

Devi Ahilya University, Indore, India Institute of Engineering & Technology			
Subject code and name	Type	L-T-P	Credits
VLR8E2: Design of Pre Stressed Concrete Elements	L	T	P
	PE	3-1-0	4

COURSE CONTENTS

Unit - 1

Principles of prestressing - Materials of prestressing - Systems of prestressing - Loss of prestress - Deflection of Prestressed Concrete members.

Unit - 2

Slabs - Pre-tensioned and Post-tensioned beams - Design for flexure, bond and shear - IS code provisions - Ultimate flexural and shear strength of prestressed concrete sections - Design of end anchorage zones using IS code method.

Unit - 3

Composite beams - Analysis and design. Partial prestressing - non-prestressed reinforcements.

Unit - 4

Analysis of Continuous beams - Cable layout - Linear transformation - Concordant cables.

Unit - 5

Design of compression members and tension members. Circular prestressing - Water tanks - Pipes - Analysis and design - IS Codal provisions.

Books & References Recommended:

1. Lin. T.Y., Burns, N.H., Design of Prestressed Concrete Structures, John Wiley & Sons, 1982.
2. RajaGopalan N. Prestressed Concrete, Narosa Publishing House, New Delhi, 2002.

Course outcomes

On completion of the course, the students will be able to:
 Design a pre-stressed concrete beam accounting for losses.
 Design the anchorage zone for post tensioned members.
 Design composite members. Design continuous beams.
 Design water tanks