



RAAJDHANI ENGINEERING COLLEGE, BHUBANESWAR
Department of Civil Engineering

LESSON PLAN

2023-2024

Session : Sep 2023- Jan 2024
Course Type : Theory
Semester/Branch :: 3rd Semester, Civil Engineering
Subject (with code) :: Building Materials & Construction technology (Th.3)
Contact hours/week :: 4 hours
Name of Faculty :: Prof. Saruk Mallick

S L. N O.	CLAS S ID	COURSE CONTENT	MODE OF DELIVERY	EXHIBIT/ REFERENCE
1	1.1	Classification of rock, uses of stone, natural bed of stone,	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
2	1.2	Qualities of good building stone,	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
3	1.3	Dressing of stone. Characteristics of different types of stone and their uses	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
4	2.1	Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
5	2.2	Classification of bricks, size of traditional and modular bricks	Field visit	https://archive.nptel.ac.in/courses/105/102/105102088/
6	3.1	Cement: Types of cements	Field visit	https://archive.nptel.ac.in/courses/105/102/105102088/
7	3.2	Properties of cements	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
8	3.3	Manufacturing of cement	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
9	3.4	Importance and application of blended cement with fly ash and blast furnace slag.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
10	4.1	Sources and classification of sand, Bulking of sand	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
11	4.2	Use of gravel, morrum and fly ash as different building material	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
12	5.1	Concrete: Definition and composition	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
13	5.2	Water cement ratio- Workability, mechanical properties.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
14	6.1	Timber: Classification and Structure of timber	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
15	6.2	Characteristics of good timber	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
16	7.1	Clay products and refractory materials – Definition and Classification.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
17	7.2	tiles, terracotta, porcelain glazing	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/

18	8.1	Iron and Steel	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
19	8.2	Uses of cast iron, wrought iron, mild steel and tor steel	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
20	9.1	Paints, Enamels, Varnishes.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
21	9.2	Distempers, Emulsion, French polish and Wax Polish	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
22	1.1	Buildings and classification of buildings based on occupancy	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
23	1.2	Different components of a building	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
24	1.3	Site investigation – objectives.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
25	1.4	site reconnaissance and explorations	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
26	2.1	Concept of foundation and its purpose	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
27	2.2	Types of foundations – shallow and deep	Field visit	https://archive.nptel.ac.in/courses/105/102/105102088/
28	2.3	Shallow foundation-constructural details of : Spread foundations for walls.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
29	2.4	thumb rules for depth and width of foundation and thickness of concrete block	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
30	2.5	Deep foundations: Pile foundations-their suitability.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
31	2.6	classification of piles based on materials,	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
32	2.7	function and method of installation	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
33	2.8	Purpose of walls	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
34	3.1	Classification of walls		https://archive.nptel.ac.in/courses/105/102/105102088/
35	3.2	load bearing, non-load bearing walls, retaining walls	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
36	3.3	Classification of walls as per materials of construction.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
37	3.4	brick, stone, reinforced brick, reinforced concrete,	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
38	3.5	precast, hollow and solid concrete block and composite masonry walls (Concept Only)	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
39	3.6	Partition Walls : Suitability and uses of brick and wooden partition walls	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
40	3.8	Bond – meaning and necessity: English bond for 1and 1-1/2 Brick thick walls.	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
41	3.9	Stone Masonry	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
42	3.10	Glossary of terms –String course, corbel, cornice, block-in-course, grouting	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
43	4.1	Glossary of terms used in doors and windows	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
44	4.2	Doors – different types of doors	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/

45	4.3	Windows – different types of windows	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
46	5.1	Floors: Glossary of terms ,Types of floor finishes	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/
47	5.2	Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs	Lecture	https://archive.nptel.ac.in/courses/105/102/105102088/

48	5.3	Stairs: Glossary of terms	Lecture	
49	5.4	Various types of stair case – straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair, cantilever stair, tread riser stair.	Lecture	
50	6.1	Plastering – purpose – Types of plastering, Types of plaster finishes	Lecture	
51	6.2	Proportion of mortars used for different plasters, preparation of mortars, techniques of plastering and curing.	Lecture	
52	6.3	Pointing – purpose –Types of pointing	Lecture	
53	6.4	Painting – objectives – method of painting new and old wall surfaces, wood surface and metal surfaces – powder coating and spray painting on metal surfaces.	Lecture	
54	6.5	White washing – Colour washing – Distemping – internal and external walls.	Lecture	
55	6.6	Damp and Termite proofing – Materials and Methods.	Lecture	
56	7.1	Introduction to Energy Management and Energy Audit of Buildings	Lecture	
57	7.2	Aims of energy management of buildings.	Lecture	
58	7.3	Types of energy audit, Response energy audit questionnaire	Lecture	
59	7.4	Energy surveying and audit report	Lecture	