WELD A107: WELD TESTING ADVANCED 1

Item	Value
Curriculum Committee Approval Date	09/23/2015
Top Code	095650 - Welding Technology
Units	.5 Total Units
Hours	27 Total Hours (Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Pass/No Pass (B)

Course Description

Weld testing for mastery of levels VII, VIII, and/or IX in Shielded Metal Arc Welding. Enroll only when ready to test. A Welder Qualification Certification will be issued. Fee charged for qualification test. PREREQUISITE: WELD A100, WELD A101, or concurrent enrollment, or industry experience. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Complete a weld or welds for qualification for certification to an American National Standard Institute codes. A. American Welding Society B. American Society of Mechanical Engineers C. Military Specification D. Complete the required welding tests for Los Angeles City Licensing E. Other welding qualification tests

Course Objectives

- 1. Demonstrate mastery in joint assembly.
- 2. Demonstrate the ability to adjust the welding machine.
- 3. Demonstrate an understanding of electrode selection.
- 4. Demonstrate the ability to manipulate welding electrodes, welding gun, or filler metal to minimum standard.
- 5. Demonstrate an understanding of shielding required for the welding process.
- 6. Explain polarity for electrodes, and welding process.
- 7. Demonstrate the correct manipulation of electrodes, welding gun, or filler metal in the root weld of the test plate or plates as required by the test standard.
- 8. Demonstrate the correct preparation (if required) for subsequent welding passes (grinding and or brushing).
- 9. Demonstrate the correct manipulation of electrodes, welding gun, or filler metal for intermediate welding passes.
- 10. Demonstrate the correct preparation (if required) for subsequent intermediate welding passes (grinding and or brushing).
- 11. Demonstrate the correct manipulation of the welding electrodes, welding gun, or filler metal for the cover pass.
- 12. Demonstrate the correct cleaning of the surface of the completed weld.

Lecture Content

Lab course

Lab Content

Preparation of Test Plates Determine test plate thickness and alloy (refer to code requirements); prepare test plates by flame or machine cutting to correct dimensions and bevel angles if required; if open, root prepare root faces; if backing is required prepare backing in accordance with code requirements. Test Procedures Determine applicable American National Standards Institute code for testing the welder, tests are repeatable, depending on the code requirements of the job license. American Welding Society American Society of Mechanical Engineers American Petroleum Institute Military Specifications Other Weld position Refer to code requirements for welding positions Plate welding positions 1-flat, 2-horizontal, 3-vertical, 4-overhead Pipe welding positions 1-flate, 2-horizontal, 5-fixed on a horizontal plane, 6-fixed at a 45. angle Electrode selection and manipulation Refer to code requirements for electrode selection Refer to code requirements for welding direction and manipulation Inform the welder of the code requirements for this test Welding sequence Refer to code requirements for welding sequencing Refer to code requirements for welding bead layers (stringer or weave) Inform the welder of the code requirements for this test Bead cleaning procedure Refer to code requirements for weld bead cleaning requirements Inform the welder of the code requirements for this test Test coupon preparation Refer to code requirements for weld test coupon selection Mark test coupons to be removed form the weld specimen Flame or cold cut and remove weld coupons Prepare coupons for testing according to code requirements > Test evaluation Determine code requirements for welded coupon evaluation Follow code requirements for processing weld test coupons Refer to code standards for acceptability or rejection of processed weld coupons Document welding testing results according to code requirement

Method(s) of Instruction

- Lab (04)

Instructional Techniques

Proctor a hands-on welding test; observe the test while in progress; compare the ability of the student to minimum industry standards as applicable to code; evaluate and document results

Reading Assignments

outside assignments not required; lab course

Writing Assignments

outside assignments not required; lab course

Out-of-class Assignments

outside assignments not required; lab course

Demonstration of Critical Thinking

Welding test result

Required Writing, Problem Solving, Skills Demonstration

Proficiency demonstrated by passing a physical test to the required standard

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

Other Resources

1. Selected handout materials to be provided and distributed by instructor.