

**JHARSUGUDA ENGINEERING SCHOOL,
JHARSUGUDA**

Department of Civil Engineering

6th Sem (3rd Year) Summer 2023

Theory No: 4

Subject: Concrete Technology

**Name Of The
Faculty:**

Sri Dhanurjaya Behera

Smt. Deepanjali Sethi

Sl No	Week No	No. Of classes	Topics to be covered	Remarks
1	W1	1	Concrete as a construction material: 1.1 Grades of concrete.	
2		1	1.2 Advantages and disadvantages of concrete	
3		1	Cement: 2.1 Composition, hydration of cement,	
4		1	water cement ratio and compressive strength,	
5	W2	1	fineness of cement, setting time,	
6		1	soundness of cement.	
7		1	Types of Cement	
8		1	Revision	
9	W3	1	3.1 Classification and characteristics of aggregate,	
10		1	fineness modulus, grading of aggregate, I.S.383	
11		1	3.2 Quality of water for mixing and curing.	
12		1	3.3 Important functions,	
13	W4	1	classification of admixtures, I.S 9103,	
14		1	accelerating admixtures	
15		1	retarding admixtures	

16		1	water reducing admixtures	
17	W5	1	air containing admixtures	
18		1	Revision	
19		1	Properties of fresh concrete: 4.1 Concept of fresh concrete,	
20		1	workability, slump test, .	
21	W6	1	compacting factor test,	
22		1	V-bee consistency test and flow test,	
23		1	requirement of workability,I.S.1199	
24		1	Revision	
25		W7	1	6 Concrete mix Design 6.1 a) Introduction
26	1		b) Data or input required for mix design.	
27	1		6.2 Nominal mix concrete	
28	1		Design mix concrete.	
29	1		Revision	
30	W8	1	6.3 Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)	
31		1	Practice on problems	
32		1	Practice on problems	
33	W9	1	Practice on problems	
34		1	Production of concrete: 7.1 Batching of materials,	
35		1	mixing of concrete materials,	
36		1	transportation, placing of concrete,	
37		1	compaction of concrete (vibrators),	

38	W10	1	Curing of concrete, Formwork-requirements and types	
39		1	stripping of forms. (Concepts only)	
40		1	Revision	
41	W11	1	Revision	
42		1	Inspection and Quality Control of Concrete 10.1 Quality control of Concrete as per I.S.456,	
43		1	Factors causing the variations in the quality of concrete	
44		1	10.2 Mixing, Transporting, Placing &curing requirements of Concrete as per I.S.456.	
45	W12	1	10.3 Inspection and Testing as per Clause 17 of IS:456.	
46		1	10.4 Durability requirements of Concrete as per I.S:456.	
47		1	Special Concrete 11.1 Introduction to ready mix concrete,	
48		1	high performance concrete,	
49	W13	1	silica fume concrete,	
50		1	shot-crete concrete or gunitting (Concepts only).	
51		1	Deterioration of concrete and its prevention: 12.1 Types of deterioration,	
52		1	prevention of concrete deterioration,	
53		1	corrosion of reinforcement, effects and prevention	

54	W14	1	Repair technology for concrete structures: 13.1 Symptom, cause and prevention and remedy of defects during construction	
55		1	cracking of concrete due to different reasons.	
56		1	Repair of cracks for different purposes,	
57	W15	1	selection of techniques	
58		1	polymer based repairs	
59		1	common types of repairs.	
60		1	Revision	
Total		60		

D. Behera
14/02/23

Signature of Faculty

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Lecturer (Civil)

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