is from Fall 2022

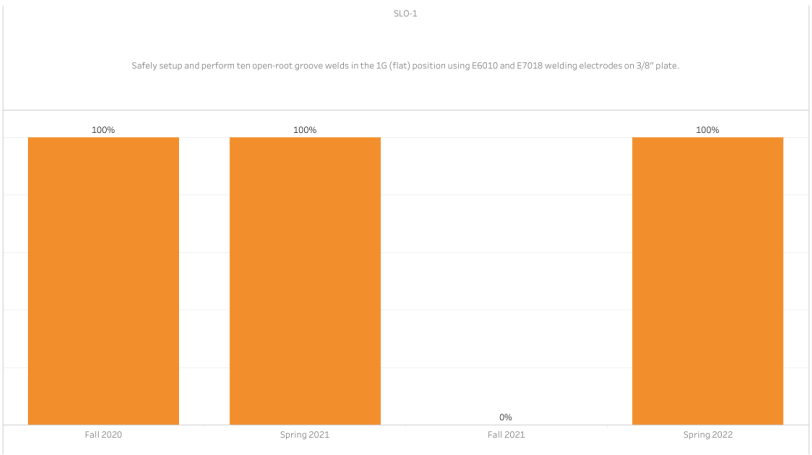
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-42

Modality
All

Course: WT - 42 Intermediate Shielded Metal Arc Welding



Course	SLO	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-42	SLO-1	67%	67%	75%	100%				100%	100%	100%	100%	0%	100%
	SLO-2					100%								
	SLO-3						100%	100%						

SLO Language is from Fall 2022

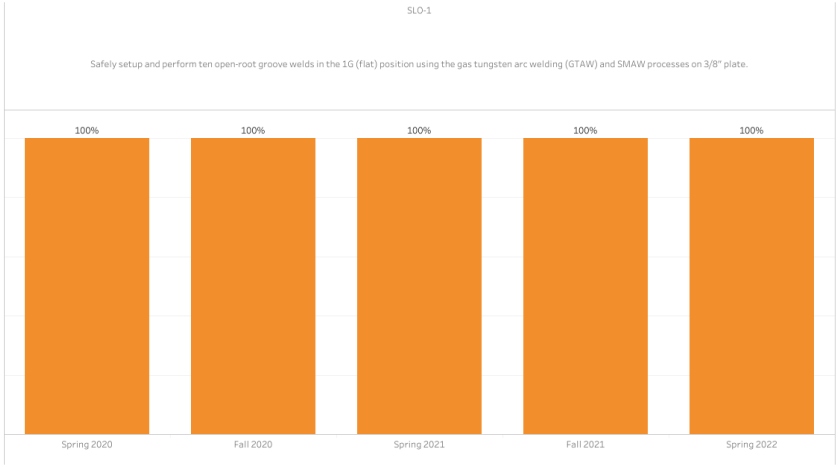
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-43

Modality
All

Course: WT - 43 Advanced Shielded Metal Arc Welding



Course	SLO	Fall 2014	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-43	SLO-1		100%		100%				100%	100%	100%	100%	100%	100%
	SLO-2			67%			100%	100%						
	SLO-3	100%				100%								

SLO Language is from Fall 2022

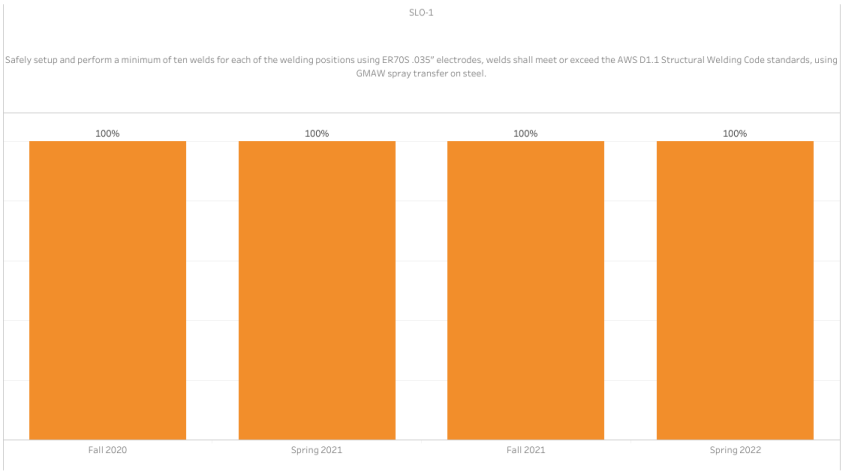
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-44

Modality
All

Course: WT - 44 Gas Metal Arc Welding



Course	SLO	Fall 2014	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Fall 2020	Spring 2021	Fall 2021	Spring 2022
WT-44	SLO-1	100%	100%				100%	100%	100%		67%	100%	100%	100%	100%
	SLO-2			100%	100%	100%		100%		100%					

SLO Language is from Fall 2022

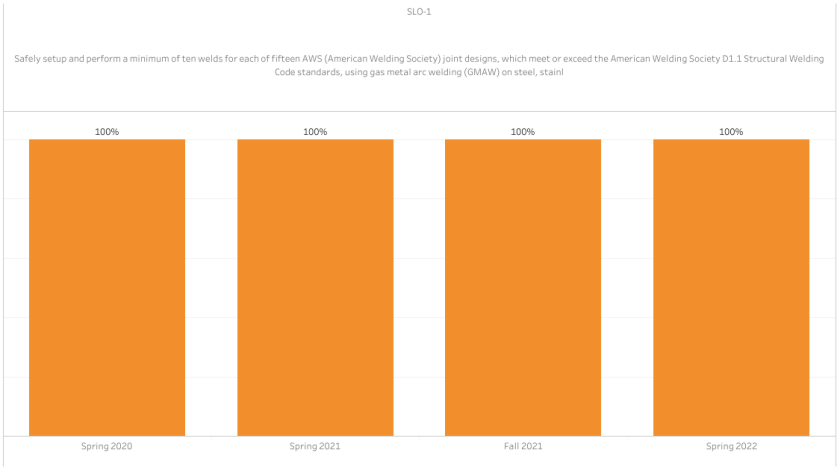
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-45

Modality
All

Course: WT - 45 Gas Tungsten Arc Welding



Course	SLO	Fall 2014	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Spring 2020	Spring 2021	Fall 2021	Spring 2022
WT-45	SLO-1	100%	50%			100%	100%	100%	0%	100%	100%	100%	100%
	SLO-2			67%	100%		100%						

SLO Language is from Fall 2022

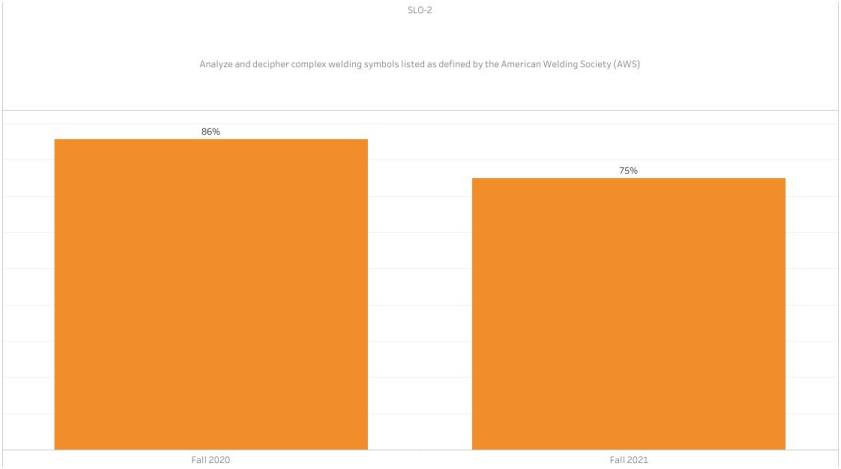
Student Learning Outcome Assessment Results

Term
Multiple values

Course
WT-51

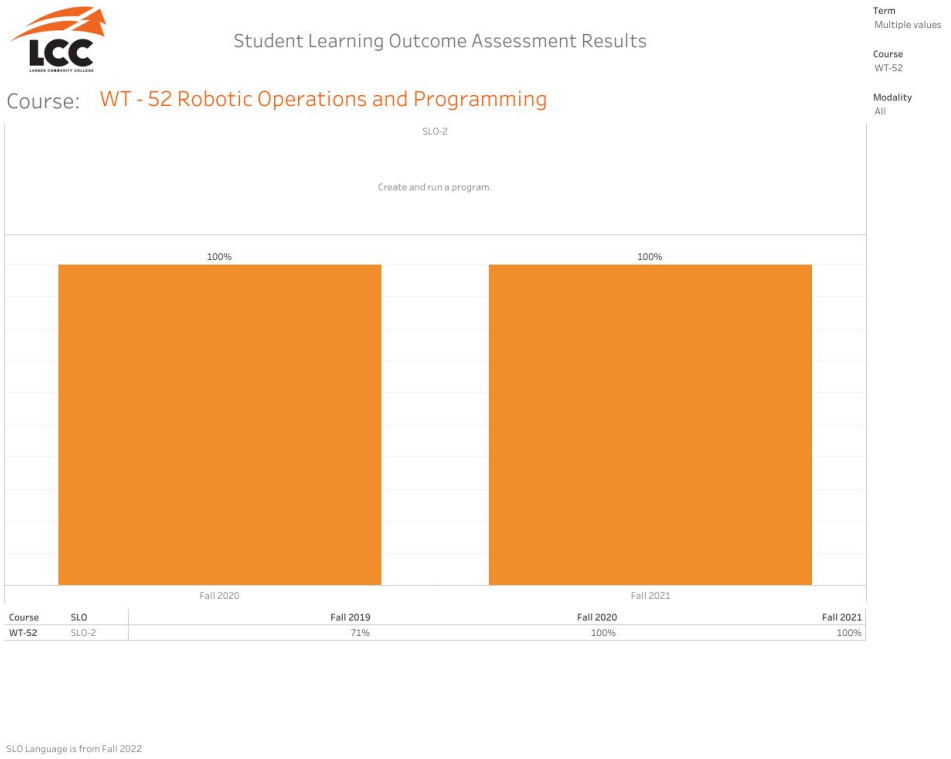
Modality
All

Course: WT - 51 Blueprint and Symbol Reading for Welders



Course	SLO	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
WT-51	SLO-1	100%		63%	83%			
	SLO-2		75%			67%	86%	75%

SLO Language is from Fall 2022

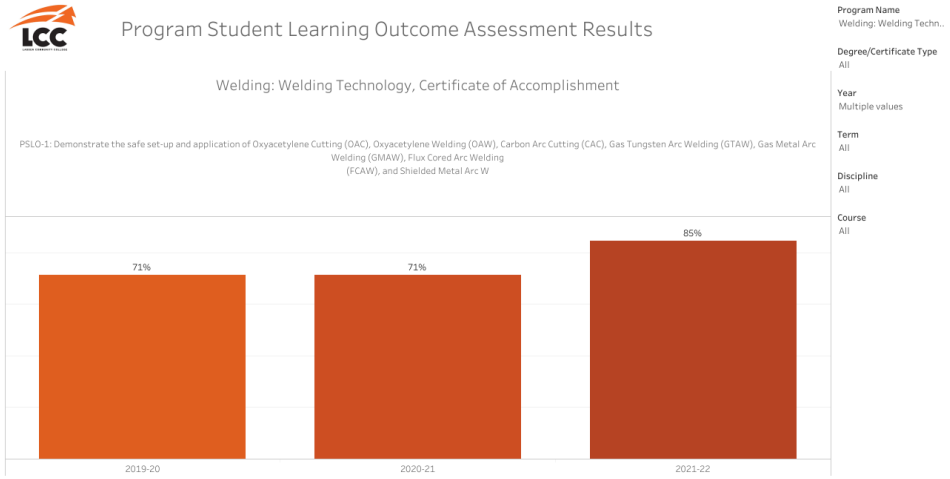


Provide an analysis of findings of the assessments completed and recommendations being made in individual assessments.

SLO data downloaded from TABLEAU can be found on pages 9-16. On the surface the data across all courses, except WT-36 and WT-51, appears to be amazing, at 100%, with zero need for improvement. And with that, I need to point something out. Unlike other courses, welding requires skill and talent, much like playing a sport. As hard as many try to reach their peak and play professionally, not everyone can. With that, passing a welding qualification test is much like playing a professional sport. The SLO being selected to evaluate a student doesn't always reflect this. This is why I'm being forthcoming and stating that going forward, when all SLO's have to be evaluated, those SLO's that require passing a welding qualification test will definitely show a decrease. Does this affect a student's employability, perhaps in some cases, but not all employers require the passing of a welding qualification test. So, the current SLO's being evaluated still meet the requirements and level of competency that employers seek. Ultimately, the only real difference may be the limit of one's financial potential.
One might think a solution would be to eliminate that SLO, but passing a welding qualification test is a standard industry practice.

Course Assessed	Recommendations for Improvement
WT-20 Power Plnt/Fld Pipe	None at this time
WT-21 Power Plnt/Fld Pipe	None at this time
WT-22 Power Plnt/Fld Pipe	None at this time
WT-23 Power Plnt/Fld Pipe	None at this time
WT-31 GTAW for Gunsmiths	None at this time

WT-32 Advanced Gtaw for Gunsmiths	None at this time
WT-36 Wldg Thry&prac-Oxy	None at this time
WT-37 Wldg Thry&prac-Shld	None at this time
WT-38 Wldg Thry&prac-Gas	None at this time
WT-39 Wldg Thry&prac-Gas	None at this time
WT-42 Intermediate Smaw	None at this time
WT-43 Advanced Smaw	None at this time
WT-44 Gas Metal Arc Welding	None at this time
WT-45 Gas Tungsten Arc Welding	None at this time
WT-49 Welding Work Experience	N/A
WT-51 Blueprint and Symbol Reading	None at this time
WT-52 Robotic Operations/Programming	None at this time

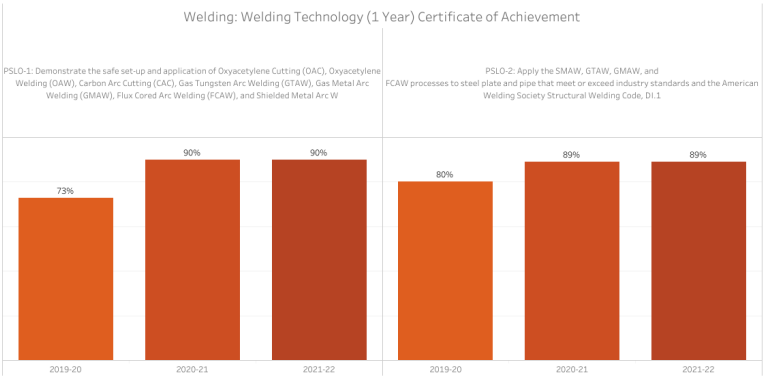


Program Name	Program Student Learning Outcome (PSLO)	2019-20	2020-21	2021-22
Welding: Welding Technology, Certificate of Accomplishment	PSLO-1: Demonstrate the safe set-up and application of Oxyacetylene Cutting (OAC), Oxyacetylene Welding (OAW), Carbon Arc Cutting (CAC), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Shielded Metal Arc W	71%	71%	85%

Program Student Learning Outcome Assessment Results

Program Name: Welding: Welding Techn..
Degree/Certificate Type: All
Year: Multiple values
Term: All
Discipline: All
Course: All

Welding: Welding Technology (1 Year) Certificate of Achievement

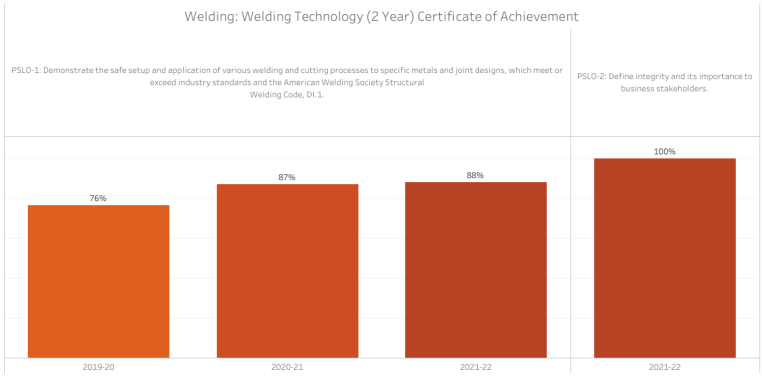


Program Name	Program Student Learning Outcome (PSLO)	2019-20	2020-21	2021-22
Welding: Welding Technology (1 Year) Certificate of Achievement	PSLO-1: Demonstrate the safe set-up and application of Oxyacetylene Cutting (OAC), Oxyacetylene Welding (OAW), Carbon Arc Cutting (CAC), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Shielded Metal Arc W	73%	90%	90%
	PSLO-2: Apply the SMAW, GTAW, GMAW, and FCAW processes to steel plate and pipe that meet or exceed industry standards and the American Welding Society Structural Welding Code, DI.1	80%	89%	89%

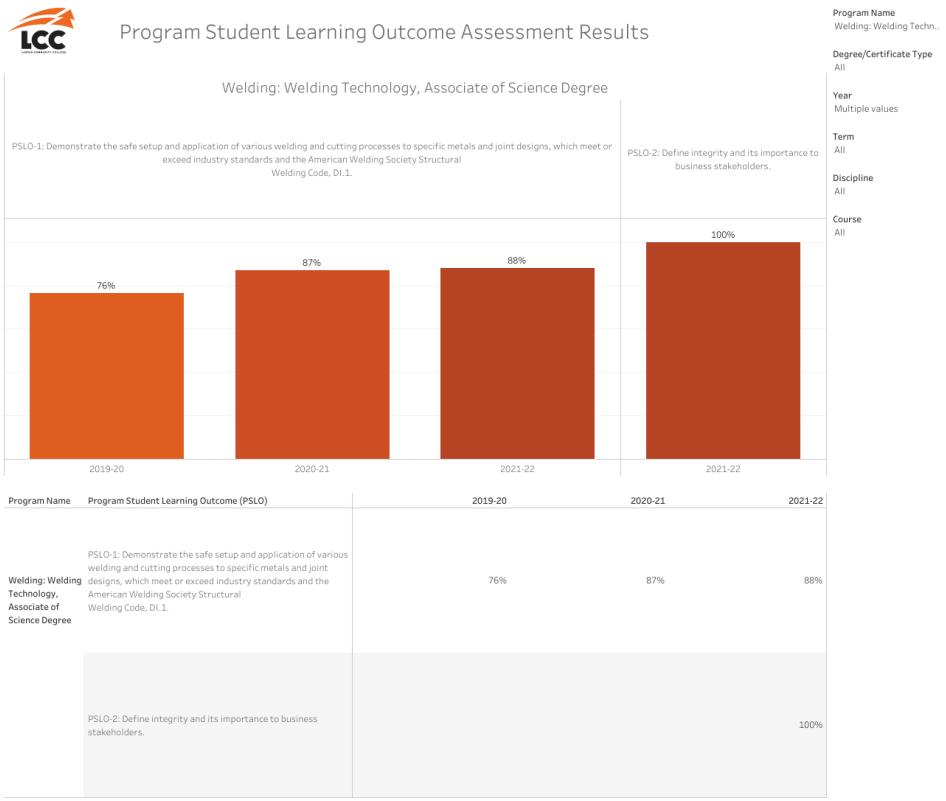
Program Student Learning Outcome Assessment Results

Program Name: Welding: Welding Techn..
Degree/Certificate Type: All
Year: Multiple values
Term: All
Discipline: All
Course: All

Welding: Welding Technology (2 Year) Certificate of Achievement



Program Name	Program Student Learning Outcome (PSLO)	2019-20	2020-21	2021-22
Welding: Welding Technology (2 Year) Certificate of Achievement	PSLO-1: Demonstrate the safe setup and application of various welding and cutting processes to specific metals and joint designs, which meet or exceed industry standards and the American Welding Society Structural Welding Code, DI.1.	76%	87%	88%
	PSLO-2: Define integrity and its importance to business stakeholders.			100%



Program Student Learning Outcomes	Summarize Findings
PSLO 1	See Narrative Below
PSLO 2	See Narrative Below
PSLO 3	
PSLO 4	
PSLO 5	
Recommendations for Improvement	
None at this time due to the steady increase and consistent results.	

Consider the impact or influence of the assessment results at the program level.

Summary of Findings

The steady increase in PSLO results across all degrees and certificates was due to taking a proactive approach in time management and student awareness. About midway through each semester the students are made aware of how many workdays remain. Since the majority of welding courses are hands on and a certain number of objectives need to be completed by the end of the semester to receive a passing grade, the number of days left becomes very important. Along with this countdown, the students are also made aware of their current grade in any given class. That grade continuously improves as more welding objectives are completed. With these daily and weekly reminders, students

are able to stay on track in order to complete their course objectives and PSLO's.

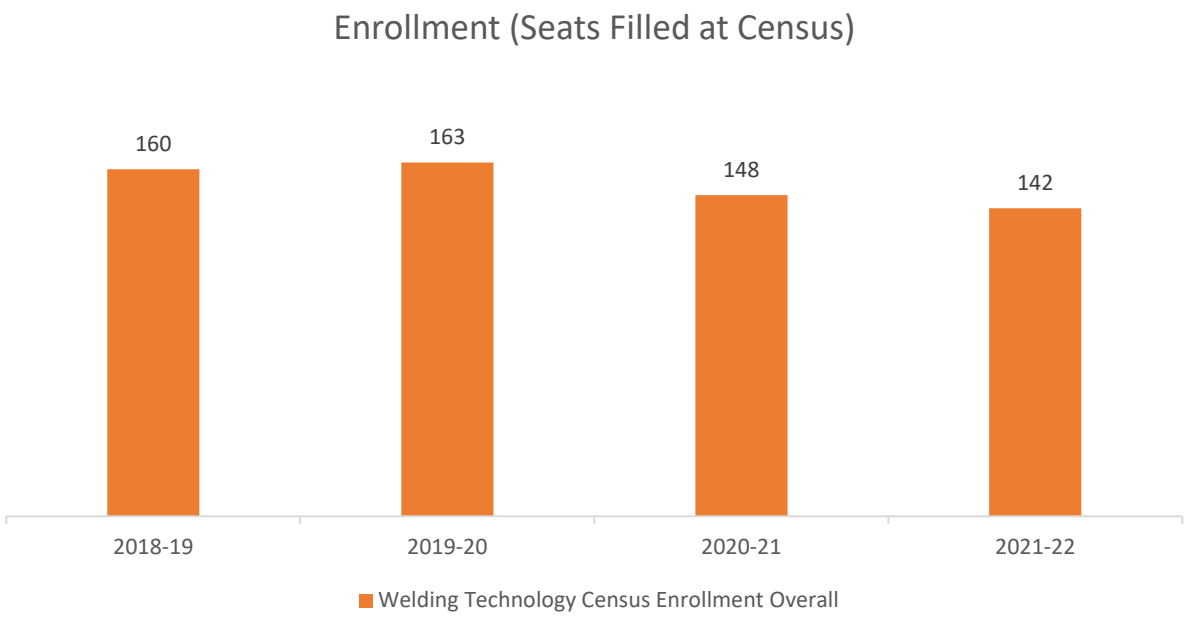
Identify and evaluate the Program Student Learning Outcomes including the relationship between course, program and institutional student learning outcomes utilizing information provided by the Office of Institutional Effectiveness.

Summary of Findings

The summaries of these findings are addressed on pages 17, 20 and 24.

Enrollment Management

Enrollment Management	2018-19	2019-20	2020-21	2021-22
Welding Technology Census Enrollment Overall	160	163	148	142
Lassen College Census Enrollment	15,117	14,320	12,244	11,847
Welding Technology Full-Time Equivalent Students (FTES)	34.4	37.5	33.3	32.1
Lassen College Full-Time Equivalent Students (FTES)	1,648	1,561	1,340	1,269
Welding Technology Number of Sections	46	46	45	47
Lassen College Number of Sections	883	851	758	818
Welding Technology Fill Rate	12%	13%	14%	15%
Lassen College Fill Rate	55%	54%	55%	51%
Welding Technology Full-Time Equivalent Faculty (FTEF)	1.8	2.0	1.8	2.3
Lassen College Full-Time Equivalent Faculty (FTEF)	79.8	77.7	70.6	74.2
Welding Technology FTES/FTEF	18.9	18.7	18.7	14.2
Lassen College FTES/FTEF	20.7	20.1	19	17.1



Enrollment	2018-19	2019-20	2020-21	2021-22
Course-Level				
IT 22	10	8	8	6
IT 72	7	10	8	6
WT 20	14	21	12	20
WT 21	7	10	11	6
WT 22	4	3	5	4
WT 23	1	3	2	3
WT 31	13	8	9	10
WT 32	12	8	8	9
WT 36	9	7	8	12
WT 37	24	15	11	14
WT 38	20	21	17	11
WT 39	17	16	12	12
WT 42	4	6	6	4
WT 43	1	2	4	3
WT 44	3	6	6	5
WT 45	5	2	3	3
WT 49	1	0	0	0
WT 51	8	10	10	8
WT 52	0	7	8	6
Modality				
Correspondence	0	0	0	0
Face-to-Face	160	163	130	142
Online	0	0	18	0
Hybrid	0	0	0	0

Program Enrollment by Student Demographic	2018-19	2019-20	2020-21	2021-22
Program-Level				
Welding Technology Census Enrollment Overall	160	163	148	142
Gender				
Female	98	71	21	35
Male	99	88	72	71
Unreported	0	0	1	0
Ethnicity-Race-Ancestry				
American Indian or AK Native	11	12	16	15
Asian	3	1	0	0
Black or African American	0	0	5	18
Filipino	0	0	9	0
Hispanic or Latinx	16	19	15	17
Pacific Islander	1	0	0	0
White	129	109	82	86
Other	0	0	0	0
Unreported	0	22	21	6

Age Group				
17 and under	19	0	2	5
18 to 24	72	60	27	43
25 to 49	89	88	59	53
50 and over	15	10	6	5
Unreported	2	1	0	0

Based on your review of the data trends above (e.g., enrollment, FTES, FTES/FTEF, fill rate) please provide an analysis of efficiency gaps and accomplishments.

Summary of Findings

The data shows that FTES steadily climbed and peaked for the 2019-2020 school year and have gradually decreased for 2020-2022 school years. This can be attributed to COVID, school lockdowns and in general uncertainty. Based on my class size starting the 2022-2023 school year, I've noticed an increase in enrollment, not provided in the data.
Regarding the data for fill rates and efficiency, the data provided makes the assumption that the welding courses are scheduled as stand-alone courses only, when in fact, they are not. The reality is, the majority of the welding courses, WT-36-39 and WT-42-45 are stacked during one time frame as well as WT-20-23. If this was considered and taken into account, one would see a different set of numbers and understand that the efficiency ratio is significantly higher than reported.

Curriculum

Degrees and/or Certificates

Degree or Certificate Title	Award Type (AA, AS, AAT, AST, etc.)	Units	Term of Last Revision
Associate in Science Degree in Welding Technology	A.S. Degree	60	Fall/2022
Two-Year Certificate of Achievement in Welding Technology	Certificate of Achievement 2 year	44	Fall/2022
One-Year Certificate of Achievement in Welding Technology	Certificate of Achievement 1 year	23	Fall/2022
Certificate of Accomplishment in Welding Technology	Certificate of Accomplishment	12	Fall/2022

Provide a narrative of revisions made.

Reviewed the degrees and certificates and no changes were necessary at this time.

Courses

Summarize curriculum revisions, new course adoptions, and/or course deletions since your last program review. Describe the program accomplishments and/or changes (e.g., major revisions, additions, etc.). All courses need to be submitted to the Curriculum Committee for revision at least once every five years.

Whether changes to a course outline are necessary or not, a Revision to Existing Course Form for each course must be completed and submitted to the Curriculum/Academic Standards Committee for action. If all the courses in the certificate or degree are reviewed at one time, a single Program revision form can be used. If there are changes made to a course, the changes must be noted on the revision form. When reviewing a single course and changes are necessary, indicate the revisions on the form. Where no changes are necessary, simply indicate on the Revision Form that "the course has been reviewed as part of the program review and no changes are necessary." All program certificates, degrees, PSLO maps, and SLO maps are also required to be reviewed and updated if necessary. PSLO maps require a program revision form and course SLO maps require a course revision form. If all maps are reviewed at the same time, a single program revision form can be used. Advising plans also need to be reviewed and updated. A program revision form is used to review and update the advising plan if necessary. Revision forms will be retained in the Instructional Office with the Curriculum agenda packets.

Following the Curriculum/Academic Standards Committee action on all submitted Revision to Existing Course Forms, a summary Instructional Program Curriculum Review Form will be completed by the Curriculum/Academic Standards Subcommittee Chair and given to the program faculty for inclusion in the program review.

The signed Instructional Program Curriculum Review Form is to be included with your completed program review documents for all certificates and degrees.

Lassen Community College
Status of Curriculum Reviews

Welding Instructional Program Review

Status of Curriculum Review 11/29/2022

Course Name	**Curriculum Committee Review Completed**	**Curriculum Committee Review Not Completed**	**Course SLO mapping Curriculum Committee reviewed**
	Date course last reviewed	*Date here if last review 4 years or more*	*Date*
IT 22 Operation Maintenance an safety	02/15/2022		05/04/2021
IT 72 Facilities Maintenance-Welding Safety	11/29/2022		05/18/2021
WT 20 Power Plant & Field Pipe Welding I	02/15/2022		05/04/2021
WT 21 Power Plant & Field Pipe Welding II	02/15/2022		05/04/2021
WT 22 Power Plant & Field Pipe Welding III	02/15/2022		05/04/2021
WT 23 Power Plant & Field Pipe Welding IV	02/15/2022		05/04/2021
WT 25 SolidWorks	02/15/2022		05/04/2021
WT 31 GTAW For Gunsmiths	02/15/2022		05/04/2021
WT 32 Advance GTAW for Gunsmithing	02/15/2022		05/04/2021
WT 36 Welding theory & Practice-Oxyacetylene	11/29/2022		11/29/2022
WT 37 Welding theory & Practice-Shield Metal Arc Welding	11/29/2022		11/29/2022
WT 38 Welding theory & Practice Gas Metal Arc Welding	11/29/2022		11/29/2022
WT 39 Welding theory & Practice Gas Tungsten Arc Welding	11/29/2022		11/29/2022
WT 42 Intermediate Shield Arc Welding	11/29/2022		11/29/2022
WT 43 Advance Shield Arc Welding	11/29/2022		11/29/2022
WT 44 Gas Metal Arc Welding	11/29/2022		11/29/2022

Lassen Community College
Status of Curriculum Reviews

WT 45 Gas Tungsten Arc Welding	11/29/2022		11/29/2022
WT 50 Welding for Artists (design and Fabrication	11/15/2022		05/04/2021
WT 51 Blue Print and Symbol Reading for Welders	02/15/2022		05/04/2021
WT 52 Robotic Operations and Programing	02/15/2022		05/04/2021
WT 53 Robotic Welding Operation and Programing (Advanced)	02/15/2022		05/18/2021
Degree/Area	**Curriculum Committee Review Completed**		**Program PSLO mapping Curriculum Committee reviewed**
AS Welding Technology	11/29/2022		11/29/2022
CA Welding Technology (one-year)	11/29/2022		11/29/2022
CA Welding Technology (Two-year)	11/29/2022		11/29/2022
COA – Welding Technology	11/29/2022		11/29/2022

Kory Konkol, Subject Area Faculty Signature — Date 12/1/22

Tom Downing, Curriculum and Academic Standards Committee Co-Chair Signature — Date 11/29/2022

Michell Williams, Dean of Instructional Services — Date 12/1/2022

Course	Last Offered	Term of Last Revision
WT-20 Power Plnt/Fld Pipe	Fall 22	5/4/2021
WT-21 Power Plnt/Fld Pipe	Fall 22	5/4/2021
WT-22 Power Plnt/Fld Pipe	Fall 22	5/4/2021
WT-23 Power Plnt/Fld Pipe	Fall 22	5/4/2021
WT-31 GTAW for Gunsmiths	Fall 21	5/4/2021
WT-32 Advanced Gtaw for Gunsmiths	Spring 22	5/4/2021
WT-36 Wldg Thry&prac-Oxy	Fall 22	5/4/2021
WT-37 Wldg Thry&prac-Shld	Fall 22	5/4/2021
WT-38 Wldg Thry&prac-Gas	Fall 22	5/4/2021
WT-39 Wldg Thry&prac-Gas	Fall 22	5/18/2021
WT-42 Intermediate Smaw	Fall 22	5/4/2021
WT-43 Advanced Smaw	Fall 22	5/4/2021
WT-44 Gas Metal Arc Welding	Fall 22	5/4/2021
WT-45 Gas Tungsten Arc Welding	Fall 22	5/4/2021
WT-49 Welding Work Experience		
WT-51 Blueprint and Symbol Reading	Fall 22	5/4/2021
WT-52 Robotic Operations/Programming	Fall 22	5/4/2021

Provide a narrative of revisions made.

Summary
Revisions were made to WT-36-39 course outlines by removing all two-unit SLO's, because they are no longer offered. Other revisions made were cleaning up grammatical errors, redundant use of words instead of acronyms and language.
No new courses were adopted or deleted since last revision.

Articulation/Integration of Curriculum
Attach a tabular comparison of Lassen Community College courses articulating with UC and CSU,indicating courses with approved C-ID designations as applicable (Obtain copies of Articulation Agreements from the Transfer Center / Articulation Officer)
Provide a narrative reviewing the Lassen Community College courses and courses at four-year institutions for course alignment. (e.g., two courses at Lassen needed to articulate with one course at UC) and the unit requirements for Lassen Community College courses as compared to four-year institutions.

Evaluation
Even though many of the welding course numbers fall below 49, meaning transferrable, I've only had one student in the last 12 years actually transfer to a four-year institution. The nature of the welding program and most CTE programs in general, students take courses to get a job.
With that, the welding technology program doesn't align its courses with UC or CSU courses.

External Compliance

Provide a summary of any compliance regulations (e.g., accreditation, accessibility), actions taken, and gaps identified.

The following is from our 2015 welding IPR and has yet to be addressed.

The main outside compliance issues that govern the welding technology program are OSHA and local building codes. These standards outline regulations that provide for the health and safety of occupants working in or around this department.

Evaluation

There continues to be insufficient welding fume ventilation in the welding department.

The following was also noted in our 2015 welding IPR:

One issue that has been addressed was moving the classroom to its current location downstairs. This move benefited by meeting ADA requirements, but still has compliance issues. Greg Collins pointed out the following known issues:
No ventilation for the space or windows that can be opened to provide ventilation or egress.
One of the two exits opens inward.
Exits to the space are opposite each other and may not meet code due to the shape of the space.
Another issue that was brought to my attention and outlined in a prior IPR was the mezzanine located in the construction trades space. The structure may not be up to code and may need modification.

External Analysis: Job Market Assessment

The following data are projections from the Bureau of Labor statistics

Job Outlook

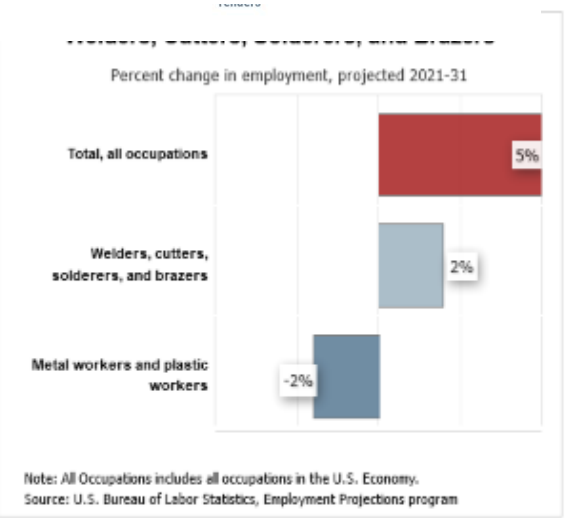
About this section

from 2021 to 2031, slower than the average for all occupations.

Despite limited employment growth, about 47,600 openings for welders, cutters, solderers, and brazers are projected each year, on average, over the decade. Most of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Employment

The nation's aging infrastructure will require the expertise of welders, cutters, solderers, and brazers to help rebuild bridges, highways, and buildings. These workers also will be in demand in manufacturing plants that produce metal parts and products like transportation equipment.



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

Employment projections data for welders, cutters, solderers, and brazers, 2021-31

Occupational Title	SOC Code	Employment, 2021	Projected Employment, 2031	Change, 2021-31		Employment by Industry
				Percent	Numeric	

National estimates for Welders, Cutters, Solderers, and Brazers:

Employment estimate and mean wage estimates for Welders, Cutters, Solderers, and Brazers:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
397,600	0.8 %	$ 23.21	$ 48,290	0.2 %

Percentile wage estimates for Welders, Cutters, Solderers, and Brazers:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	$ 15.07	$ 18.20	$ 22.60	$ 27.33	$ 30.61
Annual Wage (2)	$ 31,350	$ 37,860	$ 47,010	$ 56,850	$ 63,660

Industry profile for Welders, Cutters, Solderers, and Brazers:

Industries with the highest published employment and wages for Welders, Cutters, Solderers, and Brazers are provided. For a list of all industries with employment in Welders, Cutters, Solderers, and Brazers, see the Create Customized Tables function.

Industries with the highest levels of employment in Welders, Cutters, Solderers, and Brazers:

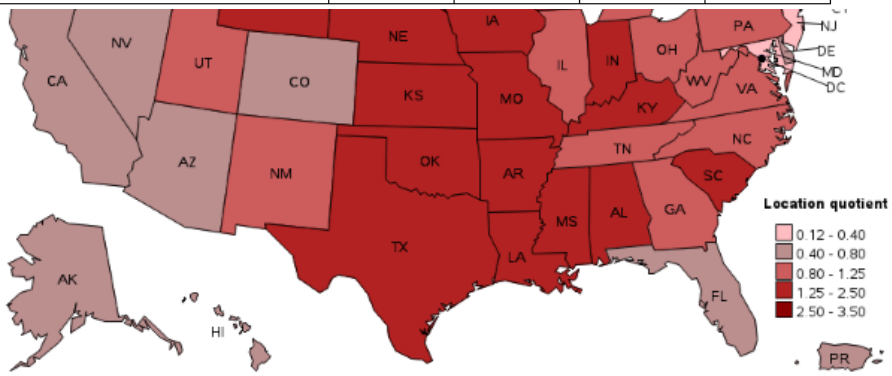
Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Fabricated Metal Product Manufacturing (3323 and 3324 only)	67,700	14.59	$ 22.02	$ 45,800
Machinery Manufacturing (3331, 3332, 3334, and 3339 only)	58,150	8.30	$ 22.21	$ 46,200
Motor Vehicle Body and Trailer Manufacturing	24,110	15.44	$ 20.30	$ 42,220
Fabricated Metal Product Manufacturing (3321, 3322, 3325, 3326, and 3329 only)	23,590	5.28	$ 21.54	$ 44,800
Ship and Boat Building	14,980	10.37	$ 25.83	$ 53,720

Industries with the highest concentration of employment in Welders, Cutters, Solderers, and Brazers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Motor Vehicle Body and Trailer Manufacturing	24,110	15.44	$ 20.30	$ 42,220
Fabricated Metal Product Manufacturing (3323 and 3324 only)	67,700	14.59	$ 22.02	$ 45,800
Railroad Rolling Stock Manufacturing	2,380	12.05	$ 23.03	$ 47,900
Ship and Boat Building	14,980	10.37	$ 25.83	$ 53,720
Other Transportation Equipment Manufacturing	3,030	8.33	$ 25.60	$ 53,250

Top paying industries for Welders, Cutters, Solderers, and Brazers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Electric Power Generation, Transmission and Distribution	1,040	0.28	$ 44.29	$ 92,130
Natural Gas Distribution	720	0.65	$ 42.76	$ 88,940
Pipeline Transportation of Crude Oil	70	0.63	$ 42.26	$ 87,900
Pipeline Transportation of Natural Gas	240	0.79	$ 38.73	$ 80,560
Petroleum and Coal Products Manufacturing	550	0.53	$ 37.08	$ 77,130



The following data are projections endorsed by the American Welding Society (AWS)

What counts as a **welding professional?**

The AWS Foundation combines six occupations (defined by the Bureau of Labor Statistics) where welding is a primary job function:

- Boilermakers
- Sheet Metal Workers
- Structural Iron and Steel Workers
- Structural Metal Fabricators and Fitters
- Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
- Welders, Cutters, Solderers, and Brazers

Demand for welding professionals in the upcoming years.

336,000

New welding professionals projected to be needed by 2026.

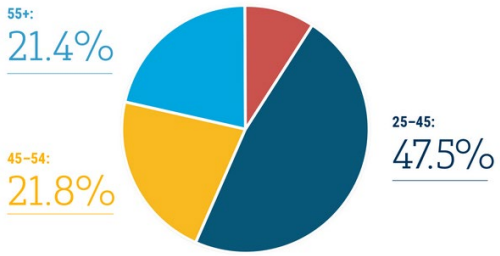
84,000

Average welding jobs to be filled annually between 2022–2025.

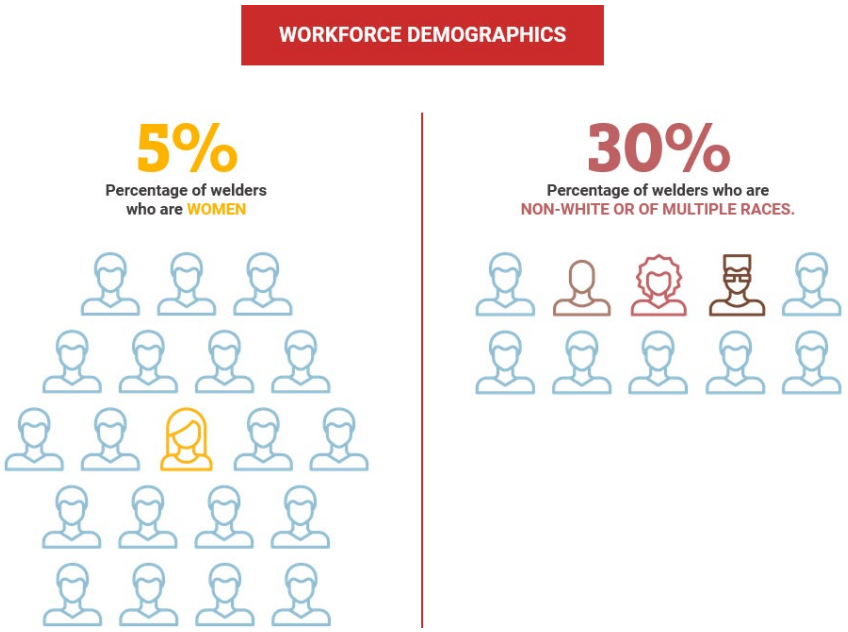
Why the need?

CURRENT OPENINGS

AGES OF CURRENT WELDERS



More than 150,000 welders
ARE APPROACHING RETIREMENT



Provide a summary of Industry Advisory Board suggestions and market data. The market data will be populated for Career Technical Education programs only

Job Market Assessment:

Data used for this assessment was taken from the Bureau of Labor Statistics (BOLS) and the American Welding Society (AWS). The BOLS data shows a 2% increase or 6900 new jobs created between 2021 and 2031. Meaning, there is a 2% increase in brand new companies opening, which would employ welders. One might find this low, but what the data doesn't take into account are the attrition rates from welding professionals retiring, advancing or changing industries from already established companies. Looking at that data, one would find that 336,000 new welding professionals are needed by 2026, or 84,000 annually. Another area of importance is the sector or industry where welders find employment. The greatest number of employment opportunities are found in fabricated metal product manufacturing and machinery manufacturing. Two areas that not only employ welders, but utilize advanced manufacturing such as, robotic welding, and CNC cutting.

Advisory Board Recommendations for New Course Offerings

Beginning and advanced classes in robotic welding

Beginning and advanced classes in Computer Numerically Controlled (CNC) plasma cutting, Computer Aided Design (CAD), beginning and advanced using SolidWorks, G-Code or combine with another new relevant offering

3D Printing

CNC Press Brake

0.5 – 1 unit layout and pattern making class for pipe welding

1 unit American Welding Society (AWS) D1.1 code class

Course focusing on using T-1 and T-8 flux core wires

Advisory Board Recommendations for Scheduling Stop stacking welding classes and offer lecture/lab replacements

Advisory Board Recommendations for New Certificate Offer Certificate in advanced manufacturing.

Progress on Advisory Committee Recommendations

Course	Proposal	Progress	Status	Outcomes
IT-22 Operations Maintenance and Safety	Update class to OSHA 10 and provide OSHA 10 cards upon passing/completion	Need to take a class before this can be offered	Pending	Relevant to industry needs
IT-72 Facilities Maintenance	No Change			Meets industry needs
WT-20 Power Plant and Field Pipe Welding I	Remove plate welding and add 2G pipe and incorporate hand beveling	Reconsidering proposal as fundamentals in plate welding are needed and some can't take WT-37 due to scheduling	On Hold needs further discussion	
WT-21 Power Plant and Field Pipe Welding II	Change objectives to pipe welding only in 5 and 6G positions		Pending on the outcome of WT-20	Relevant to industry needs
WT-22 Power Plant and Field Pipe Welding III	Take objectives from WT-23 and place them here. 1G, 2G, 5G, and 6G open root GTAW of pipe		Pending on the outcome of WT-20	Relevant to industry needs
WT-23 Power Plant and Field Pipe Welding IV	Update objectives to 4" and smaller diameter pipe using GTAW and SMAW only		Pending on the outcome of WT-20	Relevant to industry needs
WT-25 SolidWorks	New course	Kory Konkol completed 104 hours of training summer 2022	Need more hands on experience before offering a class	Relevant to industry needs
WT-31	No Change			Meets industry

GTAW for Gunsmiths				needs
WT-32 Advanced GTAW for Gunsmiths	No change			Meets industry needs
WT-36 Beginning Oxy-Acetylene	Inactivate Course	Need another class to replace it for core and/or elective	On Hold until replacement course is created	Course not needed as a stand alone course, but can be combined with another to articulate with area high schools
WT-37 Beginning SMAW	Add a 0.5-1 unit lecture component. Add lap and corner joints to objectives	Need an adjunct or full-time faculty member	On Hold	Provides fundamentals needed for the welding process
WT-38 Beginning GMAW	Add a 0.5-1 unit lecture component. Add open root GMAW to plate	Need an adjunct or full-time faculty member	On Hold	Provides fundamentals needed for the welding process
WT-39 Beginning GTAW	Add a 0.5-1 unit lecture component	Need an adjunct or full-time faculty member	On Hold	Provides fundamentals needed for the welding process
WT-40 Advanced Oxy-Acetylene	Inactivate Course	Completed	Course was Inactivated	No longer relevant to industry needs
WT-42 Advanced SMAW 6010 open root	Add back gouging to root pass with a back weld and consider Surface Tension Transfer (STT)	Update scheduled for Fall 2023	In Progress	Relevant to industry needs
WT-43 Advanced SMAW GTAW open root	No Change			Meets industry needs
WT-44 Advanced GMAW/FCAW	Add a 0.5-1 unit lecture component. Add aluminum pulse welding and open root GMAW of pipe. Remove FCAW-G and add to new course	Update scheduled for Fall 2023 (Welding changes only) Lecture will need to wait due to scheduling and lack of help	In Progress	Provides fundamentals needed for the welding process and relevant to industry needs

WT-45 Advanced GTAW	Inactivate Course	Need another class to replace it for core and/or elective	On Hold until replacement course is created	Only one GTAW course is necessary for industry needs
WT-50 Welding for Artists	No Change		Hasn't been scheduled due to lack of adjunct or full-time faculty to cover other courses	
WT-51 Blueprint Reading	No Change			Meets industry needs
WT-52	New course		Offered since fall 2019	Relevant to industry needs
WT-53	New course	Need an adjunct or full-time faculty member	Hasn't been scheduled due to lack of adjunct or full-time faculty to cover other courses	Relevant to industry needs

Program Planning and Communication Strategies

Describe the communication methods and interaction strategies used by your program faculty and administrators to discuss program-level planning, curriculum, SLOs, PSLOs, equity, student achievement, and institutional performance data.

The department strives to communicate with all stakeholders in an effort to continuously improve the welding programs offerings. The program review provides the mechanism for accomplishing this. In Career and Technical Education (CTE) programs, these stakeholders are made up of an industry advisory committee who represents the industry being served.

Ongoing outreach and partnerships with industry has provided the insight for achieving our goals. This includes efforts to provide outreach to our local high school welding programs and participating in campus visits by interested parties.

Academic Planning Analysis Summary

Summarize the key findings from the program analysis and outline opportunities for change.

Based on advisory board recommendations, labor market information and current course offerings, the program has many opportunities for growth in the advanced manufacturing sector. This would include a new certificate and courses in the following: robotic welding, CNC plasma cutting, 3D printing, CAD drawing, and CNC press brake. This is not to imply that welding is being replaced, but merely supplemented with these jobs. For example, from what I've noticed after visiting different manufacturers is that they employ only one or two robotic welding operators, but many more welders. Offering these additional courses would help increase the number of student in the program and FTES's, because some of the advanced manufacturing students would also carry over to welding and vice versa. Of course, in order to proceed with the additional courses, another instructor is needed.

Another way to increase FTE's is through outreach. Things have been improving in this area since Covid, and with the help of our Outreach department, we've seen more tours of potential students on campus. This should prove positive going forward.

Demographically, the data shows that about 30% of non-white and five-percent of women make up the workforce in welding. This may also be an area of focus to increase growth.

Section 2: Human Resource Planning

Workload and Staffing Assessment

Year	F/T Faculty	P/T Faculty
Previous Year	1	1
Current Year	1	1
Next 2 Years	2	1

Provide a narrative that describes the program's faculty staffing trends and develop a projection for the two years. Discuss the extent to which your current faculty staffing structure meets or does not meet your program's needs and/or initiatives. Please describe what strategies will be used to diversify your staffing (e.g., education, expertise/skillsets, areas of interest, demographics).

Some of the advisory committee recommendations included offering a new certificate in Advanced Manufacturing and to offer some courses as lecture/lab instead of just lab. In order to offer a certificate in Advanced Manufacturing, an additional seven courses at minimum would need to be developed and offered. And that's in addition to the current course offerings in welding.

With the current staffing situation of one full-time faculty and one adjunct, these recommendations are not possible. The current full-time faculty is carrying a 100% load per semester in order to provide the courses needed, so students can graduate with an A.S. degree in two years.

Professional Development

Provide a description and associated outcomes related to the program's target professional development participation over since the last program review. Discuss the current professional development/training need(s) of your program, and why this need(s) exists. If you have specific trainings you want to request, please include those details.

Professional development is an ongoing endeavor and with that I continue to maintain my AWS welding inspector credentials through training. These credentials allow me to provide welding qualification testing to our students and in turn makes them more employable. Summer of 2022 I completed 104 hours of training in the use of SolidWorks, a CAD drawing software. Training in SolidWorks opens the door up to several additional course offerings and a new certificate recommended by our advisory committee. These are outlined above under the "Advisory Board Recommendations for New Course Offerings". Regarding future trainings, there is a need to update IT-22, the Operations Maintenance and Safety class. It's been recommended by our advisory committee to teach this course at the level of Occupational Safety and Health Administration (OSHA) 10. Upon completing/passing the course, students would receive OSHA 10 cards. Many worksites require this level of training before being allowed to work. In order to offer OSHA 10 cards, classes and testing would need to be completed through OSHA.

Section 3: Infrastructure Planning

Facilities

Describe and evaluate the Lassen Community College facilities available to the program.

TR102, formerly construction trades, consists of the following: 12 welding booths (without power or ventilation) along the west wall, eight TIG welding booths, a metal rack, welding tables and a lockable office.

TR103 consists of the following: eight aisles along the east wall each containing four welding stations, three of which are for oxyacetylene welding, four welding stations along the west wall, a CNC cutting table, robotic welder, metal shear, floor mounted band saw, pipe beveling station, oxy-acetylene/plasma cutting table, three work tables, tool room, front office for storage, and an upstairs storage space and office.

Describe and evaluate additional facilities utilized off-campus by the program

No additional facilities are being utilized off-campus.

Describe any facilities needs identified internal or external analysis

Recent student surveys start on page 37 and end on page 47. Only thing to note is that the robotic welding class has only one robot that is to be shared by the entire class. This results in students standing around waiting for their turn. **Note, the questions in the student surveys are antiquated and in desperate need of updating. The data provided provides zero separation by course, even though a survey is expected to be completed for each course the student is taking. With that I want to point out that a typical student enrolled in a CTE program is enrolled in multiple courses in the same classroom/facility, so when a question asks if the lighting or desks/chairs is adequate, the answer isn't going to change. CTE programs should have their own surveys instead of one that encompasses all programs on campus.**

The following addresses surveys from past IPR's dating back to 2015.
From past IPR's it was noted that acoustics in the classroom needed to be improved and
lighting under the mezzanine for the TIG welding booths in TR102 is inadequate.

Justify any proposed modifications or additions to existing facilities that would better serve the program planned for the program review cycle.

Improve acoustics in the classroom, this would allow students to hear the lectures more clearly.
Improve lighting over the TIG welding stations would allow students to see their work.

The following items are carried over from my 2015 welding IPR and still apply.

Install carpeting in the classroom to eliminate poor acoustics. (Past peer evaluations recommendation and past student survey).

Improve existing electrical drops (splitting circuits if possible) and extend them to welding booths in construction trades, TR102

Address the following health and safety concerns.
Provide necessary ventilation for additional welding booths in construction trades, TR102
Improve ventilation in existing welding shop, TR103 (previous student evaluations).

Q1 Course Number (Examples:AGR-1-M0095,MUS-12-K0669, etc...):

Answered: 12 Skipped: 0

#	RESPONSES	DATE
1	WT-52-M0998	10/4/2022 2:53 PM
2	WT-52-M0998	10/4/2022 1:22 PM
3	WT-52-M0998	10/4/2022 1:15 PM
4	WT-52-M0998	10/4/2022 1:02 PM
5	WT-52-M0998	10/4/2022 12:48 PM
6	WT-20-M0432	10/3/2022 2:36 PM
7	WT-20-M0432	10/3/2022 2:05 PM
8	WT-20-M0432	10/3/2022 11:00 AM
9	WT-39-M0470	10/3/2022 10:09 AM
10	WT-20-M0432	10/3/2022 9:58 AM
11	WT-20-M0432	10/3/2022 9:50 AM
12	WT-20-M0432	10/3/2022 9:37 AM

Q2 Name of Program: (Select only one option)

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Administration of Justice	0.00%	0
Agriculture	0.00%	0
Studio Art	0.00%	0
Automotive Technology	0.00%	0
Business	0.00%	0
Child Development	0.00%	0
Fire Technology	0.00%	0
Gunsmithing	0.00%	0
Health Occupations/Medical Assisting	0.00%	0
History/Social Science/Sociology/Psychology	0.00%	0
Human Services	0.00%	0

Humanities	0.00%	0
Information Systems	0.00%	0
Natural Science	0.00%	0
Physical Education	0.00%	0
Vocational Nursing/Allied Health	0.00%	0
Welding Technology	100.00%	12
Special Instructional Programs: Athletics	0.00%	0
Special Instructional Programs: Developmental Studies	0.00%	0

Special Instructional Programs: Work Experience

0.00% 0

TOTAL	12

Q3 Course Name/Title:

Answered: 12 Skipped: 0

#	RESPONSES	DATE
1	Robotic Operations/Programming	10/4/2022 2:53 PM
2	Robotic Operations/Programming	10/4/2022 1:22 PM
3	Robotic Operations/Programming	10/4/2022 1:15 PM
4	Robotic Operations/Programming	10/4/2022 1:02 PM
5	Robotic Operations/Programming	10/4/2022 12:48 PM
6	WT-20 Powerplant and Feild Pipe	10/3/2022 2:36 PM
7	WT-20 Powerplant and Feild Pipe	10/3/2022 2:05 PM
8	WT-20 Powerplant and Feild Pipe	10/3/2022 11:00 AM
9	Welding Theory and Practice -Gas	10/3/2022 10:09 AM
10	Power Plant and field pipe	10/3/2022 9:58 AM
11	Power Plant and field pipe	10/3/2022 9:50 AM
12	Power Plant and field pipe	10/3/2022 9:37 AM

Q4 Educational Goal: What is your educational objective at Lassen Community College? (Check all that apply):

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
General Education: Transfer to a 4-year Institution	0.00%	0
General Education: IGETC Certification	0.00%	0
General Education: CSU Certification	0.00%	0
General Education: Transfer to another Community College	0.00%	0
Degrees/Certificates: AA/AS	33.33%	4
Degrees/Certificates: Certificate of Achievement/Certificate of Completion	58.33%	7
Degrees/Certificates: Certificate of Accomplishment	0.00%	0
General Interest: Job Requirement	33.33%	4
General Interest: Continuing Education	8.33%	1
General Interest: Personal Development	41.67%	5

Total Respondents: 12

#	TITLE OF DEGREE OR CERTIFICATE:	DATE
1	2 year certificate of achievement-welding	10/4/2022 2:53 PM
2	A.S. Degree Welding Technology	10/4/2022 1:22 PM
3	1-Year Certificate of Achievement	10/4/2022 1:15 PM
4	2 year certificate of achievement-welding	10/4/2022 1:02 PM
5	2-Year Certificate of Achievement	10/4/2022 12:48 PM
6	A.S. Degree in welding	10/3/2022 2:36 PM
7	A.S. Degree in welding	10/3/2022 2:05 PM
8	2 year certificate of achievement-welding	10/3/2022 11:00 AM
9	N/A	10/3/2022 10:09 AM
10	A.S. Degree Welding	10/3/2022 9:58 AM
11	A.S. Degree Welding	10/3/2022 9:50 AM
12	2 year certificate of achievement-welding	10/3/2022 9:37 AM

Q5 You need this course: Why are you taking this course?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Core requirement for degree or certificate	66.67%	8
Elective for Degree or Certificate	25.00%	3
General Education course for degree or transfer	0.00%	0
Job Requirement	66.67%	8
Continuing Education	8.33%	1

Personal Development

41.67% 5

Total Respondents: 12

#	OTHER: PLEASE SPECIFY	DATE
	There are no responses.	

Q6 Does the course content reasonably compare with the catalog/schedule description?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0
TOTAL		12

Q7 Did the catalog clearly explain the order in which the courses in this program should be taken?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0

TOTAL	12

Q8 Was any cost for this course/program, beyond registration and books, clearly identified in the catalog?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0
TOTAL		12

Q9 Did the instructor(s) use the required textbooks in the program?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0

N/A

0.00% 0

TOTAL	12

Q10 Are the textbooks purchased for this program useful to you?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	91.67%	11
No	0.00%	0

N/A

8.33%	1	
TOTAL		12

Q11 Scheduling: Did the scheduling of the course meet your needs?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Current schedule met my needs	100.00%	12
Needed morning offering	0.00%	0
Needed afternoon offering	0.00%	0
Needed evening offering	0.00%	0
Needed one day a week schedule	0.00%	0
Needed summer offering	0.00%	0
Needed week-end offering	0.00%	0
Needed short-term (less than semester) offering	0.00%	0

Other: Please Specify:

0.00%	0	
TOTAL		12

#	OTHER: PLEASE SPECIFY:	DATE
	There are no responses.	

Q12 I was provided with reasonable access to the facilities?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0
TOTAL		12

Q13 The temperature of the facilities in summer or fall is:

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Often too hot for the season	16.67%	2
Often too cold for the season	0.00%	0
Comfortable for the season	83.33%	10

N/A

0.00% 0

TOTAL	12

Q14 The lighting in the facilities is?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Too bright	0.00%	0
Adequate	91.67%	11
Too dark	8.33%	1

N/A

0.00% 0

TOTAL	12

Q15 The chairs/tables/desks are?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Adequate	91.67%	11
Inadequate	8.33%	1

N/A

0.00% 0

TOTAL	12

Q16 Is there enough space for you to do your work in class?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0

N/A

0.00% 0

TOTAL	12

Q17 Please elaborate on your responses and include any additional facilities-related comments:

Answered: 7 Skipped: 5

#	RESPONSES	DATE
1	N/A	10/4/2022 1:26 PM
2	MY responsibilities are to show up for class on time and be prepared for my daily tasks.	10/4/2022 1:04 PM
3	N/A	10/4/2022 12:57 PM
4	shorter table or platform for pipe prep.	10/3/2022 2:39 PM
5	Everything is fine as is	10/3/2022 11:03 AM
6	Welding booths are to dark	10/3/2022 10:13 AM
7	The lighting in the shop is good, but the booths need more light.	10/3/2022 9:40 AM

Q18 Did the course/program provide the necessary equipment?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0

N/A

0.00% 0

TOTAL	12

Q19 Is enough time on equipment allowed for each student?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	75.00%	9
No	25.00%	3

N/A

0.00% 0

TOTAL	12

Q20 Is equipment current?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	91.67%	11
No	8.33%	1

N/A

0.00% 0

TOTAL	12

Q21 Is equipment generally in good operation condition?

Answered: 12 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	100.00%	12
No	0.00%	0
N/A		
	0.00%	0
TOTAL		12

Q22 Describe how this course/program could be improved to better meet the needs of the students at Lassen Community College:

Answered: 9 Skipped: 3

#	RESPONSES	DATE
1	Having additional robots would be useful. Too little time on one robot is not sufficient.	10/4/2022 2:55 PM
2	There is only 1 robot for the whole class, which doesn't allow for much hands on learning, which is crucial for this class.	10/4/2022 1:26 PM
3	8 students sharing 1 robot	10/4/2022 1:17 PM
4	More time for each student on the robot to be able to complete our daily tasks efficiently.	10/4/2022 1:04 PM
5	there is one robot for 8 students, it would be nice if we had another robot so we can have more time on the robot	10/4/2022 12:57 PM
6	Everything is fine and usable in class	10/3/2022 11:03 AM
7	Sharper tools for welding. Pliers that work better. Tools are dull and need replaced	10/3/2022 10:13 AM
8	Atleast one or more cooling tanking in the shop as the old wood shop only as 5 gallon buckets	10/3/2022 9:53 AM
9	Not at this time.	10/3/2022 9:40 AM

Q23 Please provide any additional comments on the course or program:

Answered: 1 Skipped: 11

#	RESPONSES	DATE
1	Another robot would help a great deal, there is often a lot of students just using class time to wait for their turn.	10/4/2022 1:26 PM

Equipment

- Describe and evaluate equipment and equipment support provided for instruction and instructional support

Equipment	Age	Courses Served
(12) Single process stick welders	20+	WT-37, 42, 20-22
(4) TIG/Stick welders	20+	WT-37, 39, 45, 20-23
(11) Miller XMT350 multi-process welders	12+	WT-37, 38, 44, 42, 43, 20-23
(4) Miller XMT350 MPA multi-process welders	4	WT-37, 38, 44, 42, 43, 20-23
(8) Miller Dynasty 200 TIG/Stick welders	10	WT-37, 39, 42, 43, 45, 20-23
(1) Miller Dynasty 280 TIG/Stick welders	1	WT-37, 39, 42, 43, 45, 20-23
(2) Miller Dynasty 350 TIG/Stick welders	10+	WT-37, 39, 42, 43, 45, 20-23
(2) Miller 350P Pulse MIG	15+	WT-38, 44

(4) Lincoln/Miller MIG welders	18+	WT-38
(1) Lincoln multi-process MIG welder	5	WT-37, 38, 39, 44
(1) Fanuc/Lincoln robotic welder	6	WT-52, 53
(1) Dynatorch CNC cutting table	7	Future Offering
(12) Oxy-Acetylene Welding Boothes	20+	WT-36
(1) Piranha hydraulic shear	20+	All Courses
(1) Uni-Hydro hydraulic shear	16+	All Courses
(1) Stratasys 3D Printer	3	Future Offering
(1) Visible Welding Camera	2	All Courses
Shop ventilation system	20+	All Courses

We currently don't have a replacement schedule. As one can see, equipment from the above list that is 20+ years old is still serving our needs. The only draw back from those pieces of equipment is that they don't serve as many courses as a multi-process machine does.

Any maintenance costs to keep the equipment operational is taken from the welding departments budget.

Technology

- Describe and evaluate technology and technology support provided for instruction and instructional support.

The welding department currently has the latest smart board technology, which is used for power point and video presentations.

The department also has a computer station that is used to access Accudemia. Accudemia is a web-based program used to track students' attendance and hours.

We've also implemented a Visible Welding Camera. The camera is used to critique welds performed by students.

- Justify any proposed modifications or additions to existing technology that would better serve the program planned for the next four years.

  None at this time

Section 4: Program Planning

Progress update on previous action plans

I've provided this information in a more detailed table titled "Progress on Advisory Committee Recommendations" starting at the bottom of page 40.

Action Plan	Progress Detail	Outcomes

Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

Complete SWOT analysis

Strengths	Quality education in a broad range of welding processes that leads to high paying jobs diversity of students and ability to adapt and grow.
Weaknesses	Lack of adjunct or full-time faculty to support additional course offerings and certificates
Opportunities	Increase partnerships with industry and other CTE programs. More outreach
Threats	Covid lockdowns, fewer students entering the industry due to the physical demands of the job.

Program Plan

Develop a program action plan based on the findings of the SWOT Analysis. The plan should specify should aligns with one or more College Goals. SLO maps may be utilized to help show the connection.

- How do the action plans align with the mission of the college?
  The action plans align with the mission of the college by providing a rigor of coursework that leads to a higher economic potential and workforce development.

- What strategic goals do the action plans support?
  Learning Opportunities: Provide an array of rigorous academic programs delivered via a variety of modalities that promote student equity and learning while meeting the needs of the local and global community.

  Student Success: Provide a college environment that reaches-out-to and supports students, minimizes barriers, and increases opportunity and success through access and retention to enable student attainment of educational goals including completion of degrees and certificates, transfer, job placement and advancement, improvement of basic skills, and self-development through lifelong learning.

- What ISLOs do the action plans support?
  Critical Thinking - Ability to analyze a situation, identify and research a problem, propose a solution or desired outcome, implement a plan to address the problem, evaluate progress and adjust the plan as appropriate to arrive at the solution or desired outcome.

- What specific evidence (e.g., SLOs, data) support the action plans?
  The SLO data is inconclusive due to the nature of the courses, but past student surveys and advisory committee recommendations support the action plans. This is addressed on page 31, “Advisory Committee Recommendations” and in section three page 35 “Infrastructure Planning”.

- Based on the action plans what resources are needed?
  Resources are addressed in the table below on page 53.

- What are the expected outcomes of the action plans?
  Expected outcomes are addressed in the table below on page 53

- What is the total cost of bringing the action plan to life?
  Cost is addressed in the table below on page 53.

Action Plan	Supporting Evidence	Expected Outcome	Resource(s) to Achieve the Action Plan	Resource Category	Estimated Cost	Expense Type	Priority Ranking
Install ventilation for welding booths in TR 102	2015 Student Surveys	Health and Safety and expand student capacity	Facilities	Equipment	$80,000	One-Time	1
Improve current ventilation system in TR103	2015 Student Surveys	Health and Safety	Facilities	Equipment	$40,000	One-Time	2
Add electrical drops for welding booths in TR 102	2015 Student Surveys	Expand student capacity and increase graduation rates	Facilities	Facility Improvement	$5000	One-time	5
Improve lighting in TR102 under mezzanine	2021 Student Surveys	Provide a working environment that enhances productivity	Facilities	Facility Improvement	$1000	One-time	3
Improve acoustics in the classroom	2021 Student Surveys	Improve verbal comprehension through better acoustics	Facilities	Facility Improvement	$1000	One-time	4
Hire full-time faculty	Advisory committee recommendation and Industry need for workers	Offer additional courses, increase FTE's and add new certificate in advanced manufacturing	Human Resoures	Human Resources	$50K?	One-time	6
OSHA 10 class	Advisory committee recommendation and Industry need	Update IT-22 safety class to better serve and prepare students for employment	Other	Other	$2000?	One-time	7