



South Central College

## HVAC 2340 Sheet Metal Ductwork Fabrication

### Course Outcome Summary

#### Course Information

<b>Description</b>	The course will introduce the student to the layout and fabrication of sheet metal ductwork in both commercial and residential applications. The student will fabricate fittings including reducers, transitions, takeoffs, ogee offsets and radius elbows. Residential duct design and sizing methods will be discussed along with heat loss/heat gain calculations with related computer software applications. The student will be exposed to blue print reading and related specification books.
<b>Total Credits</b>	3
<b>Total Hours</b>	80

#### 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. Outline methods and practices that will insure safety in the shop and on the job site.

###### Learning Objectives

- Summarize shop equipment safety.
- Discuss safety equipment utilized on the job site.
- Review ladder safety.
- Describe safe ways to handle sheets of iron.

**2. Discover components that make up a common ductwork run.**

**Learning Objectives**

Indicate the purpose of a drive.  
Differentiate the various types of slips.  
Visualize the different types of seems.

**3. Operate Pittsburgh machine.**

**Learning Objectives**

Indicate the allowances for a Pittsburgh seem.  
Draw Pittsburgh allowances on fitting layout.  
Feed materials through Pittsburgh machine.

**4. Operate jump shear.**

**Learning Objectives**

Perform safe sheet iron cuts utilizing the hold down bar.  
Align materials using square edge.  
Summarize the use of the stop.

**5. Operate sheet metal breaks.**

**Learning Objectives**

Bend sheet iron using an 8 foot break.  
Outline the uses for the box and pan break.  
Operate the box and pan break.

**6. Operate rolling machines.**

**Learning Objectives**

Create bend using the Easy Edger.  
Roll sheet metal wrappers with radius roller.  
Construct a pipe crimp using both a rolling machine and a hand crimper.

**7. Examine duct sizing methods.**

**Learning Objectives**

Elaborate on using rules of thumb for sizing ductwork.  
Compute duct size using the equal friction method.

**8. Explore plans and specs.**

**Learning Objectives**

Read a scale rule.  
Interpret the blue print.  
Interpret the specification book.

**9. Demonstrate sheet metal fitting layout and fabrication techniques.**

**Learning Objectives**

Build a radius elbow.  
Build a transition.  
Build a threeway tab takeoff.  
Build an ogee s offset.  
Cut in takeoffs.

**10. Calculate CFM.**

**Learning Objectives**

Compute CFM utilizing velometer and lab equipment.  
Translate and calculate data to determine air flow.

**11. Investigate duct installation practices.**

**Learning Objectives**

Identify locations of floor registers.

Differentiate individual and common return systems.

### **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.