

Lesson Plan

Subject:-BMCT(TH.5) Code-CEPC209 Name of faculty: - Soumyashree Dash
 Semester:-3rd Class allotted: 45Hrs Branch: - Civil Egg. Session: 2025(W)

Discipline	Semester:-3 rd	From date:- 14/07/2025 TO 15/11/2025	Teaching Aid
Subject:	No. of days/ per week 3p/w :	Theory/ Practical –Topics/Lesson	
Week	Date/Period		

1	15/07/2025 TO 19/07/2025	1. Overview of Construction Materials • Scope of construction materials in Building Construction, Transportation Engineering, Environmental Engineering, and Irrigation Engineering (applications only).	White board & marker
2	21/07/2025 TO 26/07/2025	• Selection of materials for different civil engineering structures on the basis of strength, durability, Eco friendly and economy. Broad classification of materials –, Natural, Artificial, special, finishing and recycled.	White board & marker
3	28/07/2025 TO 02/08/2025	2. Natural Construction Materials -Requirements of good building stone; general characteristics of stone; quarrying addressing methods and tools for stone. Structure of timber, general properties and uses of good	White board & marker
4	04/08/2025 TO 09/08/2025	• timber, different methods of seasoning for preservation of timber, defects in timber, use of bamboo in construction. Asphalt, bitumen and tar used in construction, properties• and uses. Properties of lime, its types and uses. • Types of soil and its suitability in construction.	White board & marker
5	11/08/2025 TO 16/08/2025	Properties of sand and uses• Classification of coarse aggregate according to size . 3. Artificial Construction Materials: Constituents of brick earth, Conventional / Traditional• bricks, Modular and Standard bricks, Special bricks –fly ash bricks, Characteristics of good brick, Field tests on Bricks, Classification of burnt clay bricks and their suitability, Manufacturing process of burnt clay brick, fly ash bricks, Aerated concrete blocks.	White board & marker & smart board
6	18/08/2025 TO 23/08/2025	Flooring tiles – Types, uses• Pre-cast concrete blocks-hollow, solid, pavement blocks,• and their uses. Plywood, particle board, Veneers, laminated board and• their uses. Types of glass: soda lime glass, lead glass and• borosilicate glass and their uses. Ferrous and non-ferrous metals and their uses.	White board & marker
7	25/08/2025 TO 30/08/2025	Cement, Aggregates , Water and Admixture : Composition of Cementλ Manufacturing process of Cement – dry and wet (only• flow chart), types of cement and its uses. Field tests on cement. Physical properties of OPC and PPC: fineness, standard• consistency, setting time, soundness, compressive strength. Different grades of OPC and relevant BIS codes.	White board & marker

	01/09/2025 TO 06/09/2025	<ul style="list-style-type: none"> Testing of cement: Laboratory tests-fineness, standard consistency, setting time, soundness, compressive strength. Storage of cement and effect of storage on properties of cement. BIS Specifications and field applications of different types 10 of cements: Rapid hardening, Low heat, Portland pozzolana, Sulphate resisting, Blast furnace slag, High Alumina and White cement. 	White board & marker
9	08/09/2025 TO 13/09/2025	Aggregates: Requirements of good aggregate, Classification according to size and shape. Fine aggregates: Properties, size, specific gravity, bulk density, water absorption and bulking, fineness modulus and grading zone of sand, silt content and their specification as per IS 383. Concept of crushed Sand. Coarse aggregates: Properties, size, shape, surface texture,	White board & marker
10	15/09/2025 TO 20/09/2025	water absorption, soundness, specific gravity and bulk density, fineness modulus of coarse aggregate, grading of coarse aggregates, crushing value, impact value and abrasion value of coarse aggregates with specifications. Water: Quality of water, impurities in mixing water and permissible limits for solids as per IS: 456.	White board & marker
11	22/09/2025 TO 27/09/2025	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. (concepts only) 5. Concrete : Different grades of concrete, provisions of IS 456 (Latest).	White board & marker
12	08/10/2025 TO 11/10/2025	Duff Abraham water cement (w/c) ratio law, significance of w/c ratio, selection of w/c ratio for different grades, maximum w/c ratio for different grades of concrete for different exposure 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.	White board & marker & smart board
13	13/10/2025 TO 18/10/2025	Properties of Hardened concrete: Strength, Durability, Impermeability. 6. 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).	White board & marker
14	20/10/2025 TO 25/10/2025	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. 7. Quality Control of Concrete: Concreting Operations: Batching, Mixing, Transportation, Placing, Compaction, Curing and Finishing of concrete.	White board & marker
15	27/10/2025 TO 01/11/2025	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:	White board & marker & smart board

		Importance and need of • waterproofing, methods of waterproofing and materials used for waterproofing.	
	03/11/2025 TO 08/11/2025	Joints in concrete construction: Types of joints, • methods for joining old and new concrete, materials used for filling joints. 8. Special Concrete and Extreme Weather concreting: Special Concrete: Properties, advantages and ♣ limitation of following types of Special concrete: Ready mix Concrete, Fiber Reinforced Concrete, High performance Concrete, Self- compacting concrete and light weight concrete.	White board & marker
17	10/11/2025 TO 15/11/2025	Cold weather concreting: effect of cold weather ♣ on concrete, precautions to be taken while concreting in cold weather condition. (only concepts) Hot weather concreting: effect of hot weather on • concrete, precautions to be taken while concreting in hot weather condition. (only concepts)	White board & marker


 Signature of HOD

Soumyashree Das.
 Signature of faculty