

LESSON PLAN: (BUILDING MATERIAL & CONSTRUCTION TECHNOLOGY)		
Discipline :	CIVIL ENGINEERING	
Faculty :	SUMAN PATEL	
Semester :	3RD	
Duration :	14 WEEKS (1ST AUGUST 2023 to 30TH NOVEMBER 2023)	
Work Load :	Lecture :	5 Lectures per week (50 minutes per Class)
Week	Week Day	Theory
1 st	1 st	Classification of rock
	2 nd	uses of stone, natural bed of stone
	3 rd	Qualities of good building stone
	4 th	Dressing of stone
	5 th	Characteristics of different types of stone and their uses
2 nd	6 th	Characteristics of different types of stone and their uses
	7 th	Preparation of brick earth
	8 th	Moulding, Drying
	9 th	Burning in kilns
	10 th	Classification of bricks
3 rd	11 th	Size of traditional and modular bricks
	12 th	Qualities of good building bricks
	13 th	Cement: Types of cements, Properties of cements
	14 th	Manufacturing of cement
	15 th	Importance and application of blended cement with fly ash and blast furnace slag
4 th	16 th	Mortar: Definition and types of mortar
	17 th	Sources and classification of sand, Bulking of sand
	18 th	Use of gravel, morrum and fly ash as different building material
	19 th	Concrete: Definition and composition- Water cement ratio- Workability
	20 th	Mechanical properties and grading of aggregates, mixing
5 th	21 st	Placing, compacting and curing of concrete.
	22 nd	Timber: Classification and Structure of timber.
	23 rd	Characteristics of good timber
	24 th	Clay products and refractory materials – Definition and Classification
	25 th	Properties and uses of refractory materials- tiles, terracotta, porcelain glazing
6 th	26 th	Iron and Steel: Uses of cast iron, wrought iron,
	27 th	mild steel and tor steel
	28 th	Composition of Paints
	29 th	Enamels, varnishes.
	30 th	Distempers, Emulsion
7 th	31 st	French polish and Wax Polish
	32 nd	Buildings and classification of buildings based on occupancy
	33 rd	Different components of a building.
	34 th	Site investigation – objectives, site reconnaissance and explorations
	35 th	Concept of foundation and its purpose , Types of foundations – shallow and deep
8 th	36 th	Shallow foundation-constructural details of : Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block
	37 th	Deep foundations: Pile foundations-their suitability
	38 th	Classification of piles based on materials, function and method of installation.

	39 th	Purpose of walls, Classification of walls – load bearing, non-load bearing walls, retaining walls
	40 th	Classification of walls – load bearing, non-load bearing walls, retaining walls
9 th	41 st	Reinforced concrete, precast, hollow and solid concrete block and composite masonry walls
	42 nd	Partition Walls : Suitability and uses of brick and wooden partition walls
	43 rd	Brick masonry : Definition of different terms
	44 th	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
	45 th	Stone Masonry
10 th	46 th	Glossary of terms –String course, corbel, cornice, block-in-course, grouting,
	47 th	Mouldings, templates, throating, through stones, parapet, coping, pilaster and buttress
	48 th	Glossary of terms used in doors and windows
	49 th	different types of doors
	50 th	different types of windows
11 th	51 st	Purpose of use of arches and lintels
	52 nd	Glossary of terms ,Types of floor finishes – cast-in-situ, concrete flooring(monolithic, bonded), terrazzo tile flooring, cast in situ Terrazzo flooring, timber flooring
	53 rd	Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs
	54 th	Stairs: Glossary of terms; Stair case, winder, landing, stringer, newel, baluster, rise, tread, width of stair case, hand rail, nosing, head room, mumty room.
	55 th	Various types of stair case – straight flight, dog legged, open well, quarter turn,
12 th	56 th	half turn (newel and geometrical stairs), bifurcated stair, spiral stair, cantilever stair, tread riser stair.
	57 th	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.
	58 th	Proportion of mortars used for different plasters, preparation of mortars
	59 th	of plastering and curing
	60 th	Pointing – purpose –Types of pointing
13 th	61 th	Painting – objectives – method of painting new and old wall surfaces,
	62 th	wood surface and metal surfaces – powder coating and spray painting on metal surfaces.
	63 th	White washing – Colour washing.
	64 th	Distempering – internal and external walls
	65 th	Damp and Termite proofing – Materials and Methods
14 th	66 th	Concept of green building
	67 th	Introduction to Energy Management and Energy Audit of Buildings.
	68 th	Aims of energy management of buildings
	69 th	Types of energy audit, Response energy audit questionnaire
	70 th	Energy surveying and audit report