

Instructors

- Lei Sui | leisui@bu.edu | Sections A1 & A2

Web Resources

- ME359 Blackboard site

Prerequisites (Recommended)

- EK156 Design and Manufacture

Course Schedule

- Lecture: EMB 125 (ECL), Tuesday, 4-6pm (A1) and 6-8pm (A2)
- Lab: EMB 125 (ECL)
 - Arranged

Course Text

- **Required**
 - *Machinery's Handbook* from Industrial Press: Any edition from 24th to current; hardcopy

Learning Objectives

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

Topics will include initial aspects of machine components and design 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%
- Exams (2) – 40%
- 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

This schedule is a general outline for the class, the exact dates and classes may vary.

ME359: Computer Aided Design & Machine Elements; Sui, Fall 2015, Section A1 & A2, Tuesdays					
Week #	Date		Topics	Lab Topics	Lecture #
1	9/8/2015	Lecture 1	- Introduction - Short History of CAD - Parts Drawings I	- Basic CAD - Drawings Part I	1
2	9/15/2015	Lecture 2	- Part Drawings II	- Basic CAD II - Drawings II	2
3	9/22/2015	Lecture 3	- Part Drawings III, Holes, Threads and Views	- Basic CAD III - Drawings III	3
4	9/29/2015	Lecture 4	- Part Drawings IV, Revisions	- Basic CAD IV - Drawings IV	4
5	10/6/2015	Lecture 5	- Tolerances - Tolerance Stacks - Surface Finish - Geometric Dimensioning and Tolerancing (GD&T)	- Applying Tolerances, Surface Finish to Models and Drawings	5
6	10/13/2015	Holiday	Substitute Monday Classes		
7	10/20/2015	Quiz #1	Through Lecture #5		
8	10/27/2015	Lecture 6	- Assembly Drawings - Bill of Materials - Methods of Joining	- Assembly Models and Drawings - BOMs - Downloading models from online sites	6
9	11/3/2015	Lecture 7	- Weldment Drawings, Inseparable Assemblies	- Weldment Drawings	7
10	11/10/2015	Lecture 8	- Machine Elements I: Cams, Shafts, Bearings, Retaining Rings, Springs, O-Rings	- Bearing Analysis	8
11	11/17/2015	Lecture 9	- Machine Elements II: Gears, Splines, Keys, Chains, Belts	- Gears & Gear Ratios	9
12	11/24/2015	Lecture 10	- Methods of Manufacture	- Features for molded/cast parts	10
13	12/1/2015	Lecture 11	- Finite Element Analysis (FEA)	- Simulation	11
14	12/8/2015	Lecture 12	- Rapid Prototyping		12
15	12/15/2015	Quiz #2	Class 6 to end		