

LESSON PLAN FOR WINTER SESSION (2022-23)

PROGRAMME : CIVIL ENGINEERING			NAME OF THE FACULTY: MR. ARABINDA SAHU	
COURSE NAME : BUILDING MATERIALS AND CONSTRUCTIONS TECHNOLOGY			SESSION : 2022-23	
COURSE CODE : TH.3			DATE : 15/09/22 To 22/12/22	
SEMESTER : 3 RD				
PERIODS/WEEK: 5				
TOTAL PERIODS:65				
WEEK	PERIODS	UNITS	TOPICS	
Sept. 3rd Week	1	1 of Part A	Part A - BUILDING MATERIAL 1. Stone	
			1.1 Classification of rock, uses of stone, natural bed of stone	
	2	1 of Part A	1.2 Qualities of good building stone	
	3	1 of Part A	1.3 Dressing of stone	
	4	1 of Part A	1.4 Characteristics of different types of stone and their uses	
Sept. 4th Week	5	2 of Part A	2. Brick 2.1	
			Brick earth – its composition	
	1	2 of Part A	2.2 Brick making – Preparation of brick earth, Moulding, Drying	
	2	2 of Part A	Burning in kilns (continuous Process)	
	3	2 of Part A	2.3 Classification of bricks	
Oct. 1st Week	4	2 of Part A	Size of traditional and modular bricks, qualities of good building bricks	
	5	3 of Part A	3. Cement, Mortar and Concrete 3.1	
			Cement: Types of cements	
Oct. 2nd Week	1	3 of Part A	Properties of cements	
	2	3 of Part A	Manufacturing of cement	
	3	3 of Part A	3.2 Importance and application of blended cement with fly ash and blast furnace slag	
	4	3 of Part A	3.3 Mortar: Definition and types of mortar	
	5	3 of Part A	3.4 Sources and classification of sand, Bulking of sand	
Oct. 3rd Week	1	3 of Part A	3.5 Use of gravel, morrum and fly ash as different building material	
	2	3 of Part A	3.6 Concrete: Definition and composition- Water cement ratio- Workability,	
	3	3 of Part A	Mechanical properties of Concrete.	
	4	3 of Part A	Grading of aggregates, mixing, placing of Concrete	
	5	3 of Part A	Compacting and curing of concrete	
Oct. 4th Week	1	4 of Part A	4. Other Construction Materials 4.1	
			Timber: Classification and Structure of timber	
	2	4 of Part A	4.2 Seasoning of timber – Importance 4.3	
			Characteristics of good timber	
	3	4 of Part A	4.3 Clay products and refractory materials – Definition and Classification.	
Nov. 1st Week	4	4 of Part A	4.4 Properties and uses of refractory materials- tiles, terracotta, porcelain glazing	
	5	4 of Part A	4.5 Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel	
	1	5 of Part A	5. Surface Protective Materials 5.1	
			Composition of Paints, enamels, varnishes	
	2	5 of Part A	5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French	
Nov. 2nd Week	3	1 of Part B	Part B - CONSTRUCTION TECHNOLOGY 1.	
			Introduction 1.1	
	4	1 of Part B	1.2 Different components of a building	
	5	1 of Part B	1.3 Site investigation – objectives, site reconnaissance and explorations	
Nov. 2nd Week	1	2 of Part B	2. Foundations 2.1	
			Concept of foundation and its purpose 2.2 Types of	
	2	2 of Part B	foundations – shallow and deep	
		2.3 Shallow foundation-constructural details of : Spread foundations for walls		

	3	2 of Part B	Thumb rules for depth and width of foundation and thickness of concrete block	
	4	2 of Part B	2.4 Deep foundations: Pile foundations-their suitability	
	5	2 of Part B	Classification of piles based on materials, function and method of installation	
Nov. 3rd Week	1		Internal Assessment Exam	
	2	3 of Part B	3.Walls & Masonry Works Purpose of walls	3.1
	3	3 of Part B	3.2 Classification of walls - load bearing, non-load bearing walls, retaining walls.	
	4	3 of Part B	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).	
	5	3 of Part B	3.4 Partition Walls : Suitability and uses of brick and wooden partition walls	
Nov. 4th Week	1	3 of Part B	3.5 Brick masonry : Definition of different terms	
	2	3 of Part B	3.6 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	
	3	3 of Part B	3.7 Stone Masonry : Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, through stones, parapet, coping, pilaster and buttess	3.8
	4	4 of Part B	4. Doors, Windows And Lintels Glossary of terms used in doors and windows Doors – different types of doors	4.1 4.2
	5	4 of Part B	4.3 Windows – different types of windows 4.4 Purpose of use of arches and lintels	
Dec. 1st Week	1	5 of Part B	5. Floors, Roofs and Stairs Floors: Glossary of terms ,Types of floor finishes – cast-in-situ, concrete flooring(monolithic, bonded), terrazzo tile flooring, cast in situ Terrazzo flooring, timber flooring (Concept only)	5.1
	2	5 of Part B	5.2 Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs	
	3	5 of Part B	5.3 Stairs: Glossary of terms; Stair case, winder, landing, stringer, newel, baluster, rise, tread, width of stair case, hand rail, nosing, head room, mumty room.	
	4	5 of Part B	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.	
	5	6 of Part B	6. Protective, Decorative Finishes, Damp and Termite Proofing Plastering – purpose – Types of plastering, Types of plaster finishes – Grit finish, rough cast, smooth cast, sand faced, pebble dash, acoustic plastering and plain plaster etc.	6.1
Dec. 2nd Week	1	6 of Part B	6.2 Proportion of mortars used for different plasters, preparation of mortars, techniques of plastering and curing.	
	2	6 of Part B	6.3 Pointing – purpose –Types of pointing	
	3	6 of Part B	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.	
	4	6 of Part B	6.5 White washing – Colour washing – Distemping – internal and external walls.	
	5	6 of Part B	6.6 Damp and Termite proofing – Materials and Methods.	
Dec. 3rd Week	1	7 of Part B	7. Green Buildings, Energy Management and Energy Audit Of Buildings & Project 7.1 Concept of green building	
	2	7 of Part B	7.2 Introduction to Energy Management and Energy Audit of Buildings. 7.3 Aims of energy management of buildings.	
	3	7 of Part B	7.4 Types of energy audit, Response energy audit questionnaire 7.5 Energy surveying and audit report	
	4		Doubt Clearing Class & Previous year question Paper discussion.	
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