

King Fahd University of Petroleum & Minerals  
CIVIL ENGINEERING DEPARTMENT

**CE 203: STRUCTURAL MECHANICS I**  
Second Semester 2012-13 (122)  
Sections – 5 & 6

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**Office Hours :** Sat. & Mon. (10-11 & 12:10-1PM) , Wed. (10-11 AM)

**WebCT :** Check both - the instructor page & the coordinator page

**Text:** Mechanics of Materials (8<sup>th</sup> ed. in **SI Units**) by R.C. Hibbeler (2011)

**Course Schedule**

Date	Day	Lecture	Topic	Sections in text
26 Jan.	<b>S</b>	1	Introduction	1.1-2
28	<b>M</b>	2	Stress	1.3
30	<b>W</b>	3	Average normal stress	1.4
2 Feb.	<b>S</b>	4	Continued	1.4
4	<b>M</b>	5	Average shear stress	1.5
6	<b>W</b>	6	Allowable stress & simple design	1.6-7
9	<b>S</b>	7	Strain and stress-strain diagram	2.1-2&3.1-3
11	<b>M</b>	8	Hooke's law; Poisson's ratio	3.4&3.6
13	<b>W</b>	9	Deformation of axially loaded members	4.1-3
16	<b>S</b>	10	Continued	4.1-3
18	<b>M</b>	11	Statically indeterminate ALMs	4.4-5
20	<b>W</b>	12	Continued	4.4-5
23	<b>S</b>	13	Thermal stresses	4.6
25	<b>M</b>	14	Continued	4.6
27	<b>W</b>	15	Stress concentration	4.7
2 Mar.	<b>S</b>	16	Stress components under general loading	1.3 & 10.6
4	<b>M</b>	17	Generalized Hooke's law	10.6
6	<b>W</b>	18	Torsion of circular shafts	5.1-2
9	<b>S</b>	19	Power transmission	5.3
11	<b>M</b>	20	Angle of twist	5.4
12	<b>T</b>		<b><i>Exam # 1</i></b>	
13	<b>W</b>	21	Angle of twist continued	5.4
16	<b>S</b>	22	Statically indeterminate shafts	5.5
18	<b>M</b>	23	Torsion of Solid Non-Circular Sections	5.6
20	<b>W</b>	24	Torsion of Thin-Walled Closed Sections	5.7

**MID-TERM BREAK**

Date	Day	Lecture	Topic	Sections in text
30	<b>S</b>	25	Shear & moment diagrams-Graphical method	6.1-2
1 Apr.	<b>M</b>	26	Shear & moment diagrams-Graphical method	6.2
3	<b>W</b>	27	Shear & moment diagrams-Graphical method	6.2
6	<b>S</b>	28	Bending deformation of straight members	6.3
8	<b>M</b>	29	The flexure formula	6.4
10	<b>W</b>	30	Continued	6.4
13	<b>S</b>	31	Applications	6.4
15	<b>M</b>	32	Shear in straight members and shear formula	7.1-2
17	<b>W</b>	33	Shear stresses in beams	7.2
20	<b>S</b>	34	Shear flow in built-up members	7.3
22	<b>M</b>	35	Thin walled vessels	8.1
23	<b>T</b>		<b><i>Exam # 2</i></b>	
24	<b>W</b>	36	Compound normal stress	8.2
27	<b>S</b>	37	Compound shear stress	8.2
29	<b>M</b>	38	Compound normal/shear stress	8.2
1 May	<b>W</b>	39	Plane Stress transformation	9.1-3
4	<b>S</b>	40	Mohr's circle	9.4
6	<b>M</b>	41	Mohr's circle applications	9.4
8	<b>W</b>	42	Deflections of beams	12.1
11	<b>S</b>	43	Slope and displacement by integration	12.2
13	<b>M</b>	44	Discontinuity functions	12.3
15	<b>W</b>	45	Continued	12.3

**Course grades will be based on the following:**

Class Work [Attendance & Participation; Quizzes; Home-works]	15%
Exam I [Tuesday, March 12 – evening ] Time and location TBA	25%
Exam II [Tuesday, April 23 – evening ] Time and location TBA	25%
Final Exam	35%

**Remarks:**

1. It is essential that students read text-book covered-materials regularly and solve as many problems from the textbook as possible and to seek faculty assistance as needs arise.
2. It is expected that each student will exert enough effort to prepare his homework assignments independently and submit the solutions in a suitable engineering format with a cover-page that includes adequate details about the assignment. Please remember: ***Copying from any other source , or claims of "cooperation" in solving the homework will not be tolerated.***
3. The university regulations regarding attendance are strictly adhered to : **Nine unexcused absences will result in (DN) grade.**