Lesson Plan/ Course Break – up

PCC-CVE204-T- STRUCTURAL ANALYSIS-I

Name of the Faculty	**:**	Mr. Manik Goyal
Discipline	**:**	B.Tech in Civil Engineering
Semester	**:**	IV (2nd Year)
Subject	**:**	Structural Analysis-I
Lesson Plan Duration	**:**	15 Weeks
Work Load (Lecture / Practical) per week (in hrs.)	**:**	Lectures – 03

Week	Theory		
	Lecture Day	Topic (Including assignment / Test)	
1st	1	**Analysis of stresses and strains:-**	
	2	Analysis of simple states of stresses and strains	
	3	Elastic constraints, bending stresses	
2nd	4	Theory of simple bending	
	5	Flexure formula, combined stresses in beams,	
	6	Shear stresses, Mohr's circle	
3rd	7	Principle stresses and strains	
	8	Torsion in shafts and closed thin walled sections,	
	9	Stresses and strains in cylindrical shells	
4th	10	Spheres under internal pressure	
	11	**Theory of Columns:** Slenderness ratio	
	12	End connections, short columns	
5th	13	Euler's critical buckling loads	
	14	Eccentrically loaded short columns	
	15	Cylinder columns subjected to axial and eccentric loading.	
6th	16	Cylinder columns subjected to axial and eccentric loading.	
	17	**Bending moment and shear force in determinate beams and frames:**	
	18	Definitions and sign conventions,	
7th	**1st Minor Test**		
8th	19	Axial force, shear force and bending moment diagrams	
	20	Axial force, shear force and bending moment diagrams	
	21	**Three hinged arches:**	
9th	22	Horizontal thrust	
	23	Shear force and bending moment diagrams.	
	24	**Deflections in beams:** Introduction	
10th	25	Slope and deflections in beams by differential equations	
	26	Moment area methodand conjugate beam method	
	27	Examples	
11th	28	Unit load method	
	29	Principle of virtual work	
	30	Maxwell's Law of Reciprocal Deflections.	
	31	**Analysis of statically determinate trusses:** Introduction	

12th	32	Various types ,stability,	
	33	Analysis of plane trusses by method of joints and method of sections	
13th	34	Analysis of plane trusses by method of joints and method of sections	
	35	Examples	
	36	Analysis of space trusses using tension coefficient method.	
14th	**2nd Minor test**		
15th	37	Analysis of space trusses using tension coefficient method.	
	38	Analysis of space trusses using tension coefficient method.	
	39	Examples	