**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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| **CourseObjective(s)** | To understand the basic building materials and elementary constructionpractices. |
| **CourseOutcomes** | CO1  | Understand the manufacturing and testing processes of varioustypes 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 elementsusing epoxy resin and fiber materials. |
| **CourseContent** | **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 placingcover blocks (beam/column/slab).
8. Strengthening of reinforced concrete elements using fibermaterials.
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.
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**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 |