WELD A218: ARC AND OXYACETYLENE WELDING LAB LEVEL 4

Item	Value
Curriculum Committee Approval Date	12/12/2012
Top Code	095650 - Welding Technology
Units	1-2 Total Units
Hours	54-108 Total Hours (Lab Hours 54-108)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

A fourth level advanced laboratory course to develop skills in oxyacetylene, SMAW, GTAW, GMAW and FCAW welding. PREREQUISITE: WELD A200 or WELD A201 or WELD A223. ADVISORY: WELD A217. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Demonstrate proper safety procedures.
2. Cut material using thermal cutting equipment.
3. Weld flat, horizontal, vertical and overhead using the FCAW process.

Course Objectives

- 1. Demonstrate proper safety procedures.
- 2. The set up of FCAW equipment
- 3. The set-up of thermal cutting equipment.
- 4. Proper plate preparation.
- 5. Thermal cutting
- 6. Flat position welding
- 7. Horizontal position welding
- 8. Vertical position welding.
- 9. Overhead position welding.
- 10. Weld flat, horizontal, vertical and overhead using the FCAW process.
- 11. Pipe welding.

Lecture Content

I. Safety A. General safety rules B. Welding equipment safety C. Personal safety in welding II. Shielded Metal Arc Welding (Arc Welding) A. Equipment B. Flat, horizontal, vertical and overhead welding positions III. Gas Metal Arc Welding (MIG) A. Equipment B. Flat, Horizontal, vertical and overhead welding positions IV. FCAW A. Equipment B. Flat, ho rizontal, vertical and overhead positions. V. Gas Tungsten Arc Welding (TIG) A. Equipment B. Flat, horizontal, vertical and overhead welding positions VI. Thermal Cutting A. Oxygen fuel gas (OFC) B. Plasma Arc (PAC) C. Carbon Arc Cutting (AAC) VII. Pipe Welding A. Weld in the 1G position (Rolling) B. Weld in the 2G position (Horizontal)

Lab Content

I. Safety A. General safety rules B. Welding equipment safety C. Personal safety in welding II. Shielded Metal Arc Welding (Arc Welding) A. Equipment B. Flat, horizontal, vertical and overhead welding positions III. Gas Metal Arc Welding (MIG) A. Equipment B. Flat, Horizontal, vertical and overhead welding positions IV. FCAW A. Equipment B. Flat, horizontal, verti cal and overhead positions. V. Gas Tungsten Arc Welding (TIG) A. Equipment B. Flat, horizontal, vertical and overhead welding positions VI. Thermal Cutting A. Oxygen fuel gas (OFC) B. Plasma Arc (PAC) C. Carbon Arc Cutting (AAC) VII. Pipe Welding A. Weld in the 1G position (Rolling) B. Weld in the 2G position (Horizontal)

Method(s) of Instruction

- Lab (04)

Instructional Techniques

Textbook reading assignments, demonstrations, skills evaluation and instructional critique

Reading Assignments

Proficiency demonstrated by psycho-motor skills Proficiency demonstrated in vocabulary and meaning

Writing Assignments

Proficiency demonstrated by psycho-motor skills Proficiency demonstrated in vocabulary and meaning

Out-of-class Assignments

Proficiency demonstrated by psycho-motor skills Proficiency demonstrated in vocabulary and meaning

Demonstration of Critical Thinking

Project, certification plates

Required Writing, Problem Solving, Skills Demonstration

Project, certification plates

Eligible Disciplines

Welding: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Galvery, William and Frank Marlow. Welding Essentials: Questions and Answers , 2nd ed. New York: Industrial Press, 2007

Other Resources

1. Orange Coast College Welding Safety Test Selected handout materials to be provided and distributed by the instructor. Gloves, welding goggles (gas), and safety goggles required.