King Fahd University of Petroleum & Minerals
CIVIL ENGINEERING DEPARTMENT

STRUCTURAL MECHANICS I (Term 082)
CE 203-06

Textbook : **Mechanics of Materials (6th edition, SI Units) by R.C. Hibbeler**
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Revised

COURSE OUTLINE & SCHEDULE

Date	Lecture	Subject	Section #
Feb. 28	1	Introduction	---
March 2	2	Stress, Equilibrium of Deformable Bodies	1.1,1.2
March 4	3	Normal Stress, Average Stress	1.3 & 1.4
March 5*	4	**Normal Stress, Average Stress, Cont.**	**1.3 & 1.4**
March 7	5	Average Shear Stress	1.5
March 9	6	Allowable Stress, Bearing Stress, Design Problems	1.6,1.7
March 11	7	Definition of Strain	2.1,2.2
March 14	8	Material Properties, Stress-Strain Relations	3.1,3.2,3.3
March 16	9	Hooke's Law, Poisson's Ratio	3.4,3.6,3.7
March 18	10	Deformation of Axially Loaded Members	4.1, 4.2
March 21	11	Statically Indeterminate Axially Loaded Members	4.3,4.4
March 23	12	Force Method of Analysis, Thermal Stress	4.5,4.6
March 25	13	Stress Concentration	4.7
March 28	14	Stresses under General Loading	Handout
March 30	15	Generalized Hooke's Law	10.6
April 1	16	Torsion	5.1
April 4	17	Torsion of Circular Shafts	5.1
April 6	18	The Torsion Formula	5.2
		Exam # 1 April 7 (7- 9 PM)	
April 8	19	Power Transmission	5.3
April 11	20	Angle of Twist	5.4
April 13	21	Statically Indet. Shafts	5.5
April 15	22	Non-Circular Shafts, Thin-walled Tubes	5.6,5.7
April 18	23	Bending of Beams	6.1
April 20	24	Graphical Method for Shear & Moment Diagrams	6.2
April 22	25	Graphical method for Shear & Moment Diagrams	6.2 (contd.)
		Midterm Vacation (April 25-29, 2009)	

Date	Lecture	Subject	Section
May 2	26	Elastic Bending	6.3
May 4	27	Flexure Formula, Bending Stress	6.4
May 6	28	*Cont.*	6.4
May 9	29	Shear in Straight Members	7.1
May 11	30	The Shear Formula	7.2
May 13	31	Shear Stress in Beams	7.3
May 16	32	Shear Flow in Members	7.4
May 18	33	Thin-Walled Vessels	8.1
		Exam # 2 May 19 (7- 9 PM)	
May 20	34	Combined Loading, State of Stress	8.2
May 23	35	State of Combined Stress	8.2
May 25	36	Plane-Stress Transformation	9.1
May 27	37	Equations of Stress Transformation	9.2
May 30	38	Principal Stresses	9.3
June 1	39	Mohr's Circle for Plane Stress	9.4
June 3	40	Mohr's Circle for Plane Stress	9.4 & 9.5
June 6	41	Deflection of Beams, Elastic Curve	12.1
June 8	42	Double Integration Method	12.2
June 10	43	Double Integration Method	12.2
June 13	44	Singularity Functions	12.3
June 15	45	Statically Indeterminate Beams / Singularity Functions	12.6

Grade Distribution:

Attendance & Class Participation	:	5%
Homework & Quizzes	:	10%
First Major Exam	:	25%
Second Major Exam	:	25%
Final Exam	:	35%
		100%

Remarks:

1. Homework assignments are *assigned* and *collected* every Monday. It is expected that each student will exert enough effort to prepare and submit his *independent* solutions in a suitable engineering format with a cover-page that includes adequate details about the assignment.
2. Students are also encouraged to read the examples and solve as many problems from the textbook as possible and to seek faculty assistance as needs arise.
3. Applications from Chapter 11 (Design Concepts and Applications to Beams and Shafts) are inserted at appropriate times/topics through home-works, tests, and examinations. Additional handouts are provided during the course.
4. The University regulations regarding excessive absences will be strictly adhered to in this course. Read pages 38-40 of the Undergraduate Bulletin.
5. **Course Supplements:** i) WebCT (http://webcourses.kfupm.edu.sa); ii) http://faculty.kfupm.edu.sa/CE/khathlan/CE203.htm iii) Best Mechanics (http://web.mst.edu/~mecmovie/index.html); iv) Hibbeler (http://www.pearsoned-asia.com/hibbeler/).