

# MFET 220C : Manufacturing Processes and Machine Tools

A technical study of the theory, equipment, and application of machine tools and metal removal processes. Processes covered include turning, milling, and drilling, with an emphasis on numerical control. Theory is applied through actual machine operation in lab.

**Credits** 4

**Lab/Practicum/Clinical Hours** 3

**Lecture Hours** 3

**Prerequisite Courses**

MFET 111C

MCET 105C

MNFP 105C

**Learning Outcomes**

- Understand the physics and dynamics of the metal cutting process and the various types of chip formation.
- Identify mechanical and physical properties of various cutting tool materials and specify the proper tool material for a specific application.
- Select the proper machining processes required to generate various features for a desired part.
- Understand and describe the operation of various types of machining operations and specify the application and limitations of each of the machines and tooling required.
- Operate CNC machines and create basic Gcode programs.
- Understand the economics of machining and estimate the cost of manufactured items.