

Minnesota State College Southeast

MACH 2635: CNC Precision Machining Lathe

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 1

Lab Hours/Week: 6

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course will focus on CNC Lathe operations used to support metal stamping industry & metal turning manufacturing. Each student will manufacture several turning projects in this course. The student will be responsible for the programming, set-up, and operation of the CNC lathe, and will produce an inspection report of the finished project. (Prerequisites: MACH1601, MACH1605, MACH1610, MACH1615, MACH1625, MACH1630, MACH1641, MACH1650, MACH1661 or equivalent) (4 Credits: 1 lecture/3 lab)

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

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety considerations in CNC set-up & operations
2. Learning G & M code programming language
3. Use technical data to select proper tooling
4. Precision measurement
5. Math calculations related to speed and feed selections
6. Develop 5-S program skills

D. LEARNING OUTCOMES (General)

1. Identify safety rules
2. Wear proper eye protection
3. Wear proper attire
4. Use CAD/CAM system to design and/or program the project
5. Use Manual Data Input (MDI) programming methods
6. Use Conversational Programming methods
7. Demonstrate proper tool set-up and off-set data entry
8. Demonstrate knowledge of insert selection data
9. Demonstrate knowledge of speed and feed selection related to part materials
10. Operate computer aided machine tools safely by performing a block-step program check
11. Use precision measuring tools
12. Complete a production run of a specific number of parts
13. Complete inspection of part
14. Clean all machines (5-S program)
15. Lubricate machine tools (5-S program)

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted