# APPR 150: JOB SAFETY, OSHA, MATHEMATICS, HERITAGE & RIGGING I

## Foothill College Course Outline of Record

| Heading | Value |
|---|---|
| **Effective Term:** | Summer 2021 |
| **Units:** | 5 |
| **Hours:** | 37 lecture, 86 laboratory per quarter (123 total per quarter) |
| **Prerequisite:** | Per California Code of Regulations, this course is limited to students admitted to the Plumbing/ Pipefitting/Refrigeration/HVAC 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

- 2- Describe OSHA regulations pertaining to trench safety
- 1- Perform pipe offsets using mathematical formulas

## Description

First course of the Plumber & Pipefitter Apprenticeship Program. Provides students with a working knowledge of mathematics, plumbing industry materials and standards (as they apply to the plumbing industry), use and care of Pipe Trade tools, practice safety, rigging, and a review of Heritage of the United Association.

## Course Objectives

The student will be able to:
A. Demonstrate the correct use of mathematics required in the plumbing industry
B. Demonstrate the proper use and care of plumbing tools
C. Recognize and apply on-the-job safety standards
D. Demonstrate proper rigging techniques

## Course Content

A. Mathematics
1. Basic math review
2. Formulas and tables
3. Pipe measurement
B. Use and Care of Plumbing Tools
1. Use of wrenches
2. Use of hand tools
3. Cleaning tools
4. Maintaining tools
C. Safety
1. At the work site
2. Hazardous materials
3. Forms used for OSHA
D. Rigging
1. Ability to identify and tie various types of knots and hitches
2. Safety protocol relative to rigging operations
3. Crane signals
4. Proper rigging hardware and sling configurations
5. Hands-on rigging operations

## Lab Content

Students will work individually and in teams reviewing safety requirements and applying principles and concepts with practical calculations, including:
A. Formulas for Related Math in the Plumbing Trades
B. Math and Geometry for Pipe Measurements I & II
C. Instruments Used for Piping Systems Layout
D. People/Personnel Safety Precautions
E. Equipment Safety
F. Handling Power Tools and Hand Tools

## Special Facilities and/or Equipment

A. Laboratory with overhead projector and plumbing tools
B. Calculator
C. Protective equipment

## Method(s) of Evaluation

Written examination
Hands-on demonstration
Chapter quizzes
Group and classroom participation
Punctuality

## Method(s) of Instruction

Lecture
Discussion
Laboratory
Demonstration

## Representative Text(s) and Other Materials

International Pipe Trades Joint Training Committee, Inc.. Job Safety and Health. 2006.

International Pipe Trades Joint Training Committee, Inc.. Related Mathematics. 2008.

International Pipe Trades Joint Training Committee, Inc.. Your Heritage and Future in the Pipe Trades. 2006.

International Pipe Trades Joint Training Committee, Inc.. United Association of Journeyman and Apprentices, Rigging. 2006.

Although one or more of these texts may be older than the suggested "5 years or newer" standard, they remain seminal texts in this area of study.

OSHA Booklets
Pocket Reference Chart

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

A. Readings from the textbooks, Related Mathematics and Your Heritage and Future in the Pipe Trades:
1. History and Heritage of the Union
2. Math and Science for the Plumbing Trades
3. Application of Geometry for the Plumbing Trades
B. Writing assignments are related to the assignments given in the laboratory:
1. Review the OSHA Safety Pocket Guide; discuss each personal experience and provide examples
2. Complete end of chapter assignments in the Related Mathematics manual
3. Math calculations for pipe measurements
4. Apply formulas for related math in the Pipe Trades

## Discipline(s)

Plumbing