

Jharsuguda Engineering School, Jharsuguda

Lesson Plan

Building Material & Concrete Technology (Th-4)

Department: Civil Engineering

Course: Building Material & Concrete Technology

Semester: 3rd Semester


Total Contact Hours:45 (3 periods/week × 15 weeks)

Faculty:** Swapnashish Patel, Sr. Lecturer (Civil)

Week	Period No.	Unit No. & Title	Topic to be Covered	Teaching- Learning Activities / Aids	Assessment / Task	Remarks
1	1-3	Unit I – Overview of Construction Materials	Scope and selection of materials; classification of materials.	Chalk & Talk, PPT	-	
2	4-6	Unit II – Natural Construction Materials	Building stones: requirements, quarrying, dressing.	Images, PPT	-	
3	7-9	Unit II	Timber structure, properties, seasoning, defects; Bamboo use.	PPT, Demo	-	
4	10-12	Unit II	Asphalt, bitumen, tar, lime properties & uses, soil types, sand, coarse aggregates.	PPT + Sample Materials	Quiz 1	
5	13-15	Unit III – Artificial Construction Materials	Bricks: constituents, types, tests, manufacturing; fly ash bricks.	Video + PPT	-	
6	16-18	Unit III	Tiles, precast blocks, plywood, particle board, glass types, metals.	Samples + PPT	Assignment 1	
7	19-21	Unit IV – Cement, Aggregates, Water & Admixtures	Cement composition, manufacturing (flowchart), types & tests.	PPT + Lab Demo	-	
8	22-24	Unit IV	Physical properties (OPC, PPC), BIS codes, grades; cement tests.	Lab Videos	-	
9	25-27	Unit IV	Aggregates properties (fine & coarse), grading, IS specs; Water quality & admixtures.	Charts + PPT	Class Test 1	

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10	28-30	Unit V - Concrete	Grades of concrete (IS 456), w/c ratio, workability factors.	Demo + PPT	-	
11	31-33	Unit V	Workability tests: slump cone, compaction factor, Vee-Bee; segregation, bleeding.	Lab Demo	Quiz 2	
12	34-36	Unit V	Hardened concrete properties: strength, durability, impermeability.	PPT + Discussion	-	
13	37-39	Unit VI - Concrete Mix Design & Testing	IS 10262 mix design procedure; NDT tests: rebound hammer, ultrasonic pulse.	PPT + Case Study	-	
14	40-42	Unit VII - Quality Control of Concrete	Batching, mixing, placing, curing, finishing, formwork & stripping time.	Demo + BIS Codes	Assignment 2	
15	43-45	Unit VIII - Special & Extreme Weather Concreting	Special concretes (RMC, FRC, HPC, SCC); hot & cold weather concreting; Revision.	PPT + Summary	Class Test 2	


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 Sr Lect (Civ).
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