

Discipline Civil Engg	Semester 8th	Name of the teaching faculty Mrs. Tusarika Behara
Subject Concrete technology	No of day / per week class allotted	Semester from date ^{13/02/23} to date ^{23/05/23} No of week

Week	Class day	Theory
1st		<u>Concrete as a construction material :-</u>
	1st, 2nd	Grades of concrete.
	3rd, 4th	Advantage and disadvantage of concrete.
2nd		<u>Cement :-</u>
	1st	Composition, hydration of cement.
	2nd	water cement ratio and compressive strength.
	3rd	fitness of cement, setting time, soundness, types of cement.
	4th	
3rd		<u>Aggregate, water and admixture :-</u>
	1st	Classification and characteristics of aggregate.
	2nd	fineness modulus, grading of aggregate, I.S. 383
	3rd	
	4th	

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4th	1st	Quality of water for mixing and curing
	2nd	Important functions, classification of admixtures I.S. 9103 accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures.
	3rd	
	4th	
5th	1st	<u>Properties of fresh concrete:-</u>
	2nd	Concept of fresh concrete, workability slump test, compaction factor test, V- bee consistency test and flow test, requirement of workability I.S. 1199
	3rd	
6th		<u>Properties of hardened concrete:-</u>
	1st	Cube and cylinder compressive strength flexure strength of concrete, stress-strain and elasticity, phenomena of creep and shrinkage permeability, durability of concrete, sulphate chloride and acid attack on concrete efflorescence.
	2nd	
	3rd	
	4th	
7th		<u>Concrete mix design :-</u>
	1st	Introduction Data input required for mix design.

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2nd	Nominal mix concrete & design mix concrete.
3rd	Basic consideration for concrete mix design methods of proportioning concrete mix - I.S. code method of mix design (I.S. 10262)

8th

Production of concrete:-

1st	Batching of materials, mixing of concrete materials, transportation
2nd	placing of concrete, compaction of concrete (vibrators), curing of concrete, formwork - requirement and type stripping of forms.
4th	(concepts only)

9th

Inspection and Quality control of concrete:-

1st	Quality control of concrete as per I.S. 456, factors causing the variations in the quality of concrete.
2nd	Mixing, Transporting, placing & curing requirements of concrete as per I.S. 456.

10th

1st
and
2nd

Inspection and testing as per clause 17 of IS: 456

3rd
and
4th

Durability requirements of concrete as per IS: 456.

Special concrete :-

11th

1st
2nd
3rd
and
4th

Introduction to ready mix concrete, high performance concrete, silica fume concrete, shot-code concrete or guniting (concrete only).

12th

Deterioration of concrete and its prevention :-

1st
2nd
3rd
and
4th

Type of deterioration, prevention of concrete deterioration, corrosion of reinforcement, effects and prevention.

13th

Repair technology for concrete structures :-

1st
2nd
3rd
and
4th

Symptom cause and prevention and remedy of defects during construction cracking of concrete due to different reasons. Repair of cracks for different purpose selection of techniques, polymer based repairs, common types of repairs.

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