



WELD 1000

Division: Career and Technical Education

Department: Welding Technology

Course: WELD 1000

Title: Welding Fundamentals

Catalog Description:

Through lecture, demonstration and hands-on activities, this course is designed to give a student with no prior welding experience an introduction to the welding field. This course will instruct students in the basic skills and principles for oxy-acetylene and shielded metal arc welding, including shop safety and equipment setup.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 2; Lecture: 1; Lab: 3

Clock/Hour Requirements: 60

Offered for Non-Credit: No

Prerequisites: None

Corequisites: None

Justification:

This course teaches students the fundamentals approved by our program advisory committee. This course follows the standards of the American Welding Society.

Student Learning Outcomes:

Upon successful completion, students will be able to:

- increase their awareness of careers associated with the welding field
- demonstrate safe shop practices while working with welding equipment
- demonstrate how to assemble and use oxy-acetylene equipment in the flat position on several joint configurations
- demonstrate and use arc-welding equipment in the flat position on several joint configurations.

Content:

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

- a job awareness search using different media sources
- proper safety techniques
 - personal safety
 - shop safety
 - equipment safety

- assembly and use of oxy-acetylene equipment. Various joint configurations will be made in the flat position such as button plate, stringer beads, butt joint, corner joint, lap joint, tee joint, etc.
- use and care of arc welding equipment. Various joint configurations will be made in the flat position with a variety of filler materials such as starts and stops, stringer beads, butt joint, lap joint, tee joint, edge joint, 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:

Alan Palmer, M. Ed., Associate Professor

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

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:

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:

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

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)