

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