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	❑ angle grinder	❑ angle block
❑ personal protective equipment	❑ drill press	❑ polish
❑ de-burr	❑ tack weld	❑ penetration
❑ layout	❑ MIG weld	❑ amps
❑ vertical band saw	❑ arc weld	❑ ground clamp
❑ horizontal band saw	❑ shielding gas	❑ fillet
❑ dial caliper	❑ electrode	❑ 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?