

LESSON PLAN OF 5TH SEMESTER CIVIL ENGINEERING

Discipline CIVIL	Semester 5 TH	Name of the Teaching Faculty:- Smt. Rajashree Nayak
Subject: - Design of RCC Structure s	No of Days/Per Week Class Allotted: - 03	Semester From: -01.07.2026 TO 05.11.2026 No of Weeks:- 15
Week	Class Day	Theory Topics
1 st	1 st	Introduction Design Philosophies, Shear, Bond and Development length in Design of RCC member.
	2 nd	Design Philosophies, Analysis & Design of Singly Reinforced for Flexure using LSM
	3 rd	Nominal shear stress in RCC section, Design shear strength of concrete, Design of shear reinforcement
2 nd	1 st	Analysis & Design of Doubly Reinforced for Flexure using LSM. Methods of RCC design
	2 nd	Minimum Shear Reinforcement, Provisions of IS 456 2000, forms of shear reinforcement
	3 rd	Types of bonds, Bond stress, check for bond stress
3 rd	1 st	Determination of Development length in tension and compression members and check as per codal provisions, Anchorage value of 90° hook, Lapping of bars.
	2 nd	Simple numerical on: Shear reinforcement, Adequacy of section for shear.
	3 rd	Introduction to serviceability limit state check
4 th	1 st	Numerical Solution for cracking according to IS 456:2000
	2 nd	Anchorage length and curtailment of bars.
	3 rd	Design of axially loaded RCC Column Definition and classification of column, Limit state of compression members, Effective length of column.
5 th	1 st	Provisions of IS 456 2000 for minimum steel, cover, maximum steel, spacing of ties etc
	2 nd	Assumption in limit state of collapse-compression
	3 rd	Procedure for design of centrally loaded short column
6 th	1 st	Numerical solutions axially loaded Short Column
	2 nd	Design of axially loaded square column
	3 rd	Design of axially loaded rectangular column
7 th	1 st	Design of axially loaded circular column
	2 nd	Design of RC flanged beam General features of T and L beams, Advantages, Effective width as per IS 456 2000
	3 rd	Design of singly reinforcement T beam, Stress and Strain diagram, Depth of neutral axis, Moment of resistance, T beams with neutral axis in flange only.
8 th	1 st	Numerical Solutions related to T beams.
	2 nd	Design of singly reinforcement L beam, Stress and Strain diagram, Depth of neutral axis, Moment of resistance, L beams with neutral axis in flange only.
	3 rd	Numerical Solutions related to L beams.
9 th	1 st	Simple numerical on location of neutral axis, Effective width of flange.
	2 nd	Design of slab: Introduction to one-way and two-way slab with definition,

		specifications as per IS 456:2000
	3 rd	Design of simply supported one-way slab for flexure, shear and deflection and checks, as per the provisions of BIS 456
10 th	1 st	Design of one-way cantilever slab, Flexure including checks for Development length and Shear stress.
	2 nd	Design of one-way Chajjas, Flexure including checks for Development length and Shear stress.
	3 rd	Design of two-way simply supported slab with reinforcement detailing.
11 th	1 st	Concept of corners held down and not held down with numerical solutions
	2 nd	Numerical solutions
	3 rd	Introduction to staircase, basic terminology and types.
12 th	1 st	Introduction to design of dog-legged staircases with simple numerical
	2 nd	Design of Footing: Introduction, different types of footing with definition
	3 rd	Design of footing for axially loaded column only.
13 th	1 st	Types of shear and types of reinforcement.
	2 nd	Design consideration of footing, steps and procedures.
	3 rd	Analysis of Isolated footings, Codal provisions for design of isolated footings
14 th	1 st	Design of strip footing and analysis of combined footing
	2 nd	Numerical problems
	3 rd	Minimum Eccentricity, Design of Footing for uni-axial bending, column with uni-axial moment as per IS 456 provisions.
15 th	1 st	Numerical solutions
	2 nd	Numerical solutions
	3 rd	Revision with Numerical solutions

R. Nayak
28/06/26.

H. Hanif
28/6/26