

ATPL-1010: SOLDERING AND BRAZING

Cuyahoga Community College

Viewing: ATPL-1010 : Soldering and Brazing

Board of Trustees:

2012-06-28

Academic Term:

Spring 2019

Subject Code

ATPL - Applied Ind Tech - Plumbers

Course Number:

1010

Title:

Soldering and Brazing

Catalog Description:

Basic principles of joining tubing used in domestic water and medical gas installations. In addition, discussion of the principles and practices used in soldering and brazing applications.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

Departmental approval: admission to Plumbers' apprenticeship program.

Outcomes

Course Outcome(s):

1. Explain the differences between soldering and brazing operations.

Course Outcome(s):

2. Discuss the processes and procedures that are used when soldering tubing.

Course Outcome(s):

3. Describe the fundamentals of brazing tubing.

Methods of Evaluation:

1. Homework
2. Quizzes
3. Tests
4. Class participation

Course Content Outline:

1. Soldering and brazing
 - a. Applications
 - i. Pressure differences
 - ii. Liquid substance and gas transfer
 - iii. Environmental conditions

1. Above ground
2. Below grade
3. Soil conditions
- b. Plumbing systems
 - i. Domestic water
 - ii. Natural gas
 - iii. Medical gas
2. Soldering
 - a. Specific safety concerns
 - i. Fire control
 - ii. Working with chemicals
 - iii. Manufacturers safety data sheets
 - iv. Personal protective equipment
 - b. Characteristics of metals
 - i. Copper versus brass
 1. Hard metal
 2. Soft metal
 - ii. Steel and aluminum
 - iii. Joining process
 - c. Heat sources
 - i. Acetylene
 - ii. Air-propane
 - d. Equipment
 - i. Cutting tools
 - ii. Heating requirements
3. Brazing
 - a. Welding comparisons
 - i. Tensile strength of metal
 - ii. Pipe welding
 - b. Application
 - i. Medical gases
 1. Oxygen
 2. Helium
 - ii. Underground water supply
 - c. Tools and equipment
 - d. Material preparation

Resources

State of Ohio. *2007 Ohio Plumbing Code*. Country Club Hills, IL : International Code Council, 2007.

Jones, Bernard. *Brazing (Classic)*. New York: Pratt Publications, 1918.

Resources Other

1. Soldering and Brazing – Text Book from the International Union of Plumbers
2. Power points and handouts - Plumbers Local 55 JATC

Top of page

Key: 610