

King Fahd University of Petroleum & Minerals  
**CIVIL ENGINEERING DEPARTMENT**

**STRUCTURAL ANALYSIS I (Term 081)**  
**CE 305-01**

**Textbook :** Structural Analysis (6th edition) by R.C. Hibbeler  
**Instructor:** Dr. Abdulrahman Khathlan  
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**COURSE OUTLINE & SCHEDULE**

Date	Lecture	Subject	Section #
Oct. 11	1	Introduction	-----
13	2	Structures and Equilibrium	2.1-2.2
15	3	Statically Determinate Structures	2.3-2.5
18	4	Shear & Moment Diagrams for Beams	4.1-4.2
20	5	Shear & Moment Diagrams for Beams	4.3
22	6	Shear & Moment Diagrams for Frames	4.4
25	7	Shear & Moment Diagrams for Frames	4.4
27	8	Influence Lines	6.1-6.2
29	9	Influence Lines for Beams	6.3
Nov. 01	10	Influence Lines for Beams	6.3
03	11	Influence Lines for Trusses	6.5
05	12	Influence Lines for Trusses	6.5
08	13	Deflection of Beams	8.1-8.2
10	14	Conjugate Beam	8.5
12	15	Conjugate Beam Method	8.5
15	16	Conjugate Beam Method	8.5
17	17	Work & Energy	9.1-9.3
19	18	Virtual Work for Trusses	9.4
22	19	Virtual Work for Beams	9.5
24	20	Virtual Work for Beams & Frames	9.5
26	21	Virtual Work for Beams & Frames	9.5
Nov. 29	22	Castigliano's Theorem for Trusses	9.7-9.8
Dec. 01	23	Castigliano's Theorem for Beams & Frames	9.9
		<b>Eid Al-Adha Holiday (3-13 Dhul-Hija)</b>	

Date	Lecture	Subject	Section
Dec. 15	24	Statically Indeterminate Structures	10.1-10.2
17	25	Maxwell Theorem	10.3
Thursday 18	26	Force Method for Beams	10.4
20	27	Force Method for Beams	10.4
22	28	Force Method for Frames	10.5
24	29	Structural Analysis using the Computer	Handout
27	30	Structural Analysis using the Computer	Handout
29	31	Slope-Deflection Equations	11.1
31	32	Slope-Deflection Method for Beams	11.2
Jan. 09 03	33	Slope-Deflection Method for Beams	11.2
05	34	Slope-Deflection Method for Beams	11.3
07	35	Moment Distribution Method	12.1
10	36	Moment Distribution Method for Beams	12.2
12	37	Moment Distribution Method for Beams	12.3
14	38	Moment Distribution Method for Frames	12.4
17	39	Moment Distribution Method for Frames	12.4
19	40	The Stiffness Method	15.1
21	41	The Stiffness Matrix for Beams	15.2-15.3
24	42	The Stiffness Method for Beams	15.4
26	43	The Stiffness Method for Frames	Notes
28	44	The Stiffness Method for Frames	Notes
31	45	Review	----

**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.
  - (3) All submitted homeworks must represent the students' own, and individual, effort. Plagiarism will not be tolerated, as per KFUPM policies.