

APPT 185: PIPE MATERIALS, SAFETY & TOOLS, SOLDERING & BRAZING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	5
Hours:	37 lecture, 86 laboratory per quarter (123 total per quarter)
Prerequisite:	Student is a registered State indentured apprentice.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- A student will be able to define common terms used in the plumbing industry.
- A student will be able to demonstrate the proper use of pipe cutting and threading tools.

Description

This course provides students with a working knowledge of soldering and brazing along with safe practices as it relates to on-the-job-training.

Course Objectives

The student will be able to:

- Recognize and classify materials used in the plumbing industry
- Demonstrate the proper use and care of plumbing tools
- Demonstrate assembly of piping
- Recognize and apply on-the-job safety standards
- Solder and braze various piping systems

Course Content

- Materials used in the plumbing industry
 - Identification of materials
 - Selection of materials to code
 - Relationship between plan and specification
 - Material classification
- Use and care of plumbing tools
 - Use of wrenches
 - Use of plumb bob
 - Use of hand tools
 - Cleaning tools
 - Maintaining tools
- Shop assembly of piping
 - Soldering
 - Lead and oakum joints
 - Pipe threading
 - No-hub joint

- Plastics
 - Compression joints/flared joints
- Safety
 - At the work site
 - Hazardous materials
 - Forms used for OSHA
 - Solder and brazing techniques
 - Preparation of pipe and fittings
 - Applying heat to the pipe and fittings
 - Finishing soldering and brazing joints

Lab Content

- Students will work individually and in teams on the proper use and care of plumbing tools. Soldering and brazing will also be performed. Safe working practices are reviewed
- Safety review
- Soldering and brazing on equipment
- Layout of piping systems

Special Facilities and/or Equipment

- Laboratory with plumbing tools
- Personal protective equipment

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- Written examination
- Hands-on demonstration
- Classroom discussion
- Group exercises

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- Discussion
- Laboratory
- Demonstration

Representative Text(s) and Other Materials

United Association. Use and Care of Tools. 2000.

United Association. UA Heritage. 2001.

United Association. Job Safety and Health. 2006.

United Association. Soldering & Brazing. 2006.

NOTE: Although one or more may not be within 5 years of the required published date, they are the most current books used when teaching this course.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- Readings from textbooks, Use and Care of Tools and UA Heritage. Examples include:

1. History & heritage of the union, chapters 1 through 3
 2. Application of job safety & health, chapters 3 through 5
 3. Application & use of tools, chapters 1 through 5
 4. Soldering & Brazing, chapter 2
- B. Writing assignments are related to the assignments given in the laboratory. Examples include:
1. Group assignment to discuss and contrast individual views of the heritage of the Unions
 2. Prepare statement from individual perspective
 3. Review the OSHA Safety Pocket Guide
 4. Discuss each personal experience and provide examples
 5. Complete end of chapter assignments from Use and Care of Tools textbook and Lab Manual

Discipline(s)

Plumbing