

APPT 172: REFRIGERATION SCIENCE

Foothill College Course Outline of Record

Heading	Value
Units:	4.5
Hours:	30 lecture, 72 laboratory per quarter (102 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Refrigeration & Air Conditioning Mechanical Service 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

- A student will be able to identify and apply building maintenance.
- A student will be able to demonstrate basic mathematics as they apply to refrigeration and air conditioning.

Description

First-year course of the Refrigeration & Air Conditioning Apprenticeship program. This course provides students with a working knowledge of Basic Refrigeration, Refrigeration Equipment, and Equipment Maintenance.

Course Objectives

The student will be able to:

- Demonstrate basic mathematics as they apply to refrigeration and air conditioning
- Discuss equipment maintenance

Course Content

- Basic Refrigeration Mathematics
 - Calculating volume
 - Calculating pressure
 - Cubic feet per minute (CFM)
- Equipment Maintenance
 - Vocabulary and terms
 - Safety-related to maintenance

Lab Content

Students will work individually and in teams with refrigeration tools and equipment in the lab, which includes:

- Refrigeration math
- Process for equipment maintenance in the field

Special Facilities and/or Equipment

- Laboratory with refrigeration Equipment and Simulators

- Personal protective equipment, calculator

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

United Association of Journeymen and Apprentices. [Basic Refrigeration Volume II](#). Washington, D.C.: International Pipe Trades Joint Training Committee, Inc., 2014.

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

- Readings from the textbook
 - The application of basic refrigeration math principles and concepts
 - Designing a complete HVAC system
 - Understanding electricity for Plumbing & HVAC
- Writing assignments are related to the assignments given in the laboratory
 - Prepare a maintenance procedure for equipments and simulators
 - Refrigeration Handbook exercises at the end of each chapter

Discipline(s)

Air Conditioning, Refrigeration, Heating