NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT : Th-3 (BUILDING MATERIAL AND CONSTRUCTION TECHNOLOGY)

Name Of The Faculty :- Er. Diptimayee Mohanty
Branch :- Civil Engineering **Semester :-** 3rd
Session :- 2024-25 **Examination :-** 2024 (W)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
	PART:A (BUILDING MATERIALS)		
1	Stone	5	7
2	Bricks	6	8
3	Cement, Mortar and Concrete	7	9
4	Other Construction Materials	7	8
5	Surface Protective Materials	5	7
	PART: B (CONSTRUCTIONS TECHNOLOGY)		
1	Introduction	2	5
2	Foundations	4	6
3	Walls & Masonry Works	6	8
4	Doors, Windows And Lintels	4	6
5	Floors, Roofs and Stairs	5	7
6	Protective, Decorative Finishes, Damp and Termite Proofing	5	6
7	Green Buildings, Energy Management and Energy Audit of Buildings & Project	4	6
	Total Period:	61	83

D. Mohanty 28.06.'24
Sign of Faculty

K.S. Rath 28.06.'24
Sign of H.O.D.

Discipline: CIVIL ENGINEERING	Semester: 3rd	Name of the Teaching Faculty: Er. Diptimayee Mohanty
		SESSION : 2024-25 EXAMINATION : 2023 (W)
Week	**Class Day**	**Topics to be Covered**
1st	1st	**PART:A (BUILDING MATERIALS)** **Stone:** 1.1 Classification of rock, uses of stone, natural bed of stone
	2nd	1.1 Classification of rock, uses of stone, natural bed of stone
	3rd	1.2 Qualities of good building stone
	4th	1.2 Qualities of good building stone,
	5th	1.3 Dressing of stone
2nd	1st	1.4 Characteristics of different types of stone and their uses
	2nd	1.4 Characteristics of different types of stone and their uses
	3rd	**Brick:** 2.1 Brick earth – its composition
	4th	2.1 Brick earth – its composition
	5th	2.1 Brick earth – its composition
3rd	1st	2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)
	2nd	2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)
	3rd	2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process)
	4th	2.3 Classification of bricks, size of traditional and modular bricks, qualities of good building bricks
	5th	**Cement,Mortar and Concrete:** 3.1 Cement: Types of cements, Properties of cements, Manufacturing of cement
4th	1st	3.1 Cement: Types of cements, Properties of cements, Manufacturing of cement
	2nd	3.2 Importance and application of blended cement with fly ash and blast furnace slag.
	3rd	3.3 Mortar: Definition and types of mortar
	4th	3.4 Sources and classification of sand, Bulking of sand

4th	5th	3.4 Sources and classification of sand, Bulking of sand
5th	1st	3.5 Use of gravel, morrum and fly ash as different building material
	2nd	3.5 Use of gravel, morrum and fly ash as different building material
	3rd	3.6 Concrete: Definition and composition- Water cement ratio- Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete.
	4th	**Other construction Material:** 4.1 Timber: Classification and Structure of timber.
	5th	4.2 Seasoning of timber – Importance.
6th	1st	4.2 Seasoning of timber – Importance.
	2nd	4.3 Characteristics of good timber.
	3rd	4.4 Clay products and refractory materials – Definition and Classification.
	4th	4.4 Properties and uses of refractory materials- tiles, terracotta, porcelain glazing.
	5th	4.4 Properties and uses of refractory materials- tiles, terracotta, porcelain glazing.
7th	1st	4.5 Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel
	2nd	**Surface Protective Materials:** 5.1 Composition of Paints, enamels, varnishes.
	3rd	5.1 Composition of Paints, enamels, varnishes.
	4th	5.1 Composition of Paints, enamels, varnishes.
	5th	5.1 Composition of Paints, enamels, varnishes.
8th	1st	5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish.
	2nd	5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish.
	3rd	5.2 Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish.
	4th	**PART: B (CONSTRUCTIONS TECHNOLOGY)** **Introduction:** 1.1 Buildings and classification of buildings based on occupancy
	5th	1.1 Buildings and classification of buildings based on occupancy
9th	1st	1.2 Different components of a building.
	2nd	1.2 Different components of a building.

9th	3rd	1.3 Site investigation – objectives, site reconnaissance and explorations.
	4th	**Foundations:** 2.1 Concept of foundation and its purpose
	5th	2.1 Concept of foundation and its purpose
10th	1st	2.2 Types of foundations – shallow and deep
	2nd	2.3 Shallow foundation-constructional details of : Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block
	3rd	2.4 Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.
	4th	2.4 Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation.
	5th	REVISION
11th	1st	REVISION
	2nd	REVISION
	3rd	**INTERNAL ASSESSMENT**
	4th	**INTERNAL ASSESSMENT**
	5th	**Walls & Masonry Works :** 3.1 Purpose of walls
12th	1st	3.2 Classification of walls – load bearing, non-load bearing walls, retaining walls.
	2nd	3.3Classification 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).
	3rd	3.4 Partition Walls : Suitability and uses of brick and wooden partition walls
	4th	3.5 Brick masonry : Definition of different terms
	5th	3.6 Bond – meaning and necessity: English bond for 1and 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
13th	1st	3.7 Stone Masonry :
	2nd	3.8 Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, through stones, parapet, coping, pilaster and buttress
	3rd	**Doors, Windows And Lintels:** 4.1 Glossary of terms used in doors and windows

13th	4th	4.1 Glossary of terms used in doors and windows
	5th	4.2 Doors – different types of doors
14th	1st	4.3 Windows – different types of windows
	2nd	4.3 Windows – different types of windows
	3rd	4.4 Purpose of use of arches and lintels
	4th	**Floors, Roofs and Stairs:** 5.1 Floors: Glossary of terms ,Types of floor finishes – cast-in-situ, concrete flooring(monolithic, bonded), terrazzo tile flooring, cast in situ Terrazzo flooring, timber flooring (Concept only)
	5th	5.2 Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs
15th	1st	5.2 Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs
	2nd	5.3 Stairs: Glossary of terms; Stair case, winder, landing, stringer, newel, baluster, rise, tread, width of stair case, hand rail, nosing, head room, mumty room.
	3rd	5.3 Stairs: Glossary of terms; Stair case, winder, landing, stringer, newel, baluster, rise, tread, width of stair case, hand rail, nosing, head room, mumty room.
	4th	5.4 Various types of stair case – straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair, cantilever stair, tread riser stair.
	5th	5.4 Various types of stair case – straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair, cantilever stair, tread riser stair.
16th	1st	**Protective, Decorative Finishes, Damp and Termite Proofing:** 6.1 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.
	2nd	6.2 Proportion of mortars used for different plasters, preparation of mortars, techniques of plastering and curing
	3rd	6.3 Pointing – purpose –Types of pointing
	4th	6.4 Painting – objectives – method of painting new and old wall surfaces, wood surface and metal surfaces – powder coating and spray painting on metal surfaces.
	5th	6.5 White washing – Colour washing – Distempering – internal and external walls.

17th	1st	6.6 Damp and Termite proofing – Materials and Methods.
	2nd	**Green Buildings, Energy Management and Energy Audit Of Buildings & Project:** 8.1 Concept of green building
	3rd	8.2 Introduction to Energy Management and Energy Audit of Buildings.
	4th	8.3 Aims of energy management of buildings.
	5th	8.4 Types of energy audit, Response energy audit questionnaire
18th	1st	8.5 Energy surveying and audit report.
	2nd	8.5 Energy surveying and audit report.
	3rd	REVISION
	4th	REVISION
	5th	REVISION

S. Mohanty 28.06.'24

Sign of Faculty

28/06/24

Sign of H.O.D.