

Minnesota State College Southeast

MACH 1610: Precision Measuring and Gauging

A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: 1

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course will provide the theory, technique, and care of typical measuring tools used in the Machining profession. Students will learn various measuring techniques used in the manufacture of machined parts. (Prerequisites: None) (2 Credits: 1 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 01/27/2016 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety considerations
2. Precision measuring tools and gauges
3. Setup sine bar and indicator
4. Operation of optical comparator
5. Operation of hardness tester
6. Using reference books

D. LEARNING OUTCOMES (General)

1. Demonstrate professionalism
2. Explain machine shop safety
3. Wear safety glasses & proper attire
4. Describe quality assurance
5. Explain comparator
6. Use comparator
7. Explain hardness tester
8. Use hardness tester
9. Demonstrate measuring tools
10. Use measuring tools
11. Prepare measuring equipment
12. Measure parts to print
13. Interpret blueprints
14. Set up measuring tools
15. Use hand tools
16. Use reference books
17. Understand machine shop formulas
18. Conversion of metric/inch dimensions
19. Calculate speeds and feeds
20. Calculate measurements
21. Explain machine shop surface finishes
22. Explain metal materials
23. Understand metal types
24. Describe surface texture
25. Describe geometric tolerance
26. Describe dimensioning techniques
27. Interpret dimensional types
28. Describe dimensioning types
29. Identify positional dimensioning
30. Identify geometric symbols
31. Measure tapers
32. Measure holes
33. Measure screw threads
34. Interpret metric threads
35. Keep tools clean
36. Maintain work area
37. Clean work area
38. Complete all assigned work
39. Complete final exam

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted