



South Central College

## WELD 1202 Press Brake Operation

### Common Course Outline

#### Course Information

<b>Description</b>	The course will offer individuals the chance to operate a press brake. Students will learn how to call up a program and make sure the correct die is installed. Students will learn the safety aspects of running a press brake. (Prerequisite: Must be enrolled in Welding Fabrication Certificate or approval from Instructor.)
<b>Total Credits</b>	2
<b>Total Hours</b>	48

#### Types of Instruction

Instruction Type	Credits/Hours
Lecture	1/16
Lab	1/32

#### Pre/Corequisites

Must be enrolled in Welding Fabrication Certificate or Approval from Instructor.

#### 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. Understand basic precision sheet metal terminology.**

**Learning Objectives**

Explain/demonstrate terminology meaning and how it relates to the press brake operation.

**2. Explain press brake types and forming methods from mechanical to electric press brakes.**

**Learning Objectives**

Explain the differences between a mechanical and electrical press brake.  
Explain safety concerns using both types of press brakes.

**3. Understand press brake punches including the types, styles, uses and limits of each.**

### **Learning Objectives**

List the different types of punches that can be used with a press brake.

Explain the different styles of brake punches.

Explain the limits of each type of brake punch depending on material type, thickness and grade.

#### **4. Explain press brake load limits as compared to tooling limits.**

### **Learning Objectives**

Explain press brake load limits depending on the tonnage of machine.

Explain radius limits depending on the tooling and thickness of material being formed.

Explain load limits of the tooling depending on the thickness of material.

#### **5. Explain the difference between the types, style, use and load limits of press brake dies.**

### **Learning Objectives**

Explain the differences between the types of press brake dies.

Explain the different uses of press brake dies.

Explain how load limits are similar and different for dies used with the press brake.

#### **6. Understand how to make proper die selection to achieve desired results from engineering to the shop floor.**

### **Learning Objectives**

Explain how different dies effect the bend radius of formed material.

Discuss how reading the blue print determine the die that should be used in the press brake.

#### **7. Explain forming types including sharp, radius, and profound radius bends.**

### **Learning Objectives**

Explain the different types of forming, coining, bottom bending and air bending.

Discuss the different types of bends that will include, sharp, radius and profound radius bends.

#### **8. Explain the difference of cold forming, warm forming and hot forming and the effects it has on material.**

### **Learning Objectives**

Explain the difference types of forming that maybe used in manufacturing.

Discuss who these different types of forming will have on the finished product because of expanding and contracting of material being used.

#### **9. Demonstrate how to use press brake safely and accurate to blue print specifications.**

### **Learning Objectives**

Demonstrate safety precaution by wearing correct PPE.

Explain where the pinch points maybe found and what you can do to avoid them.

Demonstrate proper die selection from reading the blue print.

Demonstrate how to inspect the bend to make sure that is acceptable.

### **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 C-112, (507) 389-7222; Faribault: Room A-116, (507) 332-5847.

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.

