**20CE12P1 – BUILDING MATERIALS & CONSTRUCTION WORKSHOP**(Civil Engineering)

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| **Course Category** | Professional Core | **Credits** | 1.5 |
| **Course Type** | Practical | **Lecture - Tutorial - Practical** | 0-0-3 |
| **Prerequisite** | None | **Sessional Evaluation** | 40 |
| **Semester End Exam. Evaluation** | 60 |
| **Total Marks** | 100 |

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| **Course Objective(s)** | To understand the basic building materials and elementary construction practices. | |
| **Course Outcomes** | CO1 | Understand the manufacturing and testing processes of various types of bricks. |
| CO2 | Construct 1½ brick wall and carry out wall finishing works. |
| CO3 | Prepare base for flooring and lay tile flooring. |
| CO4 | Install plumbing and fixtures. |
| CO5 | Prepare steel reinforcement cage for building components. |
| CO6 | Repairing and strengthening of reinforced concrete elements using epoxy resin and fiber materials. |
| **Course Content** | **LIST OF EXPERIMENTS**   1. a) Casting and testing of burnt bricks and fly ash bricks.   b) Preparation of concrete cover blocks.   1. Construction of 1 ½ brick wall using English bond. 2. Plastering and finishing of wall. 3. Application of wall-putty and painting a wall. 4. Preparation of base for flooring. 5. Application of base coat and laying of tile flooring. 6. Installation of plumbing and fixtures like tap, T-joint, elbow, bend and threading. 7. Bending stirrups, binding steel reinforcement cage and placing cover blocks (beam/column/slab). 8. Strengthening of reinforced concrete elements using fiber materials. 9. Repairing of cracks in structural members using epoxy resin.   **EXPERIMENTS FOR DEMONSTRATION**   1. Construction of a brick arch. 2. Identification of various types of aggregates, glass and tiles. | |

**CO-PO Mapping:** 3-High Mapping, 2-Moderate Mapping, 1-Low Mapping, - - Not Mapping

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|  | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | **j** | **k** | **l** |
| **CO1** | 1 | - | - | - | 2 | 1 | 1 | - | 2 | - | 1 | - |
| **CO2** | 2 | - | 1 | 1 | 3 | - | - | - | 2 | - | 2 | 2 |
| **CO3** | 1 | - | 1 | - | 3 | - | - | - | 2 | - | 1 | - |
| **CO4** | 2 | - | - | - | 3 | 1 | - | - | 3 | - | 2 | - |
| **CO5** | 1 | - | - | - | 2 | - | - | - | 2 | - | 1 | - |
| **CO6** | 2 | 1 | 1 | - | 3 | 1 | 2 | - | 2 | - | 3 | 2 |