

Course Code: PFT 211**Course Title:** Gas and Water Plumbing**Department:** Applied Sciences and Technologies**Effective Date:** Summer 2026**PCS Code:** 1.2 - Occupational/Technical Instruction**CIP Code:** 46.0503**Repeatability:** 0

Credit Hours

Catalog Notation: 1-6-3**Credit Hour Distribution:**

Lecture: 1

Lab: 6

Clinical: 0

Total: 3

General Course Information

Catalog Description

Natural and liquid propane (LP) gas systems. Sizing of gas/medical gas systems, rain water systems, water pipes. Venting gas appliances. Water distribution and treatment, water mains and services, hot water supply.

General Course Objectives

Students will be able to describe installation requirements for gas and water systems, and be able to correctly install each system, including those for medical gas.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

Admission into the Plumbers and Pipefitters Apprenticeship program

Methods of Evaluation

The minimum evaluation methods include 4 written and 4 practical exams.

Instructional Materials and Additional Supplies

Water Supply, International Pipe Trades Joint Training Committee (IPTJTC), 2000.

Gas Installations, IPTJTC, 2001.

Course Content

General Learning Outcomes (GLOs)

- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Gas Installations: a) Natural Gas Installations, b) LP Gas Systems, c) Sizing and Venting Gas Systems, d) Gas Appliances and Controls, and e) Medical Gas Systems	1. Apply installation procedures and code requirements for natural and LP gas systems. 2. Size and vent gas systems according to codes and specifications. 3. Explain code requirements and safety procedures for medical gas systems.	4	30	0
Sizing of Rain Water Systems: a) Catch Basins - 1. Yard, 2. Garbage, and 3. Steam Boiler Blow-off; and b) Storm Drains	1. Size rain water systems according to specifications and uniform plumbing code. 2. Describe installation requirements for storm drains.	4	18	0
Water Distribution: a) Water Treatment, b) Water Mains and Services, c) Building Water Supply Systems, d) Cross Connections, e) Hot Water Supply, f) Valves, and g) Pumps	1. Identify types and uses of materials in water distribution. 2. Describe major components of a water supply system. 3. Install water mains and services. 4. Select and install water valves and pumps.	4	24	0
Water Pipe Sizing: a) Uniform Plumbing Code, b) Number of Small Pipes Served by Large Pipes, c) Pressure and Head Problems, and d) Compound Operations	1. Size water pipes according to uniform plumbing code. 2. Calculate and adjust head pressures.	3	18	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
15	90	0