MECH 1720: Machining for Maintenance

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 1
Lab Hours/Week: 4
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

This course covers the fundamental elements of basic machine shop theory that would be applied to shop applications. Students taking the course will be able to apply skills learned in the classroom to the lab where they will have hands on experience on basic machine shop equipment. Topics of study include safety, measuring parts to print, proper set up, speeds & feeds, and cutting tool usage. (Prerequisites: None) (3 Credits: 1 lecture/2 lab)

B. COURSE EFFECTIVE DATES: 01/13/2020 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety considerations
2. Setup for manual machines
3. Operation of manual machines
4. Calculate machining data
5. Metallurgy
6. Measure parts and compare to specification
D. LEARNING OUTCOMES (General)
   1. Demonstrate professionalism
   2. Explain machine shop safety
   3. Wear safety glasses & proper attire
   4. Explain lathe operations
   5. Explain grinding operations
   6. Explain milling operations
   7. Explain drilling operations
   8. Explain sawing operations
   9. Explain machine shop tooling
  10. Explain blueprint document
  11. Explain machine shop surface finishes
  12. Explain metal materials
  13. Understand metal types
  14. Use reference books
  15. Understand machine shop formulas
  16. Calculate measurements
  17. Calculate speeds and feeds
  18. Calculate depth of cut
  19. Identify steels
  20. Saw parts
  21. Set up tooling for machining
  22. Set up job in machine tool
  23. Use hand tools
  24. Sharpen tools
  25. Machine parts on engine lathe
  26. Machine parts on milling machine
  27. Machine parts on surface grinder
  28. Machine hole types
  29. Calculate measurements
  30. Prepare measuring equipment
  31. Demonstrate measuring tools
  32. Use measuring tools
  33. Measure parts to print
  34. Keep tools clean
  35. Maintain work area
  36. Clean work area
  37. Turn in assignments
  38. Complete all assigned tasks or jobs
  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