MFG 264 : AUTOMATED CUTTING

Transcript title

Automated Cutting

Credits

3

Grading mode

Standard letter grades

Total contact hours

70

Lecture hours

10

Lab hours

60

Prerequisites

MFG 119 or MFG 119M.

Course Description

Utilize CAD tools to lay out and generate code for efficiently cutting material using a CNC plasma table or other 2D CNC tool. Includes design, tool set-up, tool maintenance, code editing, and safe operation of tools to create a final product.

Course learning outcomes

1. Demonstrate safe practices while using the MATC Machining Lab.
2. Identify all major safety precautions associated with various 2D cutting systems, including CNC plasma tables, CNC routers, and laser engravers.
3. Design parts from drawing specifications to generate and edit CNC code for 2D automated cutting systems using appropriate CAD software.
4. Demonstrate appropriate set up, maintenance, and use of 2D cutting systems for cutting various materials.
5. Create an assembly of parts using a combination of 2D cutting systems.

Content outline

1. Designing parts from product drawings or requests
2. Generating CNC (G-code) for machine control
3. Understanding and editing G-code
4. Introduction to various 2D cutting systems
5. Safe usage of CNC Plasma table
6. Introduction of Computer Aided Machining software to produce G-Code
7. Usage of Laser cutting systems
8. Usage of vector graphics editing software
9. Practical Exercises

Required materials

This class requires the purchase of safety equipment, reference books, measurement equipment, and tools.