



South Central College

MTT 1140 Measurement, Materials and Safety Level I

Course Outcome Summary

Course Information

Description	This course provides an exploration of the basics in machining, raw materials, use of hand tools, safety and maintenance. Topics include an overview of measurement techniques, materials, safety, machine tool math, quality control and maintenance. Teamwork, critical thinking and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Declare MTT as a major)
Total Credits	3
Total Hours	80

Types of Instruction

Instruction Type	Credits/Hours
Lec	1/16
Lab	2/64

Pre/Corequisites

Declare MTT as a major.

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. Explore Shop floor Layout

Learning Objectives

- Apply Quality Practices
- Compare Inspection and Preventative Processes
- Calculate Average, Standard Deviation and Determine Capability Range (Average +/- 3 Standard Deviations)
- Develop Sampling Plan
- Create Inspection Plan
- Define Differences Between Attributes and Variables (Surface Finish/Appearance vs. Measurable)

10. Differentiate a Material Composition

Learning Objectives

- Explain Ferrous Metals
- Explain Nonferrous Metals
- Define Tempering
- Describe Heat Treatment Process
- Characterize Hardness Scales and Test Variety of Specimens

11. Adopt Maintenance Schedules

Learning Objectives

- Communicate Lubrication Needs
- Use Cutting Fluids
- Demonstrate Measuring of Cutting Fluid Techniques
- Explain K Debris