

# AHR 110 Intro to Refrigeration

## **COURSE DESCRIPTION:**

Prerequisites: None

Corequisites: None

This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems. Upon completion, students should be able to identify refrigeration systems and components, explain the refrigeration process, and use the tools and instrumentation of the trade. Course Hours Per Week: Class, 2; Lab, 6; Semester Hours Credit, 5.

## **LEARNING OUTCOMES:**

Upon completing requirements for this course, the student will be able to:

1. Demonstrate safe practices and procedures with tools, materials, and industry accepted test equipment covered in the course.
2. Identify and explain the theory, operating principle, and components of the refrigeration cycle.
3. Identify tools, materials, and equipment used in the refrigeration industry.
4. Evacuate, charge, recover, and safely operate a basic refrigeration/cooling system in accordance with EPA regulations.
5. Demonstrate refrigeration piping and soldering techniques.

## **OUTLINE OF INSTRUCTION:**

1. Basic Refrigeration Cycle
2. Evaporators and Condensers
3. Compressors and Metering Devices
4. Superheat and Subcooling Concepts
5. Manifold Gauges, Services Valves, and Refrigeration Specialties
6. Pressure Testing and Evacuation
7. Charging the System, Typical Operating Pressures and Temperatures
8. Refrigerant Recovery
9. Refrigeration Tubing, Piping, and Soldering Techniques
10. Electrical Wiring Diagrams and PSC Motors
11. Prep for CFC Exam

## **REQUIRED TEXTBOOK AND MATERIAL:**

The textbook and other instructional material will be determined by the instructor to ensure that current, relevant concepts and theories are present.