



BAKER COLLEGE
STUDENT LEARNING OUTCOMES
WELD 1210 Gas Tungsten Arc Welding
4 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Demonstrate appropriate safety precautions for gas tungsten arc welding (GTAW).
 - 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. Identify all equipment necessary for gas tungsten arc welding.
 - e. Properly set-up, tear down, and maintenance of welding machinery.

2. Distinguish when and why various types of welding processes are used.
 - a. Investigate the advantages and limitations for gas tungsten arc welding.
 - b. Examine the types of welding current, or polarities used with gas tungsten arc welding.
 - c. Differentiate Stainless Steel material in comparison to Mild steel settings.

3. Demonstrate various techniques for gas tungsten arc welding (GTAW).
 - 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. Examine the impact torch angle, filler rod manipulation, and tungsten contamination have on gas tungsten arc welding situations.
 - e. Determine appropriate shielding gases for various welding situations.
 - f. Determine appropriate welding current and amperage settings for various welding situations.
 - g. Identify appropriate filler metals and their uses.
 - h. Describe the purpose of metal preparation prior to welding.
 - i. Determine the correct machine current setting for each type and size of tungsten.

4. Investigate the various tungsten electrodes and their uses.

- a. Examine the various types of tungsten electrodes:
 - i. Pure
 - ii. Thoriated
 - iii. Cerium
 - iv. Zirconium
- b. Examine the various ways a tungsten electrode can be shaped:
 - i. Grinding
 - ii. Breaking and Remelting
 - iii. Chemical Cleaning and Pointing i
 - iv. Pointing and Remelting

Big Ideas and Essential Questions

Big Ideas

- Gas Tungsten Arc Welding (GTAW/TIG)
- 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. How do welders determine the quality of the weld for Gas Tungsten Arc Welding (GTAW)?

These SLOs are approved for experiential credit.

Effective: Fa11 2017