South Central College

HVAC 2120  Testing Refrigeration Systems

Course Outcome Summary

Course Information

Description
This course will cover analyzing, troubleshooting, testing of both the electrical and refrigeration systems. Safety will be stressed throughout this course. This course will be offered concurrently with refrigeration controls.

Total Credits 2
Total Hours 48

Types of Instruction

Instruction Type Credits/Hours
Lecture
Lab

Pre/Corequisites
None

Institutional Core Competencies

Civic Engagement and Social Responsibility - Students will be able to demonstrate the ability to engage in the social responsibilities expected of a community member.

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Cultural Competence - Students will be able to demonstrate an attitude of personal curiosity, a rising knowledge of cultures, and an evolving range of skills for living and working among others with other worldviews and ways of life.

Course Competencies

1. Analyze the refrigerant properties and safety requirements

   Learning Objectives
   Discuss the pressure and temperature relationship
   List the refrigerant's and their application in today's refrigeration systems
Write a list of possible refrigerant hazards

2. **Examine the four-part refrigeration system operation**
   
   Learning Objectives
   
   List the components that make-up the four-part system
   
   Break down the functions of each of the four-part system components
   
   Draw out the four-part system and label

3. **Examine the equipment used in the recovery process**
   
   Learning Objectives
   
   List the steps in the recovery process
   
   Identify the equipment necessary in the recovery process
   
   Weigh the recovery tanks before and after usage
   
   Hook-up the recovery equipment

4. **Explain why we have sealed system failures**
   
   Learning Objectives
   
   Discuss what effect moisture has on a sealed system
   
   Describe what happens when a system runs with high head pressure
   
   Identify what causes high head pressure in a sealed system
   
   Point out how a low-charge effects a sealed system operation

5. **Discover the equipment necessary for making sealed system repairs**
   
   Learning Objectives
   
   Describe the function of the vacuum pump and micron gauge
   
   Demonstrate the usage of your multimeter and wiring schematic to troubleshoot
   
   Choose the correct torch for the job
   
   Repair electrical system failures
   
   Repair sealed system failures

6. **Demonstrate proper procedures for handling refrigerants**
   
   Learning Objectives
   
   Practice proper safety procedures by wearing all necessary safety equipment while working in the lab
   
   Locate 1st aid kits and eye wash stations in the lab

**SCC Accessibility Statement**

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: [www.southcentral.edu/disability](http://www.southcentral.edu/disability)

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.