

Course Objectives/Course Outline
Spokane Community College

Course Title: Fundamentals of Refrigeration 2

Prefix and Course Number: AIRC 110

This course is a continuation of AIRC 109 and further provides students with the fundamentals of refrigeration systems. Emphasis on practical applications include basic refrigeration troubleshooting and the use of testing equipment and tools. Lab exercises focus on developing ladder diagrams and troubleshooting electrical components.

Course Learning Outcomes:

By the end of this course, a student should be able to:

- identify refrigeration components and types
- describe the basic operation of 5 types of compressors
- identify some of the factors that affect compressor capacity
- identify factors that affect system components capacity
- identify various defrosting methods
- develop ladder diagrams for a basic refrigeration system
- troubleshoot related electrical controls for system
- use related tools

Course Outline:

I. Refrigeration Components

- A. Compressors
- B. Compressors Types
- C. Hermetic and Semi-Compressors
- D. Air Cooled Condensers
- F. Water Cooled Condensers
- G. Refrigeration Evaporators
- H. Capillary Tubes
- I. Thermostatic Expansion valves
- J. Oil in refrigeration systems

II. Basic refrigeration Skills

- A. Identify on Equipment Principles of Refrigeration
- B. Use High and Low Manifold Gauge Set
- C. Identify Sealed System Components
- D. Identify Sealed System Accessories
- E. Test Temperatures to Determine Superheat and Sub-cooling
- F. Identify and Use Related Tools and Instruments
- G. Pump Down a System to Repair or Replace System Components
- H. Develop a Wiring Diagram of a Refrigeration System
- I. Develop a Ladder Diagram of a Refrigeration System
- J. Troubleshooting Electrical Controls of a Refrigeration System.