

ATGL-2340: ADVANCED WELDING

Cuyahoga Community College

Viewing: ATGL-2340 : Advanced Welding

Board of Trustees:

2001-04-26

Academic Term:

Spring 2019

Subject Code

ATGL - Appld Indus Tech - Glazing

Course Number:

2340

Title:

Advanced Welding

Catalog Description:

Instruction in advanced welding, including oxy-acetylene, M.I.G., T.I.G., and F.C.A.W. welding processes, welding of cast iron, aluminum, copper alloys, and stainless steel, hardfacing, and plasma cutting.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

ATGL-1630 Basic Welding or concurrent enrollment; or departmental approval.

Outcomes

Course Outcome(s):

N/A

Objective(s):

1. 1. Explain the basic welding processes from Basic Welding.
2. 2. Demonstrate correct procedures for oxy-acetylene welding.
3. 3. Demonstrate proper procedures for M.I.G., T.I.G., and F.C.A.W. welding processes.
4. 4. Demonstrate ability to weld with a variety of metals using the appropriate welding process.

Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of assigned projects

Course Content Outline:

1. Review Basic Welding
 - a. Arc welding
 - b. Electrodes
 - c. Electrode selection
 - d. Weld size and weld symbols
 - e. Introduction to oxy-acetylene cutting
2. Oxy-acetylene cutting

- a. Oxy-fuel
 - i. gases
 - ii. acetylene
 - iii. trouble shooting
 - iv. hand held
 - v. track cutting
 - b. Preheating
 - i. cooling rate of metal
 - ii. HAZ cracking
 - iii. martensite formation
 - c. Hole cutting
3. Alloy steels chemistry/metals properties
4. Hardfacing
5. Welding processes
- a. TIG
 - b. MIG
 - c. FCAW
6. Welding metals
- a. Identification
 - i. AISI
 - ii. tradenames
 - iii. carbon steel
 - b. Aluminum
 - c. Copper alloys
 - d. Stainless steel

Resources

Geary, Don. *Welding*. New York: McGraw-Hill, 2000.

McGuire, Daniel. *Weldperfect: The Easy Guide to Perfect Welding*. Miami, Florida American Welding Society, 1998.

Walker, John R. *Welding Print Reading*. South Holland: The Goodheart-Willcox Co., Inc., 1991.

Bennett, A. E. *Blueprint Reading for Welders*. 5th Edition. Albany: Delmar Publishing, 1993.

Finch, Richard. *Welder's Handbook: Complete Guide to MIG, TIG, Arc and Oxyacetylene Welding*. Revised Edition. New York: HP Books, 1997.

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