

## COLLEGE OF TECHNOLOGY AND ENGINEERING

## DEPARTMENT OF CIVIL ENGINEERING 3 YEAR BE I SEMESTER SESSION 2015-16

1. Course Code : CE312

2. Course Title : **DESIGN OF CONCRETE STRUCTURES-I** 

3. Credit : 4(3+1)

4. Theory Lecture Outlines

1.	Design Philosophies: Introduction to Working stress					
2.	ultimate load and limit state methods					
3.	Analysis and Design of Flexural Members (Using limit state design method)					
4.	Analysis and Design of Flexural Members (Using limit state design method)					
5.	Rectangular sections: Singly and doubly reinforced					
6.	Rectangular sections: Singly and doubly reinforced					
7.	Rectangular sections: Singly and doubly reinforced					
8.	T section: Singly reinforced.					
9.	T section: Singly reinforced.					
10.	Shear and Bond: Behaviour of beams in shear and bond					
11.	design for shear					
12.	anchorage curtailment and splicing of reinforcement					
13.	detailing of reinforcement					
14.	Torsion: I.S. code provisions for torsion in beams					
15.	Serviceability Conditions: I.S. code provisions for limit states of deflection and cracking					
16.	Slabs, Lintels: Design of one way and two way slabs					
17.	Slabs, Lintels: Design of one way and two way slabs					
18.	design of lintels and introduction of flat slab					
19.	design of lintels and introduction of flat slab					
20.	design of lintels and introduction of flat slab					
21.	Design of Columns: Short and long columns					
22.	Design of Columns: Short and long columns					

23.	Design of Columns: Short and long columns				
24.	Design of Columns: Short and long columns				
25.	eccentrically loaded columns (uni-axial).				
26.	Column Footings: Isolated column footing				
27.	Column Footings: Isolated column footing				
28.	Column Footings: Isolated column footing				
29.	combined footing for two columns (without central beam)				
30.	combined footing for two columns (without central beam)				
31.	combined footing for two columns (without central beam)				
32.	Staircases: Design of dog-legged staircases				
33.	Staircases: Design of dog-legged staircases				
34.	Staircases: Design of dog-legged staircases				
35.	Cantilever Retaining Walls: Design of cantilever type retaining walls				
36.	Cantilever Retaining Walls: Design of cantilever type retaining walls				
37.	Cantilever Retaining Walls: Design of cantilever type retaining walls				
38.	introduction to counter-fort retaining wall				
39.	introduction to counter-fort retaining wall				
40.	introduction to counter-fort retaining wall				
41.	Numericals				
42.	Numericals				
43.	Numericals				
44.	Revision				
45.	Revision				

## Suggested Text Books & References

- 1. Jain A.K., 'Reinforced Concrete-Limit State Design', Nem Chand & Bros. Roorkee.
- 2. Krishna J. and Jain O.P., 'Plain and Reinforced Concrete, Vol. I. New Chand & Bros. Roorkee.
- 3. Dayaratnam P., 'Reinforced Concrete Structures', Oxford and IBH Publishing Co.
- 4. Punamia B.C., 'Limit State Design of Reinforced Concrete', Laxmi Publication Pvt. Ltd.
- 5. Pillai and Menon, 'Reinforced Concrete Design', Tata McGraw Hill, New Delhi.