Course Title: *Advanced CADD*   **Course Code & Number:**   *MET 2350*

Credit Hour Total: *3*

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

Prerequisite(s):   *MET 1250*

Text: *Intro to Solid Modeling using Solidworks, by Howard, 2016*

Software: *SolidWorks 2016*

Course Description: (Approved Catalog Description)
Continuation of MET 1250. Topics covered include attributes, with attention to geometric tolerancing and true dimensioning. Application of three-dimensional modeling techniques and the preparation of detail drawings from the model.

Related Program Outcomes:
Outcome a: ability to select and apply the knowledge, skills and modern tools to engineering design.
Outcome b: ability to select and apply knowledge of mathematics and engineering to designing an engineering system component.
Outcome c: Ability to conduct standard tests, as evidenced by the CSWA Industrial Certification Tests
Outcome d: Ability to design engineering systems, as evidenced by individual projects consisting of a working assembly
Outcomes h and k: an ability to understand the need and engage in self-directing continuing PD, as evidenced by the re-engineering of an existent working assembly

Course Objectives:
Upon completion of this course, the students will be able to:

1. Explain appropriate use of wireframe, surfaced, solid, parametric and kinematic modeling as tools in the manufacturing process.

2. Understand CAD concepts of associativity, base sketch, geometric constraint, feature, parent and child relationships, and part and assembly structures.

3. Produce three dimensional parametrically constrained solid part models.

4. Produce three dimensionally constrained assembly models.

5. Produce multiple view orthographic part drawings from a 3D part or assembly model.

6. Produce isometric drawings from a 3D part or assembly model.

7. Produce an assembly drawing using a set of related part files.

8. Create kinematic assembly studies.

Course Outline:
- Engineering Drawing Terms
- Engineering Technical Drawings
- Configurations
- Lofts
- Sweeps
- Design Tables
- Tolerancing and Design Intent
- Advanced Assembly Operations
- Generation of 2D Layouts
- Solution of Vector Problems
- Analysis of Mechanisms
- Design of Molds
- Sheet Metal Parts