



BAKER COLLEGE STUDENT LEARNING OUTCOMES

WELD 2960 Welding Certification I and II SMAW and GMAW Processes 3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Demonstrate appropriate safety precautions for shielded metal arc welding (SMAW).
 - a. Apply general industrial safety precautions while working.
 - b. Apply necessary safety precautions related to welding.
 - c. Demonstrate appropriate use of personal protection equipment.
 - d. Properly set-up and tear down welding machinery.

2. Distinguish discontinuities to the AWS D1.1 standards Code testing criteria that are used.
 - a. Identify the difference between defects and discontinuities for shielded metal arc welding (SMAW) and gas metal arc welding (GMAW).
 - b. Identify the uses consumables used in given parameters to Code specifications.
 - c. Investigate the advantages and limitations for SMAW and GMAW to incorporate proper technique in following given Welding Procedure Specification (WPS).

3. Demonstrate various techniques for SMAW / GMAW to follow guidelines to AWS Code standards.
 - a. Identify defects in a weld and what caused them.
 - b. Determine the quality of a weld.
 - c. Examine the positions needed for various welding situations.
 - d. Identify various joint fit-ups used in welding.
 - e. Identify appropriate filler metals and their uses.
 - f. Identify various heat parameters used in multi pass sequences.
 - g. Examine the visual testing criteria to prep for final bend test discontinuities.
 - h. Identify any and all correction needing to be made with Mastery learning concepts.

Big Ideas and Essential Questions

Big Ideas

- Shielded Metal Arc Welding (SMAW) Welder Qualification testing
- Gas Metal Arc Welding (GMAW) Welder Qualification testing
- Safety

Essential Questions

1. How do I ensure my safety and the safety of others during the welding process?
2. How do I determine the appropriate type of welding procedures to pass AWS D1.1 Welder Qualification testing criteria given?
3. Why do we use set parameters to AWS D1.1 Structural Steel Welding Code.
4. How do welders determine the quality of the weld?

These SLOs are approved for experiential credit.

Effective: Fall 2017