Course Information Form (CIF)

Course Code: PFT 117

Course Title: Basic Pipefitting and Welding

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 46.0503
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

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

Lecture: 1	Lab: 6	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Pipefitting and welding equipment and safety. Fabrication and installation of commercial/industrial piping systems. Pipe layout and welding techniques/applications. Oxyacetylene and portable plasma cutting torch.

General Course Objectives

The apprentice will be able to properly and safely fabricate and install various piping systems.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement into MAT 059

Prerequisites

Admission into the Plumbers and Pipefitters Apprenticeship program

Methods of Evaluation

4 written exams and 4 practical exams.

Instructional Materials and Additional Supplies

Oxy-Fuel Cutting and Welding and Shielded Metal-Arc Welding, International Pipe Trades Joint Training Committee, Inc., 2004.

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
Safe Use of Tools: framing squares, levels, plumb bob with string, chalk line with chalk, wrap around, girder, soapstone, banding straps-scrap, torches, hammers, and tape measures	1. Demonstrate proper and safe use of pipefitting and welding tools.	2	9	0
Parallel Line Development: 90 degree concentric branch to main, 90 degree eccentric branch to main, and 45 degree lateral to main	1. Explain and demonstrate parallel line development.	2	9	0
Pipe Layout and Welding - 90 Degrees Concentric Branch: equal branch to main, unequal branch to main	1. Perform pipe layout and welding for 90 degree unequal branch to main.	1	6	0
Pipe Layout and Welding - 90 Degrees Eccentric Branch: equal branch to main, unequal branch to main	1. Perform pipe layout and welding of 90 degree eccentric branch to main.	1	6	0
Pipe Layout and Welding - 45 Degrees Lateral to Main: equal branch to main and unequal branch to main	1. Perform layout and welding for 45 degree equal lateral to main.	1	6	0
Use and Salvage of Old Fittings; Welding Procedure	1. Perform welding procedures using old fittings and describe how they are used.	2	9	0
Odd Angle Fitting Types and Welding Procedures	1. Perform welding procedures using odd angle fittings and describe how they are used.	2	9	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Welding Basics: tack-up, weld-out, and spools	1. Explain and demonstrate welding basics to include tack-up, weld-out, and spool techniques.	2	15	0
Oxyacetylene Torch Use: radical, miter, bevel, and back bevel	1. Demonstrate the safe and proper use of the oxyacetylene cutting torch including radical, miter, and back bevel operations.	1	12	0
Portable Plasma Cutting Torch Use	1. Demonstrate the safe and proper use of the portable plasma cutting torch.	1	9	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
15	90	0