

APPT 172: REFRIGERATION SCIENCE

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2022
Units:	4.5
Hours:	36 lecture, 66 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 Only
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 and 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
- When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address

Method(s) of Evaluation

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

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

Method(s) of Instruction

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

- Lecture
- Discussion
- Laboratory
- Demonstration

Representative Text(s) and Other Materials

United Association of Journeymen and Apprentices. [HVAC and Refrigeration Systems](#). 2014.

Texts older than five years may be utilized in this course as industry-standard texts.

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 and HVAC
- Writing assignments are related to the assignments given in the laboratory
 - Prepare a maintenance procedure for equipment and simulators
 - Refrigeration handbook exercises at the end of each chapter

Discipline(s)

Air Conditioning, Refrigeration, Heating