Lesson Plan

Name of the Faculty: Ravinder Saini

Discipline: CIVIL ENGINEERING

Semester:5th

Subject: DESIGN OF CONCRETE STRUCTURES-I (CE-303N)

Work Load (Lecture/Practical) per week (in hours): Lectures- , Practicals-

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1st	1st	UNIT-I Elementary treatment of concrete technology	1st	
	2nd	: Physical requirements of cement,		
	3rd	aggregate		
	4th	, admixture and reinforcement, Strength and durability,		
2nd	5th	shrinkage and creep.	2nd	
	6th	Design of concrete mixes,		
	7th	Acceptability criterion, I.S. Specifications		
	8th			
3rd	9th	, Design Philosophies in Reinforced Concrete:	3rd	
	10th	Working stress and limit state methods,		
	11th	Limit state v/s working stress method,		
	12th	Building code,		
4th	13th	Normal distribution curve,	4th	
	14th	characteristic strength and characteristics loads,		
	15th	design values, Partial safety factors and factored loads,		
	16th	stress -strain relationship for concrete and steel		
5th	17th	stress -strain relationship for concrete and steel	5th	
	18th	UNIT-II Working Stress Method: Basic assumptions		
	19th	, permissible stresses in concrete and steel,		
	20th	permissible stresses in concrete and steel,		
6th	21st	design of singly and doubly	6th	

		reinforced rectangular and flanged beams in flexure,		
	22nd	design of singly and doubly reinforced rectangular and flanged beams in flexure,		
	23rd	steel beam theory, inverted flanged beams,.		
	24th	steel beam theory, inverted flanged beams,.		
7th	**25th**	design examples. Limit State Method: Basic assumptions,	**7th**	
	26th	Analysis and design of singly and doubly reinforced rectangular flanged beams,		
	27th	minimum and maximum reinforcement requirement, and design example		
	28th	minimum and maximum reinforcement requirement, and		
8th	**29th**	design example	**8th**	
	30th	UNIT-III Analysis and Design of Sections in shear bond and torsion:.		
	31st	Diagonal tension,		
	32nd	shear reinforcement,		
9th	**33rd**	development length,	**9th**	
	34th	Anchorage and flexural bond,		
	35th	Torsional, stiffness,		
	36th	equivalent shear,		
10th	**37th**	Torsional reinforcement,	**10th**	
	38th	Design examples. Columns and Footings:		
	39th	Effective length, Minimum eccentricity,		
	40th	short columns under axial compression,		
11th	**41st**	Uniaxial and biaxial bending, slender columns,	**11th**	
	42nd	Isolated and wall footings, Design examples.		
	43rd	Serviceability Limit State: Control of deflection, cracking, slenderness and vibrations,		
	44th	deflection and moment relationship for limiting values of span to depth,		
12th	**45th**	limit state of crack width, Design examples	**12th**	
	46th	limit state of crack width, Design examples		
	47th	UNIT-IV		

		Concrete Reinforcement and Detailing.		
	48th	: Requirements of good detailing cover to reinforcement,		
13th	**49th**	spacing of reinforcement,	**13th**	
	50th	reinforcement splicing		
	51st	, Anchoring reinforcing bars in flexure and shear,		
	52nd	curtailment of reinforcement.		
14th	**53rd**	One way and Two Ways Slabs:	**14th**	
	54th	General considerations,		
	55th	Design of one way and two ways slabs for distributed and concentrated loads,		
	56th	Nonrectangular slabs,		
15th	**57th**	openings in slabs, Design examples.	**15th**	
	58th	Retaining Walls: Classification, Forces on retaining walls,		
	59th	design criteria, stability requirements, Proportioning of cantilever retaining walls,		
	60th	counterfort retaining walls, criteria for design of counterforts, design examples		