

ATGL-1630: BASIC WELDING

Cuyahoga Community College

Viewing: ATGL-1630 : Basic Welding

Board of Trustees:

2001-04-26

Academic Term:

Spring 2019

Subject Code

ATGL - Appld Indus Tech - Glazing

Course Number:

1630

Title:

Basic Welding

Catalog Description:

Introduction to arc welding and oxy-acetylene cutting including shop safety, electrode identification and classification and selection, all position welding, set up of fillet, power sources, weld size, and weld symbols.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

Departmental approval: admission to any Applied Industrial Technology program.

Outcomes

Course Outcome(s):

N/A

Objective(s):

1. Explain power sources, duty cycle, and problems and solutions for arc blow.
2. Differentiate between the various electrode classifications and groups.
3. Explain the advantages and problems with fast-freeze electrode groups and with vertical-up welding.
4. Demonstrate various welding procedures such as; testing, and safety precautions.

Methods of Evaluation:

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

Course Content Outline:

1. Introduction
2. Electrodes
 - a. Types
 - b. Given a problem, determine weld size
 - c. Electrode classifications
 - d. Polarity analysis
 - e. Fill-freeze group

- f. Fast freeze
- g. Fast-fill group
- 3. Preparation for welding
 - a. Power sources
 - b. Duty cycle
 - c. Arc blow
 - d. Weld symbols
 - e. Vertical-up welding
- 4. Arc welding
 - a. Welding overhead
 - b. Butt joints
 - c. Overhead v butts
 - d. Non-destructive testing
 - e. Fillet gauge
 - f. Weld size
 - g. Joint designs
- 5. Introduction to oxy-acetylene cutting
 - a. Oxy-fuel
 - b. Preheating
 - c. Oxy-fuel cutting
- 6. Safety procedures
 - a. Metal coating
 - b. Ventilation
 - c. Respirators

Resources

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

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

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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