Course Information Form (CIF)

Course Code: PFT 216
Course Title: Welding

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 48.0508
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

Basic oxyacetylene and arc welding with emphasis on shop training. History and purpose. Safe welding practices. Weld types and related use in pipe trades.

General Course Objectives

Students will be able to explain the uses and history of oxyacetylene welding and safely demonstrate proper welding techniques for the pipe trades.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Admission into the Plumbers and Pipefitters Apprenticeship program

Methods of Evaluation

The minimum evaluation methods include 2 return demonstrations and 3 written 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, 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
Oxyacetylene and Arc Welding: a) History and b) Purpose	1. Describe the history and purpose of oxyacetylene and arc welding.	2	0	0
Welding Equipment: a) AC Transformer, b) AC/DC Rectifier, and c) Engine-driver Generator (DC)	1. Compare and contrast the different types of welding equipment and the procedures for their use.	2	6	0
Welding Procedures: a) Stick Electrode, b) TIG, and c) MIG	1. Compare and contrast the different types of welding equipment and the procedures for their use.	2	12	0
Welding Circuit: a) Welding Cables and b) Electrode Holder	1. Hook up and take down welding equipment.	1	6	0
Safe Practices: a) Precautions, b) Equipment, c) Definition of Welding Terms, d) Variables, e) Hookup, and f) Take Down	1. Hook up and take down oxyacetylene equipment.	1	6	0
Striking and Arc: a) Steps, b) Controlling the Arc, and c) Running a Bead	1. Demonstrate steps to strike and control an arc. 2. String beads in all positions.	1	6	0
Four Essentials of Arc Welding: a) Correct Electrode, b) Correct Arc Length, c) Correct Current Setting, and d) Correct Travel Speed	1. Apply the four essentials of arc welding to running a continuous bead.	2	12	0
Weld Types: a) Filet, b) Corner, c) Ripple, d) Forehand, e) Backhand, and f) Roll Butt	1. Demonstrate weld types in all positions; describe their use in the field.	2	24	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Stationary Plasma Cutting Torch: a) Radical, b) Miter, c) Bevel, and d) Back Bevel	1. Demonstrate weld types in all positions; describe their use in the field. 2. Demonstrate setup and safe use of a Stationary Plasma Cutting Torch for cutting test coupons.	1	12	0
J-Beveling Pipe Machine: a) Facing Pipe and Setting Land, b) Set J-Bevel, and c) Standard Bevel	1. Demonstrate commonly used welding cuts. 2. Demonstrate setup and safe operation of the J-beveling pipe machine for special prep for welds.	1	6	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
15	90	0