South Central College

MTT 2140 Applications II

Course Outcome Summary

Course Information

Description
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)

Total Credits 3
Total Hours 96

Types of Instruction

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<tr>
<th>Instruction Type</th>
<th>Credits/Hours</th>
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<tbody>
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<td>Lab</td>
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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 scribers 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 ±0.005  
   Demonstrate milling angles to ±1 degree

7. **Explain lathe processes and procedures**  
   Learning Objectives  
   Describe boring internal diameters to ±0.0005  
   Describe turning between centers to ±0.003

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**

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