

## LESSON PLAN

Department: Civil Engineering	Semester : 3rd Sem SEC B	Name of the Teaching faculty: R.Bhanu	
Subject :- Th2. BUILDING MATERIALS AND CONSTRUCTION TECHNOLOGY	No.of Days/ week class allotted : 05/week	Semester from date: 15/09/2022 to 22/12/2022 No. of Weeks :15 Topics to be covered:-	
Week	Class Day	Topics	Remarks
<b>PART :A (BUILDING MATERIALS)</b>			
<b>1.Stone</b>			
1 st Week: (15 th Sept- 17th Sept)	1 <sup>st</sup>	1.1 Classification of rock, uses of stone, natural bed of stone	
	2 <sup>nd</sup>	1.2 Qualities of good building stone	
2nd Week : (18th sept - 25th sept)	1 <sup>st</sup>	1.3 Dressing of stone, 1.4 Characteristics of different types of stone and their uses	
	<b>2.Bricks</b>		
	2 <sup>nd</sup>	2.1 Brick earth – its composition	
	3 <sup>rd</sup>	2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)	
3 rd Week: (26 th Sept-1st Oct)	1 <sup>st</sup>	2.3 Classification of bricks, size of traditional and modular bricks, qualities of good building bricks	
	2 <sup>nd</sup>	2.3 Classification of bricks, size of traditional and modular bricks, qualities of good building bricks <b>3.Cement, Mortar and Concrete-</b> 3.1 Cement: Types of cements, Properties of cements, Manufacturing of cement	
	<b>3.Cement, Mortar and Concrete</b>		
	3 <sup>rd</sup>	3.2 Importance and application of blended cement with fly ash and blast furnace slag	
<b>4th week</b>	<b>vacation</b>		
5 th Week: (10 th Oct- 15 th Oct)	1st	3.3 Mortar: Definition and types of mortar, 3.4 Sources and classification of sand, Bulking of sand	
	2nd	3.5 Use of gravel, morrum and fly ash as different building material	
	3rd	3.6 Concrete: Definition and composition- Water cement ratio- Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete.	
<b>4.Other Construction Materials</b>			
6 th Week: (17 th Oct- 22 nd Oct)	1st	4.1 Timber: Classification and Structure of timber, 4.2 Seasoning of timber – Importance,4.3 Characteristics of good timber	
	2nd	4.4 Clay products and refractory materials – Definition and Classification	
	3rd	4.5 Properties and uses of refractory materials- tiles, terracotta, porcelain glazing	
7th Week:(25th Oct- 29th Oct)	1st	4.6 Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel	
	<b>5.Surface Protective Materials</b>		
	2nd	5.1 Composition of Paints, enamels, varnishes. 5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish	

	3rd	5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish	
8th Week: (31st oct - 5th nov)	1st	5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish	
		<b>PART: B (CONSTRUCTIONS TECHNOLOGY)</b>	
		<b>1. Introduction</b>	
	2nd	1.1 Buildings and Classification of buildings based on occupancy, 1.2 Different components of a building, 1.3 Site investigation – objectives, site reconnaissance and explorations	
		<b>2. Foundations</b>	
	3rd	2.1 Concept of foundation and its purpose, 2.2 Types of foundations – shallow and deep	
9 th Week: (7 th Nov -12 th Nov)	1st	2.3 Shallow foundation-constructural details of : Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block	
	2nd	2.4 Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation. <b>3.Walls &amp; Masonry Works-</b> 3.1 Purpose of walls, 3.2 Classification of walls – load bearing, non-load bearing walls, retaining walls	
		<b>3.Walls &amp; Masonry Works</b>	
	3rd	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)	
10th Week:(14th nov - 19th nov)	1st	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.	
	2nd	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	
		<b>4.Doors, Windows And Lintels</b>	
	3rd	4.1 Glossary of terms used in doors and windows, 4.2 Doors – different types of doors	
11 th Week: (21st Nov -	1st	4.3 Windows – different types of windows, 4.4 Purpose of use of arches and lintels	
		<b>5. Floors, Roofs and Stairs</b>	
	2nd	5.1 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)	

26 th Nov)	3rd	5.2 Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs, 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.	
12 th Week: (28 th Nov -3 rd) Dec	1st	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, Stairs: Glossary of terms; Stair case, winder, landing, stringer, newel, baluster, rise, tread, width of stair	
		<b>6.Protective, Decorative Finishes, Damp and Termite Proofing</b>	
	2nd	6.1 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 , 6.2 Proportion of mortars used for different plasters, preparation of mortars, techniques of plastering and curing	
13 th Week: (5 th Dec -10 th Dec)	3rd	6.3 Pointing – purpose –Types of pointing, 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	
	1st	6.5 White washing – Colour washing – Distempering – internal and external walls, 6.6 Damp and Termite proofing – Materials and Methods	
		<b>7.Green Buildings, Energy Management and Energy Audit Of Buildings &amp; Project</b>	
14th week:(12th dec- 17th dec)	2nd	7.1 Concept of green building, 7.2 Introduction to Energy Management and Energy Audit of Buildings	
	3rd	7.3 Aims of energy management of buildings.	
	1st	7.4 Types of energy audit, Response energy audit questionnaire 7.5 Energy surveying and audit report	
15 th Week: (19 th Dec- 22nd Dec)	2nd	7.5 Energy surveying and audit report	
	1st	<b>REVISION</b>	
2nd			

R. Bharu

SIGNATURE OF THE FACULTY