



BAKER COLLEGE
STUDENT LEARNING OUTCOMES
WELD 1160 Gas Metal Arc Welding
4 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Demonstrate appropriate safety precautions for gas metal arc welding (GMAW).
 - 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, tear down, and maintenance of welding machinery.

2. Distinguish when and why various types of welding processes are used.
 - a. Identify the consumables and their uses for gas metal arc welding (GMAW) and flux cored arc welding (FCAW)
 - b. Investigate the advantages and limitations for gas metal arc welding and flux cored arc welding.
 - c. Identify the process and limitations for (GMAW) Aluminum push pull operations.

3. Demonstrate various techniques for gas metal arc welding (GMAW).
 - a. Identify defects in a weld and what caused them.
 - b. Examine the positions needed for various welding situations.
 - c. Identify various joint fit ups used in welding.
 - d. Determine appropriate shielding gases for various welding situations.
 - e. Determine appropriate voltage and amperage settings for various welding situations.
 - f. Identify appropriate filler metals and their uses.
 - g. Describe the purpose of metal preparation prior to welding.

4. Investigate various techniques for flux cored arc welding (FCAW).
 - a. Examine the positions needed for various welding situations.
 - b. Identify various joint fit ups used in welding.

5. Examine the various metal transfer modes for gas metal arc welding and their effect on machinery settings.
 - a. Explain axial spray metal transfer.
 - b. Explain globular transfer.
 - c. Explain pulsed arc metal transfer.
 - d. Explain buried arc transfer.
 - e. Explain short circuiting transfer.

Big Ideas and Essential Questions

Big Ideas

- Gas Metal Arc Welding (GMAW/MIG)
- Flux Cored Arc Welding (FCAW)
- 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 process?
3. Why do we use Flux Cored Arc Welding over other welding processes?
4. How do welders determine the quality of the weld for Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)?

These SLOs are approved for experiential credit.

Effective: Fall 2017