WELD A217: ARC AND OXYACETYLENE LAB LEVEL 3

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
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)

Course Description

A third-level advanced laboratory course to develop skills in oxyacetylene, SMAW, GTAW, GMAW and FCAW welding. PREREQUISITE: WELD A200, WELD A201, or WELD A223. ADVISORY: WELD A216. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

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

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. Fl at position C. Horizontal position V. Gas Tungsten Arc Welding (TIG) A. Equipment B. Flat, horizontal, vertical and overhead welding positions V. Thermal Cutting A. Oxygen fuel gas (OFC) B. Plasma Arc (PAC) C. Carbon Arc Cutting (AAC)

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 position ; C. Horizontal position V. Gas Tungsten Arc Welding (TIG) A. Equipment B. Flat, horizontal, vertical and overhead welding positions V. Thermal Cutting A. Oxygen fuel gas (OFC) B. Plasma Arc (PAC) C. Carbon Arc Cutting (AAC)

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 bachelor's 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.