BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK

DEPARTMENT OF CIVIL ENGINEERING



LESSON PLAN

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| SUBJECT: CONCRETE TECHNOLOGY (TH 4) | ACCADEMIC SESSION: 2021-22 |
| FACULTY: SRI M S KAR | SEMESTER: 6TH |
|  | SEC: A |

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| H O D (Civil Engg.) |

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| **Discipline:**  **Civil Engineering** | **Semester:6th** | | **Name of Teaching Faculty:**  **MAHAMRUTYUNJAYA SIVAPRASAD KAR** |
| **Subject:**  **Concrete Technology** | **No. of Days / week class allotted: 04 period per week ( Mon, Wed,Thu&Fri -- 1 Period each )** | | **Semester From Date : 10-03-2022 To Date 10-06-2022**  **No. of Weeks: 14** |
| **Week** | **Date** | **No. of periods available** | **Topics to be covered** |
| 1st | 10/03/2022 | 1 | **1 Concrete as a construction material:**  1.1 Grades of concrete.  1.2 Advantages and disadvantages of concrete. |
| 11/03/2022 | 1 | **2 Cement:**  2.1 Composition, hydration of cement, water cement ratio and compressive strength, |
| 2nd | 14/03/2022 | 1 | 2.1 fineness of cement, setting time, soundness, types of cement. |
| 16/03/2022 | 1 | **3 Aggregate, Water and Admixtures:**  3.1 Classification and characteristics of aggregate, fineness modulus, grading of aggregate,I.S.383 |
| 17/03/2022 | 1 | 3.2 Quality of water for mixing and curing |
| 3rd | 21/03/2022 | 1 | 3.3 Important functions, classification of admixtures, I.S 9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixture |
| 23/03/2022 | 1 | **4 Properties of fresh concrete:**  4.1 Concept of fresh concrete, |
| 24/03/2022 | 1 | 4.1 workability, slump test, compacting factor test, |
| 25/03/2022 | 1 | 4.1 V-bee consistency test and flow test, requirement of workability,I.S.1199. |
| 4th | 28/03/2022 | 1 | **5 Properties of hardened concrete:**  5.1 Cube and cylinder compressive strengths, flexural strength of concrete, stress-strain and elasticity, |
| 30/03/2022 | 1 | Monthly Class Test 1 |
| 31/03/2022 | 1 | 5.1 Phenomena of creep and shrinkage, permeability, durability of concrete,. |
| 5th | 04/04/2022 | 1 | 5.1 Sulphate, chloride and acid attack on concrete, efflorescence. |
| 06/04/2022 | 1 | **6 Concrete mix Design**  6.1  a)Introduction  b) Data or input required for mix design. |
| 07/04/2022 | 1 | 6.2 Nominal mix concrete &design mix concrete. |
| 08/04/2022 | 1 | 6.3 Basic consideration for concrete mix design, |
| 6th | 11/04/2022 | 1 | 6.3 Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262) |
| 13/04/2022 | 1 | 6.3 Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262) |
| 7TH | 18/04/2022 | 1 | **7 Production of concrete:**  7.1 Batching of materials, mixing of concrete materials, transportation, placing of concrete, |
| 20/04/2022 | 1 | 7.1 Compaction of concrete (vibrators), |
| 21/04/2022 | 1 | 7.1 Curing of concrete, |
| 22/04/2022 | 1 | 7.1 Formwork-requirements and types,stripping of forms |
| 8TH | 25/04/2022 | 1 | **8 Inspection and Quality Control of Concrete**  8.1 Quality control of Concrete as per I.S.456, |
| 27/04/2022 | 1 | 8.1 Factors causing the variations in the quality of concrete |
| 28/04/2022 | 1 | 8.2 Mixing, Transporting, Placing &curing requirements of Concrete as per I.S.456. |
| 29/04/2022 | 1 | Monthly Class Test 2 |
| 9TH | 02/05/2022 | 1 | 8.3 Inspection and Testing as per Clause 17 of IS:456. |
| 04/05/2022 | 1 | 8.4 Durability requirements of Concrete as per I.S:456. |
| 05/05/2022 | 1 | **9 Special Concrete**  9.1 Introduction to ready mix concrete, |
| 06/05/2022 | 1 | 9.1 high performance concrete, |
| 10TH | 09/05/2022 | 1 | INTERNAL ASSESSMENT |
| 11/05/2022 | 1 | 9.1 silica fume concrete, |
| 12/05/2022 | 1 | 9.1 Shot-crete concrete or gunitting (Concepts only). |
| 13/05/2022 | 1 | **10 Deterioration of concrete and its prevention:**  10.1 Types of deterioration, |
| 11TH | 18/05/2022 | 1 | 10.1 Prevention of concrete deterioration,. |
| 19/05/2022 | 1 | 10.1 corrosion of reinforcement, effects andprevention. |
| 20/05/2022 | 1 | **11 Repair technology for concrete structures:**  11.1 Symptom, cause and, cracking of concrete due to different reasons. |
| 12TH | 23/05/2022 | 1 | 11.1 Prevention and remedy of defects during construction |
| 25/05/2022 | 1 | 11.1 Repair of cracks for different purposes |
| 26/05/2022 | 1 | 11.1 Selection of techniquesfor repair of Concrete. |
| 27/05/2022 | 1 | Monthly Class Test 3 |
| 13TH | 01/06/2022 | 1 | 11.1 Polymer based repairs, common types of repairs. |
| 02/06/2022 | 1 | Revision |
| 03/06/2022 | 1 | Revision |
| 14TH | 06/06/2022 | 1 | Revision |
| 08/06/2022 | 1 | Revision |
| 09/06/2022 | 1 | Previous Year Questions and Answers discussion |
| 10/06/2022 | 1 | Previous Year Questions and Answers discussion |