Fundamentals of Engineering Design – ME312 – Spring 2010

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Section A1, Thursday, 6:00, PHO-206 (LAB - ENG 302; 3-5989)

TEXT: Class notes – Use ME311 book as a reference

GRADES: 40% Big Lift Project (15% Performance, 25 % Drawings/Report)
20% Homework
20% Tolerance/Fits Quiz
20% Statistics Quiz

LATE WORK WILL RECEIVE HALF CREDIT

DATE	TOPIC	HOMEWORK
1/14	Introduction Design Project "The Big Lift" Tolerances, Gears Design Management	Form design teams (4 or 5 per team) Everyone *must* join a design team. **Concept Sketch – Due 1/21** Counts as 1 homework **Responsibility Chart – Due 1/21** Counts as 2 homeworks
1/21	Manufacturing drawings Tolerances, Dimensioning Manufacturing Techniques Fits	Create a set of manufacturing drawings from your concept sketch. **Due 2/4.** **Make 2 copies** – One for you, one to hand in to me. Order Gears
1/28	Working Drawings How to get new ideas Puzzles and Problem solving	Build Big Lifter

The Big lifter will be built in the shop (Room B7)
Joe and Dave will help you with the building.
All materials except for gears and some bearings will be supplied.
All members of a team *must* attend.
Bring your drawings to the shop every time you work.

2/4	Ergonomics	Build Big Lifter

2/11 Ethics Build Big Lifter
Film: Supersonic Spies – A NOVA film about the
The development of the Russian TU-144
supersonic aircraft – "Konkordski".

There will be four questions on the Quiz about the film.

2/18 QUIZ – Tolerances/Fits (Hint: understand geometric positional tolerances)
Test big lifter in RM 302 (CAD LAB)
Prof Bethune must see some of the testing.

NOTE: There is no due date for the Big Lifter Performance as there are often procurement problems with the gears. It is best to complete the performance part of the project as soon as possible.

Design Report Requirements

Title Page – See sample in lab
A 3D assembly drawing including assembly numbers
Drawings must include a border and title block
Parts List (BOM), including a material and cost column
(include manufacture's part numbers part and manufacture's name)
Dimensioned drawing for any part you manufactured

2/25	Guest lecture	
3/4	Creating a Production Line	Homework: define Initial costs, Fixed Costs, Variable costs. **Due 3/18** Counts as 3 homeworks
3/11	Spring Recess	
3/18	Creating a Production Line	Create a floor plan for your Production line (scaled drawing) Determine cost per unit, time per Unit. **Due 3/25** Counts as 4 homeworks
3/25	TBA	

4/1	TBA	
4/8	Statistics Probability Hypothesis testing	Homework Set #1 – **Due 11/19**
4/15	Statistics Pearson Product-Moment Correlation Regression Analysis ANOVA Non-parametric testing	Homework Set #2 – **Due 12/3**
4/22	No lecture	
4/20	Statistics Quiz – Handout notes with tables only.	