

Subject: Building materials & Construction Technology Th.3	No. of days/per week Class Allotted: 5	Name Of Faculty: Er. Adyashree Sahoo
Week	Class/Day	Theory Topics
1st	1st	<i>BUILDING MATERIALS</i> Stone : Classification of rock
	2nd	Uses of stone ,Natural bed of stone
	3rd	Qualities of good building stone
	4th	Dressing of stone
	5th	Characteristics of different types of stone and their uses
2nd	1st	Bricks : Brick earth – its composition
	2nd	Brick making – Preparation of brick earth
	3rd	Moulding, Drying
	4th	Burning in kilns (continuous Process)
	5th	Classification of bricks, size of traditional and modular bricks
3rd	1st	Qualities of good building bricks
	2nd	Cement, Mortar and Concrete : Cement: Types of cements , Properties of cements
	3rd	Manufacturing of cement
	4th	Importance and application of blended cement with fly ash and blast furnace slag, Mortar: Definition and types of mortar
	5th	Sources and classification of sand, Bulking of sand
4th	1st	Use of gravel, morrum and fly ash as different building material
	2nd	Concrete: Definition and composition- Water cement ratio
	3rd	Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete.
	4th	Other Construction Materials : Timber: Classification and Structure of timber.
	5th	Seasoning of timber – Importance
5th	1st	Characteristics of good timber.
	2nd	Clay products and refractory materials – Definition and Classification
	3rd	Properties and uses of refractory materials
	4th	Tiles, Terracotta, Porcelain Glazing
	5th	Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel
6th	1st	Surface Protective Materials : Composition of Paints
	2nd	Enamels, Varnishes
	3rd	Types and uses of surface protective materials like Paints

	4 th	Enamels, Varnishes, Distempers, Emulsion
	5 th	French polish and Wax Polish.
7 th	1 st	CONSTRUCTIONS TECHNOLOGY (Introduction): Buildings and classification of buildings based on occupancy Different components of a building
	2 nd	Site investigation – objectives, site reconnaissance and explorations
	3 rd	Foundations : Concept of foundation and its purpose
	4 th	Types of foundations – shallow and deep
	5 th	Shallow foundation-constructural details of : Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block
8 th	1 st	Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.
	2 nd	Walls & Masonry Works : Purpose of walls ,Classification of walls – load bearing, non-load bearing walls, retaining walls.
	3 rd	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).
	4 th	Partition Walls : Suitability and uses of brick and wooden partition walls
	5 th	Brick masonry : Definition of different terms
9 th	1 st	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
	2 nd	Stone Masonry : Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, through stones, parapet, coping, pilaster and buttress
	3 rd	Doors, Windows And Lintels : Glossary of terms used in doors and windows
	4 th	Doors – different types of doors
	5 th	Windows – different types of windows
10 th	1 st	Purpose of use of arches and lintels
	2 nd	Floors, Roofs and Stairs : Floors: Glossary of terms ,
	3 rd	Types Of Floor Finishes – Cast-In-Situ, Concrete Flooring(Monolithic, Bonded), Terrazzo Tile Flooring
	4 th	Cast In Situ Terrazzo Flooring, Timber Flooring (Concept Only)
	5 th	Roofs: Glossary of terms, Types of roofs
11 th	1 st	Concept And Function Of Flat, Pitched, Hipped And Sloped Roofs
	2 nd	Stairs: Glossary of terms; Stair case, winder, landing
	3 rd	Stringer, Newel, Baluster, Rise, Tread, Width Of Stair Case
	4 th	Hand Rail, Nosing, Head Room, Mumty Room.
	5 th	Various Types Of Stair Case – Straight Flight, Dog Legged, Open Well
12 th	1 st	Quarter Turn, Half Turn (Newel And Geometrical Stairs)
	2 nd	Bifurcated Stair, Spiral Stair
	3 rd	Cantilever Stair, Tread Riser Stair.
	4 th	Protective, Decorative Finishes, Damp and Termite Proofing : Plastering – purpose – Types of plastering

	5 th	Types of plaster finishes – Grit finish, rough cast, smooth cast
13 th	1 st	Sand Faced, Pebble Dash
	2 nd	Acoustic plastering and plain plaster etc.
	3 rd	Proportion of mortars used for different plasters
	4 th	Preparation of mortars
	5 th	Techniques of plastering and curing
14 th	1 st	Pointing – purpose –Types of pointing
	2 nd	Painting – objectives – method of painting new and old wall surfaces, wood surface and metal surfaces – powder coating and spray painting on metal surfaces.
	3 rd	wood surface and metal surfaces – powder coating and spray painting on metal surfaces.
	4 th	White washing – Colour washing – Distempering – internal and external walls.
	5 th	Damp and Termite proofing – Materials and Methods
15 th	1 st	Green Buildings, Energy Management and Energy Audit Of Buildings & Project : Concept of green building
	2 nd	Introduction to Energy Management and Energy Audit of Buildings.
	3 rd	Aims of energy management of buildings.
	4 th	Types of energy audit, Response energy audit questionnaire
	5 th	Energy surveying and audit report.
16 th	1 st	Revision
	2 nd	Revision
	3 rd	Revision
	4 th	Revision
	5 th	Revision
17 th	1 st	Revision
	2 nd	Revision
	3 rd	Revision
	4 th	Revision
	5 th	Revision