

MFG 105 : WELDING TECHNOLOGY II

Transcript title

Welding Technology II

Credits

4

Grading mode

Standard letter grades

Total contact hours

80

Lecture hours

20

Lab hours

60

Prerequisites

MFG 103.

Prerequisites with concurrency

MFG 100.

Course Description

Second course in a three-course sequence focused on introductory level skills used in structural plate welding in accordance to AWS D1.1 Structural Steel Welding code. Introduces intermediate welding processes, safety, nomenclature, and equipment operation for the advancement of more difficult weldments in the 3F and 4F position using shielded metal arc welding (SMAW) and gas metal arc welding (GMAW) on mild steel.

Course learning outcomes

1. Demonstrate safe practices while using the MATC Welding Lab.
2. Demonstrate intermediate level set up, maintenance, and use of Gas Metal Arc Welding (GMAW) equipment for weldments.
3. Demonstrate introductory level set up, maintenance, and use of Flux-Cored Arc Welding (FCAW) equipment for weldments.
4. Weld common joint assemblies with GMAW and FCAW processes to welding industry standards.
5. Apply intermediate level examination principles and practices in accordance with industry standards.

Content outline

1. Welding Safety
2. Personal safety by using proper protective gear
3. Power tool safety
4. Maintain a safe work area
5. Fundamentals of shielded metal arc welding (SMAW) operations
6. Welding equipment setup, shut down
7. Electrode characteristics

8. Welding arc length and travel speed
9. Welding starting, stopping and restarting techniques
10. Welding bead placement
11. Fundamentals of gas metal arc welding (GMAW) operations
12. Weld examination principles and practices in accordance with American Welding Society (AWS) standards

Required materials

This class requires the purchase of safety equipment, reference books, measurement equipment, and tools.