



**Western Technical College**

**10420208 Turning Operations 1 (CBE)**

**Course Outcome Summary**

**Course Information**

<b>Description</b>	Requires the learner to identify turning machine components, identify tools and tool holding accessories, verify alignment of machine components, and apply machining theory principles to fundamental turning machine operations.
<b>Career Cluster</b>	Manufacturing
<b>Instructional Level</b>	One-Year Technical Diploma
<b>Total Credits</b>	1
<b>Total Hours</b>	36

**Textbooks**

No textbook required.

**Learner Supplies**

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

Proper footwear - \$35.00-75.00. **Vendor:** To be discussed in class. Required.

Scientific calculator (recommend T1-36x Solar). **Vendor:** Campus Shop. Required.

Three-ring binder. **Vendor:** Campus Shop. Required.

Clipboard. **Vendor:** Campus Shop. Required.

Pens/Pencils/Black Sharpie Marker. **Vendor:** Campus Shop. Required.

Minimum 4GB USB Flash Drive. **Vendor:** Campus Shop. Required.

**Success Abilities**

1. Live Responsibly: Foster Accountability
2. Refine Professionalism: Improve Critical Thinking
3. Refine Professionalism: Participate Collaboratively

## Program Outcomes

1. Apply basic safety practices in the machine shop.
2. Interpret industrial/engineering drawings.
3. Apply precision measuring methods to part inspection.
4. Perform basic machine tool equipment set-up and operation.

## Course Competencies

### 1. Interpret the use of turning machine (lathe) components and accessories.

#### Assessment Strategies

- 1.1. Written Objective Test
- 1.2. Skill Demonstration

#### Criteria

*You will know you are successful when*

- 1.1. you identify the location of machine controls, guards, and safety devices.
- 1.2. you operate machine controls, guards, and safety devices.
- 1.3. you describe purpose of turning machine components and accessories.

#### Learning Objectives

- 1.a. Locate all machine controls, components, and accessories.
- 1.b. Describe the function of all machine controls, components, and accessories.
- 1.c. Identify different types of workholding devices/accessories and their applications.

### 2. Interpret safety issues common to turning machines (lathes).

#### Assessment Strategies

- 2.1. Written Objective Test
- 2.2. Skill Demonstration

#### Criteria

*You will know you are successful when*

- 2.1. you identify safety concerns related to turning machine operations.
- 2.2. you describe ways to mitigate safety concerns related to turning operations.
- 2.3. you demonstrate safe practices while performing turning operations.

#### Learning Objectives

- 2.a. Recognize safety issues related to the operation of turning machines.
- 2.b. Demonstrate safe practices while operating turning machines.

### 3. Identify proper tools and toolholding accessories for various turning operations.

#### Assessment Strategies

- 3.1. Written Objective Test
- 3.2. Skill Demonstration

#### Criteria

*You will know you are successful when*

- 3.1. you name and identify cutting tools used on a turning machine.
- 3.2. you describe the purpose of the selected tool.
- 3.3. you name and identify types of toolholding accessories used on turning machines.
- 3.4. you change tool inserts based on tool wear.

#### Learning Objectives

- 3.a. Identify cutting tools that are commonly used on turning machines, and their applications.
- 3.b. Identify types of toolholders commonly used on turning machines.
- 3.c. Recognize indications of tool wear.

3.d. Demonstrate proper technique for changing tool inserts.

**4. Verify the alignment of turning machine (lathe) components.**

**Assessment Strategies**

- 4.1. Written Objective Test
- 4.2. Skill Demonstration

**Criteria**

*You will know you are successful when*

- 4.1. you demonstrate the process of checking/adjusting tailstock alignment on a lathe.
- 4.2. you demonstrate the process of checking chuck run out on the lathe.
- 4.3. you demonstrate the process of aligning the tool/tool post.

**Learning Objectives**

- 4.a. Recognize the results of tailstock miss-alignment on a work piece.
- 4.b. Demonstrate the process of checking/adjusting tailstock alignment on a lathe.
- 4.c. Recognize the results of chuck run out on a work piece.
- 4.d. Demonstrate the process of checking chuck run out on the lathe.
- 4.e. Recognize the results of tool/tool post mis-alignment.
- 4.f. Demonstrate the process of aligning the tool/tool post.

**5. Demonstrate basic turning processes.**

**Assessment Strategies**

- 5.1. Skill Demonstration

**Criteria**

*You will know you are successful when*

- 5.1. you operate the machine without injury to yourself or others.
- 5.2. you operate the equipment without causing damage to the machine or equipment.
- 5.3. you follow industry safety protocols.
- 5.4. you face a workpiece to specified length.
- 5.5. you center drill a workpiece.
- 5.6. you turn a diameter to length on a workpiece.

**Learning Objectives**

- 5.a. Demonstrate the process of facing a workpiece to specified length.
- 5.b. Demonstrate the process of center drilling a workpiece.
- 5.c. Demonstrate the process of turning a diameter to length on a workpiece.