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: MS NICKY PATTANAYAK | SEMESTER: 6TH |
|  | SEC: C |

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| H O D (Civil Engg.) |

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| **Discipline:**  **Civil Engineering** | **Semester: 6th**  **Sec:C** | | **Name of Teaching Faculty:**  **NICKY PATTNAIK** |
| **Subject:**  **Concrete Technology** | **No. of Days / week class allotted: 04 period per week ( TUE—1 Period, Thu-2 period & Fri -- 1 Period )** | | **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 | 2 | **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 | 15/03/2022 | 1 | 2.1 fineness of cement, setting time, soundness, types of cement. |
| 17/03/2022 | 2 | **3 Aggregate, Water and Admixtures:**  3.1 Classification and characteristics of aggregate, fineness modulus, grading of aggregate,I.S.383  3.2 Quality of water for mixing and curing |
| 3rd | 22/03/2022 | 1 | 3.3 Important functions, classification of admixtures, I.S 9103, accelerating admixtures, retarding admixtures,  water reducing admixtures, air containing admixture |
| 24/03/2022 | 2 | **4 Properties of fresh concrete:**  4.1 Concept of fresh concrete,  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 | 29/03/2022 | 1 | MONTHLY CLASS TEST 1 |
| 31/03/2022 | 2 | **5 Properties of hardened concrete:**  5.1 Cube and cylinder compressive strengths, flexural strength of concrete, stress-strain and elasticity,  5.1 Phenomena of creep and shrinkage, permeability, durability of concrete, |
| 5th | 05/04/2022 | 1 | 5.1 Sulphate, chloride and acid attack on concrete, efflorescence. |
| 07/04/2022 | 2 | **6 Concrete mix Design**  6.1 a) Introduction b) Data or input required for mix design.  6.2 Nominal mix concrete &design mix concrete. |
| 08/04/2022 | 1 | 6.3 Basic consideration for concrete mix design, |
| 6th | 12/04/2022 | 1 | 6.3 Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262) |
| 7TH | 19/04/2022 | 1 | 6.3 Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262) |
| 21/04/2022 | 2 | **7 Production of concrete:**  7.1 Batching of materials, mixing of concrete materials, transportation, placing of concrete,  7.1 Compaction of concrete (vibrators),  7.1 Curing of concrete, |
| 22/04/2022 | 1 | 7.1 Formwork-requirements and types, stripping of forms |
| 8TH | 26/04/2022 | 1 | **8 Inspection and Quality Control of Concrete**  8.1 Quality control of Concrete as per I.S.456, |
| 28/04/2022 | 2 | 8.1 Factors causing the variations in the quality of concrete  8.2 Mixing, Transporting, Placing &curing requirements of Concrete as per I.S.456. |
| 29/04/2022 | 1 | Monthly Class Test 2 |
| 9TH | 05/05/2022 | 2 | 8.3 Inspection and Testing as per Clause 17 of IS: 456.  8.4 Durability requirements of Concrete as per I.S:456. |
| 06/05/2022 | 1 | **9 Special Concrete**  9.1 Introduction to ready mix concrete. |
| 10TH | 10/05/2022 | 1 | INTERNAL ASSESSMENT |
| 12/05/2022 | 2 | 9.1 high performance concrete, silica fume concrete. |
| 13/05/2022 | 1 | 9.1 Shot-crete concrete or gunitting (Concepts only). |
| 11TH | 17/05/2022 | 1 | **10 Deterioration of concrete and its prevention:**  10.1 Types of deterioration, |
| 19/05/2022 | 2 | 10.1 Prevention of concrete deterioration,  10.1 corrosion of reinforcement, effects and prevention. |
| 20/05/2022 | 1 | **11 Repair technology for concrete structures:**  11.1 Symptom, cause and, cracking of concrete due to different reasons. |
| 12TH | 24/05/2022 | 1 | 11.1 Prevention and remedy of defects during construction |
| 26/05/2022 | 2 | 11.1 Repair of cracks for different purposes |
| 27/05/2022 | 1 | 11.1 Selection of techniques for repair of Concrete. |
| 13TH | 31/05/2022 | 1 | Monthly Class Test 3 |
| 02/06/2022 | 2 | 11.1 Polymer based repairs, common types of repairs. |
| 03/06/2022 | 1 | Revision |
| 14TH | 07/06/2022 | 1 | Revision |
| 09/06/2022 | 2 | Revision |
| 10/06/2022 | 1 | Previous Year Questions and Answers discussion |