

Instructors

- Peter A. Zink | pzink@bu.edu | Sections A3, A4

Web Resources

- ME359 Blackboard site

Prerequisites (Recommended)

- EK156 Design and Manufacture

Course Schedule

- Lecture: EMB 125 (ECL); A1: Tue 4-6, A2: Tue 6-8p, A3: Mon 12-2, A4: Wed 12-2
- Labs: EMB 125 (ECL); Mon 6-8, Tue 10-12, 12-2, Thu 10-12 (students may attend any lab)
- Graders/ Lab TAs: Noah Bernays, Josh Byington, David Chittendon, Patrick Husted

Course Text

- **Required:** PTC Creo Parametric Student eLearning Library (purchase at store.ptc.com/bu)
- **Recommended:** *Machinery's Handbook* from Industrial Press: Any edition from 24th to current

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.
- Specific key machine components will be used as demonstrations of dimensioning and tolerancing specifications.

Grading

- Homework – 80% * Lowest homework score will be dropped at the end of the semester
- Exams (2) – 20%
- 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 homework assignments are weighted equally
- Frequency: Weekly
- Collaboration Policy: Collaboration is acceptable, but the final work must be the student's own. Students must note with whom they have collaborated

Academic Conduct

- Students must follow the BU Academic Conduct Code:
<http://www.bu.edu/academics/files/2011/08/AcademicConductCode.pdf>
- Any violation of this code will be reported to the COE Academic Conduct Committee.

Lecture Schedule

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

| 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 | - Part Drawings III, Holes, Threads and Views | - Basic CAD III - Drawings III |
| 4 | - Part Drawings IV, Revisions | - Basic CAD IV - Drawings IV |
| 5 | - Tolerances - Tolerance Stacks - Surface Finish - Geometric Dimensioning and Tolerancing | - Applying Tolerances, Surface Finish to Models and Drawings |
| 6 | - Assembly Drawings, Separable Assemblies - Bill of Materials | - Assembly Models and Drawings - BOMs - Downloading models from online sites |
| 7 | Exam 1 | |
| 8 | - Weldment Drawings, Inseparable Assemblies | - Weldment drawings |
| 9 | Machine Elements I - Cams - Shafts - Bearings - Retaining Rings - Springs - O-Rings | - Bearing Analysis |
| 10 | Machine Elements II - Gears - Splines - Belts | - Gears & Gear Ratios |
| 11 | Methods of Manufacture | - Features for molded/cast parts |
| 12 | Finite Element Analysis (FEA) | - Simulation |
| 13 | - Rapid Prototyping | |
| 14 | Exam 2 | |