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| **Course Code – CE503** | | **Concrete Technology** | **3L + 0T** | **3 Credits** |
| **Course Objective** | To define and understand concepts related Concrete technology which involves types and property of concrete and different additive materials and its vital use for safe, economic development for the buildings and to give an experience in the implementation of Engineering concepts which are applied in field of Civil Engineering. | | | |
| **Course Outcome (CO)** | 1. Students will be able to identify various materials for concrete and classify them accordingly. 2. Students will be able to apply fundamental knowledge in assessing various properties of concrete in fresh and hardened state 3. Students will be able to ensure quality control of concrete by performing tests of properties of concrete materials as per IS code 4. Students will be able to gather knowledge about various additive materials that are used in concrete and their proper usage to make the concrete better 5. Students will be able to design concrete mix as per latest IS Codes parameters | | | |

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| **CO Distribution** | **Assignment 1 (T1)** | **Slot Test 1 (T2)** | **Assignment 2 (T3)** | **Slot Test 2 (T4)** |
| **CO1** | Q1, Q2 | Q1 |  |  |
| **CO2** | Q3, Q5,Q6 | Q2,Q3 | Q1 |  |
| **CO3** | Q4 | Q4,Q6 | Q2,Q3 | Q1 |
| **CO4** |  | Q5 | Q4 | Q3,Q2 |
| **CO5** |  |  | Q5,Q6 | Q4,Q5,Q6 |

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| **Course outcomes** | **% of students achieved CO** | **Decision on CO result (achieved) (Y/N) with level** |
| **CO1** | 80% | Y (Level: 3) |
| **CO2** | 70% | Y(Level: 2) |
| **CO3** | 78% | Y(Level:2) |
| **CO4** | 74% | Y(Level:2) |
| **CO5** | 80% | Y(Level: 3) |
| **Average CO attainment for the course through CIE EC502** | 75.2% | Level: 2.4 |

**Overall CO attainment (EC502) in the scale of 3**

= (40% of target level of average CO attainment through CIE) +(60% of target level of CO attainment through SEE)

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| **CO Articulation Matrix** | | | | | | | | |
| **Subject Code** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** | **Average CO Score**  **(CIE)** | **CO Score**  **(SEE)** | **Overall CO Attainment Score** |
| **CE502** | 2 | 2 | 2 | 2 | 3 | 2.4 | 0 | 0.96 |

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| **CO-PO Mapping**  **Design of RC Structure**  **(Course Code - CE502)** | | | | | | | | | | | | | |
|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | 3 | 2 | 3 | 3 | - | - | 2 | - | - | - | 1 | 3 |
| **CO2** | 3 | 3 | 3 | 2 | 3 | 1 | 2 | - | - | 1 | 1 | 2 |
| **CO3** | 3 | 1 | 2 | 1 | 3 | - | - | 1 | - | 1 | - | 1 |
| **CO4** | 3 | - | 2 | - | 3 | 2 | 2 | - | - | - | - | 2 |
| **CO5** | 3 | 3 | - | 2 | 2 | 2 | 3 | - | 1 | 1 | - | 2 |
| **Average CO** | **3** | **2.25** | **2.5** | **2** | **2.75** | **1.67** | **2.25** | **1** | **1** | **1** | **1** | **2** |

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| **CO-PSO Mapping**  **Design of RC Structure**  **(Course Code - CE502)** | | | |
|  | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | 1 | 2 | 1 |
| **CO2** | 3 | 2 | 3 |
| **CO3** | 2 | 2 | 3 |
| **CO4** | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 |
| **Average CO** | 2.4 | 2.2 | 2.6 |

Following table has been generated considering mapping of CO-PO and CO attainment.

For, PO1 mapping value is = 2.2

Target PO = 3

Overall CO1 attainment score = 0.96

**Therefore, contribution to PO3 attainment is 0.96 × (2.2/3) =0.59. Others are calculated accordingly**

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| **PO Articulation Matrix** | | | | | | | | | | | | | |
|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CE502** | **0.96** | **0.72** | **0.8** | **0.64** | **0.88** | **0.53** | **0.72** | **0.32** | **0.32** | **0.32** | **0.32** | **0.64** |

Following table has been generated considering mapping of CO-PSO and CO attainment.

For, PSO1 mapping value is = 2.4

Target PSO = 3

Overall CO1 attainment score = 0.96

**Therefore, contribution to PO3 attainment is 0.8 × (2.4/3) =0.64. Others are calculated accordingly**

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| **PSO Articulation Matrix** | | | |
|  | **PSO1** | **PSO2** | **PSO3** |
| **CE502** | **0.77** | **0.70** | **0.83** |