



Lakeshore Technical College

## 31-420-310 Shop Tools and Fasteners

### Course Outcome Summary

#### Course Information

<b>Description</b>	...prepares the learner to identify and use tools required during the machining and assembly process including precision, semi-precision measuring tools, layout, surface finish, and mechanical hand tools, power hand tools, and a variety of fastener types.
<b>Total Credits</b>	1
<b>Total Hours</b>	36

#### Types of Instruction

Instruction Type	Credits/Hours
Lecture	18
Lab	18

#### Textbooks

*Precision Machining Technology*. Publisher: Delmar, Cengage Learning. Year: 2014. ISBN-13: 978-1-3054-1480-8

#### Learner Supplies

Reference Machine Tool Operations Orientation Packet (**required, supplied by Instructor**)

LTC. *Machine Tool Basic Hand Tools Study Guide*. **Source:** Machine Tool Instructor (required, supplied by instructor)

Safety Glasses (required, student responsible for purchasing their own safety glasses)

6 inch steel scale (required, student responsible for purchasing your own steel scale (ruler))

#### Course Competencies

##### 1. Select hand tools

###### Assessment Strategies

- 1.1. In the machine tool lab
- 1.2. Using measuring tools
- 1.3. Using layout tools
- 1.4. Using hand mechanical tools

###### Criteria

*Your performance will be successful when:*

- 1.1. you obtain measurements that are within the acceptable limits of the part print
- 1.2. you perform the layout to the part print specifications
- 1.3. you successfully identify tools used in the shop
- 1.4. you perform an assembly using hand tools
- 1.5. you demonstrate safe practices

#### **Learning Objectives**

- 1.a. Identify safe hand tool practices
- 1.b. Identify hand mechanical tools
- 1.c. Identify hand measuring tools
- 1.d. Identify hand layout tools
- 1.e. Demonstrate use of hand tools

## **2. Identify Fasteners**

#### **Assessment Strategies**

- 2.1. In the machine tool lab
- 2.2. Identify different types of threaded fasteners
- 2.3. Identify different types of non-threaded fasteners
- 2.4. Identify the correct hand mechanical tools to use with the correct fastener
- 2.5. Identify thread type by using a pitch gage

#### **Criteria**

*Your performance will be successful when:*

- 2.1. you identify different types of threaded fasteners
- 2.2. you identify different types of non-threaded fasteners
- 2.3. you identify the tools you will use with different fasteners

#### **Learning Objectives**

- 2.a. Identify threaded fasteners
- 2.b. Identify non threaded fasteners
- 2.c. Identify tools used with the fasteners

## **3. Select power tools**

#### **Assessment Strategies**

- 3.1. In the machine tool lab
- 3.2. using hand power hole producing tools
- 3.3. using hand power deburring tools
- 3.4. using hand power cutting tools
- 3.5. using hand power assembly tools

#### **Criteria**

*Your performance will be successful when:*

- 3.1. you demonstrate safe work habits
- 3.2. you perform a hole producing operation
- 3.3. you demonstrate deburring a part
- 3.4. you perform a cut off procedure
- 3.5. you perform an assembly using power tools

#### **Learning Objectives**

- 3.a. Identify hand power tools
- 3.b. Demonstrate use of power tools
- 3.c. Identify safe working habits

## **4. Demonstrate Assembly**

#### **Assessment Strategies**

- 4.1. In the machine tool lab
- 4.2. using a variety of threaded fasteners
- 4.3. using variety of non-threaded fasteners

- 4.4. using a variety of hand mechanical assembly tools
- 4.5. using a variety of power assembly tools

### **Criteria**

*Your performance will be successful when:*

- 4.1. you will use safe practices
- 4.2. you will use the correct fasteners for assembly
- 4.3. you will use the correct non-threaded fasteners for assembly
- 4.4. you will use the correct hand assembly tools
- 4.5. you will use the correct hand power assembly tools

### **Learning Objectives**

- 4.a. Identify assembly tools
- 4.b. Identify safe assembly practices
- 4.c. Identify fasteners used in an assembly
- 4.d. Perform an assembly