DET2240 - Computer Aided Machining and Programming

Credits:	4 (2/2/0)
Description:	The objective of this course is to develop students' knowledge of computer numerical control system components, programming codes for linear and circular interpolation, and Computer Aided Design/Computer Aided Machining (CAD/CAM) integration.
Prerequisites:	• DET2110
Corequisites:	
Pre/Corequisites*:	
Competencies:	1. Correctly interpret machine axis movements in the X, Y and Z planes. 2. Analyze and apply point-to-point programming to generate linear interpolation toolpaths. 3. Analyze and apply continuous path programming to generate circular and linear interpolation toolpaths. 4. Utilize incremental programming modes to generate code sequences for toolpaths. 5. Utilize absolute programming modes to generate codes sequences for toolpaths. 6. Write and backplot comprehensive linear interpolation programs for part toolpathing. 7. Write and backplot comprehensive circular interpolation programs for part toolpathing. 8. Utilize CAD/CAM software to generate part toolpathing for three-axis machining. 9. Utilize a virtual computer numerical control environment to analyze programs for functionality, correct toolpathing and interference checking. 10. Demonstrate accurate and safe setup procedures for a three-axis mill. 11. Machine parts based on manually generated computer numerical control code. 12. Machine parts based on CAD/CAM generated computer numerical control code.
MnTC goal areas:	None

**Can be taking as a Prerequisite or Corequisite.*