Panipat Institute of Engineering and Technology

Department of Civil Engineering

For Lecture's in **B. Tech. Civil Engineering VIIth Semester**

Course No.	Title of the Course	Course Structure	
CE-401A	**DESIGN OF CONCRETE STRUCTUTRES-II**	**L-T-P**	**2-0-0**

COURSE OUTCOMES (CO)	
CO1	Students will be able to study behavior in the Beam and Prestressed concrete –moments, shear and design of beam.
CO2	Students will be able to design different types of Slabs, Stair case and Foundations.
CO3	Students will be able to design of Water tanks, Silos and Bunkers.
CO4	Students will be able to analyze the frames structures

UNIT NO`	Topics To Be Covered	Lecture Nos
1	Basic assumptions, Moment of inertia, settlements	1-3
	Modification of moments, maximum moments and shear	4
	beams curved in plananalysis for torsion	5
	redistribution of moments for single and multispan beams, design examples	6
	Basic principles, classification of prestressed members, various Prestressing systems, losses in prestress, initial and final stress conditions	7-10
	analysis and design of sections for flexure and shear, load balancing concept, I:S:Specifications.	11-13
	End blocksAnalysis of stresses, Magnel's method, Guyon's method, Bursting and spelling stresses, design examples	14-16
II	Advantages of flat slabs, general design considerations, approximate direct design method	17
	design of flat slabs	18
	openings in flat slab, design of various types of staircases	19
	design examples	20-22
	Combined footings, raft foundation, design of pile cap and piles, underreamed piles, design examples	23
III	Estimation of Wind and earthquake forces, design requirements	24-27
	rectangular and cylindrical underground and overhead tanks,	25
	Intze tanks, design considerations	26
	design examples	27
	Silos and Bunkers Various theories	28
	Bunkers with sloping bottoms and with high side walls, battery of bunkers,.	29
	design examples	30
IV	Introduction, Member stiffness's, Loads, Analysis for vertical and lateral loads	31
	Torsion in buildings, Ductility of beams, design and detailing for ductility, design examples	32-34
	Basic assumptions, Methods of analysis	35

	yield line patterns and failure mechanisms, analysis of one way and two way rectangular and nonrectangular slabs	36-37
	effect of top corner steel in square slabs, design example	38-39

Sr. No.	Course Coordination Committee	Name	Contact No	E Mail Id
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