

Lesson Planning (Theory)

Branch : Civil Engineering

Semester : 3rd

Subject : Construction Materials

Session : August-December 2026

Teacher: Er. Saibal Bharti

Class Room : A-202

S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	3 WEEKS	Unit – I: Overview of Construction Materials	• Scope of construction materials in Building Construction, Transportation Engineering, Environmental Engineering, Irrigation Engineering (applications only). • Selection of materials for different civil engineering structures based on strength, durability, Eco friendly and economy. • Broad classification of materials – Natural, Artificial, special, finishing and recycled.	R1,R2	
2	3 WEEKS	Unit – II: Natural Construction Materials	• Requirements of good building stone; general characteristics of stone; quarrying and dressing methods and tools for stone. • Structure of timber, general properties and uses of good 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. • Properties of sand and uses • Classification of coarse aggregate according to size	R1,R2	
3	3 WEEKS	Unit- III: 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. • Flooring tiles – Types, uses • Manufacturing process of Cement - dry and wet (only flow chart), types of cement and its uses. Field tests on cement. • 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.	R1,R2	
4	3 WEEKS	Unit– IV: Special Construction Materials	• Types of material and suitability in construction works of following materials: Water proofing, Termite proofing; Thermal and sound insulating materials. • Fibers – Types – Jute, Glass, Plastic Asbestos Fibers, (only uses). • Geo polymer cement: Geo-cement: properties, uses.	R1,R2	

5	2 WEEKS	Unit– V: Processed Construction Materials	• Constituents and uses of POP (Plaster of Paris), POP finishing boards, sizes, and uses. • Paints- whitewash, cement paint, Distempers, Oil Paints and Varnishes with their uses. (Situations where used). • Industrial waste materials- Fly ash, Blast furnace slag, Granite and marble polishing waste and their uses. • Agro waste materials - Rice husk, Bagasse, coir fibers and their uses. • Special processed construction materials; Geo synthetic, Ferro Crete, Artificial timber, Artificial sand, and their uses.	R1,R2	
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REFERENCE RESOURCES

- Ghose, D. N., Construction Materials, Tata McGraw Hill, New Delhi.
- S.K. Sharma, Civil Engineering Construction Materials, Khanna Publishing House, Delhi.

Signature of Teacher

Signature of H.O.D/OIC