



South Central College

## HVAC 2220 Commercial Ice Makers

### Course Outcome Summary

#### Course Information

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| <b>Description</b>   | This course covers commercial ice makers used in the industry today. The electrical, mechanical and water systems will be studied, analyzed, connected and operated. The students will study proper troubleshooting and safety procedures. The students will then apply this knowledge when testing the electrical, mechanical and water systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. |
| <b>Total Credits</b> | 3   |
| <b>Total Hours</b>   | 48  |

#### Types of Instruction

| Instruction Type | Credits/Hours |
|------------------|---------------|
| Lecture          |               |
| Lab              |               |

#### Pre/Corequisites

None

#### Institutional Core Competencies

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.

#### Course Competencies

**1. Examine the different ice formations produced by commercial ice makers.**

**Learning Objectives**

Recognize evaporators from different brands of commercial ice makers.  
Identify what is correct ice formation for each unit.  
Explain adjustments needed for correct ice formation.

**2. Examine installation requirements.**

### **Learning Objectives**

Discuss requirements for drain lines.  
Discuss electrical supply requirements and safety.  
Discuss water supply and filter systems.  
Assemble drain lines and water supply lines.  
Demonstrate knowledge of electrical supply requirements.

### **3. Analyze wiring schematics.**

#### **Learning Objectives**

Study commercial ice maker wiring schematics.  
Use electrical wiring schematics for troubleshooting ice maker electrical problems.  
Trace out the active circuit for the freeze and harvest cycles.

### **4. Illustrate knowledge of the major commercial ice makers.**

#### **Learning Objectives**

Articulate the freeze and harvest cycles for each brand of ice maker found in the lab.  
Describe the type of ice that is produced by each ice maker.

### **5. Operate commercial ice makers and make adjustments.**

#### **Learning Objectives**

Start up and adjust the Scotsman ice maker for correct ice production.  
Start up and adjust the Manitowoc ice maker for correct ice production.  
Start up and adjust the Ice-O-Matic ice maker for correct ice production.  
Start up and adjust the Hoshizaki ice maker for correct ice production.

### **6. Identify low-voltage components.**

#### **Learning Objectives**

Identify low-voltage components on the Manitowoc ice maker.  
Demonstrate how to test low-voltage components found on the Manitowoc ice maker.  
Describe precautions for low-voltage components.

### **7. Test electrical components of a commercial ice maker.**

#### **Learning Objectives**

Identify if components are low-voltage or supply voltage components.  
Describe what is the best method of testing electrical components.  
Demonstrate and follow all safety techniques while troubleshooting electrical failures.

### **8. Complete maintenance on commercial ice makers.**

#### **Learning Objectives**

List the type of maintenance that should be completed by the service technician.  
Discuss the cleaning procedure and safety issues.  
Perform maintenance on lab commercial ice makers.

### **9. Measure ice production.**

#### **Learning Objectives**

Write and explain the ice production formula.  
Describe causes for low ice productions.  
Correct problems associated with low ice production.  
Test ice production of lab ice makers.

### **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.