WELD 1020

Division: Career and Technical Education
Department: Welding Technology
Course: WELD 1020
Title: Shielded Metal Arc Welding
Catalog Description:

This course is designed for welding technology majors, various trades, and community members. The course is for beginning students interested in learning basic arc welding techniques, theory, and practices, including types of machines, electrodes, and their application. Students study types of joints, expansion and contraction of metals, care and use of tools and equipment, and welding safety.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 4; Lecture: 2; Lab: 6
Clock/Hour Requirements: 120
Offered for Non-Credit: No
Prerequisites: None

Corequisites: None

Justification:

Our program advisory committee approved this course. This course and WELD 1010 will match UVSC WELD 1100. It meets the American Welding Society standards for Entry Level Welder Profile.

Student Learning Outcomes:

Upon successful completion, students will be able to:

- demonstrate safe shop practices while working with welding equipment
- demonstrate ability to apply fillet weld techniques
- demonstrate ability to apply groove weld techniques
- identify electrodes according to application
- demonstrate understanding of joint designs and their applications
- identify applications of arc welding techniques to their particular field of study or interest.

Content:

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

- proper safety techniques
- use and care of arc welding equipment
- electrode identification and selection

- weld assignments on various joint types, including stringer beads, tee joints, edge joints, corner joints, etc.

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)