Course Number and Name

BCE070 - CONCRETE STRUCTURES

Credits and Contact Hours

3 & 45

Course Coordinator's Name

Ms . T.Arthi Harini

Text Books and References

REFERENCES:

- Purushothaman P, Reinforced Concrete Structural Elements: Behaviour Analysis and Design, Tata McGraw Hill, 1986.
- Varghese P. C., Limit State Design of Reinforced Concrete, Prentice Hall of India, 1995.
- Krishna Raju, N. Advanced Reinforced Concrete Design, CBS Publishers and Distributors, 1986.
- N. C. Sinha, S. K. Roy, Fundamentals of Reinforced concrete, S. Chand & Company Ltd, 2001.
- Varghese. P. C. Advanced Reinforced concrete design, Prentice Hall of India, 2005.

Course Description

- To study the properties of concrete making materials, tests, mix design, special concretes and various methods for making concrete.

Prerequisites	Co-requisites
Reinforced Concrete Structures - I	NIL

required, elective, or selected elective (as per Table 5-1)

Course Outcomes (COs)

CO1	To learn about calculation of deflection and crack width according to IS 456-2000
CO2	To know about design of special RC elements.
CO3	To Design flat slabs and flat plates according to ACI method.
CO4	To know about the inelastic behavior of concrete beams.
CO5	To analyze problems based on detailing for ductility.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k
CO1	H			H	H						
CO2	H			H	H						
CO3	H			H	H						
CO4	H	M		H	H						
CO5	H			H	H	M					

List of Topics Covered

UNIT I INTRODUCTION 9

Review of limits state design of beams, Slabs and columns according to IS: 456-2000 Calculation of deflection and crack width according to IS 456-2000.

UNIT II DESIGN OF SPECIAL RC ELEMENTS 11

Design of Slender columns - Design of Rewalls - Ordinary and shear walls - Design of Corbels - Deep beams and grid floors.

UNIT III FLAT SLABS AND FLAT PLATES 10

Design of flat slabs and flat plates according to ACI method - Design of shear load - reinforcement and edge (Spandrel) beams - Yield line theory and Hillerberg method of design of slabs.

UNIT IV INELASTIC BEHAVIOUR OF CONCRETE BEAMS 9

In elastic behavior of concrete beams - moment - rotation curves - moment redistribution - Baker's method of plastic design, Design of cast in situ Joints in frames.

UNIT V GENERAL 6

Detailing for ductility - Fire resistance of buildings - field control of concrete.