

**VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA**

Semester: **Second (M Tech)**

**LESSON PLANS** Subject: **ARCD**

Session: **Spring Semester, 2016-17** Theory/Sessional: **Theory**

Branch/Course: **Civil Engineering** Name of the Faculty Member: **Dr. S. K. Panigrahi**

**COURSE OBJECTIVES:**

- To understand various structural design methods in concrete.
- To understand design of various structural components.
- To understand ductility design in RC frames against wind load and seismic forces.

Period	Module /Number	Topic to be covered	Remark/Sign of the Faculty member
1	Module I	Concepts of concrete design	
2		Working stress design (WSD)	
3		Limit state design (LSD)	
4		Limit state design (LSD)	
5		Review in brief of LSD-flexure	
6		Review in brief of LSD- axial-flexure	
7		Review in brief of LSD shear and torsion	
8		Estimation of crack width	
9		Estimation of crack width	
10		Estimation of crack width	
11		Deflection of reinforced concrete beams	
12		Deflection of reinforced concrete beams	
13		Deflection of reinforced concrete beams	
14	Module II	Analysis and design of building frames subjected to wind load	
15		Analysis and design of building frames subjected to wind load	
16		Analysis and design of building frames subjected to wind load	
17		Earthquake forces and structural response	
18		Earthquake forces and structural response	
19		Earthquake forces and structural response	
20	Module III	Ductility of reinforced structures	
21		Ductility of reinforced structures	
22		Ductility of reinforced structures	
23		Material ductility-steel and concrete	
24		Material ductility-steel and concrete	
25		Material ductility-steel and concrete	
26		Section ductility, member ductility, structural ductility	
27		Section ductility, member ductility, structural ductility	
28		Ductile detailing of reinforced concrete frames for	

		seismic forces	
29		Ductile detailing of reinforced concrete frames for seismic forces	
30		Ductile detailing of reinforced concrete frames for seismic forces	
31	Module IV	Design of deep beams	
32		Design of deep beams	
33		Design of deep beams	
34		Design of deep beams	
35		Design of deep beams	
36		Design of concrete shear walls	
37		Design of concrete shear walls	
38		Design of concrete shear walls	
39		Design of concrete shear walls	
40		Design of concrete shear walls	

### **COURSE OUTCOME**

- Ability to understand various design methods in concrete including design of several structural RC members components including ductility design.

### **REFERENCES**

- A. K. Jain, “Reinforced Concrete: Limit State Design”, Nemchand and Brothers, 1999.
- R. park and T. Pauley, “Reinforced Concrete Structure”, John Wiley and Sons
- P. C. Varghese, “Advanced Reinforced Concrete Design”, PHI 2<sup>nd</sup> Edition-2002.

Signature of the faculty member:

Date:06/01/2017

Counter Signature of H.O.D

Semester: **Third (B Tech)** LESSON PLAN Subject: **CEMC**

Session: **Autumn Semester, 2015-16**

Theory/Sessional: **Theory**

Branch/Course: **Civil Engineering**

Name of the Faculty Member: **Dr. S. K. Panigrahi**

Period	Module /Number	Topic to be covered	Remark/Sign of the Faculty member
1	Module I	Introduction to Civil Engineering Materials	
2		<b>Bricks:</b> Methods of bricks manufacture	
3		Methods of bricks manufacture	
4		Testing of bricks	
5		<b>Cement:</b> classification of various types of cements, ,	
6		Chemical composition and hydration of cement	
7		Tests for cement	
8		Tests for cement	
9		<b>Concrete:</b> Composition, Water- Cement ration,	
10		Workability of concrete	
11	Module II	<b>Masonry arches:</b> Terms used types of arches, stability of arches	
12		Line of thrust, depth of arch at the crown	
13		Cavity walls: Purpose,	
14		Method of construction for cavity wall	
15		<b>Stairs:</b> Terms used, types of stairs, essential requirements	
16		Various stairs: wooden stairs, concrete stairs, metal stairs	
17	Module III	<b>Fire resistive construction:</b> Fire resistive construction,	
18		Fire resistance of common building materials,	
19		Protection for girders and columns	
20		Fire fighting appliances.	
21		<b>Plastering:</b> Materials for plastering, methods of plastering,	
22		Defects in plastering and remedy	
23		<b>Damp prevention:</b> causes, effects, different	
24		Methods of prevention of dampness	
25	Module IV	Types of Doors	
26		Types of Doors	
27		Types of Windows	
28		Types of Windows	
29		Painting and decoration:	
30		Ingredients of oil paint	
31		Oil painting	
32		Varnishing	

33		Enamel painting	
34		Washes and distemper,	
35		Defects in painting and remedies	
36		<b>Glazing:</b> Varieties of glass	
37		Decorative glass, door and window glazing.	
38		Repair of building: Annual and special repair of buildings,	
39		Maintenance of buildings, Types of cracks in Building, Types of building Joint	
40		Stone: Indian building stones, their properties and uses,	
41		Methods of stone quarrying	
42		Timber: Preservation	
43		Seasoning of timber	
44		Foundation: Brief idea on various types of foundation	
45		Various types of foundation	

Signature of the faculty member:

Date: 10/07/2015

Counter Signature of H.O.D