

Department of Civil Engineering

Lesson Plan cum Diary 2015-'16

Name of the Subject : **Building Materials and Concrete Technology** Name of the faculty member :
Class and Semester : **Year II, I** Section :

S. No.	Topic	No. of periods	Dates Covered	No. of Periods used	Book(s) followed	Topics for self-study
UNIT I- STONES, BRICKS AND TILES, TIMBER						
1.	Properties of Building Stones and Structural requirements, Classification of stones, Stone Quarrying, Blasting and dressing of stones	1			T1	1.Manufacturing of Tiles, Light weight Bricks
2.	Composition of good brick earth – Various methods of manufacture of bricks	1			T1	
3.	Qualities of a good brick – Efflorescence in bricks Classification of bricks- Characteristics of good tile	1			T1	
4.	Tutorial 01	1				
5.	Manufacturing methods - Types of tiles.	1			T1	
6.	Timber-Structure – Properties – Seasoning of timber	1			T1	
7.	Classification of various types of woods used in buildings	1			T1	
8.	Tutorial 02	1				

9.	Defects in timber - Decay of timber – Mechanical treatment	1			T1	
10.	Paints – Varnishes	1			T1	
11.	Distempers	1			T1	
12.	Tutorial 03	1				
13.	Formative test, Bituminous wooden products in construction	1			T1	
Total Periods Required:		13				
14.	Various ingredients of lime	1			T1	1.Manufacturing process of iron, aluminum and ceramic tiles
15.	Constituents of lime stone	1			T1	
16.	Tutorial 04	1				
17.	Classification of lime	1			T1	
18.	Various methods of manufacture of lime	1			T1	
19.	Use of Materials like galvanized iron, steel, aluminum, gypsum,	1			T1	
20.	Tutorial 05	1				
21.	copper, glass, bituminous materials, rubber, Fiber reinforced plastics, ceramic products,	2			T1	
22.	Fiber reinforced plastics, ceramic products, asbestos and their quality	1			T1	
23.	Tutorial 06	1				
Total Periods Required:		11				
24.	Ingredients of cement, Manufacture of OPC	1			T1,T2	1. Manufacturing process of special cements, colour

25.	Types of cement and their properties, Various field and laboratory tests on cement.	1			T1,T2	cements and durability concept	
26.	Various ingredients of cement concrete and their importance	1			T1,T2		
27.	Tutorial 07	1					
28.	Proportioning of concrete	1			T1,T2		
29.	Water-cement ratio	1			T1,T2		
30.	Workability of concrete, Factors influencing workability	1			T1,T2		
31.	Tutorial 08	1					
32.	Measurement of workability, Effect of time and temperature on workability	1			T1,T2		
33.	Segregation and bleeding, Mixing and vibration of concrete	1			T1,T2		
34.	Formative test Quality of mixing water.	1			T1,T2		
35.	Tutorial 09	1					
Total Periods Required:		12					
UNIT IV- HARDENED CONCRETE AND TESTS ON HARDENED CONCRETE							
36.	Nature of strength of concrete, Maturity concept	1			T1,T2		1.IS: 516 - 1959 Method of Test for Strength of Concrete, Bureau of Indian Standards, New Delhi.
37.	Strength in tension and compression, Factors affecting strength	1			T1,T2		
38.	Relation between compression and tensile strength	1			T1,T2		
39.	Tutorial 10	1					
40.	Curing – Numerical Problems	2			T1,T2		

41.	Compression test – Tension test	1			T1,T2	
42.	Tutorial 11	1				
43.	Factors affecting strength	1			T1,T2	
44.	Flexure test	1			T1,T2	
45.	Formative test Non-destructive testing methods	1			T1,T2	
46.	Tutorial 12	1				
Total Periods Required:		12				
UNIT V- ELASTICITY, CREEP AND SHRINKAGE, MIX DESIGN						
47.	Modulus of elasticity – Dynamic modulus of elasticity	1			T1,T2	1.IS: 456 - 2000 Plain and Reinforced concrete - code for practice, Bureau of Indian Standards, New Delhi. 1.IS: 10262 - 1982 Recommended Guidelines for Concrete Mix Design, Bureau of Indian Standards, New Delhi.
48.	Poisson's ratio – Creep of concrete	1			T1,T2	
49.	Factors influencing creep	1			T1,T2	
50.	Tutorial 13	1				
51.	Relation between creep and time – Effects of creep	1			T1,T2	
52.	Shrinkage – Types of shrinkage.	1			T1,T2	
53.	Mix Design factors in the choice of mix proportions	1			T1,T2	
54.	Tutorial 14	1				
55.	BIS method of mix design	1			T1,T2	
56.	Numerical Problems on Mix Design.	2			T1,T2	
57.	Tutorial 15	1				
Total periods required:		12				
Grand total of periods required:		60				

Number of Classes : 45
Number of Tutorials : 15

TEXT BOOKS

1. S. K. Duggal, *Building Materials*, New Age International Publishers, 4th Edition, 2010.
2. M.S. Shetty, *Concrete Technology*, S. Chand and Company Ltd., 7th Edition, 2011.

REFERENCE BOOKS

1. Rajput R.K., *Engineering Materials*, S. Chand and Company Ltd., 3rd Edition, 2006.
2. A.R. Santha Kumar, *Concrete Technology*, Oxford University Press, New Delhi, 7th Edition, 2011.
3. A.M. Neville, *Properties of Concrete*, Pearson Education, 5th Edition, 2012.
4. M.L. Gambhir, *Concrete Technology*, McGraw Hill Education (India) Private Limited, 5th Edition, 2013.

Signature of the faculty Member

Signature of HOD