

AHR 112
HEATING TECHNOLOGY

COURSE DESCRIPTION:

Prerequisite: MAT 060 or DMA 010, 020, 030; RED 070, or satisfactory score on placement test
Corequisite: 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.

COURSE OBJECTIVES:

- a. Understand the fundamentals of air-to-air heat pumps
- b. Understand the fundamentals of geothermal heat pumps
- c. Understand the fundamentals of gas-fired heating equipment
- d. Understand the fundamentals of oil-fired heating equipment
- e. Understand the fundamentals of hydronic heating
- f. Understand how to safely utilize tools and instruments used to service, install, and troubleshoot heating systems.
- g. Be able to successfully pass the CFC Refrigeration Exam

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:

Whitman, Johnson and Tomczyk. Refrigeration & Air Conditioning Technology. 5th ed.