

MICRO LESSON PLAN

CE 2404 - PRESTRESSED CONCRETE STRUCTURES

Week	Hrs	Lecture Topics	Book
UNIT I INTRODUCTION -THEORY AND BEHAVIOUR			
I	1	Basic concepts-Advantages-Materials required	Text Book-1
	2-3	Systems and method of prestressing-Analysis of sections	
	4	Stress concept-strength concept-load balancing concept	
	5	Effect of loading on the tensile stresses in tendons- Effect of tendon profil on deflections	
II	6	Factors influencing deflections-calculation of deflections-	
	7	Short term and long term deflections-	
	8-9	Losses of prestress-Estimation of crack width.	
UNIT II - DESIGN CONCEPTS			
III	10	Flexural strength-simplified procedures as per codes	Text Book-1
	11	strain compatibility method	
	12	Basic concepts in selection of cross section for bending	
	13-14	Stress distribution in end block	
IV	15-16	Design of anchorage zone reinforcement	
	17	Limit state design criteria	
	18	Partial prestressing-Applications	
UNIT III - CIRCULAR PRESTRESSING			
V	19-23	Design of prestressed concrete tanks	Text Book-1
VI	24-27	Design of prestressed concrete pipes	
UNIT IV -COMPOSITE CONSTRUCTION			
VII	28-29	Analysis for stresses	Text Book-1
	30-32	Estimate for deflections	
VIII	33-34	Flexural strength of composite members	
	35-36	Shear strength of composite members	
UNIT V - PRE-STRESSED CONCRETE BRIDGES			
IX	37-38	General aspects-	Text Book-1
	39-40	Pretensioned prestressed bridge decks	
X	40-42	Post tensioned prestressed bridge decks	
	43-45	Principles of prestressed concrete bridge design only	

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