WELD 2400

Division: Career and Technical Education
Department: Welding Technology
Course: WELD 2400
Title: Industrial Joining Processes
Catalog Description:

This course is for welding technology majors. It covers common current industrial welding processes; i.e., gas tungsten arc welding (GTAW), resistance, and specialized processes.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 8; Lecture: 3; Lab: 15
Clock/Hour Requirements: 270
Offered for Non-Credit: No
Prerequisites: WELD 2200

Corequisites: None

Justification:

This course was approved by our program advisory committee. This course and WELD 2200 are comparable to SLCC WLD 1230 and WLD 1231 and follows standards of the American Welding Society.

Student Learning Outcomes:

Upon successful completion, students will be able to:

- set up and properly operate a gas tungsten arc welder
- weld aluminum, stainless, cast iron, etc.
- pass a four position GTAW American Society of Mechanical Engineers (ASME) test
- recognize other welding processes.

Content:

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

- GTAW power supplies and operation
- GTAW components, proper care, and use of equipment
- GTAW trouble shooting
- GTAW pipe welding techniques in all positions
- resistant welding processes
- special welding processes
    - laser beam

- inertia
- ultrasonic
- plasma arc
- stud
- hardfacing
- thermal spraying
- cold
- resistance
- seam.

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 and in the workplace.

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)