South Central College

MTT 2250  MTT Capstone

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 courses. Additional material is also introduced: topics include advanced grinding techniques. This is a variable credit course. (Prerequisites: MTT 2130 and MTT 2140)

Total Credits  4
Total Hours  128

Types of Instruction

Instruction Type Credits/Hours
Lab  2-4/64-128

Pre/Corequisites

MTT 2130 and MTT 2140

Institutional Core Competencies

Civic Engagement and Social Responsibility - Students will be able to demonstrate the ability to engage in the social responsibilities expected of a community member.

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.

Cultural Competence - Students will be able to demonstrate an attitude of personal curiosity, a rising knowledge of cultures, and an evolving range of skills for living and working among others with other worldviews and ways of life.

Course Competencies

1. Perform set-up operations on the grinding machine

   Learning Objectives
   Set-up manual grinder
   Set-up cylindrical grinder for outside diameter (OD) grinding
2. **Use the grinding magnet**
   Learning Objectives
   Discuss proper care of magnet (cleanliness)
   Describe proper use of honing stone

3. **Demonstrate grinding to print**
   Learning Objectives
   Illustrate grinding perpendicular to +or- .0003
   Illustrate grinding parallel to +or- .0003

4. **Utilize the grinding wheel dresser**
   Learning Objectives
   Demonstrate how to "true" a grinding wheel
   Demonstrate how to side dress a grinding wheel

5. **Demonstrate form dressing**
   Learning Objectives
   Demonstrate form dressing an outside radius on a grinding wheel
   Demonstrate form dressing an angle on a grinding wheel

6. **Use grinding wheel**
   Learning Objectives
   Demonstrate balancing grinding wheel
   Demonstrate mounting wheel on grinder
   Select proper grinding wheel

7. **Use advanced inspection equipment and documentation**
   Learning Objectives
   Use roamer arm coordinate measuring machine (CMM)
   Illustrate proper inspection sheet documentation
   Use Bridge style CMM

8. **Illustrate ability to complete tasks on time**
   Learning Objectives
   Demonstrate professionalism
   Create parts to print specifications

9. **Describe milling mold cavity**
   Learning Objectives
   Discuss machining runners to specifications
   Discuss machining gates to specifications

10. **Demonstrate mold press safety**
    Learning Objectives
    Explain how to adjust press shut height
    Explain how to adjust knock out bar

11. **Discuss types of plastics**
    Learning Objectives
    Identify thermosetting plastic
    Identify thermoplastics

12. **Demonstrate grinding a radius**
    Learning Objectives
    Grind an inside radius
    Grind an outside radius
13. Exhibit lab safety
   Learning Objectives
   Use proper personal protective equipment (PPE) and safety glasses
   Demonstrate proper clean-up of shop and machines

14. Demonstrate process planning and process procedures
   Learning Objectives
   Create a bill of material
   Identify machinery to make specific project
   Identify proper inspection plan for specific projects
   Identify tooling needed for project

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and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507)
332-7222.

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