

Semester: 4 th		Subject: Structural Analysis-II(PC/CE/5-T)	
Week	Lec. Day	Topics	Remarks
1 st	1.	Unit-I: Statically Indeterminate Structures: Introduction, Static and Kinematic Indeterminacies,	
	2.	Static and Kinematic Indeterminacies: Numerical Problems	
	3.	Castigliano's theorems	
2 nd	4.	Strain energy method	
	5.	Strain energy method: Numerical Problems	
	6.	Strain energy method: Numerical Problems	
3 rd	7.	Analysis of frames with one or two redundant members using Castigliano's 2 ⁿ theorem.	
	8.	Analysis of frames with one or two redundant members using Castigliano's 2 ⁿ theorem.	
	9.	Numerical Problems	
4 th	10.	Unit-II: Slope deflection and moment Distribution Methods	
	11.	Slope deflection Method: Analysis of continuous beams	
	12.	Slope deflection Method: Analysis of continuous beams	
5 th	13.	Slope deflection Method: Analysis of portal frames	
	14.	Slope deflection Method: Analysis of portal frames	
	15.	Slope deflection Method: Analysis of Portal frames with inclined members	
6 th	16.	Slope deflection Method: Analysis of Portal frames with inclined members	
	17.	Moment Distribution Method: Analysis of continuous beams	
	18.	Moment Distribution Method: Analysis of continuous beams	
7 th		MINOR TEST I	
8 th	19.	Moment Distribution Method: Analysis of portal frames	
	20.	Moment Distribution Method: Analysis of portal frames	
	21.	Moment Distribution Method: Analysis of portal frames with inclined members	
9 th	22.	Moment Distribution Method: Analysis of portal frames with inclined members	
	23.	Unit-III: Column Analogy Method: Elastic centre, Properties of analogous column	
	24.	End Conditions	
10 th	25.	Applications to beam	
	26.	Applications to frames	
	27.	Analysis of Two hinged Arches	
11 th	28.	Analysis of Two hinged Arches: Parabolic Arches	
	29.	Analysis of Two hinged Arches: Circular Arches	
	30.	Analysis of Two hinged Arches: B. M Diagram for various loadings & temperature effects	
12 th	31.	Analysis of Two hinged Arches: Bending Moment Diagram for Rib shortening & Axial thrust	
	32.	Analysis of Two hinged Arches: Bending Moment Diagram for Radial Shear	
	33.	Analysis of Two hinged Arches: Force Diagram	
13 th	34.	Unit-IV: Unsymmetrical Bending: Introduction Centroidal principal axes of sections	
	35.	Bending stresses in beam subjected to unsymmetrical bending,	
	36.	shear centre, shear centre for channel, Angles and Z sections.	
14 th		MINOR TEST II	
15 th	37.	Cable and suspension Bridges: Introduction, uniformly loaded cables	
	38.	Temperature stresses, three hinged stiffening Girder	
	39.	Two hinged stiffening Girder	