PRE-STRESSED CONCRETE DESIGN

Course Code: 15CE2202	**L**	**P**	**C**
	3	**0**	**3**

Course Outcomes: At the end of the course the student will be able to

CO1: Discuss various pre-stressing methods and related basic issues.
CO2: Analyse and design the beams for a given pre-stressing force.
CO3: Apply the principles to design beams for shear, bond and bearing.
CO4: Compute deflection in pre-stressed concrete beams.
CO5: Apply the concepts underlying design principles of various miscellaneous PSC structural members.

UNIT-I (10-Lectures)
Pre-stressing Systems:
Materials, Pre-stressing Systems, End Anchorages, Losses of Pre-stress.

UNIT-II (10-Lectures)
Flexure Design:
Analysis and Design of Sections for Flexure.

UNIT-III (10-Lectures)
Design for Shear:
Design for Shear, Bond and Bearing.

UNIT-IV (10-Lectures)
Deflections:
Camber, Deflections, Cable Layouts. Load-Balancing method.

UNIT-V (10-Lectures)
Slabs: Tension Members, Circular Pre-stressing. Compression Members.

TEXT BOOKS

1. Krishnam Raju N, *"Design of Prestressed Concrete Structures",* 4th Edition, TMH, 2004

2. Lin., T.Y., *"Design of Prestressed Concrete Structures",* 2nd Edition, John Wiley & Sons, 1999.

REFERENCES

1. Edward G. Nawy, *"Prestressed Concrete A Fundamental Approach",* 1stEdition, Prentice Hall, 2002.
2. Rajagopalan. N, *"Pre stressed Concrete"*, 2nd Edition, Narosa publications, 2006.