

# Program Student Learning Outcome (PSLO) Assessment Reporting Template 2016-2017

[For further guidance on this process, see the [PSLO Assessment How-To Guide](#) on the TLC website]

**Program:** Welding Technology

**Semester:** Fall & Spring 2017

**Faculty/Staff Assessing the Program:** Joe Meyer, Dann Gesink

## Part 1: Assessment Goals

### What do you want to learn about your students and their learning from this process?

To evaluate the learning success of the students and provide evidence whether our students are properly trained & prepared for a successful career in the welding field. Those that “meet” proficiency or “exceed” proficiency have succeeded in absorbing the PSLO’s and will be ready to meet industry needs.

The final course grades were evaluated from Welding 10 Theory sections taught both day and evening (four classes in total). Data was also collected from the day and evening Welding 11 – 43 Labs (two day sections and two evening sections). This data covers all of our PSLO’s and provides great evidence in determining a student’s proficiency level. Data from both day and evening sections is expected to provide a broad overview of how the program operates.

## Part 2: Assessment Plan

PSLO	Method of Assessment	Proficiency Criteria	Student Population Assessed
<b>Enter all the PSLOs for your program below.</b> (Additional rows may be needed)	<b>Identify and describe the assessment activity</b> (capstone project, portfolio, interview, pre/post survey, analysis of success rates, etc) used to assess the students’ proficiency of the PSLO. Explicitly state which part of the assessment activity assessed a particular PSLO.	<b>List the criteria you used to determine proficiency levels for each of your PSLOs.</b> How did you determine “needs improvement,” “meets proficiency,” or “exceeds proficiency” criteria?	<b>Describe which student populations you assessed and how you chose those populations.</b> How many students did you assess? To what extent did the sample adequately represent all students in the program? Why did you choose this particular group for this particular PSLO? Explain.
<b>PSLO _A_ :</b> Be able to know and specify the safety requirements and knowledge as required in the welding trade.	Analysis of the students final course grade from Welding 10 Theory. This course covers all the safety and theory knowledge an apprentice should have in the welding trade.	In order to achieve an “exceeds proficiency” level, a students final course grade was evaluated at 90% or above. Students who received a grade level in the 70% - 89% were placed in the “meets proficiency” category. Lastly, those whose grade level was less than 70% are in the “needs improvement” level.	Welding 10 theory is the most popular course in our program. This course is taught both day and evening. A different instructor teaches each section. This course addresses this PSLO and by evaluating the final course grades, it represents all the students who completed this course. Lastly, it allows us the opportunity to see how the different sections align.

<p><b>PSLO_B_ :</b> Demonstrate the ability and theory to effectively solve problems encountered while welding or cutting and perform in accordance with industry standards.</p>	<p>Analysis of the students final course grades from Welding 10 Theory and Arc Welding Labs 11 - 43. These courses elaborate on welding problems, critical thinking, and hands-on practice of the trade.</p>	<p>In order to achieve an “exceeds proficiency” level, a students final course grade was evaluated at 90% or above. Students who received a grade level in the 70% - 89% were placed in the “meets proficiency” category. Lastly, those whose grade level was less than 70% are in the “needs improvement” level.</p>	<p>Welding 10 theory and lab courses Welding 11 – 43 illustrate the most popular courses in our program. These courses are taught both day and evening. A different instructor teaches each section. These courses address all the PSLO’s and by evaluating all the final course grades, it represents all the students who completed those courses. Lastly, it allows us the opportunity to see how the different sections align.</p>
<p><b>PSLO_C_ :</b> Be prepared to learn the step-by-step procedure to pas the AWS Welder Qualification/Certification Exam, essential for employment as a welder.</p>	<p>Analysis of the students final grade from Arc Welding Labs 11 – 43. These courses provide the knowledge and practice to successfully pass a Certification exam.</p>	<p>In order to achieve an “exceeds proficiency” level, a students final course grade was evaluated at 90% or above. Students who received a grade level in the 70% - 89% were placed in the “meets proficiency” category. Lastly, those whose grade level was less than 70% are in the “needs improvement” level.</p>	<p>Welding lab courses 11 – 43 include all the hands-on practice labs in our program. These courses are taught both day and evening. A different instructor teaches each section. These courses address this PSLO and by evaluating all the final course grades, it represents all the students who completed those courses. Lastly, it allows us the opportunity to see how the different sections align.</p>
<p><b>PSLO_D_ :</b> Be able to know and have an appreciation for the safety knowledge required in the welding trade.</p>	<p>Analysis of the students final course grade from Welding 10. This course covers all the safety and theory knowledge an apprentice should have in the welding trade.</p>	<p>In order to achieve an “exceeds proficiency” level, a students final course grade was evaluated at 90% or above. Students who received a grade level in the 70% - 89% were placed in the “meets proficiency” category. Lastly, those whose grade level was less than 70% are in the “needs improvement” level.</p>	<p>Welding 10 theory is the most popular course in our program. This course is taught both day and evening. A different instructor teaches each section. This course addresses this PSLO and by evaluating the final course grades, it represents all the students who completed it. Lastly, it allows us the opportunity to see how the different sections align.</p>
<p><b>PSLO_E_ :</b> Have a basic understanding how to solve common welding problems encountered in industry as well as reveal basic welding and cutting manipulative skills.</p>	<p>Analysis of the students final course grades from Welding 10 Theory and Arc Welding Labs 11 - 43. These courses elaborate on welding problems, critical thinking, and hands-on practice of the trade.</p>	<p>In order to achieve an “exceeds proficiency” level, a students final course grade was evaluated at 90% or above. Students who received a grade level in the 70% - 89% were placed in the “meets proficiency” category. Lastly, those whose grade level was less than 70% are in the “needs improvement” level.</p>	<p>Welding 10 theory and lab courses Welding 11 – 43 illustrate the most popular courses in our program. These courses are taught both day and evening. A different instructor teaches each section. These courses address all the PSLO’s and by evaluating all the final course grades, it represents all the students who completed those courses. Lastly, it allows us the opportunity to see how the different sections align.</p>

### Part 3: Assessment Findings

#### What are the findings from your assessment efforts?

##### Welding 10 Theory Class Assessment Data:

Spring 2017:	Day Course	Evening Course
# of students that "Exceed Proficiency":	2 or 18%	0 or 0%
# of students that "Meets Proficiency":	8 or 73%	9 or 43%
# of students that "Needs Improvement":	<u>1 or 9%</u>	<u>12 or 57%</u>
Total:	11	21

##### Fall 2017:

# of students that "Exceed Proficiency"	6 or 35%	2 or 13%
# of students that "Meets Proficiency"	9 or 53%	9 or 60%
# of students that "Needs Improvement"	<u>2 or 12%</u>	<u>4 or 27%</u>
Total:	17	15

Upon initial review, the day course in Spring 2017 had the majority of its students (91%) meeting proficiency requirements while the evening course did not (43%). Those in the "needs improvement" category will most likely repeat the class as they will have difficulty succeeding or surviving in the welding industry. One must note that the evening course has almost double the quantity of students than the day course for the Spring semester.

For the Fall semester, the student quantity is similar for both sections. Both day and evening sections have a majority of its students meeting proficiency (88% for day, 73% for evening). This illustrates a better alignment between the sections.

Additional analysis was done by combining the data for both the Spring and Fall 2017 by each section:

Fall & Spring 2017 Combined:	Day Course	Evening Course
# of students that "Exceed Proficiency":	8 or 29%	2 or 6%
# of students that "Meets Proficiency":	17 or 61%	18 or 50%
# of students that "Needs Improvement":	<u>3 or 11%</u>	<u>16 or 44%</u>
Total:	28	36

From this analysis, one can see that 90% of the students met proficiency in the day section while 56% did in the evening. This cumulative data illustrates that the majority of the students were successful.

Lastly, to illustrate a total cumulative analysis, both the day and evening section data was combined to provide the following results:

Fall & Spring 2017:	Day & Evening Courses
# of students that "Exceed Proficiency":	10 or 16%
# of students that "Meets Proficiency":	35 or 55%
# of students that "Needs Improvement":	<u>19 or 30%</u>
Total:	64

The total cumulative analysis depicts that the majority of the students (71%) are meeting proficiency requirements. This is great news and it validates that we are doing the right thing (methods) in teaching our students about welding. However, it also displays that 30% of the students need improvement. The data illustrates that there are more students in the evening are in the “needs improvement” category than the day section. This has caused us to ponder why?

The day section meets twice per week while the evening section meets only once. This might be a factor as meeting more often may provide the student more time to “absorb” or learn the material in a slower pace. Another may be that most evening students are working during the day and may not have as much time to study and absorb the material. Lastly, it may be the instructors, although we cover the same material, we employ different methods to instruct the students.

Now, lets cover the Lab data results:

Welding 11 –43 Lab Class Assessment Data:

Spring 2017:	Day Course	Evening Course
# of students that “Exceed Proficiency”:	3 or 15%	1 or 7%
# of students that “Meets Proficiency”:	10 or 50%	9 or 64%
# of students that “Needs Improvement”:	<u>7 or 35%</u>	<u>4 or 29%</u>
Total:	20	14

Fall 2017:

# of students that “Exceed Proficiency”	2 or 10%	2 or 10%
# of students that “Meets Proficiency”	11 or 52%	16 or 76%
# of students that “Needs Improvement”	<u>8 or 38%</u>	<u>3 or 14%</u>
Total:	21	21

Upon initial review, one can see that the majority of the students were successful in meeting proficiency in both sections of lab courses (day and night) for both semesters. For Spring 2017, the data aligns well between the sections: 65% meeting proficiency in the day section and 71% of the evening. Those in the “needs improvement” category are similar between the two sections as well.

For the Fall 2017 data, 62% of the day students met proficiency compared to 86% of the evening. The same number of students were in each section, however a greater number were in the “needs improvement category for the day section.

Additional analysis was done by combining the lab course data for both the Spring & Fall 2017 by each section:

Fall & Spring 2017 Combined:	Lab Day Course	Lab Evening Course
# of students that “Exceed Proficiency”:	5 or 12%	3 or 9%
# of students that “Meets Proficiency”:	21 or 51%	25 or 71%
# of students that “Needs Improvement”:	<u>15 or 37%</u>	<u>7 or 20%</u>
Total:	41	35

From this analysis, one can see that 63% of the students met proficiency in the day section while 80% did in the evening. This cumulative data illustrates that the majority of the students were successful, more so in the evening section. One possible reason the evening section is more successful may be that most evening students are older, more mature, already working in industry, thus is more skilled and likely more passionate about their welding skills.

Lastly, to illustrate a total cumulative analysis between lab sections, both the day and evening section data was combined to provide the following results:

Fall & Spring 2017:	Day & Evening Courses
# of students that "Exceed Proficiency":	8 or 11%
# of students that "Meets Proficiency":	46 or 61%
# of students that "Needs Improvement":	<u>22 or 29%</u>
Total:	76

The total cumulative analysis depicts that the majority of the students (72%) are meeting proficiency requirements. Once again, this is great news and it validates that we are doing the right thing (methods) in training our students how to weld. However, it also displays that 29% of the students need improvement.

The data illustrates that there are more students in the day section that "needs improvement" over the evening section. Although both sections meet twice per week for the same number of hours the data does not show similar alignment. The employment and age of the student may be one reason as explained earlier (evenings are mostly working students while the day has more non-working students). The ethnic background is similar between the two sections as well as the sexual makeup. Lastly, it may be the instructors, although we cover the same material, we employ slightly different methods to instruct the students in lab.

#### **Part 4: Next Steps**

##### **What are your next steps?**

This data will be discussed among the Welding faculty and plans will be made to continue improvement in student learning and success. Overall, we are happy with the results showing that the majority of students in both day and evening sections are succeeding by meeting or exceeding proficiency and thus absorbing the PSLO's.

Changes to the program have already occurred recently (Fall 2017) to help improve student success. Prerequisites have been recently added which will require the student to take welding labs 11, 20, and 21 in order and only one at a time. Previously, students took too many welding lab courses in the same semester and did not fully absorb the skills fast enough to be successful. Welding takes time to learn and just taking too many in the same semester is not to the benefit of the average student. With the new prerequisites, we expect to see more student success with our lab courses.

In addition, a prerequisite to complete Weld 10 was moved from Weld 41 to Weld 21. This requires the student to complete the theory class earlier in the program to continue taking welding labs. We theorize that this will lead to them taking more theory courses as well as the general education courses earlier in the program so they will be more likely to succeed and earn their Certificate of Achievement.

This will then lead to a greater number of students striving towards the Associate of Science degree in a shorter time span. So far, we believe that it is working out well, and with the students taking Weld 10 theory, Math, and English earlier in the program, they are earning a Skills Certificate which will help ladder them up to the C of A. In addition, taking those theory courses earlier in the program has better prepared them for our advanced theory courses (Weld 35 and 40) and will thus give them more opportunity to earn their C of A before starting work in industry.

Lastly, to encourage the Welding 10 students to learn, we plan to invite more alumni to speak with them and let them know what they have to look forward too. We have had success with this in the past but need to do it more often and consistently every semester.

### **Part 5: Report Summary**

This assessment of our PSLO's allowed us to see how well our students are prepared for working in the welding industry. Those that meet or exceed the proficiency levels have gained sufficient knowledge and skills to be successful for a career in Welding. We were also able to see the differences or alignment of both the day and evening sections.

This assessment used final course grades in both day and evening sections from all students who completed Weld 10 in the Spring and Fall of 2017. It also used the final course grades from two day sections and two evening sections of Welding 11 – 43 Labs during the same time period.

Data was analyzed by student quantity and percentages. It was found that the overall majority were successful in engrossing our PSLO's. This validates our program effectiveness in successfully training and providing the knowledge for the students to be successful in the Welding trade. The data illustrated there is a greater percentage of students meeting proficiency in the day section of Weld 10 than the evening. For the Weld 11 – 43 labs, it was found that a greater percentage of students met proficiency in the evening section than the day section.

Finally, it is desired to reduce the number of students in the “needs improvement” category. Steps have already taken place in the program to address this and over time it is expected to have a positive effect on student proficiency.