ISET-2131: OXYFUEL PROCESSES/PLASMA PROCESSES

Cuyahoga Community College

Viewing: ISET-2131 : Oxyfuel Processes/Plasma Processes

Board of Trustees:
June 2018

Academic Term:
Fall 2018

Subject Code
ISET - Integrated Systems Engineering

Course Number:
2131

Title:
Oxyfuel Processes/Plasma Processes

Catalog Description:
Develop skills in OxyFuel processes, cutting, brazing, and plasma processes. Extensive guided instruction provided.

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 OxyFuel Gas/Plasma Processes to prepare parts or complete assigned work tasks according to job specifications

Objective(s):
1. Interpret the different Oxyfuel/Plasma cutting processes.
2. Practice cutting safety through laboratory activities.
3. Utilize OxyFuel and Plasma cutting processes in a safe and efficient manner to cut steel into parts used in fabrications and weldments.
4. Demonstrate mastery of OxyFuel Gas/Plasma Processes cutting processes through the setup, use, and shutdown of related equipment.
5. Prepare welded work samples to American Welding Society Standards (AWS).

Course Outcome(s):
Construct a project utilizing Oxyfuel/Plasma cutting technologies.

Objective(s):
1. Construct a metalworking project that includes welding print reading skills and is in accordance with standard acceptable welding industry practices.
2. Create a metalworking/artwork project incorporating artistry and creativity.

Methods of Evaluation:

1. Laboratory assignments of cutting operations
2. Written and hands-on quizzes covering homework and in-class demonstrations
3. Classroom participation
4. Final exam

Course Content Outline:

1. Concepts
   a. Safety when operating OxyFuel/Plasma equipment
   b. OxyFuel/Plasma equipment set up, operation, and shutdown
   c. Metal preparation for OxyFuel/Plasma equipment
   d. Cutting of both thin materials and heavy plate steel.
   e. Square and bevel cuts
   f. Limitations of Oxyfuel/Plasma cutting processes
   g. Supplies used in OxyFuel/Plasma cutting processes
   h. Basic math
   i. Measurements
2. Skills: Utilizing OxyFuel/Plasma cutting processes, the student will learn and become proficient with the safe and efficient use of the equipment and demonstrate mastery of OxyFuel/Plasma cutting processes thrugh the setup, use, and shutdown of related equipment.
   a. Equipment and response
   b. Setup and shutdown of oxyfuel/plasma cutting equipment
   c. Select the proper cutting process for type of metal
   d. Prepare metal for cutting
   e. Select proper measuring and hand tools for specific jobs
   f. Apply safety procedures
3. Issues
   a. Safe operation of equipment
   b. Math
   c. Relate theory to practical application

Resources

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

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

Bennett, Siy. *Blueprint Reading for Welders.* 9th. Delmar, 2014.

Jeffus. *Welding Principles and Practices.* 8th. Delmar, 2016.

Bohnart. *Welding. Principles and Applications.* 5th. McGraw Hill, 2017.

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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