WELD 1030

Division: Career and Technical Education
Department: Welding Technology
Course: WELD 1030
Title: Related Oxy-acetylene and Arc Welding
Catalog Description:

This course is designed to give students in other programs a background in welding fundamentals that can be used in their career fields. This course will instruct students on the basic skills and principles for oxy-acetylene welding, shielded metal arc welding, gas metal arc welding, gas tungsten arc welding. Instruction will also be given on shop safety, electrode selection, equipment setup, brazing, soldering, and cutting techniques.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 1; Lab: 6
Clock/Hour Requirements: 105
Offered for Non-Credit: No
Prerequisites: None

Corequisites: None

Justification:

Our program advisory committees for Diesel Mechanics, Automotive Technology, and Collision Repair approved this course. This course is comparable to UVSC WELD 1030 and SLCC WLD 1005.

Student Learning Outcomes:

Upon successful completion, students will be able to:

- demonstrate safe shop practices while working with welding equipment
- demonstrate how to assemble and use oxy-acetylene welding (OAW) equipment in the flat position on several joint configurations
- demonstrate and use shielded metal arc welding (SMAW) equipment in the flat position on several joint configurations
- demonstrate and use gas metal arc welding (GMAW) equipment in the flat position on several joint configurations
- demonstrate and use gas tungsten arc welding (GTAW) equipment in the flat position on several joint configurations
- demonstrate how to braze and solder joints
- cut with an oxy-acetylene torch.

Content:

Course objectives will be accomplished by providing students with learning experiences in the following

subject areas:

- proper safety techniques
- assembly and use of oxy-acetylene welding equipment
- use and care of shielded metal arc welding equipment
- use and care of gas metal arc welding equipment
- use and care of gas tungsten arc welding equipment
- electrode selection
- brazing processes
- soldering processes
- cutting processes.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
Students will perform measurement, design, and fabrication functions as they pertain to laboratory experiences and welding projects. Students must be familiar with basic computational functions.

7) Apply scientific reasoning to a variety of contexts.
Students will understand the structural changes that take place in ferrous and non-ferrous materials during the welding process.

9) Respond with informed sensitivity to an artistic work or experience.
Students will visually inspect weld quality for appearance, uniformity, and consistency. Professional welding is judged heavily on the aesthetic aspect.

Key Performance Indicators:

In class:

- The students' knowledge and skills are tested through assignments, tests and quizzes. Assignments are worth 40%-50%, written tests are 30%-40%, and quizzes are 10%-20% of the total grade.

Following class:

- Upon completion of the course, competency will be demonstrated in subsequent courses and on projects.

Representative Text and/or Supplies:

- Larry Jeffus, *Welding Principles and Applications,* current edition, Delmar Publishers.

Optimum Class Size: 10
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

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Alan Palmer, M. Ed., Associate Professor

I hereby find this course consistent with the goals and resources of the Welding Technology Department:

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Alan Palmer, M. Ed., Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)