

ME 360L - Mechanical Engineering Design III – Spring 2012
Bob Greenlee - ME Building 323 - Phone 277-5613 - Email: bgreen@unm.edu
Office Hours: 12:00 PM - 2:00 PM Monday - Thursday

- Book:**
1. Shigley's Mechanical Engineering Design – 9th Edition – Budynas and Nisbett
 2. Pro/ENGINEER Wildfire 5.0 - MECHANICA Tutorial (Structure / Thermal) Integrated Mode – Roger Toogood (Lab)

Flash Drive: 1GB Minimum size – used in lab to save Pro/E and Mechanica results

Week	Date	Description
1	1/16	Dr. Martin Luther King Day
	1/18	Introduction to the class – Units
	Lab	Review of Pro/E
2	1/23	Safety Factors – Concept of Design (1-14)
	1/25	Stress strain Curve (2-1, 2-3) – Matlab Functions
	Lab	Chapter 3 - Solids Modeling 1
3	1/30	Singularity functions (3-1, 3-2, 3-3)
	2/1	More Singularity Functions Stresses,
	Lab	Chapter 4 - Solids Modeling 2
4	2/6	Mohr's circle (3-4, 3-5, 3-6)
	2/8	3D Stresses (3-7, 3-8, 3-9)
	Lab	Chapter 5 - Plane Stress and Plane Strain
5	2/13	Transverse shear, torsion (3-11, 3-12)
	2/15	Stress Concentration factors (3-13)
	Lab	Chapter 6 - Axisymmetric Solids and Shells
6	2/20	Project Phase I – Due 3/19
	2/22	<u>Exam I</u>
	Lab	Chapter 7 - Shell Models
7	2/27	Static Failure Theories (5-1, 5-2, 5-3)
	2/29	Ductile materials, Von Mises Stresses (5-4, 5-5, 5-7)
	Lab	Chapter 8 - Beams and Frames
8	3/5	Brittle Materials (5-9, 5-10)
	3/7	Fatigue Failure (6-1, 6-2, 6-3, 6-4)
	Lab	Chapter 9 - Miscellaneous Topics
9	3/12	<u>SPRING BREAK !!!!</u>
	3/14	<u>SPRING BREAK !!!!</u>
	Lab	<u>SPRING BREAK !!!!</u>

10	3/19	Project Phase II – Due 5-4
	3/21	S-N Curve (6-7, 6-8, 6-9)
	Lab	Chapter 10 – Thermal Modeling
11	3/26	More stress concentration, Torsion Loads, Combining loads (6-11, 6-12, 6-13)
	3/28	General Fatigue method (6-14, 6-15)
	Lab	PROJECT
12	4/2	General Fatigue Problems
	4/4	<u>Exam II</u>
	Lab	PROJECT
13	4/9	Idealization and symmetry - Impact Loads
	4/11	More Impact Loads
	Lab	PROJECT
14	4/16	Case Study
	4/18	Case Study
	Lab	PROJECT
15	4/23	Case Study
	4/25	Case Study
	Lab	PROJECT
16	4/30	<u>Exam III</u>
	5/2	Project Presentations
	Lab	Project Presentations