

APPT 122: RESIDENTIAL SYSTEMS, WASTE, WATER & GAS SIZING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	2.5
Hours:	18 lecture, 36 laboratory per quarter (54 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Residential Plumbing Apprenticeship Program.
Advisory:	Current employment in the pipe trades industry.
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 identify components of building drainage systems.
- A student will be able to demonstrate the proper use of plastic drainage pipe and fittings.
- A student will be able to list four causes of trap seal loss.

Description

Overview of the installation and design criteria of residential drainage, waste, and vent systems, with emphasis and study of the applied theory, design, and installation criteria. Includes application of local codes.

Course Objectives

The student will be able to:

1. Describe the purpose and operation of residential drainage, waste, and vent systems, including theory and design criteria
2. Demonstrate proficiency in determining the proper piping materials, fittings, and devices utilized in a given installation
3. Demonstrate proficiency in proper installation practices
4. Execute test procedures of a typical plumbing installation

Course Content

1. Purpose and operation of residential drainage, waste, water, gas, and vent systems
 - a. Describe the public health benefits and parameters of sewage disposal
 - b. List requirements for private sewage disposal systems
 - c. Explain function of sewers and drains

- d. Explain principles of drainage system venting
 - e. Define function of traps
2. Determine the proper piping materials, fittings, and devices utilized in a given installation
 - a. Identify components of building drainage systems
 - b. Identify major appurtenances used in building drainage systems
 - c. Explain requirements for plastic, cast iron, and clay piping systems
 - d. Identify the types and uses of fittings
 3. Demonstrate proficiency in proper installation practices
 - a. Assemble plastic pipe using multiple joining methods
 - b. Prepare cast iron pipe for joining
 - c. Properly cut cast iron pipe
 - d. Prepare clay pipe for joining, using standard methods
 4. Execute test procedures of a typical plumbing installation
 - a. Perform hydrostatic pressure test
 - b. Perform pneumatic pressure test
 - c. Prepare test reports

Lab Content

1. Cut and join plastic pipe and fittings
2. Cut and join cast iron pipe and fittings
3. Use testing equipment

Special Facilities and/or Equipment

1. Personal protective equipment
2. Laboratory with plumbing tools

Method(s) of Evaluation

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

Results of written exercises, short quizzes, end of session and end of module assessment

Satisfactory completion of hands-on projects

Maintenance of a student's workbook with questions drawn from text

Method(s) of Instruction

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

Lecture

Lab assignment

Group discussion

Demonstration

Representative Text(s) and Other Materials

International Pipe Trades Joint Training Committee. UA Pipe Fittings, Valves, Supports and Fasteners. 2015.

International Pipe Trades Joint Training Committee, Inc.. Drainage Systems. 2016.

These are the standard textbooks/workbooks used for this course. Although they are older than 5 years, they are the most current books used when teaching this course.

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

1. Readings from assigned textbook
 - a. Lessons on Sewers and Drains, chapter 2
 - b. Lessons on Building Drainage systems, chapter 3
2. Writing assignments given in the laboratory
 - a. Answer study questions in assigned text
 - b. Write test report for drainage system pressure test

Discipline(s)

Plumbing