

# APPT 147B: SF 401B INDUSTRIAL RIGGING

## Foothill College Course Outline of Record

Heading	Value
<b>Effective Term:</b>	Summer 2023
<b>Units:</b>	3.5
<b>Hours:</b>	36 lecture, 18 laboratory per quarter (54 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Steamfitting & Pipefitting Technology Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 180.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- A student will be able to demonstrate proper use of crane signals.
- A student will be able to describe the operation of pneumatic control valves.
- A student will be able to describe the operation of pneumatic thermostats.

## Description

Appropriate knots required for specific rigging operations. Rigging safety protocol is reviewed, which includes health and safety legislation and the responsibilities of specified rigging personnel. Crane signals and practice of rigging skills, through both observation and hands-on activities.

## Course Objectives

The student will be able to:

- Demonstrate ability to identify and tie various types of knots and hitches
- Define safety protocol relative to rigging operations
- Demonstrate crane signals
- Demonstrate the proper use and safety associated with hoisting and jacking equipment
- Identify proper rigging hardware and sling configurations
- Perform hands-on rigging operations using rigging equipment and machinery

## Course Content

- Demonstrate ability to identify and tie various types of knots and hitches
  - Four requirements of rope fastening
  - Three parts of a rope

- Basic elements of knots
  - Tie various knots and hitches required for specific rigging operations
- Define safety protocol relative to rigging operations
    - Rigging hazards
    - Safety and health standards
    - Duties and responsibilities of supervisor and rigging personnel
  - Demonstrate crane signals
    - Conditions requiring hand signals
    - Cranes and crane signals
    - International hand signals
  - Demonstrate the proper use and safety associated with hoisting and jacking equipment
    - Various types and use of rigging tools and devices
    - Appropriate maintenance and safety requirements
  - Identify proper rigging hardware and sling configurations
    - Safe sling configurations
    - Calculate safe working load limits of slings
    - Identify capacity and safe working load limits
  - Perform hands-on rigging operations using rigging equipment and machinery
    - Operate small rigging equipment, such as jacks, multi-ton, come a-longs, and chain falls
    - Operate large rigging equipment and machineries, such as cranes, boom trucks, and forklifts

## Lab Content

Students will work individually and in teams on various projects using rigging equipment and machinery.

## Special Facilities and/or Equipment

- Personal protective equipment
- Laboratory with rigging equipment
- When taught via Foothill Global Access, on-going access to computer with software and hardware capable of accessing email, learning management system, and video conferencing; email address

## Method(s) of Evaluation

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

- Results of written exercises and final examination
- Satisfactory completion of hands-on projects
- Maintenance of a student's workbook with questions drawn from text
- Group and classroom participation

## 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, Inc.. Rigging. 2014.

Garby, Ronald G.. ITP's Crane & Rigging Handbook. 2015.

KORE-TECKX, Inc.. The Pipe Fitters Field Book. 2015.

De Mark, Larry. Signal Person Training Course, Version 4 with Student Guide. 2012.

Although these textbooks are older than 5 years, they are the most current books used when teaching this course. We will adopt the next edition of each text, as it is published.

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

- a. Readings from assigned textbook Rigging
  - i. Chapter 6: Cranes and Crane Signals
- b. Writing assignments given in the laboratory
  - i. Calculate loads and list total weights of various loads to be hoisted
  - ii. Essay and exams on the importance of safety rules and regulations governing crane and rigging operations

## Discipline(s)

Steamfitting