

**ACADEMIC SESSION: WINTER-2022**

<b>Discipline : Civil Engineering</b>	<b>Semester:3<sup>rd</sup></b>	<b>Name of the Teaching Faculty : SAIBALI MISHRA</b>
Subject: BMCT	No. of Days / Week class allotted: 5	Semester Duration: 15/09/2022 to 22/12/2022  No. of Weeks : 15
<b>Week</b>	<b>Class day</b>	<b>Theory/Practical Topics:</b>
1 <sup>st</sup>	1 <sup>st</sup>	Classification of rock, uses of stone, natural bed of stone, Qualities of good building stone
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	Dressing of stone, Characteristics of different types of stone and their uses
	4 <sup>th</sup>	Brick earth – its composition
	5 <sup>th</sup>	Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)
2 <sup>nd</sup>	1 <sup>st</sup>	Classification of bricks, size of traditional and modular bricks,
	2 <sup>nd</sup>	Cement: Types of cements, Properties of cements, Manufacturing of cement
	3 <sup>rd</sup>	Importance and application of blended cement with fly ash and blast furnace slag.
	4 <sup>th</sup>	qualities of good building bricks
	5 <sup>th</sup>	Mortar: Definition and types of mortar
3 <sup>rd</sup>	1 <sup>st</sup>	Sources and classification of sand, Bulking of sand
	2 <sup>nd</sup>	Use of gravel, morrum and fly ash as different building material
	3 <sup>rd</sup>	Concrete: Definition and composition- Water cement ratio- Workability
	4 <sup>th</sup>	mechanical properties and grading of aggregates, mixing, placing,
	5 <sup>th</sup>	compacting and curing of concrete
4 <sup>th</sup>	1 <sup>st</sup>	Durga Puja Holiday
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
	4 <sup>th</sup>	
	5 <sup>th</sup>	
	1 <sup>st</sup>	Timber: Classification and Structure of timber

5 <sup>th</sup>	2 <sup>nd</sup>	Seasoning of timber – Importance.
	3 <sup>rd</sup>	Characteristics of good timber.
	4 <sup>th</sup>	Clay products and refractory materials – Definition and Classification
	5 <sup>th</sup>	Clay products and refractory materials – Definition and Classification
6 <sup>th</sup>	1 <sup>st</sup>	Properties and uses of refractory materials- tiles, terracotta, porcelain glazing.
	2 <sup>nd</sup>	Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel
	3 <sup>rd</sup>	Composition of Paints, enamels, varnishes.
	4 <sup>th</sup>	Types and uses of surface protective materials like Paints,
	5 <sup>th</sup>	Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish
7 <sup>th</sup>	1 <sup>st</sup>	Buildings and classification of buildings based on occupancy
	2 <sup>nd</sup>	Different components of a building.
	3 <sup>rd</sup>	Site investigation – objectives, site reconnaissance and explorations
	4 <sup>th</sup>	Concept of foundation and its purpose
	5 <sup>th</sup>	Types of foundations – shallow and deep
8 <sup>th</sup>	1 <sup>st</sup>	Shallow foundation-constructural details of : Spread foundations for walls,
	2 <sup>nd</sup>	thumb rules for depth and width of foundation and thickness of concrete block
	3 <sup>rd</sup>	Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.
	4 <sup>th</sup>	Purpose of walls
	5 <sup>th</sup>	Classification of walls – load bearing, non-load bearing walls, retaining walls.
9 <sup>th</sup>	1 <sup>st</sup>	Classification of walls as per materials of construction: brick, stone, reinforced brick, reinforced concrete,.
	2 <sup>nd</sup>	precast, hollow and solid concrete block and composite masonry walls (Concept Only)
	3 <sup>rd</sup>	Partition Walls : Suitability and uses of brick and wooden partition walls

	4 <sup>th</sup>	Brick masonry : Definition of different terms
	5 <sup>th</sup>	Bond – meaning and necessity: English bond for 1and 1-1/2 Brick thick walls. T, X and right angled corner junctions.
10 <sup>th</sup>	1 <sup>st</sup>	Thickness for 1and 1-1/2 brick square pillars in English bond
	2 <sup>nd</sup>	Stone Masonry :
	3 <sup>rd</sup>	Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates
	4 <sup>th</sup>	throating, through stones, parapet, coping, pilaster and buttress
	5 <sup>th</sup>	Glossary of terms used in doors and windows
11 <sup>th</sup>	1 <sup>st</sup>	Doors – different types of doors
	2 <sup>nd</sup>	Windows – different types of windows
	3 <sup>rd</sup>	Purpose of use of arches and lintels
	4 <sup>th</sup>	Floors: Glossary of terms ,Types of floor finishes – cast-in-situ, concrete flooring(monolithic, bonded),
	5 <sup>th</sup>	terrazzo tile flooring, cast in situ Terrazzo flooring, timber flooring (Concept only)
12 <sup>th</sup>	1 <sup>st</sup>	Roofs: Glossary of terms, Types of roofs, concept
	2 <sup>nd</sup>	function of flat, pitched, hipped and Sloped roofs
	3 <sup>rd</sup>	Stairs: Glossary of terms; Stair case, winder, landing, stringer, newel, baluster, rise, tread, width of stair case,
	4 <sup>th</sup>	hand rail, nosing, head room, mumty room.
	5 <sup>th</sup>	Various types of stair case – straight flight, dog legged,
13 <sup>th</sup>	1 <sup>st</sup>	open well, quarter turn, half turn (newel and geometrical stairs),
	2 <sup>nd</sup>	bifurcated stair, spiral stair, cantilever stair, tread riser stai
	3 <sup>rd</sup>	Plastering – purpose – Types of plastering, Types of plaster finishes – Grit finish, rough cast, smooth cast,
	4 <sup>th</sup>	sand faced, pebble dash, acoustic plastering and plain plaster etc.
	5 <sup>th</sup>	Proportion of mortars used for different plasters, preparation of mortars,
14 <sup>th</sup>	1 <sup>st</sup>	techniques of plastering and curing
	2 <sup>nd</sup>	Pointing – purpose –Types of pointing

	3 <sup>rd</sup>	Painting – objectives – method of painting new and old wall surfaces, wood surface and metal surfaces – powder coating and spray painting on metal surfaces.
	4 <sup>th</sup>	White washing – Colour washing – Distempering – internal and external walls.
	5 <sup>th</sup>	Damp and Termite proofing – Materials and Methods.
15 <sup>th</sup>	1 <sup>st</sup>	Concept of green building
	2 <sup>nd</sup>	Introduction to Energy Management and Energy Audit of Buildings.
	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.