

Devi Ahilya University Indore, India Institute of Engineering & Technology				III Year B.E. (Civil Engineering) (Full Time)			
Subject Code and Name	Instruction Hours Per Week			Credits			
5VLRC1: Design of RCC Structures – II	L	T	P	L	T	P	Total
Duration of Theory Paper: 3 hours	3	1	0	3	1	0	4

Course Objectives:

1. To impart knowledge of the general behavior of advanced reinforced concrete structures.
1. To understand the principles involved in analysis and design of advanced reinforced concrete structures.
2. To learn about the methods of design of reinforced concrete Multistory Buildings
3. To learn about the methods of reinforced concrete Water Tanks
4. To understand the principles of prestressed concrete for design of prestressed reinforced concrete members.

COURSE CONTENTS

Unit-I

Design of Multistory Buildings - Sway and Non sway buildings, Shear walls and other bracing elements.

Unit-II

Earth Retaining Structures: Cantilever and counter fort types retaining walls.

Unit-III

Water Tanks: Tanks on ground and underground tanks: Square, rectangular, circular tanks, Overhead tanks: square, rectangular, circular & intze tanks.

Unit -IV

T-beam & Slab bridges- for highway loading (IRC Loads).

Unit -V

Prestressing concepts materials, systems of prestressing & losses Introduction to working & limit State Design.

NOTE: - All the designs for strength and serviceability should strictly be as per the latest version of IS:456,IS:13920,IS:1893,IS:875,IS:3370,IRC: 6 ,IRC 21; Use of SP-16 (Design aids)

Suggested Books: -

1. Plain & Reinforced Concrete Vol. I & II – O.P. Jain & Jay Krishna
2. Advanced Reinforced Concrete Design by P.C.Varghese ; Prentice Hall of India, New Delhi
3. Design of Reinforced Concrete Elements by Purushothman; Tata McGraw Hill, New Delhi

4. Reinforced Cement Concrete by Gupta & Mallick, Oxford and IBH
5. Design of concrete Structure – B.C. Punnia&A.K.Jain ; Laxmi publication
6. Advanced Reinforced Concrete Design by N.K.Raju;CBS publisher
7. Essentials of Bridge engineering – D.J. Victor
8. Bridge Engineering - Ponnuswamy

Course Outcome:

Students earned credits will develop ability to

CO.No.	CO	PO
CO1	Apply the code of practice for design of reinforced concrete structural members and elementary structural systems.	PO-1, PO-2, PO-5
CO2	Identify the general behavior of advanced reinforced concrete structures	PO-1, PO-2, PO-4
CO3	Apply the design concept of cantilever and counterfort types of retaining walls	PO-1, PO-2, PO-3
CO4	Design the Underground, elevated liquid and material storage structures	PO-1, PO-2, PO-3
CO5	Apply the principles of prestressed concrete for the design of prestressed reinforced concrete members	PO-1, PO-2, PO-3,

CO-PO Relationship

CO	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO1	3	3			2							
CO2	3	3		2								
CO3	3	3	3									
CO4	3	3	2									
CO5	3	3	3									

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