BAKER COLLEGE
STUDENT LEARNING OUTCOMES

Weld 1010 Welding Principles
3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Determine the skills and techniques needed to have a safe environment when welding
    a. Describe the rules and regulations regarding overall safety (OSHA, MSDS, fire suppression equipment, emergency procedures, reporting injuries, etc.)
    b. Explain the importance of personal protection equipment (gloves, masks, clothing, shields, ear protection, footwear, etc.)
    c. Discuss equipment usage safety (proper use of the equipment)
    d. Discuss electrical safety (good electrical safety practices, extension cords, portable power tools, etc.)
    e. Explain the issues of working with combustible/flammable elements
    f. Pass a safety test

2. Explore basic electric principles as they apply to welding
    a. Describe the differences between AC and DC power (AC, DCEN, DCEP) and when to use each
    b. Explain basic electrical terminology to include:
        i. Resistance
        ii. Wavelength
        iii. Voltage
        iv. Amperage
        v. Circuit
        vi. Duty Cycle
    c. Discuss the different types of equipment and different sources of electricity used in the different welding processes

3. Interpret the work to be performed by a welder based on a blueprint
    a. Explain symbols/abbreviations from a blueprint that are important to a welder
    b. Interpret a 3 view rendering from a blueprint
    c. Construct a bill of materials based on a blueprint

4. Examine the welding profession
    a. Describe different welding careers
    b. Describe different welding work environments
    c. Describe physical requirement for the job
    d. Investigate different welding certifications of interest and determine requirements

5. Apply math skills to various welding situations
    a. Take measurements needed for welding projects.
    b. Use math to solve various problems in welding situations.
        i. Tolerances
        ii. Metric vs. U.S
        iii. Geometry
        iv. Measurement
        v. Fractions
        vi. Decimal

Big Ideas and Essential Questions

Big Ideas

- Safety
- Applied Math
- Electrical Principles
- Blueprint Reading
- Welding Profession

Essential Questions

1. What part do electrical principles play in producing a quality weld?
2. How do I ensure my safety and the safety of others around me during the welding process?
3. How does math impact my ability to perform as a welder?
4. How does your ability to read blueprints help you do your job as a welder?
5. How can I use welding to obtain meaningful employment?

These SLOs are approved for experiential credit.

Effective: Fall 2017