COURSE MODULE FOR THE AY- 2024-25 (EVEN SEM)

Course Syllabi with CO's

Faculty Name :			Academic Year: **2024-2025**				
Department: **CIVIL ENGINEERING**							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
BCV601	**Design of RCC Structures**	**Core**	**Concrete Technology**	**3**	**-**	**2**	**40**
Course Objectives	1. Identify, formulate and solve engineering problems of RC elements subjected to different kinds of loading. 2. Follow a procedural knowledge in designing various structural RC elements. 3. Impart the usage of codes for strength, serviceability and durability. 4. Acquire knowledge in analysis and design of RC elements.						

Topics Covered as per Syllabus

Module-1

Introduction to working stress and limit State Design:

Introduction to working stress and limit State Design: Introduction to working stress method, Difference between Working stress and Limit State Method of design. Philosophy and principle of limit state design with assumptions. Partial Safety factors, Characteristic load and strength. Stress block parameters, concept of balanced section, under reinforced and over reinforced section. Limiting deflection, short term deflection, long term deflection, Calculation of deflection of singly reinforced beam only.

Module-2

Limit State Analysis of Beams:

Analysis of singly reinforced, doubly reinforced and flanged beams for flexure and shear.

Module-3

Limit State Design of Beams:

Design of singly reinforced beams with check for shear, check for development length and other checks. Design of doubly reinforced beams and flanged sections without checks.

Module-4

Limit State Design of Slabs and Stairs: Limit State Design of Slabs and Stairs: Introduction to one way and two way slabs, Design of Cantilever, simply supported and one way continuous slab. Design of two way slabs for different boundary conditions. Design of dog legged and open well staircases.

Module-5

Limit State Design of Columns and Footings:

Limit State Deign of Columns and Footings: Analysis and design of short axially loaded RC column. Design of columns with uniaxial and biaxial moments, Design concepts of the footings. Design of Rectangular and square column footings with axial load.

List of Text Books 1. Unnikrishnan Pillai and Devdas Menon, "Reinforced Concrete Design", McGraw Hill, New Delhi 2. Subramanian, "Design of Concrete Structures", Oxford university Press 3. H J Shah, "Reinforced Concrete Vol. 1 (Elementary Reinforced Concrete)", Charotar Publishing House Pvt. Ltd.
List of Reference Books
1. P C Varghese, "Limit State design of reinforced concrete" , PHI, New Delhi 2. W H Mosley, R Husle, J H Bungey, "Reinforced Concrete Design", MacMillan Education, Palgrave publishers 3. Kong and Evans, "Reinforced and Pre-Stressed Concrete", Springer Publications 4. A W Beeby and Narayan R S, "Introduction to Design for Civil Engineers", CRC Press 5. Robert Park and Thomas Paulay, "Reinforced Concrete Structures", John Wiley & Sons, Inc.
List of URLs, Text Books, Notes, Multimedia Content, etc
1. https://nptel.ac.in/courses/105105105/ 2. https://onlinecourses.nptel.ac.in/noc17_ce23/preview
Bureau of Indian Standards, IS456-2000, IS875-PART 1 & PART 2 and SP-16 Charts

CO's		**RBT levels**
Course Outcomes	• Understand the design philosophy and principles.	L2
	• Solve problems of RC elements subjected to flexure, shear and torsion.	L3
	• Demonstrate the procedure in designs of RC structural elements such as slabs, columns and footings.	L3, L4
	• Owns professional and ethical responsibility.	L2

The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code:	**BCV601**	TITLE: **Design of RCC Structures**					Faculty Name:		**Dr.Jyothi D N**			
List of Course Outcomes	Program Outcomes											**RBT Levels**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO 12**	
CO-1	2	1	-	-	-	-	-	1	-	-	-	1	L2
CO-2	3	3	2	-	-	-	-	2	-	2	-	2	L3
CO-3	2	1	1	-	-	-	-	2	-	2	-	2	L3, L4
CO-4	1	-	-	-	-	-	-	2	-	-	-	2	L2

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution - = No Contribution

The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code:	**BCV601**	TITLE: **Design of RCC Structures**
List of Course Outcomes		
	PSO1	**PSO2**
CO-1	-	-
CO-2	2	-
CO-3	2	-
CO-4	2	-

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution - = No Contribution