

4SE45: STRUCTURAL DESIGN PRACTICES
CREDITS - 3 (LTP: 1,0,2)

Course Objective:

To enhance the concepts of Structural Design Practices.

Teaching and Assessment Scheme:

Teaching Scheme (Hours per Week)			Credits	Assessment Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	CE	ESE	CE	150	
1	0	4	3	30	20	40		60

Course Contents:

Unit No.	Topics	Teaching Hours
1	Analysis and design of RCC Structures Analysis and design of RCC framed Structure building with and without Shear wall subjected to Gravity and Lateral loadings using Software. Students need to carry put any real field problem.	7
2	Analysis and design of Industrial Building Analysis and design of Industrial Building with Gantry Girder, Bracings, Connections etc. using Software. Students need to carry out any real field problem. Pre-Engineering Buildings.	8
Total		15

List of References:

1. Pankaj Agarwal & Manish Shrikhande, “*Earthquake Resistant Design of Structures*”, Prentice Hall of India, New Delhi.
2. Dr. C. V. R. Murty, “*Earthquake Tips*”, Indian Institute of Technology Kanpur and Building Materials and Technology Promotion Council, New Delhi.
3. KrishanaRaju N., “*Advanced Design of Concrete Structures*”, Tata Mc-Graw Hill, Delhi
4. N. Subramanian, “*Design of Steel Structures*”, Oxford University Press, New Delhi.
5. S. K. Duggal, “*Limit State Design of Structures*” McGraw Hill Education Pvt. Ltd., New Delhi.
6. K. S. Sai Ram, “*Design of Steel Structures*” Pearson, New Delhi.
7. M. R. Shiyekar, “*Limit State Design in Structural Steel*” Prentice-Hall of India Pvt.Ltd.
8. M. L. Gambhir, “*Fundamentals of Structural Steel Design*” Tata McGraw-Hill Education.
9. IS: 456 - Indian Standard Code of Practice for Plain and Reinforced Concrete
10. IS: 875 - (Part I to V) –Indian Standard Code of Practice for Structural Safety of Building Loading Standards
11. SP:16 – Design aids for Reinforced Concrete
12. IS1893-Part-1- Indian Standard Criteria for Earthquake Resistant Design of Structures (General Provisions and Buildings)

13. IS1893- Part-2-Criteria for Earthquake Resistant Design of Structures (Liquid Retaining Tanks)
14. IS1893- Part-3- Criteria for Earthquake Resistant Design of Structures (Bridges and Retaining Walls)
15. IS: 1905 - Indian Standard Code of Practice for Structural Use of Unreinforced Masonry.
16. IS: 4326 - Indian Standard Code of Practice for Earthquake Resistant Design & Construction of Buildings.
17. IS 3370 (All parts)- Concrete Structures for Storage of Liquids - Code of Practice
18. IRC: 5, 6, 78, 112
19. IS: 800 - Code of Practice for General Construction in Steel
20. IS: 13920 - Indian Standard Code of Practice for Ductile Detailing of Reinforced Concrete Structures Subjected to Seismic Forces.
21. IS: 13827 - Indian Standard Guidelines for Improving Earthquake Resistance of Earthen Buildings.
22. IS:13828 - Indian Standard Guidelines for Improving Earthquake Resistance of Low Strength Masonry Buildings
23. IS16700 Criteria for Structural Safety of Tall Concrete Buildings

Course Outcomes (COs):

At the end of this course students will be able to ...

1. Design of RCC Structures as per recent practices.
2. Design of *Steel* Structures as per recent practices.