## INSTITUTE OF ENGINEERING AND MANAGEMENT <u>GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005</u> LESSON PLAN

## LESSON PLAN

Name of the Subject: Building Materials and Construction TechnologyName of the Faculty: M SrinivasanSemester: Third SemesterBranch:

Semester From: July to December

**Branch:** Civil Engineering **No. of Weeks:** 15 Weeks

Week	Class Day	Theory/ Practical Topics
	$1^{st}$	Classification of rock.
. st	$2^{nd}$	Uses of stone, natural bed of stone
1 <sup>st</sup>	$3^{\rm rd}$	Qualities of good building stone
	$4^{\text{th}}$	Dressing of stone
	5 <sup>th</sup>	Characteristics of different types of stone and their uses
	$6^{\text{th}}$	Tutorial classes
	$1^{st}$	Brick earth-its composition
$2^{nd}$	$2^{nd}$	Brick making- preparation of brick earth
	$3^{\rm rd}$	Moulding, Drying
	$4^{\text{th}}$	Burning in kilns (Continuous process)
	$5^{\text{th}}$	Classification of bricks, size of traditional and modular bricks.
	$1^{st}$	Qualities of good building bricks
	$2^{nd}$	Cement types of cement, properties of cements, manufacturing of cement.
$3^{\rm rd}$	$3^{\rm rd}$	Importance and application of blended cement with fly ash and blast furnace
		slag
	$4^{\text{th}}$	Mortar : Definition and types of mortar
	$5^{\text{th}}$	Sources and classification of sand, bulking of sand.
	$1^{st}$	Use of gravel, morrum and fly ash as different building material.
	$2^{nd}$	Concrete: Definition and composition -Water cement ratio- workability,
$4^{\text{th}}$	nd	Mechanical properties.
	3 <sup>10</sup>	Grading of aggregates, mixing, placing, compacting and curing of concrete
	4 <sup>th</sup>	Timber classification and structure of timber
	5 <sup>th</sup>	seasoning of timber- Importance
th	1 <sup>st</sup>	Characteristics of good timber
$5^{\text{tn}}$	2 <sup>nu</sup>	Clay products and refractory materials- Definition and classification.
	3 <sup>10</sup>	Properties and uses of refractory materials like-tiles, terracotta
	4 <sup>th</sup>	Porcelain glazing, Iron and steel uses of cast iron.
	5 <sup>th</sup>	Wrought iron, mild steel and tor steel
th	6 <sup>m</sup>	Tutorial class
6 <sup>m</sup>	1 <sup>st</sup>	Composition of paints, enamels
	$2^{nd}$	Composition of varnishes
	$3^{\rm rd}$	Types and uses of surface protective materials like paints
	4 <sup>th</sup>	Enamels, Varnishes, Distempers
	5 <sup>th</sup>	Emulsion. French polish and Wax polish Tutorial class.
	6 <sup>th</sup>	Tutorial Class.
7 <sup>th</sup>	1 <sup>st</sup>	Building and classification of buildings based on occupancy, different
		components of buildings site
	$2^{nd}$	Investigation objective, Site reconnaissance and explorations
	$3^{\rm rd}$	Concept of foundation and its purpose

	4 <sup>th</sup>	Types of foundation – shallow and deep, shallow foundation - constructional details of Spread foundation of walls.
	5 <sup>th</sup>	Thump rules for depth and width of foundation and thickness of concrete
8 <sup>th</sup>	1 <sup>st</sup>	Deep foundations : Pile foundation their suitability, classification of piles based on materials function and method of installation
	2 <sup>nd</sup>	Purpose of walls, Classification of walls load bearing, non-load bearing walls, retaining walls
	3 <sup>rd</sup>	Classification of walls as per materials of construction : brick stone
	5	reinforced brick reinforced concrete pre cast hollow and solid concrete
		block and composite masonry walls
	4 <sup>th</sup>	Partition walls suitability and uses of brick and wooden partition walls, brick
		masonry, Definition of different terms
	5 <sup>th</sup>	Bond- meaning and necessity; English bond for I and I -1/2 brick thick walls
9 <sup>th</sup>	$1^{st}$	Stone Masonry string course, corbel, Cornices block in course
	$2^{nd}$	Grouting, mouldings, templates, throating through stones, parapet, coping,
		pilaster and buttress
	3 <sup>rd</sup>	Glossary of terms used in doors and windows doors- different types of doors
	4 <sup>th</sup>	Doors- different types of doors
	5 <sup>th</sup>	Windows – different types of windows
10 <sup>th</sup>	$1^{st}$	Purpose of use of arches and lintels
	$2^{nd}$	Floors, types of floor finishes-cast – situ, concrete flooring, terrazzo tile
		flooring cast in situ terrazzo flooring, timber flooring.
	3 <sup>rd</sup>	Roots types concept and function of flat pitched and slopped roofs
	4 <sup>th</sup>	stair case, landing, winder, stringer, newel, baluster, rise, tread, width
	5"	Hand rail, noising, head room, mumty room, various types of stair case – straight flight, dog legged open well
11 <sup>th</sup>	1 <sup>st</sup>	Quarter turn, half turn, bifurcated stair, spiral stair, cantilever stair, tread riser
		stair
	$2^{nd}$	Plastering – purpose- types of plastering types of plaster finishes.
	$3^{\rm rd}$	Proportions of mortar of plaster, pre parathion techniques and curing.
	4 <sup>th</sup>	Painting purpose types, paining- method of paining new and old surface
	5 <sup>th</sup>	White washing –colour washing- distempering internal and external walls
12 <sup>th</sup>	$1^{st}$	Damp and termite proofing – materials and method
	2 <sup>nd</sup>	Concept of green building, introduction to energy management and audit of building
	3 <sup>rd</sup>	Aims of energy management of buildings
	4 <sup>th</sup>	Types of energy audit, response energy audit questionnaire
	5 <sup>th</sup>	Energy Surveying and audit report
	6 <sup>th</sup>	Tutorial classes
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