Minnesota State College Southeast

MACH 1643: CNC Operations 2

A. COURSE DESCRIPTION

   Credits: 2
   Lecture Hours/Week: 0
   Lab Hours/Week: 4
   OJT Hours/Week: *.*
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None

   This course will familiarize the student with CNC machining and set up. Students will write programs and run programs on the various machines on the shop floor. (Prerequisite: None)(2 Credits: 0 lecture/2 lab)

B. COURSE EFFECTIVE DATES: 04/16/2020 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety considerations
2. Calculate machining data
3. Write programs
4. Set up for CNC machines
5. Operation of CNC machines
6. Measure parts and compare to specifications
D. LEARNING OUTCOMES (General)
   1. Demonstrate professionalism
   2. Explain machine shop safety
   3. Practice machine shop safety
   4. Wear safety glasses & proper attire
   5. Use reference books
   6. Understand machine shop formulas
   7. Calculate speeds & feeds
   8. Calculate depth of cut
   9. Saw parts
  10. Keep tools clean
  11. Maintain work area
  12. Set up proper stop
  13. Use proper fixture
  14. Write CNC programs
  15. Verify CNC programs
  16. Set up CNC machine
  17. Select proper tooling
  18. Use proper tool holders
  19. Use correct carbide tooling
  20. Use cutter compensation
  21. Check CNC set up
  22. Run program on CNC machine tool
  23. Set tool offset
  24. Set work offset
  25. Load correct tool
  26. Download program
  27. Fabricate parts to print
  28. Produce proper hole sizes
  29. Complete CNC prints
  30. Complete work assignments
  31. Clean work area

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted