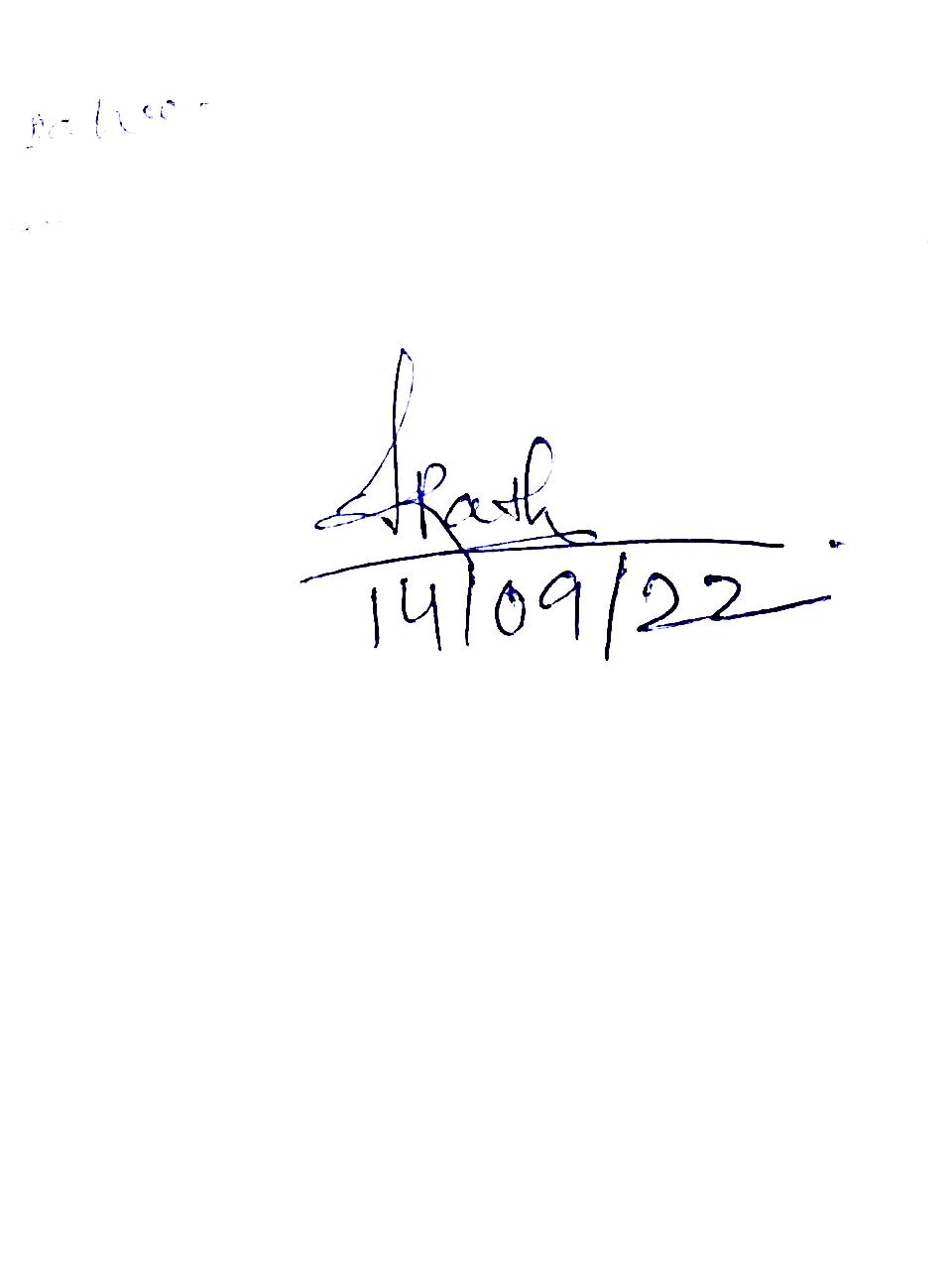
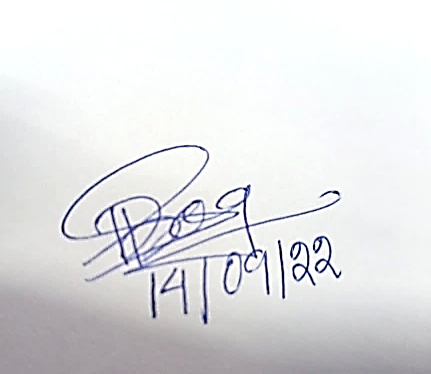
**MAHAMAYA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE,**

**NUAPADA**

**DEPARTMENT OF CIVIL ENGINEERING**

|  |  |  |
| --- | --- | --- |
| **Discipline: CIVIL Engineering** | **Semester: 3RD Semester** | **Name of the Teaching Faculty:**  **ER. HIMANEE RATH** |
| **Subject:**  **BM & CT** | **No. of**  **Days/week**  **Class**  **Allotted:60** | **Semester from date: 15/09/2022 to date: 22 /12/2022** **No of weeks: 14** |
| **Week** | **Class Day** | **Theory Topics** |
| 1st | 1st | PART :A (BUILDING MATERIALS) |
| 1. Stone  1.1 Classification of rock, uses of stone, natural bed of stone |
| 2nd | 1.2 Qualities of good building stone, |
| 3rd | 1.3 Dressing of stone |
| 4th | 1.4 Characteristics of different types of stone and their uses |
| 2nd | 1st | CONTD. |
| 2nd | 2. Bricks  2.1 Brick earth – its composition |
| 3rd | CONTD. |
| 4th | 2.2 Brick making – Preparation of brick earth, Moulding, Drying, Burning in kilns (continuous Process) |
| 3rd | 1st | CONTD. |
| 2nd | 2.3 Classification of bricks, size of traditional and modular bricks, qualities of good building bricks |
| 3rd | CONTD. |
| 4th | 3. Cement, Mortar and Concrete  3.1 Cement: Types of cements, Properties of cements, Manufacturing of cement |
| 4th | 1st | 3.2 Importance and application of blended 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, morrum and fly ash as different building material |
| 5th | 1st | 3.6 Concrete: Definition and composition- Water cement ratio- Workability, |
| 2nd | mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete. |
| 3rd | 4. Other Construction Materials  4.1 Timber: Classification and Structure of timber. |
| 4th | 4.2 Seasoning of timber – Importance. |
| 6th | 1st | 4.3 Characteristics of good timber. |
| 2nd | 4.4 Clay products and refractory materials – Definition and Classification. |
| 3rd | 4.5 Properties and uses of refractory materials- tiles, terracotta, porcelain glazing |
| 4th | 4.6 Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel |
| 7th | 1st | CONTD. |
| 2nd | 5. Surface Protective Materials  5.1Composition of Paints, enamels, varnishes. |
| 3rd | 5.2Types and uses of surface protective materials like Paints, Enamels, Varnishes, Distempers, Emulsion, French polish and Wax Polish. |
| 4th | PART: B (CONSTRUCTIONS TECHNOLOGY) |
| 1 Introduction  1.1Buildings and classification of buildings based on occupancy |
| 8th | 1st | 1.2 Different components of a building. 1.3Site investigation – objectives, site reconnaissance and explorations. |
| 2nd | 2 Foundations  2.1 Concept of foundation and its purpose |
| 3rd | 2.2 Types of foundations – shallow and deep |
| 4th | 2.3 Shallow foundation-constructional details of : Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block |
| 9th | 1st | 2.4 Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation. |
| 2nd | 3 Walls & Masonry Works : 3.1 Purpose of walls 3.2 Classification of walls – load bearing, non-load bearing walls, retaining walls. |
| 3rd | 3.3 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). |
| 4th | 3.4 Partition Walls : Suitability and uses of brick and wooden partition walls 3.5 Brick masonry : Definition of different terms |
| 10th | 1st | 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 1and 1-1/2 brick square pillars in English bond |
| 2nd | 3.7 Stone Masonry |
| 3rd | 3.8 Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, through stones, parapet, coping, pilaster and buttress |
| 4th | 4 Doors, Windows And Lintels 4.1Glossary of terms used in doors and windows |
| 11th | 1st | 4.2 Doors – different types of doors |
| 2nd | 4.3Windows – different types of windows |
| 3rd | 4.4 Purpose of use of arches and lintels |
| 4th | 5 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) |
| 12th | 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 | 5.4Various 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. |
| 4th | CONTD |
| 13th | 1st | 6 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 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. |
| 4th | 6.5 White washing – Colour washing – Distempering – internal and external walls. |
| 14th | 1st | 6.6 Damp and Termite proofing – Materials and Methods. |
| 2nd | 7. Green Buildings, Energy Management and Energy Audit Of Buildings & Project  7.1 Concept of green building |
| 3rd | 7.2 Introduction to Energy Management and Energy Audit of Buildings.  7.3 Aims of energy management of buildings. |
| 4th | 7.2 Introduction to Energy Management and Energy Audit of Buildings.  7.3 Aims of energy management of buildings. |

Signature of faculty member counter signature of HOD