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| Discipline Civil Engineering | Semester 3 rd | Name of the teaching faculty. Ms. ST Rosy Turkey. |
| Subject Building Material & Construction theory. | No of day/ per week class allotted 04. | Semester from date 15/09/22 to date. 21/4/23 No of week. 14. |
| Week | Class day | Theory |
| | | 1) <u>stone</u> |
| 1 st | 1 st | 1.1 classification of rock, uses of stone, natural bed of stone. |
| | 2 nd | 1.2 Qualities of good building stone |
| | 3 rd | 1.3 Dressing of Stone |
| | 4 th | 1.4 characteristics of different types of stone and their uses |
| | | 2) <u>Bricks</u> |
| | 1 st | 2.1 Brick earth - its composition |
| 2 nd | 2 nd | 2.2 Brick making - Preparation of brick earth, moulding, drying, Bunning in kilns (continuous process) |
| | 3 rd | 2.3 classification of bricks, size of traditional and modular bricks, Qualities of good building bricks. |

Signature.....

3) cement, mortar and concrete

4th

3.1 cement: types of cements, Properties of cements, manufacturing of cement

1st

3rd

3.2 importance and application of blends cement with fly ash and blast furnace slag.

2nd

3.3 mortar: definition and types of Mortar.

3rd

3.4 sources and classification of sand
Bulking of sand

4th

3.5 use of gravel, mornum and Fly ash as different of sand

1st

4th

3.6 concrete: Definition and composition
water cement ratio - workability,
Mechanical Properties and grading of aggregates, Mixing, placing, compacting and curing of concrete.

2nd

Signature.....

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| | | 4) <u>Other construction materials</u> . |
| | 2nd | 4.1 Timber: Classification and structure of timber. |
| | 3rd | 4.2 Seasoning of timber - importance. |
| | | 4.3 characteristics of good timber. |
| | 4th | 4.3 clay products and refractory materials - definition and classification |
| | 1st | 4.4 properties and uses of refractory materials - tiles, terracotta, porcelain glazing. |
| 5th | 2nd | 4.5 iron and steel: uses of cast iron, wrought iron, mild steel and tool steel |
| | | 5) <u>Surface protective materials</u> |
| | 3rd | 5.1 composition of paints, enamels, varishes |
| | | 5.2 Types and uses of surface protective materials like paints, enamels, varishes, distempers, emulsion, french polish and wax polish. |

PART : B (CONSTRUCTIONS TECHNOLOGY)

introduction

4th 1.1 Buildings and classification of buildings based on occupancy.

1st 1.2 Different components of a building

2nd 1.3 site investigation - objectives, site reconnaissance and explorations.

6th 2) Foundation

3rd 2.1 concept of foundation and its purpose.

4th 2.2 Types of foundation - Shallow and deep

1st 2.3 Shallow foundation - constructional details of : spread Foundation for walls, thumb rule for depth and width of foundations and thickness of concrete block.

7th 2nd 2.4 Deep foundation : Pile foundation - their suitability, classification of Piles based on materials, function and method of installation.

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| | | 3) <u>walls & masonry works</u> : |
| | 3 rd | 3.1 Purpose of walls |
| | | 3.2 classification of walls - load bearing, non-load bearing walls, retaining walls. |
| | 4 th | 3.3 classification of walls as per material of construction : brick, stone, reinforced brick, reinforced concrete, precast, hollow and solid concrete block and composite masonry walls (concept only) |
| | 5 th | 3.4 partition walls : suitability and uses of brick and wooden partition walls |
| 8 th | | 3.5 Brick masonry: Definition of different terms. |
| | 2 nd | 3.6 Bond - meaning and necessity : English bond for 1 and 1-1/2 brick thick walls T, X and right angled corner junction Thickness for 1 and 1-1/2 brick square Pillars in English bond |
| | 3 rd | 3.7 Stone masonry: |
| | | 3.8 Glossary of terms - string course, corbel, cornice, block-in-course, grouting moulding, templates, throating, through Stone, parapet, coping, Pilaster and buttress. |

Signature.....

Doors, windows And Lintels

4th

4.1 Glossary of terms used in door and windows

4.2 Doors - different types of doors

1st

4.3 windows - different types of windows

4.4 Purpose of use of arches and lintels.

9th

5 Floors, Roofs and Stairs

gnd

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)

3rd

5.2 Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and sloped roofs.

4th

5.3 stairs: Glossary of terms; Stair case, winder, landing, stringer, newel

baluster

rise

tread

width of stair case

hand rail

nosing

head room

clearance

1st

5.4 various types of stair case -

straight flight,

dog legged

open well

quarter turn

10th

half turn (newel and geometrical ^{stairs})

bifurcated stair

Spiral stair

cantilever stair

tread rise stair

6 Protective, decorative finishes, damp and termite proofing

2nd

6.1 Plastering - Purpose - Types of Plaster

Types of plaster finishes - Grit finish

rough cast,

smooth cast,

sand faced,

pebble dash,

acoustic plastering and plain plaster

etc.

| | | |
|------|-----|---|
| | 3rd | 6.2 preparation of mortars used for different plaster-s, preparation of mortars, technique of plastering and curing. |
| | 4th | 6.3 Pointing - Purpose - types of pointing |
| 11th | 1st | 6.4 painting - objectives - method of painting new and old wall surface wood surface and metal surfaces. Powder coating and spray painting on metal surface |
| | 2nd | 6.5 white washing - colour washing - Distemping - internal and external walls. |
| | 3rd | 6.6 Damp and termite proofing - materials and method. |
| | 4th | <u>7 Green Buildings, Energy management and Energy Audit of Building & Project</u> |
| | 1st | 8.1 concept of green building |
| 12th | 2nd | 8.2 introduction to Energy management and Energy Audit of Building. |
| | 3rd | 8.3 Aims of energy Audit, Response energy audit questionnaire |

Signature.....

4th

8.5

Energy Surveying and
audit report.

13th

Revision

14th

Revision.