

**MAC 222  
ADVANCED CNC TURNING  
COURSE OUTLINE**

**COURSE DESCRIPTION:**

Prerequisites: MAC 122

Co requisites: None

This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers. Course Hours per Week: Class, 1. Lab, 3. Semester Credit Hours: 2.

**OUTLINE OF INSTRUCTION:**

I.

3. Finish turning
4. Center drilling
5. Drilling
6. Taper turning
7. Arcs (Radii and Fillets, clockwise and counterclockwise)
8. Threading
9. Boring
10. Cycle turning

F. Inspections

II. Introduction to the EMCO Compact 5 Computer Numerical Control Lathe

A. Defining control functions

1. X and Z
2. Speed (RPM)
3. Feed
4. Input
5. Delete
6. Reverse
7. Forward

B. Programming G and M Codes for CNC lathes and Application

1. Definitions
2. Review all control functions
3. Write programs
  - a. Facing
  - b. Rough turning
  - c. Finish turning
  - d. Radii
  - e. Inspection

**REQUIRED TEXTBOOKS AND MATERIALS:** None

The instructor will use various handouts generated by the Durham Tech. Machining Dept. for operation and programming of CNC machines.