

# LESSON PLAN

NAME OF THE FACULTY :  
DISCIPLINE : ARCHITECTURAL ASSISTANTSHIP  
SEMESTER : 5<sup>th</sup>  
SUBJECT : **REINFORCED CEMENT CONCRETE**  
LESSON PLAN DURATION : 15 WEEKS  
WORK LOAD PER WEEK : 06

WEEK	LECTURE DAY	THEORY
		TOPIC
1 <sup>ST</sup>	1.	Introduction and Concept of Reinforced Cement Concrete (RCC)
	2.	Reinforcement Materials: - Suitability of steel as reinforcing material - Physical properties of mild steel and HYSD/TMT steel
2 <sup>ND</sup>	3.	Loading on structures as per IS: 875
	4.	Introduction to following methods of RCC design
3 <sup>RD</sup>	5.	Working stress method, Limit state method
	6.	Shear and Development Length
4 <sup>TH</sup>	7.	Shear as per IS:456-2000 by working stress method
	8.	Shear strength of concrete without shear reinforcement
5 <sup>TH</sup>	9.	Maximum shear stress, Shear reinforcement
	10.	1 <sup>ST</sup> SESSIONAL TEST
6 <sup>TH</sup>	11.	Basic assumptions of Singly Reinforced Beam (working stress method)
	12.	Stress strain curve
7 <sup>TH</sup>	13.	Neutral axis, balanced, under reinforcement and over reinforced beams,
	14.	Moment of resistance for singly reinforced beam.

8 <sup>TH</sup>	15.	Design of singly reinforced beam including sketches showing reinforcement details
	16.	Concept of Limit State Method (as per IS 456:2000)
9 <sup>TH</sup>	17.	Definitions and assumptions made in limit state of collapse (flexure)
	18.	Partial factor of safety for materials, Partial factor of safety for loads
10 <sup>TH</sup>	19.	Design loads, Stress block diagram
	20.	2 <sup>nd</sup> SESSIONAL TEST
11 <sup>TH</sup>	21.	Theory and Design of singly reinforced beam by Limit State Method
	22.	Doubly Reinforced Beams, Theory and design of simply supported doubly reinforced rectangular beam by Limit State Method
12 <sup>TH</sup>	23.	Behaviour of T beam, inverted T beam, isolated T beam and 'L' beams (No Numericals)
	24.	Theory and design of simply supported one way slab including sketches showing reinforcement details (plan and section) by Limit State Method.
13 <sup>TH</sup>	25.	Theory and design of two-way simply supported slab with corners free to lift, no provisions for torsional reinforcement by Limit State Method including sketches showing reinforcement details (plan and two sections)
	26.	Axially Loaded Column- Definition and classification of columns, Effective length of column, Specifications for longitudinal and lateral reinforcement
14 <sup>TH</sup>	27.	Design of axially loaded square, rectangular and circular (with lateral ties only) short columns by Limit State Method including sketching of reinforcement (sectional elevation and plan)
	28.	Concept of foundation: shallow and deep foundation, types and suitability of foundation (no numerical)
15 <sup>TH</sup>	29.	Concept of pre-stressed concrete, advantages and disadvantages, Methods of pre-stressing
	30.	3 <sup>rd</sup> SESSIONAL TEST