**20CE32P3 –STRUCTURAL ANALYSIS AND DESIGN LABORATORY**

**(Civil Engineering)**

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| **Course Category** | Professional core  | **Credits** | 1.5 |
| **Course Type** | Practical | **Lecture – Tutorial –Practical** | 0-0-3 |
| **Prerequisite** | Strength of Materials, Structural Analysis, Elemental Design of RC Structures | **Sessional Evaluation**  | 40 |
| **Semester End Exam. Evaluation** | 60 |
| **Total Marks** | 100 |

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| **Course Outcomes** | CO1 | Carryout analysis of simple beam and frame |
| CO2 | Analyze and design of multi storey RCC building  |
| CO3 | Carryout wind and seismic analysis of RCC buildings |
| CO4 | Analyze and design of footings |
| CO5 | Carryout analysis and design of industrial warehouse |
| CO6 | Carryout analysis and design of conventional center |
| **Course Content** | **LIST OF EXPERIMENTS**1. Introduction to STAAD pro and STRAP
2. Analysis of simple beam and single storey frame.
3. Analysis and design of multi-storey frame
4. Analysis of multi-storeybuilding
5. Design of multi-storeybuilding
6. Wind load analysis on RCC building
7. Seismic analysis of RCC building
8. Analysis and design of steel truss
9. Analysis and design of isolated footing
10. Analysis of industrial warehouse
11. Design of industrial warehouse
12. Analysis and design of conventional center
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**CO-PO Mapping:**3-High Mapping, 2-Moderate Mapping, 1-Low Mapping, - -Not Mapping

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|   | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | 3 | 3 | 3 | - | 3 | - | - | 3 | 2 | 1 | - | 3 | 3 | 2 | 2 |
| **CO2** | 3 | 3 | 3 | - | 3 | - | - | 3 | 2 | 1 | - | 3 | 3 | 2 | 2 |
| **CO3** | 3 | 3 | 3 | - | 3 | - | - | 3 | 2 | 1 | - | 3 | 3 | 2 | 2 |
| **CO4** | 3 | 3 | 3 | - | 3 | - | - | 3 | 2 | 1 | - | 3 | 3 | 2 | 2 |
| **CO5** | 3 | 3 | 3 | - | 3 | - | - | 3 | 2 | 1 | - | 3 | 3 | 2 | 2 |
| **CO6** | 3 | 3 | 3 | - | 3 | - | - | 3 | 2 | 1 | - | 3 | 3 | 2 | 2 |