



South Central College

# HVAC 2251 Brazing

## Common Course Outline

### Course Information

<b>Description</b>	This course covers brazing equipment and material. Students will be introduced to the soldering and brazing process, terms, and personal safety.
<b>Total Credits</b>	2
<b>Total Hours</b>	48

### Types of Instruction

Instruction Type	Credits/Hours
Lecture	
Lab	

### 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 soldering process and the materials used

##### Learning Objectives

- Discuss the temperature range for soldering
- Compare soft solder materials
- List applications for soldering

#### 2. Examine the brazing process and the materials used

##### Learning Objectives

- Discuss the temperature range for brazing
- Compare brazing alloys
- Describe the function and steps that high temperature flux goes through
- Determine which brazing alloy will work best on lab projects

#### 3. Explain the differences between ACR and Nominal tubing

### **Learning Objectives**

List the code for wall thickness for ACR and Nominal tubing  
Select the correct tubing for the project  
Explain what I.D. and O.D. stands for

#### **4. Identify and compare the different styles of torches used in the lab**

### **Learning Objectives**

Study the torches that are used in the lab  
Compare each torch and the temperatures that they can reach  
Start-up and shut-down each of the torches in the lab

#### **5. Illustrate the proper way to cut, prepare tubing for soldering and brazing**

### **Learning Objectives**

Demonstrate the proper way to cut tubing  
Clean and assemble tubing for brazing  
Demonstrate using the three and one tubing bender  
Produce flare and swage connections

#### **6. Demonstrate the ability to solder, braze and use proper safety techniques**

### **Learning Objectives**

Build a sealed system without leaks  
Select the correct alloys and flux for the projects  
Demonstrate the ability to solder or braze with either hand

### **SCC Accessibility Statement**

Disability Services provides accommodations and other supports to students with permanent and temporary disabilities that affect their SCC experience. Disabilities may include mental health (anxiety, depression, PTSD), ADHD, learning disabilities, chronic health conditions (migraine, fibromyalgia), sensory disabilities, and temporary disabilities (broken arm, surgery). Common accommodations are extended test time, private room for testing, audiobooks, and sign language interpreter.

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