

## **GANDHI SCHOOL OF ENGINEERING**

## BHABANDHA, BERHAMPUR

BRANCH- CIVIL ENGINEERING

SEMESTER- 3RD

SUBJECT- Th3. BUILDING MATERIAL & CONSTRUCTION TECHNOLOGY

NAME OF THE FACULTY- ER.MANJULA BHUYAN & ER. ROJALINI MISHRA

			Topic to be taken			Actual topic taken		
SI. No	Topic/ Module	No. of period	Details of the topics	Date	Topic No.	Topic Name	Date	Remarks
			Section	– A: (BUILDIN	IG MA	TERIALS)		I
1	Stone	5	1.1 Classification of rock, uses of stone, natural bed of stone, 1.2 Qualities of good building stone, 1.3 Dressing of stone 1.4 Characteristics of different types of stone and their uses	01.08.2023 - 07.08.2023	1.3	bed of stone, Qualities of good building stone, Dressing of stone	01.08.2023 02.08.2023 04.08.2023 05.08.2023 07.08.2023 08.08.2023	
2	Bricks	6	2.1 Brick earth – its composition 2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process) 2.3 Classification of bricks, size of traditional and modular bricks, qualities of good building bricks	08.08.2023 - 16.08.2023	2.2	Brick earth – its composition Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process) Classification of bricks, size of traditional and modular bricks, qualities of good building bricks	09.08.2023 11.08.2023 12.08.2023 16.08.2023 18.08.2023 19.08.2023 21.08.2023	

Cement, Mortar and Concrete	7	3.1 Cement: Types of cements, Properties of cements, Manufacturing of cement 3.2 Importance and application of blended cement with fly ash and blast furnace slag. 3.3 Mortar: Definition and types of mortar 3.4 Sources and classification of sand, Bulking of sand 3.5 Use of gravel, morrum and fly ash as different building material 3.6 Concrete: Definition and composition- Water cement ratio- Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete	18.08.2023 - 26.08.2023	3.2 3.3 3.4 3.5	cements, Manufacturing of cement Importance and application of blended cement with fly ash and blast furnace slag. Mortar: Definition and types of mortar Sources and classification of sand, Bulking of sand Use of gravel, morrum and fly ash as different building material	22.08.2023 23.08.2023 25.08.2023 26.08.2023 28.08.2023 29.08.2023 01.09.2023 02.09.2023
Other Construct ion Materials	7	<ul> <li>4.1 Timber: Classification and Structure of timber.</li> <li>4.2 Seasoning of timber – Importance.</li> <li>Characteristics of good timber.</li> <li>4.3 Clay products and refractory materials – Definition and Classification.</li> <li>4.4 Properties and uses of refractory materialstiles, terracotta, porcelain glazing.</li> <li>4.5 Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel</li> </ul>	28.08.2023 - 09.09.2023	4.3 4.4	Seasoning of timber – Importance. Characteristics of good timber. Clay products and refractory materials – Definition and Classification. Properties and uses of refractory materials-	04.09.2023 08.09.2023 09.09.2023 11.09.2023 12.09.2023 13.09.2023 15.09.2023 16.09.2023
Surface Protectiv e Materials	5	5.1Composition of Paints, enamels, varnishes. 5.2Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish.	16.09.2023	5.1 5.2	Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish.	22.09.2023 23.09.2023 25.09.2023 26.09.2023 27.09.2023 29.09.2023

1	Introduct	2	1.1Buildings and classification of buildings based on occupancy 1.2 Different components of a building. 1.3Site investigation – objectives, site reconnaissance and explorations.	18.09.2023 - 22.09.2023	1.2	Buildings and classification of buildings based on occupancy Different components of a building. Site investigation – objectives, site reconnaissance and explorations.	30.09.2023 03.10.2023
2	Foundati ons	4	2.1 Concept of foundation and its purpose 2.2 Types of foundations – shallow and deep 2.3 Shallow foundation-constructional details of: Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block 2.4 Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.	23.09.2023 - 27.09.2023		Concept of foundation and its purpose Types of foundations – shallow and deep Shallow foundation-constructional details of: Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.	04.10.2023 06.10.2023 07.10.2023

3	Walls & Masonry Works	6	3.1 Purpose of walls 3.2 Classification of walls – load bearing, non-load bearing walls, retaining walls. 3.3 Classification of walls as per materials of construction: brick, stone, reinforced brick, reinforced concrete, precast, hollow and solid concrete block and composite masonry walls (Concept Only). 3.4 Partition Walls: Suitability and uses of brick and wooden partition walls 3.5 Brick masonry: Definition of different terms 3.6 Bond – meaning and necessity: English bond for 1and 1-1/2 Brick thick walls. T, X and right angled corner junctions. Thickness for 1and 1-1/2 brick square pillars in English bond 3.7 Stone Masonry: 3.8 Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, through stones, parapet, coping, pilaster and buttress	28.09.2023 - 06.10.2023	3.3 3.4 3.5 3.6	stone, reinforced brick, reinforced concrete, precast, hollow and solid concrete block and composite masonry walls (Concept Only).  Partition Walls: Suitability and uses of brick and wooden partition walls  Brick masonry: Definition of different terms  Bond – meaning and necessity: English bond for 1 and 1-1/2 Brick thick walls. T, X and right angled corner junctions. Thickness for 1 and 1-1/2 brick square pillars in English bond Stone Masonry:	11.10.2023 13.10.2023 16.10.2023 17.10.2023 18.10.2023
4	Doors, Windows And Lintels		4.1Glossary of terms used in doors and windows 4.2 Doors – different types of doors 4.3Windows – different types of windows 4.4 Purpose of use of arches and lintels	07.10.2023 - 11.10.2023	4.1 4.2 4.3 4.4	Purpose of use of arches and lintels	04.11.2023 06.11.2023 07.11.2023 08.11.2023

					5.1	Floors: Glossary of terms ,Types of floor	10.11.2023
			5.1 Floors: Glossary of terms ,Types of floor		- · · ·	finishes – cast-in-situ, concrete	11.11.2023
			finishes – cast-in-situ, concrete			flooring(monolithic, bonded), terrazzo tile	
			flooring(monolithic, bonded), terrazzo tile			flooring, cast in situ Terrazzo flooring, timber	
			flooring, cast in situ Terrazzo flooring, timber			flooring (Concept only)	
			flooring (Concept only)		5.2	. , , , ,	15.11.2023
			5.2 Roofs: Glossary of terms, Types of roofs,				17.11.2023
	Floors,		concept and function of flat, pitched, hipped and			and Sloped roofs	
5	Roofs	5	Sloped roofs	13.10.2022 -		·	18.11.2023
	and Stairs		5.3 Stairs: Glossary of terms; Stair case, winder,	31.10.2022		landing, stringer, newel, baluster, rise, tread,	
			landing, stringer, newel, baluster, rise, tread,			width of stair case, hand rail, nosing, head	
			width of stair case, hand rail, nosing, head room,			room, mumty room.	
			mumty room.		5.4	Various types of stair case – straight flight, dog	20.11.2023
			5.4Various types of stair case – straight flight,			legged, open well, quarter turn, half turn	
			dog legged, open well, quarter turn, half turn			(newel and geometrical stairs), bifurcated	
			(newel and geometrical stairs), bifurcated stair,			stair, spiral stair, cantilever stair, tread riser	
			spiral stair, cantilever stair, tread riser stair.			stair.	
			6.1 Plastering – purpose – Types of plastering,		6.1	Plastering – purpose – Types of plastering,	21.11.2023
			Types of plaster finishes – Grit finish, rough cast,			Types of plaster finishes – Grit finish, rough	
			smooth cast, sand faced, pebble dash, acoustic			cast, smooth cast, sand faced, pebble dash,	
	Protectiv		plastering and plain plaster etc.			acoustic plastering and plain plaster etc.	
	e,		6.2 Proportion of mortars used for different		6.2	Proportion of mortars used for different	24.11.2023
	Decorativ		plasters, preparation of mortars, techniques of			plasters, preparation of mortars, techniques of	
	e		plastering and curing			plastering and curing	
6	Finishes,	5	6.3 Pointing – purpose –Types of pointing	01.11.2023 -		Pointing – purpose –Types of pointing	
	Damp	J	6.4 Painting – objectives – method of painting	07.11.2023			25.11.2023
	and		new and old wall surfaces, wood surface and			new and old wall surfaces, wood surface and	
	Termite Proofing		metal surfaces – powder coating and spray			metal surfaces – powder coating and spray	
			painting on metal surfaces.			painting on metal surfaces.	
			6.5 White washing – Colour washing –		6.5	S	28.11.2023
			Distempering – internal and external walls.			Distempering – internal and external walls.	
			6.6 Damp and Termite proofing – Materials and		6.6	Damp and Termite proofing – Materials and	
			Methods.			Methods.	

	Green		8.1 Concept of green building		8.1	Concept of green building	29.11.2023		
	Buildings,		8.2 Introduction to Energy Management and		8.2	Introduction to Energy Management and	01.12.2023		
	Energy		Energy Audit of Buildings.	00 11 2022		Energy Audit of Buildings.	02.12.2023		
7	Manage	4	I 8.3 Aims of energy management of buildings, 8.4	08.11.2023 - 15.11.2023	8.3	Aims of energy management of buildings.	04.12.2023		
	ment and		Types of energy audit, Response energy audit		15.11.2023	15.11.2023	8.4	Types of energy audit, Response energy audit	06.12.2023
	Energy		questionnaire			questionnaire			
	Audit Of		8.5 Energy surveying and audit report.		8.5	Energy surveying and audit report.	09.12.2023		

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