

Lesson Planning (Theory)

Branch : **Civil Engineering**

Semester : 3rd

Subject : Concrete Technology

Session : **August-December 2026**

Teacher: **Er. Harish Kumar**

Class Room : A-202

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			conditions as per IS 456. • Properties of fresh concrete: Workability: Factors affecting workability of concrete. Determination of workability of concrete by slump cone, compaction factor, Vee-Bee Consistometer. Value of workability requirement for different types of concrete works. Segregation, bleeding, and preventive measures. • Properties of Hardened concrete: Strength, Durability, Impermeability.		
3	3 WEEKS	Unit– III Concrete Mix Design and Testing of Concrete	- Concrete mix design: Objectives, methods of mix design, study of mix design as per IS 10262 (only procedural steps). - Testing of concrete, determination of compressive strength of concrete cubes at different ages, interpretation, and co-relation of test results. - Non- destructive testing of concrete: Rebound hammer test, working principle of rebound hammer and factor affecting the rebound index, Ultrasonic pulse velocity test as per IS 13311 (part 1 and 2), Importance of NDT tests.	R1,R2	
4	3 WEEKS	Unit– IV Quality Control of Concrete Unit– V Chemical Admixture, Special Concrete and Extreme Weather concreting.	- Concreting Operations: Batching, Mixing, Transportation, Placing, Compaction, Curing and Finishing of concrete. - Forms for concreting: Different types of form works for beams, slabs, columns, materials used for form work, requirement of good form work. Stripping time for removal of form works per IS 456. - Waterproofing: Importance and need of waterproofing, methods of waterproofing and materials used for waterproofing. - Joints in concrete construction: Types of joints, methods for joining old and new concrete, materials used for filling joints. - Admixtures in concrete: Purpose, properties and application for different types of admixtures such as accelerating admixtures, retarding admixtures, water reducing admixtures, air entraining admixtures and super plasticizers.	R1,R2	
5	2 WEEKS	Unit– V Chemical	• Special Concrete: Properties, advantages and limitation of following types of Special	R1,R2	

		Admixture, Special Concrete and Extreme Weather concreting	concrete: Ready mix Concrete, Fibre Reinforced Concrete, High performance Concrete Self-compacting concrete and light weight concrete. • Cold weather concreting: effect of cold weather on concrete, precautions to be taken while concreting in cold weather condition. • Hot weather concreting: effect of hot weather on concrete, precautions to be taken while concreting in hot weather condition.		
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REFERENCE RESOURCES

- Gambhir, M.L., Concrete Technology, Tata McGraw Hill Publishing Co. Ltd., Delhi.
- Santhakumar, A. R., Concrete Technology, Oxford University Press, New Delhi.

Signature of Teacher

Signature of H.O.D/OIC