



UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: Civil Engineering	SEMESTER: 3 rd Sem	NAME OF THE TEACHING FACULTY: Er. Tejaswini Das		
SUBJECT: Building Material And Construction Technology	No of Days/Per week class allotted: 5 Class P/W(75)	Semester From Date:15/09/2022 To Date:22/12/2022 No. Of Weeks: 15		
WEEK	CLASS DAY	THEORY TOPICS <u>PART-A</u> <u>(BUILDING MATERIAL)</u>	REMARKS	
1 st	1 st	Stone : Introduction to Stone as a Building Material	Date	Dean/Principal
	2 nd	Classification of rock, uses of stone, natural bed of stone		
	3 rd	Qualities of good building stone And Dressing of stone		
	4 th	Characteristics of different types of stone and their uses.		
	5 th	Revision about last class Characteristics of Stone.		
2 nd	1 st	Bricks :Brick earth – its composition		
	2 nd	Brick making – Preparation of brick earth, Moulding.		
	3 rd	Drying, Burning in kilns (continuous Process).		
	4 th	Classification of bricks, size of traditional and modular bricks.		
	5 th	Qualities of good building bricks		
	1 st	Revision of Last week Class About Bick and its Process of Manufacturing.		
	2 nd	Cement, Mortar and Concrete: Cement: Types of cements, Properties of cement		

3rd

3rd

Manufacturing of cement And reminding terms like Cement, Mortar & Concrete

4th

Importance and application of blended cement with fly ash and blast furnace slag.

5th

Mortar: Definition and types of mortar.

1st

Sources and classification of sand, Bulking of sand.

2nd

Use of gravel, morrum and fly ash as different building material.

3rd

Concrete: Definition and composition- Water cement ratio

4th

	4 th	Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete.		
	5 th	Revision of Last Class About Water Cement Ratio and Workability of Concrete		
5 th	1 st	Other Construction Materials : Timber: Classification and Structure of timber		
	2 nd	Seasoning of timber – Importance.		
	3 rd	Characteristics of good timber.		
	4 th	Clay products and refractory materials – Definition and Classification.		
	5 th	Properties and uses of refractory materials- tiles, terracotta, porcelain glazing.		
	1 st	Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel.		

6 th	2 nd	Revision of Last Class About Characteristics of Good Timber And Properties And Uses of Refractory Material.		
	3 rd	Surface Protective Materials		
	4 th	Composition of Paints, enamels, varnishes.		
	5 th	Types and uses of surface protective materials like Paints.		
7 th	1 st	Revision of Last week Class about Surface Protective Material like Paints, Enamels and Varnishes.		
	2 nd	Types of Enamels, Varnishes, Distempers		
	3 rd	Types of Emulsion, French polish and Wax Polish.		
	4 th	Discussing the Various materials that Can be used to protect the Surface.		
	5 th	Some important Questions About Building Material To be Discussed.		
		<u>PART-B</u> <u>(CONSTRUCTION</u> <u>TERCHNOLOGY)</u>		

8 th	1 st	Introduction: Buildings and classification of buildings based on occupancy.		
	2 nd	Different components of a building. Site investigation – objectives		
	3 rd	Site reconnaissance and explorations		
	4 th	Foundations : Concept of foundation and its purpose		
	5 th	Types of foundations – shallow and deep.		
9 th	1 st	Shallow foundation-constructural details of: Spread foundations for walls.		
	2 nd	Thumb rules for depth and width of foundation and thickness of concrete block.		
	3 rd	Deep foundations: Pile foundations- their suitability.		
	4 th	classification of piles based on materials		
	5 th	Function and method of installation.		
10 th	1 st	Walls & Masonry Works: Purpose of walls		
	2 nd	Classification of walls – load bearing, non-load bearing walls, retaining walls.		
	3 rd	Classification of walls as per materials of construction: brick, stone		
	4 th	Reinforced brick, reinforced concrete, precast		
	5 th	Hollow and solid concrete block and composite masonry walls (Concept Only).		

11 th	1 st	Partition Walls : Suitability and uses of brick and wooden partition walls		
	2 nd	Brick masonry : Definition of different terms		
	3 rd	Bond – meaning and necessity: English bond for 1 and 1-1/2 Brick thick walls.		
	4 th	T, X and right angled corner junctions. Thickness for 1 and 1-1/2 brick square pillars in English bond		
	5 th	Stone Masonry		
12 th	1 st	Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings		
	2 nd	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 Windows – different types of windows		
	5 th	Purpose of use of arches and lintels.		
13 th	1 st	Floors, Roofs and Stairs : Floors: Glossary of terms		
	2 nd	Types of floor finishes – cast-in-situ, concrete flooring(monolithic, bonded)		
	3 rd	Terrazzo tile flooring, cast in situ Terrazzo flooring, timber flooring (Concept only)		
	4 th	Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs		
	5 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.		

14 th	1 st	Various types of stair case – straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs)		
	2 nd	Bifurcated stair, spiral stair, cantilever stair, tread riser stair.		
	3 rd	Protective, Decorative Finishes, Damp and Termite Proofing : Plastering – purpose – Types of plastering		
	4 th	Types of plaster finishes – Grit finish, rough cast, smooth cast.		
	5 th	Sand faced, pebble dash, acoustic plastering and plain plaster etc.		
15 th	1 st	Proportion of mortars used for different plasters, preparation of mortars, technique of plastering and curing		
	2 nd	Pointing – purpose –Types of pointing 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	White washing – Colour washing – Distempering – internal and external walls. Damp and Termite proofing – Materials and Methods.		
	4 th	Concept of green building: Introduction to Energy Management and Energy Audit of Buildings. Aims of energy management of buildings.		
	5 th	Types of energy audit , Response energy audit questionnaire, Energy surveying and audit report.		

Tejaswini Das

HOD

Chittaranjan Parida

DEAN

(Signature)

PRINCIPAL