

CT

Lesson plan of Concrete Technology 6th Sem 2020-2021

(Elective)

| Unit | Topic | Period | Total period | Grand total |
|-------------------------------------|--|--------|--------------|-------------|
| Concrete as a construction material | Grades of concrete. | 1 | 2 | 70 |
| | Advantages and disadvantages of concrete. | 1 | | |
| Cement | Composition, hydration of cement, | 2 | 6 | |
| | water cement ratio and compressive strength, fineness of cement, setting time, soundness | 2 | | |
| | Types of cement | 2 | | |
| Aggregate, Water and Admixtures: | Classification and characteristics of aggregate, fineness modulus, grading of aggregate, I.S.383 | 2 | 6 | |
| | Quality of water for mixing and curing. | 2 | | |
| | Important functions, classification of admixtures, I.S 9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures | 2 | | |
| Properties of fresh concrete | Concept of fresh concrete | 1 | 6 | |
| | workability | 1 | | |
| | slump test, compacting factor test, V-bee consistency test and flow test, requirement of workability, I.S.1199 | 4 | | |
| Properties of hardened concrete | Cube and cylinder compressive strengths, | 1 | 8 | |
| | flexural strength of concrete | 1 | | |
| | stress-strain and elasticity | 1 | | |
| | phenomena of creep and shrinkage, | 1 | | |
| | permeability, durability of concrete | 2 | | |
| | sulphate, chloride and acid attack on concrete, efflorescence | 2 | | |
| Concrete mix Design | Introduction, Nominal mix concrete & design mix concrete. | 1 | 5 | |
| | Data or input required for mix design. | 1 | | |
| | Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262) | 3 | | |
| Production of concrete | Batching of materials | 1 | 6 | |
| | mixing of concrete materials | 1 | | |
| | Transportation, placing of concrete, compaction of concrete (vibrators) | 1 | | |
| | Curing of concrete | 1 | | |

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| | Formwork-requirements and types ,stripping of forms | 2 | |
| Inspection and Quality Control of Concrete | Quality control of Concrete as per I.S.456, Factors causing the variations in the quality of concrete | 2 | 6 |
| | Mixing, Transporting, Placing &curing requirements of Concrete as per I.S.456. | 2 | |
| | Inspection and Testing as per Clause 17 of IS:456. | 1 | |
| | Durability requirements of Concrete as per I.S:456. | 1 | |
| Special Concrete | Introduction to ready mix concrete, | 2 | 6 |
| | High performance concrete, | 2 | |
| | Silica fume concrete | 1 | |
| | Shot-crete concrete or gunitting | 1 | |
| Deterioration of concrete and its prevention: | Types of deterioration, | 2 | 6 |
| | Prevention of concrete deterioration | 2 | |
| | Corrosion of reinforcement | 1 | |
| | Effects and prevention | 1 | |
| Repair technology for concrete structures: | Symptom, cause and prevention and remedy of defects during construction | 1 | 8 |
| | Cracking of concrete due to different reasons | 2 | |
| | Repair of cracks for different purposes | 2 | |
| | Selection of techniques | 1 | |
| | Polymer based repairs | 1 | |
| | Common types of repairs | 1 | |
| Revision | MCQ type questions discussion | 5 | 5 |