WELD A140: OCCUPATIONAL WELDING LEVEL 1

Item	Value
Curriculum Committee Approval Date	04/12/2023
Top Code	095650 - Welding Technology
Units	1.5 Total Units
Hours	54 Total Hours (Lecture Hours 18; Lab Hours 36)
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 first-level beginning course in arc and oxy-acetylene welding covering safety practices, use of welding, brazing, thermal and mechanical cutting equipment operations on various types of metal. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Demonstrate proper safety procedures.
2. Cut various metals utilizing oxygen-fuel, carbon arc and plasma arc processes.
3. Join steel utilizing the oxygen acetylene welding process.

Course Objectives

- 1. Demonstrate an understanding of basic welding processes and theory.
- 2. Demonstrate entry level welding skills with oxygen acetylene.
- 3. Demonstrate entry level joint design and preparation.
- 4. Set up and adjust oxygen acetylene welding equipment.
- 5. Weld using oxygen acetylene welding equipment.
- 6. Set up and adjust oxygen acetylene cutting equipment.
- 7. Cut metal using oxygen acetylene cutting equipment.
- 8. Set up oxygen fuel cutting equipment.
- 9. Cut metals with the oxygen fuel cutting equipment.
- 10. Set up and adjust various types of thermal cutting equipment.
- 11. Cut various metals using thermal cutting equipment.
- 12. Braze and braze weld to an entry level job requirement.

Lecture Content

Safety General safety rules Welding equipment safety Personal safety in welding Definition of welding History of welding Ancient time Modern time Oxy-acetylene Welding Equipment Torch assembly Torch Regulators Cylinders Gas Manufacture Oxygen Acetylene Flame adjustments and applications Carburizing Neutral Oxidizing Torch Technique Thermal cutting theory and application Oxy-fuel cutting Carbon arc cutting Plasma arc cutting Soldering and Brazing Definitions Alloys Fluxes Electric Arc Welding Definitions Equipment Electrodes

Lab Content

Safety General safety rules Welding equipment safety Personal safety in welding Definition of welding Oxy-acetylene Welding Equipment Torch assembly Torch Regulators Cylinders Gas Manufacture Oxygen Acetylene Flame adjustments and applications Carburizing Neutral Oxidizing Torch Technique Thermal cutting theory and application Oxy-fuel cutting Carbon arc cutting Plasma arc cutting Soldering and Brazing Definitions Alloys Fluxes Electric Arc Welding Definitions Equipment Electrodes

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture, demonstrations, evaluation , and critique

Reading Assignments

Proficiency demonstrations, written examinations

Writing Assignments

Proficiency demonstrations, written examinations

Out-of-class Assignments

Proficiency demonstrations, written examinations

Demonstration of Critical Thinking

Skill development demonstration and evaluation.

Required Writing, Problem Solving, Skills Demonstration

Written examinations.

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. William Galvery, Orange Coast College Safety Examination