

ME 211 INTRODUCTION TO SOLID MECHANICS

COURSE OUTLINE – Fall 2016

Hibbeler 3rd edition

Class	Date	Topic	Reading	Homework
1	W 9/7	Introduction	Chapter 1	
2	F 9/9	Forces	Chapter 2, web A	None
3	M 9/12	Vector products and moments	§3.1–§3.6, web B	
4	W 9/14	Equilibrium (2D)	§4.1–§4.4, web C	
5	F 9/16	Equilibrium (3D)	§4.5, §4.6, web D	HW 1
6	M 9/19	Friction	§4.7–§4.8, web E	
7	W 9/21	Two-force member structures	§5.1–§5.4	
8	F 9/23	More general structures	§5.5, web F	HW 2
9	M 9/26	Centroids and distributed loading	§6.1, §6.3, web G	
10	W 9/28	Internal loading	§7:1, §7.2	
11	F 9/30	Shear force and bending moment diagrams	§11.1, §11.2, web H	HW 3
12	M 10/3	Shear force and bending moment examples		
13	W 10/5	Concept of stress	§7.3–§7.7	
14	F 10/7	Review of Statics		HW 4
15	M 10/10	Bluebook #1 — Lectures 1–12		
16	W 10/12	Concept of strain	§7.8, §7.9 web I	
17	F 10/14	Material behavior	Chapter 8, web J	HW 5
	M 10/17	Fall Break		
18	W 10/19	Axial loading (determinate problems)	§9.1–§9.3, web K	
19	F 10/21	Indeterminate problems and thermal strain	§9.4–§9.6, web L	HW 6
20	M 10/24	Torsion of cylinders	§10.1–§10.4, web M	
21	W 10/26	Torsion examples, including indeterminate problems	§10:5	
22	F 10/28	Bending stresses	§11.3, §11.4	HW 7
23	M 10/31	Centroidal second moments	§6:2, §6.4–§6.6, web N	
24	W 11/2	Bending stresses (examples)		
25	F 11/4	Eccentric loading	§13.2, web O	HW 8
26	M 11/7	Pressure vessels	§13.1	
27	W 11/9	Combined loading		
28	F 11/11	Examples of combined loading		HW 9
29	M 11/14	Stress transformation equations	§14.1–§14.3	
30	W 11/16	Mohr's circle and 3-D max. shear stress	§14.4, 14.5	
31	F 11/18	Review of Lectures 13–28		HW 10
32	M 11/21	Bluebook #2 — Lectures 13–28		
33	W 11/23	Max. shear stress in combined loading	web P	HW 11*
	F 11/25	Thanksgiving Break		
34	M 11/28	Strain transformation, strain gage rosettes	§14.6–§14.9	
35	W 11/30	Multiaxial stress	§14.10, web Q	
36	F 12/2	Relation between elastic constants + review of Chapter 14		HW 12
37	M 12/5	Bending deflections (continuous loading)	§16.1, §16.2, web R	
38	W 12/7	Discontinuity functions	§16.3, web S	
39	F 12/9	Bending deflections (examples)		
40	M 12/12	Review of whole course		HW 13*

*Notice that HW 11 is due on Wednesday before the Thanksgiving break and HW 13 is due on the final Monday class. Homework assignments and web A, B, etc. can be found in the Resources section of Canvas.