

## GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN- 2024-25 (WINTER)

| Discipline : CIVIL ENGG. |      | Semester: 3rd                                 | Name of the Teaching Faculty : Padmabhusan Naik |   |
|--------------------------|------|---|---|---|
| Subject : BM&CT          |      | No. of Days /<br>per week class allotted : 05 | Semester From date : 01.07.2024                 | To Date : 08.11.2024  |
| MONTH                    | Week | Day   | Unit  | Topics  |
| JULY                     | 1st  |   |   | <b>PART :A (BUILDING MATERIALS)</b>   |
|                          |      | 1st   | <b>UNIT-1</b>                                   | <b>1. Stone:</b>  |
|                          |      | 2nd   |   | Classification of rock, uses of stone, natural bed of stone,  |
|                          |      | 3rd   |   | Qualities of good building stone,   |
|                          |      | 4th   |   | Question Discussion   |
|                          | 5th  | Dressing of stone                             |   |   |
|                          | 2nd  | 1st   | <b>UNIT-2</b>                                   | Characteristics of different types of stone and their uses  |
|                          |      | 2nd   |   | Question Discussion   |
|                          |      | 3rd   |   | <b>2. Bricks:</b>   |
|                          |      | 4th   |   | Brick earth – its composition   |
|                          |      | 5th   |   | Brick making – Preparation of brick earth, Moulding,  |
|                          | 3rd  | 1st   | <b>UNIT-2</b>                                   | Drying, Burning in kilns (continuous Process)   |
|                          |      | 2nd   |   | Classification of bricks, size of traditional and modular bricks, qualities of good building bricks |
|                          |      | 3rd   |   | Question Discussion   |
|                          |      | 4th   |   | <b>3. Cement, Mortar and Concrete:</b>  |
|                          |      | 5th   |   | Cement: Types of cements, Properties of cements, Manufacturing of cement                            |
|                          |      |   |   | <b>Muharram</b>   |
|                          |      |   |   | Importance and application of blended cement with fly ash and blast furnace slag.                   |
|                          |      |   |   | Mortar: Definition and types of mortar  |

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|     | 4th    | 1st   | UNIT-3   | Sources and classification of sand, Bulking of sand   |
|     |        | 2nd   |  | Question Discussion   |
|     |        | 3rd   |  | Use of gravel, morrum and fly ash as different building material  |
|     |        | 4th   |  | Concrete: Definition and composition- Water cement ratio- Workability, mechanical properties and grading of aggregates, mixing, placing, compacting and curing of concrete. |
|     |        | 5th   |  | Question Discussion   |
|     | 5th    | 1st   | UNIT-4   | <b>4. Other Construction Materials:</b>   |
|     |        | 2nd   |  | Timber: Classification and Structure of timber.   |
|     |        | 3rd   |  | Seasoning of timber – Importance.   |
|     |        | 4th   |  | Characteristics of good timber.   |
|     | AUGUST | 1st   | 5th  | UNIT-5  |
| 1st |        |   | Clay products and refractory materials – Definition and Classification.            |   |
| 2nd |        | 2nd   | Properties and uses of refractory materials- tiles, terracotta, porcelain glazing. |   |
|     |        | 3rd   | Question Discussion  |   |
|     |        | 4th   | Iron and Steel: Uses of cast iron, wrought iron, mild steel and tor steel          |   |
|     |        | 5th   | Question Discussion  |   |
|     |        | 1st   | <b>5. Surface Protective Materials:</b>  |   |
| 3rd |        | 2nd   | Composition of Paints, enamels, varnishes.   |   |
|     |        | 3rd   | Types and uses of surface protective materials like Paints, Enamels, Varnishes,    |   |
|     |        | 4th   | Question Discussion  |   |
|     | 5th    | Types and uses of surface protective materials like Distempers, Emulsion, French polish and Wax Polish. |  |   |
|     | 1st    | <b>Independence day</b>   |  |   |
|     | 2nd    | Question Discussion   |  |   |
|     | 1st    |   | <b>Jhulana Purnima</b>   |   |
|     | 2nd    |   | <b>Class Test-1</b>  |   |
|     | 3rd    |   | <b>PART: B (CONSTRUCTIONS TECHNOLOGY)</b>  |   |

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|-----|-----|--|--|--|---|---------------------------------------|---|
|     | 4th | 3rd  | UNIT-1   | <b>1. Introduction:</b>  |   |                                       |   |
|     |     | 4th  |  | Buildings and classification of buildings based on occupancy               |   |                                       |   |
|     | 5th | Different components of a building.  |  |  |   |                                       |   |
|     | 5th | 1st  |  | <b>Janmastami</b>  |   |                                       |   |
|     |     | 2nd  |  | Site investigation – objectives, site reconnaissance and explorations.     |   |                                       |   |
|     |     | 3rd  | Question Discussion  |  |   |                                       |   |
|     |     | 5th  | 4th  | UNIT-2   | <b>2. Foundations:</b>  |                                       |   |
|     |     |  | 5th  |  | Concept of foundation and its purpose   |                                       |   |
|     |     |  | 1st  |  | Types of foundations – shallow and deep   |                                       |   |
|     |     |  | 1st  |  | 2nd   | Question Discussion                   |   |
| 3rd |     |  |  |  | Shallow foundation-constructural details of : Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block |                                       |   |
| 4th |     | Deep foundations: Pile foundations-their suitability, classification of piles based on materials, function and method of installation. |  |  |   |                                       |   |
|     |     | 1st  | 5th  |  | UNIT-3  | <b>3. Walls &amp; Masonry Works :</b> |   |
|     |     |  | 2nd  |  |   | Purpose of walls                      |   |
|     |     |  | 2nd  |  |   | 1st                                   | Classification of walls – load bearing, non-load bearing walls, retaining walls.  |
|     |     |  |  |  |   | 2nd                                   | 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). |
|     | 3rd |  |  | Partition Walls : Suitability and uses of brick and wooden partition walls |   |                                       |   |
|     | 2nd | 4th  | Brick masonry : Definition of different terms  |  |   |                                       |   |
|     |     | 5th  | 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 |  |   |                                       |   |
|     |     | 1st  | <b>Birthday of Prophet Mohammad</b>  |  |   |                                       |   |

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|     | 3rd | 2nd    |  | Question Discussion   |
|     |     | 3rd    |  | Stone Masonry :<br>Glossary of terms –String course, corbel, cornice, block-in-course, grouting, mouldings, templates, throating, |
|     |     | 4th    |  | Glossary of terms –through stones, parapet, coping, pilaster and buttress   |
|     |     | 5th    |  | Question Discussion   |
|     | 4th | 1st    | UNIT-4   |   |
| 2nd |     |        |  | <b>4. Doors, Windows And Lintels :</b>  |
| 3rd |     |        |  | Glossary of terms used in doors and windows   |
| 4th |     |        |  | Doors – different types of doors  |
| 5th |     |        |  | Question Discussion   |
| 5th | 1st |        | Windows – different types of windows   |   |
|     | 2nd |        | Question Discussion  |   |
|     | 3rd |        | Purpose of use of arches and lintels   |   |
|     | 4th |        | <b>Gandhi Jayanti</b>  |   |
|     | 5th |        | Question Discussion  |   |
| 1st | 2nd | UNIT-5 |  | <b>5. Floors, Roofs and Stairs :</b>  |
|     | 3rd |        |  | bonded), terrazzo tile flooring, cast in situ Terrazzo flooring, timber flooring (Concept only)                                   |
|     | 4th |        |  | <b>Puja Holidays</b>  |
|     | 5th |        |  | <b>Puja Holidays</b>  |
|     | 1st |        |  | Roofs: Glossary of terms, Types of roofs, concept and function of flat, pitched, hipped and Sloped roofs                          |
| 2nd | 2nd |        | <b>Puja Holidays</b>   |   |
|     | 3rd |        | <b>Puja Holidays</b>   |   |
|     | 4th |        | <b>Puja Holidays</b>   |   |
|     | 5th |        | <b>Puja Holidays</b>   |   |
|     | 1st |        | 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 | 2nd |        |  |   |

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| OCTOBER |          | 3rd | UNIT-6  | <b>Kumar Purnima</b>   |
|         |          | 4th |   | Question Discussion  |
|         |          | 5th |   | 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. |
|         | 4th      | 1st |   | Question Discussion  |
|         |          | 2nd |   | <b>6. Protective, Decorative Finishes, Damp and Termite Proofing :</b>   |
|         |          | 3rd |   | 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                   |
|         |          | 4th |   | Proportion of mortars used for different plasters, preparation of mortars, techniques of plastering and curing   |
|         |          | 5th |   | Question Discussion  |
|         | 5th      | 1st |   | Pointing – purpose –Types of pointing  |
|         |          | 2nd |   | Painting – objectives – method of painting new and old wall surfaces, wood surface and metal surfaces – powder coating and spray painting on metal surfaces.                                       |
|         |          | 3rd |   | White washing – Colour washing – Distempering – internal and external walls.   |
|         |          | 4th |   | Damp and Termite proofing – Materials and Methods.   |
|         | NOVEMBER | 1st |   | 5th  |
| 2nd     |          | 1st | Concept of green building   |  |
|         |          | 2nd | Introduction to Energy Management and Energy Audit of Buildings.                                  |  |
|         |          | 3rd | Aims of energy management of buildings.Types of energy audit, Response energy audit questionnaire |  |
|         |          | 4th | Energy surveying and audit report.  |  |
|         |          | 5th | Question Discussion   |  |
|         |          |     | <b>Class Test-2</b>   |  |