

Report : Assessment Cycle Details for : Welding

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Workspace : Program Assessment Plans

Assessment Plan: 2018-2020 Assessment Cycle: Assessment Plan and Assessment Findings

Assessment Plan Template: Academic Program Assessment Plan Template

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Measures and Findings

Welding Outcome Set (2018-2020)

Outcome

SLO 1

Demonstrate the knowledge of how to properly identify and use basic hand tools.

Measure

Measure 1 (SLO 1)

DIRECT - EXAM

Course Alignment:

WELD 1110

Acceptable Target:

At least 75% of Welding students will be able to recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Measure Description:

Written Exam - (Module 00103-09 in NCCER Core Curriculum)

Findings

for Measure 1 (SLO 1)

Summary of Findings:

89.8% of students successfully completed objective.
(127 total students: 114 passed, 13 failed)

Target Achievement:

Exceeded

Analysis of Results:

Students typically do well with this assignment because faculty ensure ample time-on-task and usage of tools, daily. Some students may also benefit from prior experience with tools before entering the program. Faculty feel that many of the students who do not perform well on the exam may not have properly reviewed the appropriate textbook section related to the test. Moving forward, the program will begin using NCCERconnect, an online text, that may give faculty more opportunity to engage students in this part of the curriculum.

Measure

Measure 2 (SLO 1)

DIRECT - OTHER

Course Alignment:

WELD 1110

Acceptable Target:

At least 85% of Welding students will be able to Safely and Properly use a Adjustable Wrench.

Measure Description:

Performance Evaluation and Rubric - (Module 00103-09 in NCCER Core Curriculum)

Findings

for Measure 2 (SLO 1)

Summary of Findings:

89.8% of students successfully completed objective.
(127 total students: 114 passed, 13 failed)

Target Achievement:

Met

Analysis of Results:

Students use the adjustable wrench almost every day in class, so this provides plenty of repetition. Faculty noticed that many of the students who struggled with this exam also had poor attendance which negatively impacts repetition. Faculty will continue to emphasis the importance of attendance on performance in class.

SLO 2

Demonstrate the knowledge and the understanding of how to properly prepare base metals for welding.

Measure

Measure 1 (SLO 2)

DIRECT - EXAM

Course Alignment:

WELD 1130

Acceptable Target:

At least 75% of Welding students will be able to identify and describe basic weld joints.

Measure Description:

Written Exam (Module 29105-15 in NCCER Welding Level One)

Findings

for Measure 1 (SLO 2)

Summary of Findings:

92.8% of students successfully completed objective.
(111 total students: 103 passed, 8 failed)

Target Achievement:

Exceeded

Analysis of Results:

Making a good weld joint is key to the welding process, so faculty place a lot of emphasis on this, which leads to high success rates. Faculty have noticed that some students become over-reliant on the grinder tool which can lead to less than ideal performance. Faculty will continue to re-emphasize the importance of not becoming reliant on the grinder to fix weld issues.

Measure

Measure 2 (SLO 2)

DIRECT - OTHER

Course Alignment:

WELD 1130

Acceptable Target:

At least 85% of Welding Students will be able hand grind a bevel at 30 degrees.

Measure Description:

Performance Evaluation and Rubric (Module 29105-15 in NCCER Welding Level One)

Findings

for Measure 2 (SLO 2)

Summary of Findings:

92.8% of students successfully completed objective.
(111 total students: 103 passed, 8 failed)

Target Achievement:

Met

Analysis of Results:

Faculty provide a focus on this type of weld within the curriculum and students receive a lot of time on task performing the weld. A majority of students who did not pass this exam struggled with attendance. Since this measure is administered early in the semester, some students who eventually do not continue in the program typically do not perform well on the exam or fail to complete it.

SLO 3

Demonstrate the knowledge and the operations of a CAC (Carbon

Measure

Measure 1 (SLO 3)

Arc Cutting) process.

DIRECT - EXAM

Course Alignment:

WELD 1310

Acceptable Target:

At least 75% of Welding students will be able to define air-carbon arc cutting and the related equipment.

Measure Description:

Written Exam (Module 29104-15 in NCCER Welding Level One)

Findings

for Measure 1 (SLO 3)

Summary of Findings:

90.9% of students successfully completed objective.
(110 total students: 100 passed, 10 failed)

Target Achievement:

Exceeded

Analysis of Results:

Through the lab, students are able to spend ample time with hands-on instruction that complements what is presented in the textbook. This helps students reinforce learning. Most students performed well on this exam but faculty believe the exam itself could be enhanced. Some questions were not very clear which can cause some confusion in how to best respond. The exam used comes from NCCER curriculum, but faculty could place more focus on reviewing content specific to the exam prior to administering it to help overcome some of the testing complications.

Measure

Measure 2 (SLO 3)

DIRECT - STUDENT ARTIFACT

Course Alignment:

WELD 1310

Acceptable Target:

At least 85% of Welding students will perform a A-CAC gouge to a uniform width and depth

Measure Description:

Performance Evaluation and Rubric (Module 29104-15 in NCCER Welding Level One)

Findings

for Measure 2 (SLO 3)

Summary of Findings:

90.9% of students successfully completed objective.

(110 total students: 100 passed, 10 failed)

Target Achievement:

Met

Analysis of Results:

Students are able to build competency from stick welding that helps prepare for the switch to CAC weld. Also, students are provided ample opportunity to practice the skill. Some students have a hard time getting a feel for this type of weld, compared to a stick weld. Students end up going too deep with the weld when a skim is more appropriate. Faculty will consider ways to offer more time-on-task for students were are struggling with the transition.

SLO 4

Demonstrate the knowledge and the ability to make fillet welds using the SMAW (Shielded Metal Arc Welding) process.

Measure

Measure 1 (SLO 4)

DIRECT - EXAM

Course Alignment:

WELD 1411

Acceptable Target:

At least 75% of Welding Students will be able to explain how to prepare for SMAW welding and how to strike an arc.

Measure Description:

Written Exam (Module 29109-15 in NCCER Welding Level One)

Findings

for Measure 1 (SLO 4)

Summary of Findings:

79.7% of students successfully completed objective.
(69 total students: 55 passed, 14 failed)

Target Achievement:

Met

Analysis of Results:

Faculty found that students who struggle with completing the weld in the shop also struggle with the written exam. In this process, making a strike can be challenging and also frustrating for students. While most students do well with this type of weld, some do experience frustrations that impact both performance and the written evaluations. Faculty believe providing extra opportunities for preparing for the exam could help student performance.

Measure

Measure 2 (SLO 4)

DIRECT - STUDENT ARTIFACT

Course Alignment:

WELD 1411

Acceptable Target:

At least 85% of Welding Students will properly perform a stinger bead with E7018 electrodes in the Horizontal (2F) position.

Measure Description:

Performance Evaluation and Rubric (Module 29109-15 in NCCER Welding Level One)

Findings

for Measure 2 (SLO 4)

Summary of Findings:

78.3% of students successfully completed objective.
(69 total students: 54 passed, 15 failed)

Target Achievement:

Not Met

Analysis of Results:

Faculty have found that some students struggle with understanding the appropriate amperage needed to successfully strike a SMAW weld. While ample time is provided to practice, faculty could provide more time on the machine set-up and how it impacts different welding rods for different styles.

SLO 5

Demonstrate the knowledge and the ability to make Open Root V-Groove welds using the SMAW (Shielded Metal Arc Welding) Process

Measure

Measure 1 (SLO 5)

DIRECT - EXAM

Course Alignment:

WELD 1420

Acceptable Target:

At least 75% of Welding Students will be able to identify various types of groove welds and describe how to prepare for groove welding.

Measure Description:

Written Exam (Module 29112-15 in NCCER Welding Level One)

Findings

for Measure 1 (SLO 5)

Summary of Findings:

93.5% of students successfully completed objective.

(77 total students: 72 passed, 5 failed)

Target Achievement:

Exceeded

Analysis of Results:

Students typically do well with this assignment because of the use of scaffolding in the program throughout the semester. The welding curriculum builds on top of itself. This assignment is administered near the end of the program, so students have already built understanding and are better prepared. Several of the students who did not perform well were not prepared for the exam. Faculty will reinforce the importance of preparedness not only in the classroom but also in the welding career.

Measure

Measure 2 (SLO 5)

DIRECT - STUDENT ARTIFACT

Course Alignment:

WELD 1420

Acceptable Target:

At least 85% of Welding Students will be able to make a open root groove weld the Flat (1G) Position with E6010 and E7018 electrodes.

Measure Description:

Performance Evaluation and Rubric (Module 29112-15 in NCCER Welding Level One)

Findings

for Measure 2 (SLO 5)

Summary of Findings:

93.5% of students successfully completed objective.
(77 total students: 72 passed, 5 failed)

Target Achievement:

Met

Analysis of Results:

By this point in the curriculum, students have a solid welding foundation and are better able to engage with this type of weld as compared to introductory level students. Some students who have trouble with this weld don't properly set-up the machine right. This causes the weld pool to be cold that impacts the cleanliness and strength of the product. While most student excel with this, faculty will consider providing additional support to students who are struggling with proper machine set-up.