

# AHR-112 Heating Technology

## **COURSE DESCRIPTION:**

Prerequisites: None

Corequisites: None

This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system. Course Hours Per Week: Class, 2; Lab, 4; Semester Hours Credit, 4.

## **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. Use industry terminology to describe principles for oil, gas, and electric warm air heating systems.
3. Identify the major components of oil, gas, and electric heating systems.
4. Install and start-up warm air heating systems.
5. Identify various types of energy sources used in heating and describe the individual characteristics of each.
6. Describe service procedures for heating systems.
7. Use tools and instruments necessary to troubleshoot and test system efficiency.

## **OUTLINE OF INSTRUCTION:**

1. Review Basic Refrigeration Cycle and System Components
2. Review Superheat and Subcooling Concepts
3. Review Gauges, Pressure Testing, Evacuation, Charging and Recovery
4. Review Electrical Wiring Diagrams and PSC Motors
5. Review Refrigeration Tubing, Piping, and Soldering Techniques
6. Air Source Heat Pumps
7. Geothermal Heat Pumps
8. Gas-fired Equipment
9. Oil-Fired Equipment
10. Air Distribution and Duct Design
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.