

MAC 224
ADVANCED CNC MILLING

COURSE DESCRIPTION:

Prerequisites: MAC 124

Corequisites: None

This course covers advanced methods in setup and operation of CNC machining 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 machining centers. Course Hours Per Week: Class, 1. Lab, 3. Semester Hours Credit, 2.

OUTLINE OF INSTRUCTION:

- I. CNC Machining Centers and CNC Mills
 - A. Machine CNC system description
 - B. Axis designation/coordinate system
 - C. Code description/data format
 - 1) G codes
 - 2) M codes
 - 3) S and F codes
 - D. Tooling and setup procedures
 - 1) Z length and diameter set
 - 2) Reference, tool change and special point set locations
 - 3) Tooling safety
 - 4) Tooling menus
 - E. Control orientation
 - 1) Start-up procedures
 - 2) Diagnostic checks
 - 3) Menu format
 - F. Operation procedures
 - 1) Manuscript reading
 - 2) Program editing
 - (a.) speed/feed overrides
 - (b.) dimensional changes

- 3) Manual data input (MDI)
- 4) Set-up tooling procedures
- 5) Operation of CNC mills and Machining Centers

REQUIRED TEXTBOOKS AND MATERIALS:

None.

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

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.