LESSION PLAN			
Deparment: Civil Engineering	**Semester : 3rd Sem Sec-B**	**Name of the Teaching faculty: SAILAJA BHUYAN**	
Subject :- Th2. BUILDING MATERIALS AND CONSTRUCTION TECHNOLOGY	**No.of Days/ week class allotted : 05**	**Semester from date: 01/07/2024 to 08/11/2024 No. of Weeks :19 Topics to be covered:-**	
Week	**Class Day**	**Topics**	**Remarks**
		PART :A (BUILDING MATERIALS)	
8TH WEEK		**1.Stone (5P)**	
	1st	1.1 Classification of rock, uses of stone, natural bed of stone	
	2nd	1.1 Classification of rock, uses of stone, natural bed of stone	
	3rd	1.2 Qualities of good building stone, 1.3 Dressing of stone, 1.4 Characteristics of different types of stone and their uses	
9TH WEEK	1st	**2.Bricks (6P)**	
		2.1 Brick earth – its composition	
	2nd	2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)	
	3rd	2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)	
10TH WEEK	1st	2.3 Classification of bricks, size of traditional and modular bricks, qualities of good building bricks	
		3.Cement, Mortar and Concrete (7P)	
		3.1 Cement: Types of cements, Properties of cements, Manufacturing of cement	
	2nd	3.2 Importance and application of blended cement with fly ash and blast furnace slag	
	3rd	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	
11TH WEEK	1st	3.6 Concrete: Definition and composition- Water cement ratio- Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete.	
	2nd	3.6 Concrete: Definition and composition- Water cement ratio- Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete.	
	3rd	**4.Other Construction Materials (7P)**	
		4.1 Timber: Classification and Structure of timber, 4.2 Seasoning of timber – Importance, 4.3 Characteristics of good timber	
12TH WEEK	1st	4.4 Clay products and refractory materials – Definition and Classification	
	2nd	4.5 Properties and uses of refractory materials- tiles, terracotta, porcelain glazing	
	3rd	4.6 Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel	
13TH WEEK	1st	**5.Surface Protective Materials (5P)**	
		5.1 Composition of Paints, enamels, varnishes.	
	2nd	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.	

14TH WEEK	1st	**PART: B (CONSTRUCTIONS TECHNOLOGY)**	
		1. Introduction (2P)	
		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	
	3rd	**2. Foundations (4P)**	
		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	
15TH WEEK		**VACCATION**	
16TH WEEK	1st	2.4 Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.	
	3rd	**3.Walls & Masonry Works (6P)**	
		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)	
17TH WEEK	1st	3.4 Partition Walls : Suitability and uses of brick and wooden partition walls, 3.5 Brick masonry : Definition of different terms	
	2nd	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	
	3rd	3.8 Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, through stones, parapet, coping, pilaster and buttress	
		4.Doors, Windows And Lintels (4P)	
		4.1 Glossary of terms used in doors and windows 4.2 Doors – different types of doors	
18TH WEEK	1st	4.3 Windows – different types of windows	
	2nd	4.4 Purpose of use of arches and lintels.	
	3rd	**5. Floors, Roofs and Stairs (5P)**	
		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)	
19TH WEEK	1st	5.2 Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs	
	2nd	5.3 Glossary of terms; Staircase, winder, landing, stringer, newel, baluster, rise, tread, width of staircase, handrail, noseing, headroom, mumty room.	
		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 case, hand rail, nosing, head room, mumty room.	
	3rd	**6.Protective, Decorative Finishes, Damp and Termite Proofing (5P)**	
		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	
	1	6.3 Pointing – purpose –Types of pointing	

EXTRA CLASSES	2	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	
EXTRA CLASSES	3	6.5 White washing – Colour washing – Distempering – internal and external walls, 6.6 Damp and Termite proofing – Materials and Methods. 7.1 Concept of green building	
	4	**7.Green Buildings, Energy Management and Energy Audit Of Buildings & Project (4P)**	
		7.2 Introduction to Energy Management and Energy Audit of Buildings	
	5	7.3 Aims of energy management of buildings.	
	6	7.4 Types of energy audit, Response energy audit questionnaire	
	7	7.5 Energy surveying and audit report	

SIGNATURE OF THE FACULTY