WELD 1000

Division: Career and Technical Education
Department: Industrial 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: Yes
Prerequisites: N/A

Corequisites: N/A

Justification:

This course teaches students the fundamentals approved by the 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 asthetic aspect.

Applied Education Outcomes:

3) Students will demonstrate safe practices and awareness of potential hazards in their field of expertise.

Students must pass a shop safety test prior to entering the lab. Continued compliance with safe practices is monitored by the instructor

Key Performance Indicators:

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- assignments
- tests
- quizzes
- competency 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 Industrial Technology Department:

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Alan Hart, AAS, Instructor, 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)