



WELD 2009

Division: Career and Technical Education

Department: Industrial Technology

Course: WELD 2009

Title: Practical Welding

Catalog Description:

This course is a continuation of WELD 1000. More advanced techniques of welding are taught on shielded metal arc welding, gas metal arc welding, gas tungsten arc welding, and cutting processes. Special needs of specific students may also be covered; e.g., welding problems or techniques, qualification, certification, and fabrication projects.

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: WELD 1000 or equivalent

Corequisites: N/A

Justification:

This course is designed to give students and the general public a chance to improve on their welding skills in areas of their choice. The program advisory committee has approved this course. Skills are taught to American Welding Society (AWS) standards.

Student Learning Outcomes:

Upon successful completion, students should be able to:

- demonstrate safe shop practices while working with welding equipment
- demonstrate how to assemble and use oxy-acetylene equipment in all positions on several joint configurations
- demonstrate and use arc welding equipment in all positions on several joint configurations
- demonstrate and use gas metal arc welding equipment in all positions on several joint configurations
- demonstrate and use gas tungsten arc welding equipment in all positions on several joint configurations
- use proper cutting techniques in oxy-acetylene, plasma, air arc, and oxygen lance.

Content:

WELD 2009

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 equipment
- use and care of arc welding equipment
- advanced arc-welding techniques
- gas metal arc welding (GMAW) fundamentals
- gas tungsten arc welding (GTAW) fundamentals
- 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.

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 the job.

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 Industrial Technology Department:

Alan Hart, AAS, Instructor, 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)