COLLEGE OF ENGINEERING
THE UNIVERSITY OF TOLEDO

University of Toledo
Mechanical Engineering Technology
Master Syllabus

Course Title: *CADD* **Course Code & Number:** *MET 1250*

Credit Hour Total: *3*

Lecture Contact Hours: *1.5* **Lab Contact Hours:** *1.5*

Prerequisite(s): *MET 1020 and MET 1050*

Text: *Engineering Graphics Essentials with AutoCAD 2012, Kristie Plantenburg, 2012*

Software: *AutoCad 2015*

Course Description: (Approved Catalog Description)
Introduction to two-dimensional and three-dimensional Computer Aided Drafting. Laboratory based experiences with creating and dimensioning working drawings, part libraries, entity insertion, graphics manipulation and customization.

Related Program Outcomes:
Outcome a. An understanding of the industry standards necessary to successfully document part design for manufacturing, as evidenced by the completion of a set of drawings which meet these standards.
Outcome b. An ability to apply current knowledge of manufacturing, as evidenced by the ability to use the web as a source of information about standard manufactured parts and manufacturing processes, and by the ability to solve problems on three course exams.
Outcome g. An ability to communicate effectively, as evidenced by the ability actively participate in group discussions and complete an oral report effectively demonstrated a practical CADD application.

Course Objectives:
At the end of the course the student should be prepared to:

1. Use Windows to perform appropriate file management in a network setting.
2. Explain appropriate use of two dimensional, three dimensional, and parametric modeling as tools in the manufacturing process.
3. Identify appropriate interfaces for drawing database (CNC, CAM, CMM, FEM).

4. Create customized templates with appropriate limits; layers; text, line, dimension styles and paper space layouts.
5. Produce multiple view orthographic and isometric part drawings.
6. Use and create symbol libraries with attributes to produce schematic drawings.
7. Fully dimension and tolerance part drawings using ASME Y14.5 standards.
8. Produce an assembly drawing using a set of externally referenced part files.
9. Use reference texts and web resources to complete a set of manufacturing drawings.
10. Effectively communicate a practical application of CAD in a professional oral report.

Course Outline:

- Understanding data management and backup in a network environment
- Creating and modifying part geometry using multiple coordinate systems and geometry references.
- Creating an appropriate template structure for manufactured parts.
- Creating and using symbol libraries to create schematic drawings.
- Extracting database information from attributes in schematic drawings
- Creating paper space plotting layouts.
- Creating multiple dimension styles to meet ASME Y14.5 standards.
- Creating two-dimensional isometric drawings.
- Learning to control part tolerances using dimensioning.
- Learning to apply Geometric Dimensioning and Tolerancing.
- Learning to control three-dimensional viewing space.
- Creating three-dimensional solid models.
- Learning to modify User Coordinate Systems to create more complex solid models.