Instructors

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Web Resources

- ME359 Blackboard site, by section

Prerequisites

- EK156 Design and Manufacture

Course Schedule

- Lecture - EMB 125 (ECL)
  - Section A1 – Thurs, 6-8p
- Lab - EMB 125 (ECL)
  - Arranged

Course Text

- **Required**
  - *Machinery's Handbook* from Industrial Press: Any edition from 24th to current
    - It is strongly recommend to get a hard copy, not a digital copy
- **Recommended**
  - *SolidProfessor* – Digital learning system for Solidworks

Learning Objectives

Technical drawing in two and three dimensions will be covered in detail using the computer aided design tool Solidworks. Geometrical dimensioning and tolerancing methods and specifications will be taught and applied to a variety of tasks and projects.

Topics will include initial aspects of machine components and design, computer numerical control (CNC), computer aided manufacturing (CAM), and relations to machining and various manufacturing processes.

Often, specific key machine components will be used as demonstrations of dimensioning and tolerancing specifications.

Grading

- Homeworks – 60%
- Quizzes (2) – 20%
- Final Project – 20%

Note: It is your responsibility to check with the instructor or GTF to make sure that all quizzes and assignments have been recorded correctly, and that you are not missing any points on the grade sheet on blackboard. After two weeks from the time the assignment is returned there will be no change in grades.

Homework

- Weight
  - All homeworks are weighted equally
- Frequency
  - Weekly
- Collaboration Policy
  - Collaboration is acceptable, but the final work must be the student's own. The students must note with whom they have collaborated

Lecture Schedule

Exact dates determined

Class No.	Lecture Topic	CAD Demo
1	- Introduction - History of CAD - Parts Drawings, Part I	- Basic CAD - Drawings Part I
2	- Part Drawings II	- Basic CAD II - Drawings II
3	- Assembly Drawings - Bill of Materials - Methods of Joining	- Assy Models and Drawings - BOMs - Downloading models from online sites (McMaster) and 3D ContentCentral
4	- Tolerances - Tolerance Stacks - Surface Finish	- Applying Tolerances, Surface Finish to Models and Drawings
5	Machine Elements I - Cams - Shafts - Bearings - Fits - Retaining Rings - Springs - O-Rings	
6	Machine Elements II - Gears - Splines - Ball Screws - Chains - Sprockets - Belts	
7	Methods of Manufacture - Machining - Sheetmetal - Molded Parts - Cast Parts Methods of Joining, continued	- Sheetmetal - Sheetmetal Drawings - Features for molded/cast parts - Weldment Models/Drawings
8	**Quiz 1 Up to Class 5**	
9	- Geometric Tolerances - Tolerance Stacks using GD&T	- Downloading models from online sites (McMaster) and 3D ContentCentral
10	- FEA	- Simulation demo - Basic + Advanced
11	- Industrial Design - Rapid Prototyping	
12	**Project Presentations and Reports due**	
13	**Quiz 2 Class 6 on**	