

Manufacturing Design and Fabrication II



Intermediate Welding Course Curriculum

Power Objectives

P.O. #1: Understand and execute steps of the design process (P.O. #1 Proficiency Rubric)

P.O. #2: Utilize industry accepted procedures and equipment in a safe manner (P.O. #2 Proficiency Rubric)

P.O. #3: Develop increased accuracy in measurement specific to industry (P.O. #3 Proficiency Rubric)

P.O. #4: Fabricate products appropriate to their skill level (P.O. #4 Proficiency Rubric)

P.O. #5: Understand and evaluate various metallic materials (P.O. #5 Proficiency Rubric)

P.O. #6: Demonstrate proper welding and gas cutting techniques (P.O. #6 Proficiency Rubric)

P.O. #7: Demonstrate the basic math skills essential to precision machining (P.O. #7 Proficiency Rubric)

Academic Vocabulary

- ☐ margin of safety
- ☐ personal protective equipment
- ☐ de-burr
- ☐ layout
- ☐ vertical band saw
- ☐ horizontal band saw
- ☐ dial caliper

- ☐ angle grinder
- ☐ drill press
- ☐ tack weld
- ☐ MIG weld
- ☐ arc weld
- ☐ shielding gas
- ☐ electrode

- ☐ angle block
- ☐ polish
- ☐ penetration
- ☐ amps
- ☐ ground clamp
- ☐ fillet
- ☐ butt

Enduring Understandings

Students understand that...

- The proper use and operation of personal protective equipment is essential to avoiding injury in the lab environment.
- Proper planning increases the likelihood of efficient use of tools and materials.
- Adherence to plans/procedure result in a higher quality end product.
- Selection of the correct welding techniques and/or materials is essential for a high quality weld.

Essential Questions

- Other than personal injury, what could result from not following safety rules/procedures?
- What steps can be taken to help ensure tools and materials are used as efficiently as possible?
- What steps can be taken to ensure a high quality end product?
- What determines how to end up with a proper weld?