Discipline: Civil Engg.	Semester: 5th	Name of the Teaching Faculty:BIDHU BHUSAN SABAR
Subject:Design of RCC structures	No. of Days/Per week class allotted: 03	Semester From Date: 01.07.2026 To Date: 05.11.2026 No. of Weeks: 18 Weeks
week	Class Days	TOPIC TO BE COVERED
1st	1p	**Design Philosophies, Shear, Bond and Development length in Design of RCC member(11 Hour)** • Design Philosophies, Design of Singly Reinforced & Doubly Reinforced beam for Flexure using LSM.
	2p	• Nominal shear stress in RCC section, Design shear strength of concrete, Design of shear reinforcement,
2nd	1p	• Minimum Shear Reinforcement, Provisions of IS 456 2000, forms of shear reinforcement
	2p	• Types of bond, Bond stress, check for bond stress
3rd	1p	• Determination of Development length in tension and compression members and check as per codal provisions,
	2p	Anchorage value of 90o hook, Lapping of bars.
4th	1p	• Simple numerical on: Shear reinforcement, Adequacy of section for shear.
	2p	• Introduction to serviceability limit state check
5th	1p	**Design of axially loaded RCC Column(8 Hour)** • Definition and classification of column, Limit state of compression members,
	2p	Effective length of column
6th	1p	• Provisions of IS 456 2000 for minimum steel, cover,
	2p	maximum steel, spacing of ties etc.
7th	1p	• Design of axially loaded short column - Square,
	2p	Rectangular, and Circular only.
8th	1p	**Design of RC flanged beam(6 Hour)** • General features of T and L beams, Advantages, Effective width as per BIS 456 2000
	2p	• Design of singly reinforcement T beam, Stress and Strain diagram, Depth of neutral axis,
9th	1p	Moment of resistance, T and L beams with neutral axis in flange only.
	2p	• Simple numerical on location of neutral axis, Effective width of flange.
10th	1p	**Design of slab(11 Hour)** • Design of simply supported one-way slab for flexure,
	2p	shear and deflection and checks, as per the provisions of BIS 456
11th	1p	Do
	2p	• Design of one-way cantilever slab, Chajjas,
12th	1p	Do
	2p	Flexure Including checks for Development length and Shear stress.

13th	1p	• Design of two-way simply supported slab,
	2p	• Introduction to design of dog-legged staircases
14th	1p	**Design of Footing(9 Hour)** • Design of footing for axially loaded column only.
	2p	Do
15th	1p	• Minimum Eccentricity,
	2p	Design of Footing for uni-axial bending,
16th	1p	Do
	2p	column with uni- axial moment as per IS 456 provisions.
17th	1p	Revision
	2p	Revision
18th	1p	Revision
	2p	Revision

22/06/26

Signature of Faculty:

22/06/26

Signature of HOD