ISET-2100: GAS METAL ARC WELDING (MIG)

Cuyahoga Community College

Viewing: ISET-2100 : Gas Metal Arc Welding (MIG)

Board of Trustees:
May 2023

Academic Term:
Fall 2023

Subject Code
ISET - Integrated Systems Engineering

Course Number:
2100

Title:
Gas Metal Arc Welding (MIG)

Catalog Description:
Develop skills in Gas Metal Arc Welding (MIG). Extensive guided instruction provided. Prepares students for the MIG certification test.

Credit Hour(s):
4

Lecture Hour(s):
2

Lab Hour(s):
4

Requisites

Prerequisite and Corequisite
ISET-1101 Welding Blue Print Reading or departmental approval.

Outcomes

Course Outcome(s):
Utilize skills in MIG to prepare parts or complete assigned work tasks according to job specifications.

Objective(s):
1. Interpret the different welding processes.
2. Practice welding safety through laboratory activities.
3. Utilize MIG in a proper standard of operation, that is, following MIG procedures that produce strong, mechanically sound welds.
4. Demonstrate mastery of MIG welding technique in all positions.
5. Prepare welded work samples to American Welding Society Standards (AWS).

Course Outcome(s):
Be prepared to sit for MIG certification test.

Objective(s):
a. Demonstrate the welding proficiency capable of passing MIG certification tests
b. Demonstrate proper MIG welding form and techniques to consistently produce structurally sound welds

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Methods of Evaluation:

a. Laboratory assignments of welding operations
b. Written and hands-on quizzes covering homework and in-class demonstrations
c. Classroom participation
d. Final exam

Course Content Outline:

a. Concepts
    i. Safety when operating MIG equipment
    ii. MIG equipment set up and operation
    iii. Types of joints used in MIG welding
    iv. Metal preparation for MIG welding
    v. Depth of bevel, size, and strength for MIG welding
    vi. Tools
    vii. Supplies used in MIG welding
    viii. Basic math
    ix. Shielding
    x. Measurements
b. Skills Utilizing MIG equipment, the student will perform the following welding operations:
    i. Weld joints in flat position
    ii. Weld joints in horizontal position
    iii. Weld joints in vertical position
    iv. Weld joints in overhead position
    v. Weld butt, tee, and lap joints
    vi. Setup and turn down of welding station
    vii. Safety rule application
    viii. Select the proper welding process for type of metal
    ix. Prepare metal for welding
    x. Select proper measuring and hand tools for specific jobs.
    xi. Apply safety procedures
c. Issues
    i. Safe installations
    ii. Math
    iii. Relate theory to practical application

Resources

Althous, Turnquist, Bowditch, Bowditch, Bowditch. *Modern Welding.* 11th. Goodheart-Wilcox, 2012.

Walker, Polanin. *Welding Print Reading.* 6th. Goodheart-Willcox, 2012.

Bennett, Siy. *Blueprint Reading for Welders*. 9th. Delmar, 2019.

Jeffus. *Welding Principles and Applications*. 8th. Delmar, 2020.

Bohnart. *Welding Principles and Practices*. 5th. McGraw Hill, 2021.

Resources Other

U/LINC Learning Management System Lincoln Electric Education.
http://education.lincolnelectric.com/the-lincoln-weld-school/educator-professional-courses/ulinc/

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