PROGRAM REVIEW

Department: Welding

Date of Program Review: 2023

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TABLE OF CONTENTS

Appendices....3

Introduction to Program....4

I. Scope....4
A. Program Relation to College Mission, Core Values, and Strategic Plan 4
B. Program/Discipline Demand/ Need....4
C. Program /Discipline Analysis....4
D. Program Assessment....5

II. Institutional Support....6
A. Support....6
B. Community Engagement....6
C. Program Development....6

III. Results....8
A. Continuous Improvement....8

Appendices

Full-Time Faculty Qualifications
List of courses included in the program

- **Advising degree sheet (Course catalog)**
- **Degree Audit courses (Registrar)**
- **List of college owned equipment over $2000**
- **Courses offered in the last 3 years (Instruction office)**
- **Curriculum Mapping**

Recommended Timeline

- Program Review document will be completed and submitted to the Instruction Office by December 31st.
- Vice President of Academic Affairs and Director of Institutional Effectiveness will complete the summary report and send it to faculty by April 15th.
- The faculty responsible will review the report, provide any follow up information and make comments within seven days of receiving the report.
- A meeting will be scheduled with VP of Academic Affairs and Director of Institutional Effectiveness to develop an action plan within three weeks of the review.
- Programs under review will present a summary of their program findings and an Action Plan to the Cabinet Committee in August/September of the following year.

ACADEMIC PROGRAM/DISCIPLINE REVIEW
Fort Scott Community College

Introduction to Program

I. Scope

A. Program Relation to College Mission, Core Values, and Strategic Plan:

1. **How do the goals and measurable objectives for the program/discipline help the college meet its mission, core values, and strategic plan?**

   The goal of the program is to develop qualified welders to provide meaningful careers for students and meet the needs of local employers. The measurable objectives are the number of students that complete the FSCC Welding Certificate and obtain their OSHA 10 certification and AWS D1.1 Welder Qualification Test Record. Welding is a quality technical program that supports needs in the local workforce and has grown over the past three years in enrollment as well as locations, which are key elements in the FSCC Mission and Vision statements.

2. **What specific goals of the strategic plan are affected by this? Please explain.**
   Goal 2 - Welding has grown to include 3 locations (FSCC, CTEC, and Miami County Campus). During the program review process, instructors sought to improve the quality of the education and learning of students as well as improve the efficacy of instruction.

B. Program/Discipline Demand/Need:

If applicable, provide any advisory board meeting minutes.

1. **Describe the need for the program/classes based on regional demands.**

   Based on a Department of Labor report (see graphic), there are 83 welding positions needed, and currently, FSCC Welding has 55 concentrators. The graphic below details the regional workforce needs, along with potential wages. (Welding is in blue)

2. **Is program revision needed? If yes, provide a detailed rationale supporting the program change.**

There is no need to formally revise the program at this point. Our faculty uses AWS qualification as a final measure to assess their skills. With additional instructors, revising the program involves coordinating multiple campuses to ensure consistency in curriculum and lab practices.

3. **Describe how the revised program differs from the current one?**
   The different instructors have various industry specialties, although everyone teaches to their strength instructors coordinate the baseline curriculum to provide a universal knowledge to our students. Faculty teaching welding classes meet every year to discuss curriculum and exchanges best learning practices.

C. Program/Discipline Analysis:

1. **What procedures are used to ensure that course content is up-to-date?**
   Our courses are kept up to date by close partnerships with local businesses and Advisory Board meetings, which are held once each semester. FSCC is an AWS member, and all the instructors and Kris Mengarelli have been to AWS training to become Certified Welding Inspectors (CWI). Kabria Davies earned her Certified Welding Inspector (CWI) Certificate, Davis Oehme earned his Certified Welding Educator (CWE) and Kris Mengarelli earned his Certified Welding Inspector (CWI). Brandon Fisher and Shane Kern have earned our cooperation with local construction, manufacturing, and welding fabrication companies ensures that we are teaching, techniques and equipment are up to the standard of the industry. Using NCCER or AWS SENSE as the curriculum would also enhance the consistency across the different locations and instructors and assure that the course content is current.

2. **What is the process for textbook review? Please list the book(s) and ISBN for each course.**

Faculty utilizes Openbook Education Resources for teaching. In addition, they utilize safety videos available through AWS.

3. **What methods of instruction are used to meet the goals and objectives of courses in the program/discipline? Please describe two different sample lessons used within different courses in the program.**
   As welding is a hands-on course, instruction is given at the beginning of the class, and students spend a lot of time in welding booths in the lab practicing what has been taught. Guidance is also given throughout the lab time one-on-one between the instructor and students.
   The welding blueprint course has more classroom lecture time, but students are given blueprints and asked to draw basic blueprints.
   Currently, OSHA 10 is taught online through Careersafeonline.com.

4. How do you ensure appropriate academic rigor and consistency of course content in all modalities?

Most welding courses are taught in the face-to-face modality except for OSHA 10 and use the AWS qualification. The parameters for each skill, students are supposed to possess, are outlined by the AWS D1.1 code for structural steel. The students have to master each skill before they are granted the AWS qualification.

D. Program Assessment:

1. What are the program outcomes?

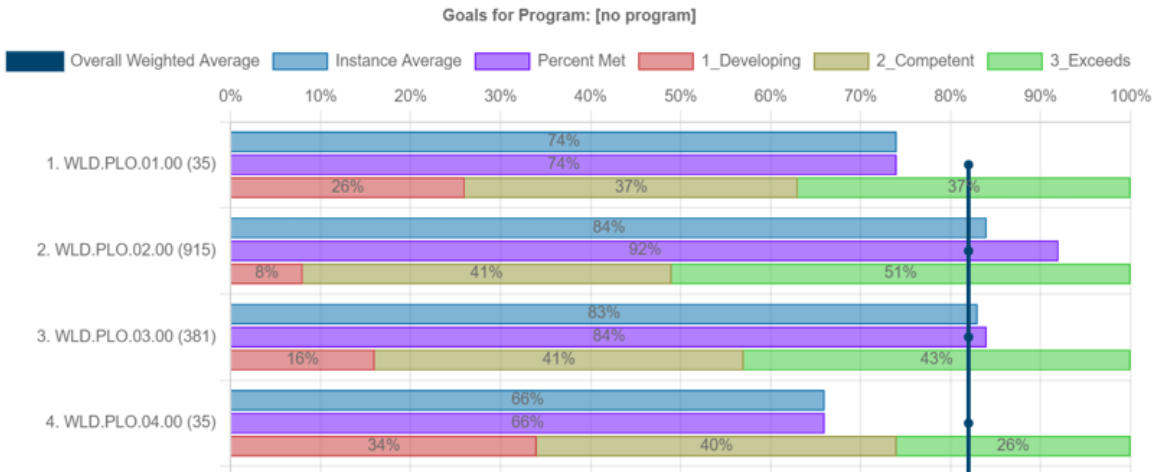
- After completion of the OSHA 10 online course and Welding Safety instruction, students will demonstrate appropriate safety in the lab and apply their knowledge of a safe environment to daily construction situations. (Basic Safety)
- Students will be able to apply their knowledge of welding equipment, tools, and processes to real-life situations that involve multiple variables (such as metal thickness, welding positions, welding processes, etc.) and successfully create a quality weld using various welding processes. (Basic Welding Techniques)
- Students will be able to apply their knowledge of cutting processes and base metal preparation to create welding surfaces that are appropriate for executing a quality weld. (Basic Cutting and Grinding Processes)
- Students will be able to understand, interpret, and create basic welding symbols and blueprints based on industry standards and have a fundamental knowledge of welding terminology. (Basic Blueprint Reading)

2. What is the process for program and course level assessment?

Faculty utilizes course assignments to assess student learning on course learning outcomes which are aligned to program level outcomes. Faculty uses common rubrics to assess the course and program outcomes and collects the data each semester. At the end of the year, faculty analyzes program outcomes data and create action plans to improve student learning. In addition, they discuss strengths and opportunities for their students and make modifications accordingly.

3. What are the findings of outcomes assessment reports from the department since the last program review? (Program Compilation Summaries/Course Assessment Reports)

2022-23



After reviewing the 2021-22 results for outcome 4, welding instructors created a plan. Over the last year, instructors spent more time on welding symbols last year than the previous year due to the CWI training. They did multiple things on the white board where they either had to write, fill in, describe, or draw parts of the entire weld and or welding symbols. Also did this in paper handout form. Students are given handouts (and white board) that contained full welding symbols and they had to draw the joint detail with weld sizes, placement, length and pitch, etc. Welding symbol hand out containing ISO and AWS symbols, joints and positions, types of welds, location of elements, how to layout welds, parts of the weld on so on were also given. Also showed some nice you tube videos over reading and drawing symbols and joints. Then testing over them. Going over the tests and spending more time on the frequently missed symbols.
The Welding Program Level Outcome 4 was unmet for 22-23, as 66% of the students could identify welding symbols. In addition to the strategies mentioned above the instructor will develop flashcards to help students learn the welding symbols throughout the semester, and the symbols will be introduced in four chunks of 5 symbols instead of all 20 symbols at once. Additional repetition of the information will be implemented in the course over the semester. There will also be quizzes over each chunk and additional testing to evaluate the retention of information.

For CTE programs only:

Program majors/Current concentrators

Unduplicated prior 3 year graduates

4. **Please list any third party accreditation.**

5. **List any additional needs for the program (facilities, personnel, technology, student support, etc.).**
   Coupon test bender for STARS.

Pipe stands for MCC-2

II. Institutional Support

A. Support:

1. How does this program support other academic areas of the college and/or how is it supported by other academic areas?

This program supports, and is supported by) various other academic areas of the college by providing a practical application to the things they are learning in these courses.

- Metallurgy involves both physics and chemistry in the understanding and application of the physical characteristics and mechanical properties of metals in their behavior and testing results.
- Math is directly applied in our courses in multiple ways through drafting, blueprints, detailed drawings, cost sheets, layout, material calculations, time tables, and even finding the proper settings on the equipment.
- Electrical theory is a fundamental principle of what we teach- not only in knowing how the machines function and various settings involved but also in understanding the effect of why current, voltage, and polarity can affect the behavior of electrons and the outcome of the weld.
- Students also are encouraged to complete job applications as well as resumes, and instructors have developed English lesson plans for students that are relevant to their field.

2. What learning resources are utilized for instruction and supporting the institutional outcomes?

B. Community Engagement:

1. Please provide examples of how the program/discipline fosters relationships within the communities FSCC serves (community partnership, participation, advisory board, etc.)

Welding faculty encourage student involvement in the community by creating projects for the community which involves showcasing their welding skills. Below are some examples of the students' work in the last year.
Welding students at MCC campus built frames for the Veterans banners for City of Louisburg.

STARS
Train cars for General Pleasanton day parade.
Students are involved in weld repairs for the city of Pleasanton.
CTEC
Students built stair stringers, Column, and landing pads for the Pittsburg Fire Department.
Made a grill for TRiO utilizing a 55-gallon drum.

C. Program Development:

1. What marketing/recruiting strategies are used by the program/discipline?

FSCC promotes the program extensively through advertising and on its website. Local representatives work extensively with local high schools to encourage enrollment, and the local KansasWorks organization also promotes the FSCC Welding program.

2. How, and by what means, does the discipline use external professional and community resources to enhance discipline practices?

- Local entities donate material to the program, which is beneficial to the program. Local Certified Welding Inspectors (CWI) perform the ASW D1.1 qualification test record and actively participate in a job fair held at CTEC each year in March.
- Tours of local facilities
- Internships
- Feedback from the Advisory Board meetings are incorporated to improve the program.

3. Does the discipline have a means for students to assess the program outside of the official student evaluations? If so, explain.

III. Results

A. Continuous Improvement:

1. **Please summarize the action plan, including findings from the last Program Review.**
    - Sharing curriculum between instructors to align the process to improve student learning.
    - Inviting guest speakers from the industry.
    - Continue to take students to industry tours.

2. Provide a list of accomplished action items from the previous Program Review.

3. What items are pending/not completed from the last Program Review? Please provide rationale.

4. List any resources needed to complete the pending items.

II. SWOT Analysis

A. Strengths:

- Improvement in enrollment numbers each of the past several semesters.
- Community Involvement along with the Advisory Board Committee.
- Student engagement with competitions against other area schools with students performing well in areas of safety knowledge, blueprint reading, cutting, fitting and welding along with winning first in some of the contests.
- Over 80% of students sign contracts for employment by graduation date.
- Students find employment income starting out at over $20 per hour.

B. Weaknesses:

- Continuous need for welding machines to support the increased number of student enrollment.
- There is a need for more funding to supplies and equipment.

C. Opportunities:

- Students have flexibility with multiple campuses offered to where they can take welding from FSCC.
- Instructors can recruit students at job fairs, career day at schools, and other opportunities to get information to high school students and recruit them.
- Students can earn multiple certificate levels with the Kansas WorkKeys tests they have to take.

D. Threats:

- Low faculty pay makes it difficult to keep and attract well-qualified talented instructors when many can earn more income in the industry itself.
- Other area community colleges offer similar welding programs making competition difficult for FSCC welding program.