

## ABET Course Syllabus for MET 355: CAD/CAM Manufacturing

1. Course number and name: MET 355: CAD/CAM Manufacturing
2. Credits and contact hours: 4 credit hours, 6 hours per week
3. Instructor's Name: Charles Pringle, PE
4. Textbook, title, author, and year:
  - *Machine Tool Practices, 11th ed.*, by Kibbe, Meyer, Stenerson, Curran; Pearson Education Inc., 2020.
- a. Other supplemental materials:
  - Safety glasses
  - Closed toed shoes
5. Specific course information:
  - a. Brief description of the content of the course (catalog description): Introduction to the mechanical design and manufacturing process. Machining of metallic and non-metallic materials on automated equipment; programming and operation of Computer Numeric Controlled (CNC) equipment. Integrates Computer-aided Design (CAD) and Computer-aided Manufacturing (CAM).
  - b. Pre-requisites: ETSC 265 and MET 255.
  - c. Required, elective, or selected elective (as per Table 5-1) course in the program: Selective Elective
6. Specific goals for the course:

This course introduces the student to CAD/CAM process and manufacturing.

  - a. Specific outcomes of instruction:
    - Design a part to be produced applying Geometric Dimensioning & Tolerancing (GD&T) and solid modeling principles using Computer Aided Manufacturing (both additive and subtractive processes) to produce a part.
    - Create, modify, and translate Computer Numeric Control (CNC) program code using Computer Aided Manufacturing (CAM) and manual means.
    - Simulate, optimize, and fabricate folded metal parts.
    - Describe Lean concepts that can be applied to manufacturing processes.
    - Create programs using Computer Aided Drafting (CAD) and Computer Aided Manufacturing (CAM) software to create a part.
  - b. Criterion 3 student outcomes addressed by course:  
3 (1)

7. Brief list of topics covered:

- GD&T
- NC Code
- Sheetmetal Fabrication
- Weldments
- Fixturing
- Lean Concepts
- CAM Programming

Optimization/Continuous improvement