



South Central College

## HVAC 2310 Hydronic Heat

### Course Outcome Summary

#### Course Information

<b>Description</b>	This course covers systems that utilize fluid for the transfer of heat known as hydronic heating. The electrical and mechanical systems will be studied and analyzed along with troubleshooting system fluid problems, air infiltration and proper operating pressures. The students will identify fluid control components, and demonstrate knowledge of each component's purpose in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester.
<b>Total Credits</b>	2
<b>Total Hours</b>	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. Identify practices and procedures used to enhance safety for the technician and the home owner.**

**Learning Objectives**

Discuss methods of cooling the system down.  
Recognize the proper pressure settings.  
Select the proper pressure relief valve.

**2. Examine the electrical systems.**

**Learning Objectives**

Study schematics high voltage circuits.  
Study schematics low voltage circuits.  
Draw Ladder diagrams.

**3. Summarize issues, on hydronic systems, relating to water.**

**Learning Objectives**

Study the characteristics of air in water.  
Describe how water causes corrosion.  
Interpret how pressure affects the boiling temperatures.

**4. Identify specific components found on hydronic systems.**

**Learning Objectives**

Identify different types of zone valves.  
Identify a pressure reducing valve.  
Identify a backflow preventer.  
Describe the purpose of the backflow preventer.  
List the components that make up the "make up water system".  
Recognize the different types of ball valves.

**5. Calculate proper operating pressures.**

**Learning Objectives**

Interpret inches of water column.  
Summarize what causes friction in a hydronic system.  
Compute system pressures.

**6. Investigate the use of radiant in floor heating.**

**Learning Objectives**

Interpret the advantages and disadvantages of radiant floor heating.  
Describe a slab system.  
Describe an under the floor system  
Describe a thin slab system.  
Describe an on the floor system.

**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.

