PROGRAM REVIEW

Department: Welding

Date of Program Review: 2019

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TABLE OF CONTENTS

Appendices

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

- **Advising degree sheet (Course catalog)**
- **Degree Audit courses (Registrar)**
- **Program Inventory, if applicable (Instruction office)**
- **Courses offered in the last 3 years (Instruction office)**

ACADEMIC PROGRAM/DISCIPLINE REVIEW
Fort Scott Community College

Introduction to Program

I. Scope

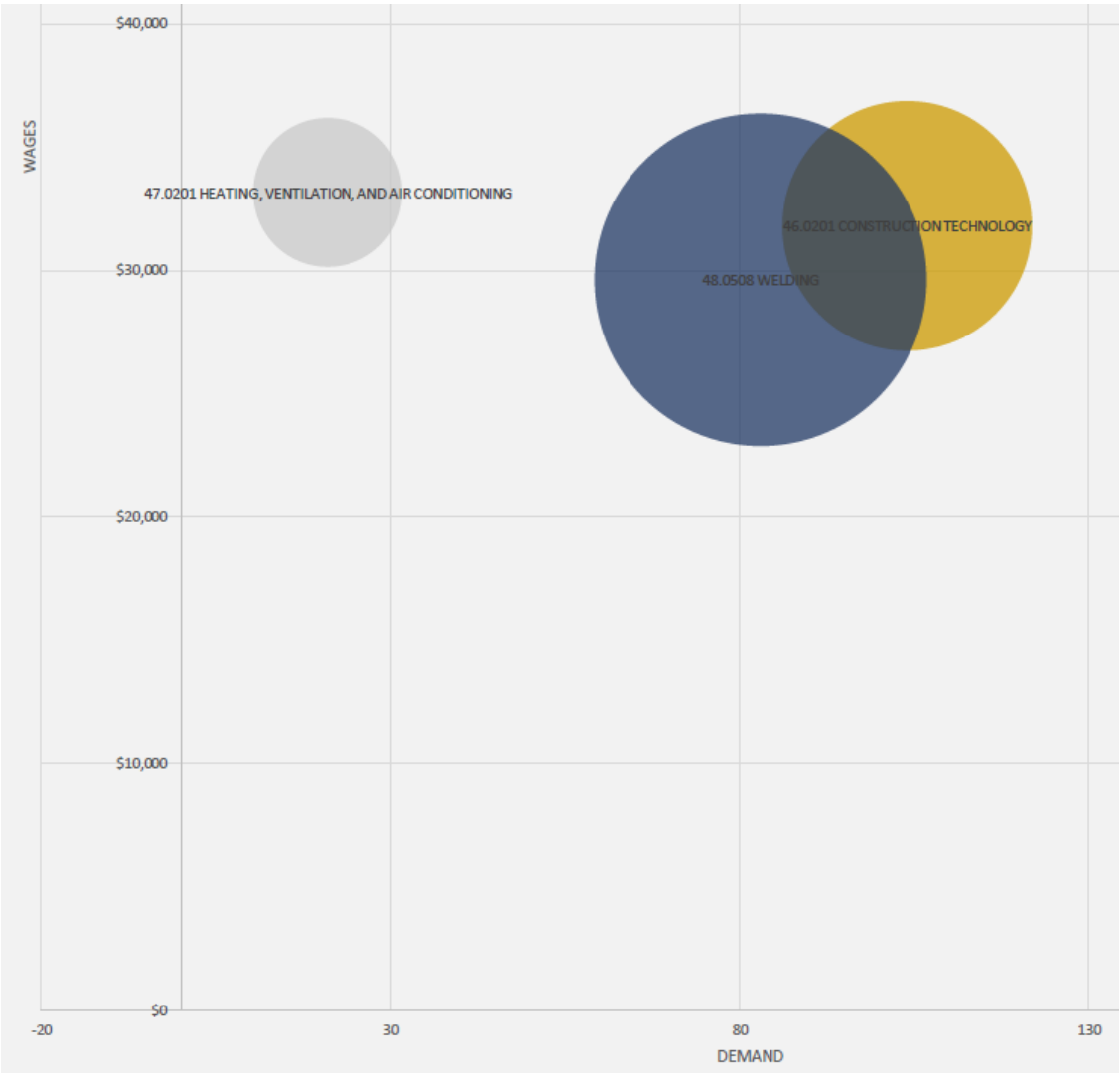
A. Program Relation to College Mission, Core Values, and Strategic Plan:

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.**

   We are currently considering a shift in the program to incorporate a curriculum program such as the AWS (American Welding Society) SENSE program or the NCCER (National Center for Construction Education & Research) curriculum. More research is necessary to determine which option would be best for our students. Adopting this curriculum could provide a more streamlined program across the various campus locations and instructors as well as providing additional certification opportunities for students who successfully complete the program. It will also provide the ability to switch to hybrid courses that would allow students to access the curriculum online and more efficiently achieve the number of minutes needed in the class. One of the challenges when working with dual credit students is scheduling. If the welding program were to utilize

hybrid courses, classroom instruction would be completed online, and instructors would monitor the online portion and have students work in the lab.

3. **Describe how the revised program differs from the current one?**
   The revised program would adopt an online curriculum (NCCER Connect or AWS SENSE), which would include online materials, textbooks, presentations, quizzes, and formal assessments.
   The recommended change would be to make all welding classes hybrid format to improve consistency in instruction as well as allow more flexibility in the schedule for work in the lab portion of the class.

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 Associate Welding Inspector (CAWI) and will be a CWI once he has an additional two years in the field. 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.**
   To date, an official textbook has not been adopted, although in light of the COVID-19 outbreak, the instructors have begun a review of online and textbook resources. Staff will collaborate and review several options and then determine which curriculum to adopt. As noted, NCCER and AWS Sense are the two primary textbooks under consideration.

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.

See lessons attached at the end of the document

4. **How do you ensure appropriate academic rigor and consistency of course content in all modalities?**
   As the welding program has expanded, this is an essential part of the review process. Moving toward AWS SENSE or NCCER curriculum and hybrid courses would improve this area as the course could be consistently used by all instructors in Blackboard and would be identical.

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?**
   - Program assessment is based on students completing the ASW D1.1 WQTR and OSHA 10 certification
   - Course level assessment is based on participation and quality of hands-on performance as well as tests and quizzes.

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

   No previous documentation available

   For CTE programs only:

   Program majors/Current concentrators - 55

   Unduplicated prior 3 year graduates - Darlene / Jacob

4. **Please list any third party accreditation.**
   OSHA 10
   AWS D1.1 Qualification for 3G flux core (limited)

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

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?**
   Blackboard and NCCER Connect was used at the end of the Spring 2020 semester and will continue to be utilized if courses become hybrid courses.

   Lab tools and materials are used extensively throughout the program.

   Advisory boards and relationships with local manufacturers are a vital source of information as well as donated materials.

   There is a need for additional curriculum NCCER Connect or AWS Sense are currently being assessed.

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.)**
   Advisory Board meetings are held twice a year, and students have completed projects for local high schools or organizations. For example, the CTEC welding program participated in building a bench that was donated to the Fort Scott Chamber of Commerce.

   For the past two years, CTEC has hosted a job fair that has attracted over 25 businesses and provided opportunities for students who are graduating from FSCC. This job fair helps with placing students; also, instructors often discuss with business partners work opportunities for students.

   Local industries are very supportive by donating to the program as well as providing internship opportunities for students.

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

3. **Does the discipline have a means for students to assess the program outside of the official student evaluations? If so, explain.**
   Not at this time.