

IF 502 Fundamental design study of various infrastructure**CREDITS = 5 (L=3, T=2, P=0)****M. Tech First year, 1st Semester****Teaching and Assessment Scheme:**

Teaching Scheme			Credits	Assessment Scheme				
L	T	P		Theory		Practical		Total Marks
			ESE	CE	ESE	CE		
3	2	0	5	70	30	30	20	150

Course Contents:

Unit No.	Topics	Teaching Hours
1	Introduction to limit state method of design; provisions in the Indian Standard Codes (IS456:2000, IS800:2007, IS875:1987 (part 1 to 5), IS 13920: 1993, IS1893:2002) For Loading, wind loads and seismic loads, design and detailing of concrete and steel structures. Examples of design using BIS handbook.	06
2	Concept of Structural Analysis, Design and Detailing * Columns with biaxial moments. * Grid floors. * Silos and bunkers * Liquid and Soil Retaining Structures	08
3	Concept of Structural Analysis, Design and Detailing for * Flat slabs. * Concrete Chimneys. * Multi-storey building frame and Shear wall design	08
4	Structural Analysis, Design and Detailing for Intze tank and underground water tanks	06
5	Structural Analysis, Design and Detailing for Different RCC, Post tensioned and Steel Bridges	06
6	Concept of Structural Analysis, Design and Detailing for Industrial Buildings, Gantry Girder, Foot over Bridge, Plate Girder	08

List of References:

1. 1. Raina V.K. "*Concrete Bridge Practice*", Tata McGraw Hill Publishing Company, New Delhi.
2. Krishnaraju, N., "*Design of Bridges*" Oxford and IBH Publishing Co., Bombay, Calcutta, New Delhi.
3. B. S. Taranath, "*Tall buildings*", CRC Press Book
4. S. N. Manohar, "*Tall Chimneys: Design & Construction*", Tata McGraw-Hill Publishing Company Limited- New Delhi.
5. N. Subrhamanyan, "*Design of Steel Structures*", Oxford Publication
6. S. K. Duggal, "*Design of Steel Structure*", Tata Mc Graw Hill.
7. Varghese A. V, "*Advanced Reinforced Concrete*", Prentice Hall of India.
8. Shah H. J., "*Reinforced concrete, Vol - I and II*". Charotar Publication, Anand.
9. Punmia, B.C. Reinforced Concrete Structures, Vol II., Laxmi Publications
10. IS456:2000, IS800:2007, IS875:1987 (part 1 to 5), IS 13920: 1993, IS1893:2002
11. STAAD Pro- (Software)