



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.