



South Central College

## MTT 2140 Applications II

### Course Outcome Summary

#### Course Information

<b>Description</b>	This course provides students with continuing opportunities to work on applying their skills, building on what was learned in the previous Applications course. Additional material is also introduced: topics include machining with carbide, producing heat treated parts and basic surface grinding. (Prerequisite: MTT 1240)
<b>Total Credits</b>	3
<b>Total Hours</b>	96

#### Types of Instruction

Instruction Type	Credits/Hours
Lab	3/96

#### Pre/Corequisites

MTT 1240

#### 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. Grind part perpendicular to +or- .0005**

**Learning Objectives**

Use precision vice  
Grind feature to print

**2. Apply heat treat methods**

**Learning Objectives**

Explain hardening work piece  
Explain tempering work piece  
Use hardness tester

**3. Demonstrate grinding procedures**

**Learning Objectives**

Use angle plate  
Use honing stones

**4. Use measurement tools**

**Learning Objectives**

Demonstrate the use of surface plates  
Use scribes and dividers  
Use dial indicator and gage blocks

**5. Identify general purpose turning tools**

**Learning Objectives**

Use high speed tooling  
Use carbide tooling

**6. Explain milling processes and procedures**

**Learning Objectives**

Demonstrate milling steps to +or- .005  
Demonstrate milling angles to +or- 1 degree

**7. Explain lathe processes and procedures**

**Learning Objectives**

Describe boring internal diameters to +or- .0005  
Describe turning between centers to +or- .003

**8. Describe quench mediums**

**Learning Objectives**

Use oil quenching material  
Use air hardening material

**9. Demonstrate part layout**

**Learning Objectives**

Setup semi-precision tooling  
Setup precision tooling  
Demonstrate proper layout procedure

**10. Describe mechanical hardware**

**Learning Objectives**

Identify thread and threaded fasteners  
Demonstrate the application of common mechanical hardware  
Explain Metric and English thread format

**11. Exhibit lab safety**

**Learning Objectives**

Demonstrate proper dress code and eye glass protection  
Demonstrate shop clean-up  
Demonstrate machine clean-up

**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.