Instructor

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Web Resources

- ME359 Blackboard site (learn.bu.edu)
- Piazza Website (for ME359 discussion & questions), http://piazza.com/bu/other/buengme359/home

Prerequisites (Recommended)

• EK156 Design and Manufacture

Course Schedule

- Lecture: EMB 125 (ECL); A3: Mon 12-2, A4: Wed 12-2
- Labs: EMB 125 (ECL); TBD (students may attend any lab section)
- Graders/ Lab TAs: TBD

Course Tools (links to recommended tools available on Blackboard)

- Dial Calipers (Anytime Tools Dial Caliper Model AT203185 recommended)
- A small tool kit containing at least: needle nose pliers, Phillips and flat screwdrivers, small and large, wire cutters; (Allied Tools Model 49032 strongly recommended)
- A Black & Decker handheld screwdriver (Model LI2000, no exceptions)
- Free Account at PTC: https://support.ptc.com/ > Create a New Academic Account

Course Texts

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

Learning Objectives

- Technical drawing in two and three dimensions will be covered in detail using CAD
- Geometrical dimensioning and tolerancing methods and specifications will be applied to a variety of tasks
- Understanding of machine components and design, including gears, bearing, cams and the relationship of design to various manufacturing processes.

Grading

- Homework 75% * Lowest homework score will be dropped at the end of the semester
- Exams (2) 20%
- Project 5% Disassemble, model, draw, and create LEGO/IKEA-like assembly instructions for the B&D LI2000
- It is your responsibility to check with the instructor or GTF to make sure that all grades have been recorded correctly on Blackboard. After two weeks from the time the assignment is returned there will be no change in grades.

Homework

- All homework assignments are weighted equally
- 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 course; the exact dates and topcis may vary by section.

	Topics	Lab/Exercise Topics
Session 1	 Introduction Short History of CAD Part Drawings I 	- Basic CAD - Drawings Part I
Session 2	- Part Drawings II	- Basic CAD II - Drawings II
Session 3	 Part Drawings III, Holes, Threads and Views 	- Basic CAD III - Drawings III
Session 4	- Part Drawings IV, Revisions	- Basic CAD IV - Drawings IV
Session 5	- Tolerances - Tolerance Stacks - Surface Finish	- Applying Tolerances, Surface Finish to Models and Drawings
Session 6	- Geometric Dimensioning and Tolerancing (GD&T)	- Applying GD&T to Drawings
Session 7	 Assembly Drawings Bill of Materials Methods of Joining 	 Assembly Models and Drawings BOMs Downloading models from online sites
Exam #1	Through Session #6	
Session 8	- Weldment Drawings, Inseparable Assemblies	- Weldment Drawings
Session 9	- Machine Elements I: Cams, Shafts, Bearings, Retaining Rings, Springs, O-Rings	- Bearing Analysis
Session 10	- Machine Elements II: Gears, Splines, Keys, Chains, Belts	- Gears & Gear Ratios
	Thanksgiving Break, No classes	
Session 11	- Methods of Manufacture	- Features for molded/cast parts
Session 12	- Finite Element Analysis (FEA)	- Simulation
Exam #2	Cumulative	