**BHADRAK ENGINEERING SCHOOL & TECHNOLOGY (BEST), ASURALI, BHADRAK**

**CONCRETE TECHNOLOGY (Th- 04(a))**

**TOPIC WISE DISTRIBUTION OF PERIODS**

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| --- | --- | --- | --- | --- |
| Sl. No. | Topics | Periods as per syllabus | Periods actually needed | Expected Marks |
| 1. | Concrete as a construction material | 2 | 02 | 10 |
| 2. | Cement | 4 | 04 | 10 |
| 3. | Aggregate Water, Admixtures | 6 | 06 | 10 |
| 4 | Properties of fresh concrete | 6 | 06 | 10 |
| 5 | Properties of hardened concrete | 7 | 07 | 05 |
| 6 | Concrete mix Design | 5 | 05 | 10 |
| 7 | Production of concrete | 6 | 07 | 15 |
| 8 | Inspection and Quality Control of Concrete | 6 | 06 | 05 |
| 9 | Special concrete | 6 | 05 | 10 |
| 10 | Deterioration of concrete and its prevention | 6 | 06 | 05 |
| 11 | Repair technology for concrete structures. | 6 | 06 | 10 |
|  |  | 60 | 60 | 100 |

**Sign of Lect. Sign of HOD. Sign of AIC Sign of Vice Principal**

**LESSON PLAN**

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| --- | --- | --- |
| **Discipline:**  Civil Engineering | **Semester:**  sixth (6th ) | **Name Of The Faculty:**  Er Ashish Kumar Mohapatra |
| **Subject:**  Concrete Technology | **No of days/ week class allotted:**  Six(6) | **Semester from date:**  **to Date:**  **No of weeks: 15** |
| **WEEK** | **CLASS DAY** | **THEORY TOPICS** |
| 1st | 1st | **Chapter No- 01 ( Concrete As A Construction Material)**  Grades of concrete |
| 2nd | Advantages and disadvantages of concrete |
| 3rd | ***Possible Question Answer Discussion*** |
| 4th | **Chapter No-02 ( Cement)**  Composition, hydration of cement |
| 5th | water cement ratio and compressive strength, fineness of cement |
| 6th | setting time, soundness, |
| 2nd | 1st | Types of cement. |
| 2nd | ***Possible Question Answer Discussion*** |
| 3rd | **Chapter No-03 (Aggregate, Water And Admixtures)**  Classification and characteristics of aggregate |
| 4th | fineness modulus, |
| 5th | grading of aggregate, I.S.383 |
| 6th | Quality of water for mixing and curing. |
| 3rd | 1st | Important functions, classification of admixtures, I.S 9103, accelerating admixtures, |
| 2nd | retarding admixtures, water reducing admixtures, |
| 3rd | air containing admixtures |
| 4th | ***Possible Question Answer Discussion*** |
| 5th | **Chapter No-04(Properties Of Fresh Concrete)**  Concept of fresh concrete |
| 6th | Workability ,Slump test |
| 4th | 1st | ***Monthly Test- 1*** |
| 2nd | Compacting factor test |
| 3rd | Ve-bee consistency test and |
| 4th | Flow test |
| 5th | ***Possible Question Answer Discussion*** |
| 6th | **Chapter No-05(Properties Of Hardened Concrete)**  Cube and cylinder compressive strengths, |
| 5th | 1st | Flexural strength of concrete |
| 2nd | Stress-strain and elasticity |
| 3rd | Phenomena of creep and shrinkage |
| 4th | Permeability, durability of concrete |
| 5th | Sulphate, Chloride and acid attack on concrete, |
| 6th | Efflorescence |
| 6th | 1st | ***Possible Question Answer Discussion*** |
| 2nd | **Chapter No-06 (Concrete mix Design )**  a) Introduction |
| 3rd | b) Data or input required for mix design. |
| 4th | Nominal mix concrete &design mix concrete |
| 5th | ***Monthly Test- 2*** |
| 6th | Basic consideration for concrete mix design, |
| 7th | 1st | Methods of proportioning concrete mix – I.S Code method of mix design (I.S.10262) |
| 2nd | ***Possible Question Answer Discussion*** |
| 3rd | **ChapterNo-07(Production Of Concrete)**  Batching of materials, mixing of concrete materials, transportation |
| 4th | Placing of concrete, compaction of concrete, |
| 5th | Compaction methods(vibrators) |
| 6th | Curing of concrete, |
| 8th | 1st | Formwork-requirements and types |
| 2nd | Stripping of forms (Concepts only) |
| 3rd | ***Possible Question Answer Discussion*** |
| 4th | **Chapter No-08(Inspection And Quality Control Of Concrete )**  Quality control of Concrete as per I.S.456 |
| 5th | ***Monthly Test- 3*** |
| 6th | Factors causing the variations in the quality of concrete |
| 9th | 1st | Mixing, Transporting,. |
| 2nd | Placing &curing requirements of Concrete as per I.S.456 |
| 3rd | Inspection and Testing as per Clause 17 of IS:456 |
| 4th | Durability requirements of Concrete as per I.S:456. |
| 5th | ***Possible Question Answer Discussion*** |
| 6th | **Chapter No-09(Special Concrete)**  Introduction to ready mix concrete |
| 10th | 1st | high performance concrete |
| 2nd | silica fume concrete |
| 3rd | Shotcrete concrete or gunitting (Concepts only). |
| 4th | Cont. |
| 5th | ***Monthly Test- 4*** |
| 6th | ***Possible Question Answer Discussion*** |
| 11th | 1st | **Chapter No-10(Deterioration Of Concrete And Its Prevention)**  Types of deterioration, |
| 2nd | Prevention of concrete |
| 3rd | deterioration |
| 4th | Corrosion of reinforcement |
| 5th | Effects and prevention |
| 6th | Cont. |
| 12th | 1st | ***Possible Question Answer Discussion*** |
| 2nd | **Chapter No-11(Repair Technology For Concrete Structures)**  Symptom, cause and prevention |
| 3rd | Remedy of defects during construction |
| 4th | Cracking of concrete due to different reasons |
| 5th | Repair of cracks for different |
| 6th | Purposes, selection of techniques |
| 13th | 1st | Polymer based repairs, common types of repairs |
| 2nd | ***Possible Question Answer Discussion*** |
| 3rd | Review Class for Chapter No.- 01 |
| 4th | Review Class for Chapter No.- 02 |
| 5th | Review Class for Chapter No.- 03 |
| 6th | Review Class for Chapter No.- 04 |
| 14th | 1st | Review Class for Chapter No.- 05 |
| 2nd | Review Class for Chapter No.- 06 |
| 3rd | Review Class for Chapter No.- 07 |
| 4th | Review Class for Chapter No.- 08 |
| 5th | Previous Year (S- 22) Question Answer Discussion |
| 6th | Previous Year (S- 21) Question Answer Discussion |
| 15th | 1st | Previous Year (S- 22) Question Answer Discussion |
| 2nd | Previous Year (S- 21) Question Answer Discussion |
| 3rd | Previous Year (S- 22) Question Answer Discussion |
| 4th | Previous Year (S- 21) Question Answer Discussion |
| 5th | Previous Year (S- 22) Question Answer Discussion |
| 6th | Previous Year (S- 21) Question Answer Discussion |

*Chapters covered up to IA****: 1,2 ,3,4, 5,& 6***