

APPT 137A: P-401A WATER SYSTEMS

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	4.5
Hours:	54 lecture per quarter (54 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Plumbing Technology Apprenticeship Program.
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 backflow and backsiphonage prevention assemblies.
- A student will be able to describe the components and operation of high purity water systems.
- A student will be able to describe the water treatment process.

Description

Development and operation of domestic and industrial water supply and distribution systems for installation and operation. An overview of water sources, methods used to plan and configure supply, purification, and distribution systems, for operation and maintenance.

Course Objectives

The student will be able to:

1. Describe factors required to operate and maintain water distribution systems
2. Describe the process of water testing
3. Describe the water treatment process
4. Describe various aspects of water distribution
5. Describe the components and operation of high purity water systems (HPW)
6. Describe factors required for an effective building water supply
7. Describe backflow connection and cross-connection control

Course Content

1. Describe factors required to operate and maintain water distribution systems
 - a. Types and categories of water distribution systems
 - b. System design, planning, configuring, and sizing

- c. Methods of maintaining pressure and flow in water distribution systems
2. Describe the process of water testing
 - a. Identify test to establish water purity
 - b. Methods used to monitor water quality
 3. Describe the water treatment process
 - a. Processes to remove particles and bacteria
 - b. Components to installing water softening equipment
 4. Describe various aspects of water distribution
 - a. Installation of water meters
 - b. Use of flow control valves
 - c. Use and installation of pumps and pressure reducing
 5. Describe the components and operation of high purity water systems (HPW)
 - a. Characteristics of an HPW system
 - b. Characteristics and component of a DI water system
 6. Describe factors required for an effective building water supply
 - a. Design, construction, and operation
 - b. Troubleshoot design problems
 - c. Operation of hot water supply systems
 7. Describe backflow connection and cross-connection control
 - a. The effects of backflow and cross connection on safe water supply
 - b. Identify backflow and cross connection control methods

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. Laboratory equipped with plumbing tools and materials.
2. When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address.

Method(s) of Evaluation

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

Results of quizzes, written exercises, and final examination
Maintenance of a student's workbook with questions drawn from text
Group and classroom participation

Method(s) of Instruction

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

Lecture
Group discussion
Demonstration

Representative Text(s) and Other Materials

International Pipe Trades Joint Training Committee, Inc.. Water Supply. 2004.

Although this textbook is older than 5 years, it conforms to national training standards and is considered seminal in the discipline. We will adopt the next edition, as it is published.

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

1. Readings from textbook Water Supply: Chapter 2
 - a. Lesson 2, Answer study guide question on water mains and services
2. Writing assignments
 - a. Make a schematic drawing of a basic water supply system with components
 - b. Describe the water control function at each point in the system

Discipline(s)

Plumbing