

MFG 119 : MANUFACTURING DESIGN AND DRAFTING TECHNIQUES

Transcript title

MFG Design/Drafting Techniques

Credits

4

Grading mode

Standard letter grades

Total contact hours

80

Lecture hours

20

Lab hours

60

Course Description

Introduces solid modeling software (computer aided drafting) used in design and manufacturing. Includes using the software to capture design intent through part development and creating assemblies with these parts. Adheres to engineering and manufacturing standards and formats.

Course learning outcomes

1. Apply engineering and manufacturing standards in the preparation of technical mechanical drawings.
2. Demonstrate basic geometrical relationships: parallelism, perpendicularity, angularity, co-linearity and concentricity using the standard measurement units of inches or millimeters, expressed as fractional or decimal values.
3. Model solid objects using standard computer aided design (CAD) software proceeding from basic sketching techniques to the creation of solid features through the use of extrusions, cuts, rotations, patterns and sweeps.
4. Demonstrate a methodical and progressive use of computer aided design functions to capture the design intent of solid models and utilize parametric modeling to create solid models that can evolve during the design process.
5. Organize and manage part, sub-assembly, and assembly properties and relationships within a solid model drawing.
6. Create exploded configurations and animations of solid models that contain sub-assemblies.

Content outline

1. Intro to Sketching and Basic Part Design
2. Intermediate Part and Assembly Design
3. Parametric Design
4. Drawings
5. Part Modeling

6. Assembly Modeling

7. Drawings Preparation

Required materials

This class may require the purchase of online tutorial services to supplement and support other in house course materials.