

King Fahd University of Petroleum & Minerals
CIVIL ENGINEERING DEPARTMENT

STRUCTURAL MECHANICS I (Term 072)
CE 203-07

Textbook : Mechanics of Materials (6th edition) by R.C. Hibbeler
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COURSE OUTLINE & SCHEDULE

Date	Lecture	Subject	Section #
Feb. 16	1	Introduction	---
18	2	Stress, Equilibrium of Deformable Bodies	1.1,1.2
20	3	Normal Stress, Average Stress	1.3 & 1.4
23	4	Average Shear Stress	1.5
25	5	Allowable Stress, Design of Connections	1.6,1.7
27	6	Definition of Strain	2.1,2.2
Mar. 01	7	Material Properties, Stress-Strain Relations	3.1,3.2,3.3
03	8	Hooke's Law, Poisson's Ratio	3.4,3.6,3.7
05	9	Deformation of Axially Loaded Members	4.1, 4.2
08	10	Statically Indeterminate Axially Loaded Members	4.3,4.4
10	11	Force Method of Analysis, Thermal Stress	4.5,4.6
12	12	Stress Concentration	4.7
15	13	Stresses under General Loading	Handout
17	14	Generalized Hooke's Law	10.6
19	15	Torsion	5.1
22	16	Torsion of Circular Shafts	5.1
24	17	The Torsion Formula	5.2
26	18	Power Transmission	5.3
29	19	Angle of Twist	5.4
31	20	Statically Indet. Shafts	5.5
Apr. 02	21	Non-Circular Shafts, Thin-walled Tubes	5.6,5.7
05	22	Bending of Beams	6.1
07	23	Graphical Method for Shear & Moment Diagrams	6.2
09	24	Graphical method for Shear & Moment Diagrams	6.2 (contd.)
Midterm Vacation (April 12-16, 2008)			

Date	Lecture	Subject	Section	
Apr.	19	25	Elastic Bending	6.3
	21	26	Flexure Formula, Bending Stress	6.4
	23	27	<i>Cont.</i>	6.4
	26	28	Shear in Straight Members	7.1
	28	29	The Shear Formula	7.2
	30	30	Shear Stress in Beams	7.3
May	03	31	Shear Flow in Members	7.4
	05	32	Thin-Walled Vessels	8.1
	07	33	Combined Loading, State of Stress	8.2
	10	34	State of Combined Stress	8.2
	12	35	Plane-Stress Transformation	9.1
	14	36	Equations of Stress Transformation	9.2
	17	37	Principal Stresses	9.3
	19	38	Mohr's Circle for Plane Stresses	9.4
	21	39	Mohr's Circle for Plane Stresses	9.4 & 9.5
	24	40	Deflection of Beams, Elastic Curve	12.1
	26	41	Double Integration Method	12.2
	28	42	Double Integration Method	12.2
	31	43	Singularity Functions	12.3
June	02	44	Singularity Functions	12.3
	04	45	Singularity Functions	12.3

Grade Distribution:

Attendance & Class	:	5%
Homework & Quizzes	:	15%
First Major Exam	:	25%
Second Major Exam	:	25%
Final Exam	:	<u>30%</u>
		100%

- Note:**
- (1) The University regulations regarding excessive absences will be strictly adhered to in this course. See the Undergraduate Bulletin for details.
 - (2) All homeworks are to be submitted neatly with a cover page in due date. Late submission will not be accepted.