



South Central College

## HVAC 2330 Alternative Heating System

### Course Outcome Summary

#### Course Information

<b>Description</b>	This course covers a variety of alternative heating systems, some of the systems included will be oil heating systems, a variety of electrical heating systems, heat pump systems and alternative fuel sources will be discussed. Electrical and mechanical systems will be explored along with safety, troubleshooting and equipment performance.
<b>Total Credits</b>	2
<b>Total Hours</b>	48

#### Types of Instruction

Instruction Type	Credits/Hours
Lecture	
Lab	

#### Pre/Corequisites

HVAC2000, HVAC2320, HVAC2240 or Instructor Approval.

#### 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. **Identify practices and procedures used to enhance safety for the technician and the home owner.**

### **Learning Objectives**

Review electrical shock hazards.  
Outline the proper way of handling an oil fire inside a combustion chamber.  
Recognize hazards of working with fuel oil.

## **2. Examine the electrical systems.**

### **Learning Objectives**

Analyze low voltage circuitry.  
Analyze High voltage circuitry.  
Draw wiring schematics.  
Test a cad cell.

## **3. Summarize issues related to using fuel oil for heating.**

### **Learning Objectives**

Identify properties and characteristics of fuel oil.  
Examine BTU firing rates.  
Identify fuel supply systems.

## **4. Examine the oil burner system.**

### **Learning Objectives**

Identify components on a fuel oil gun burner.  
Examine high voltage ignition transformers.  
Examine Primary control systems.  
Perform a combustion analysis.

## **5. Examine heat pump systems.**

### **Learning Objectives**

Compare standard air conditioning systems with heat pump systems.  
Examine the four-way reversing valve.  
Identify different types of metering devices.  
Examine troubleshooting techniques when working on heat pumps.

## **6. Investigate alternative fuels.**

### **Learning Objectives**

List other types of heating systems and the fuels they use.  
Compare fuel costs.  
Examine the environmental impact of many types of heating systems both traditional and alternative.

## **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.