

ACADEMIC SESSION :SUMMER 2024

Discipline : Civil Engineering	Semester : 6 th	Name of the Teaching Faculty : Iti Epsitarani Sethi
Subject : Concrete Technology	No. of days / week class allotted:	Semester From date: 16/01/2024 to 26/04/2024 Nos. of Weeks : 15
Week	Class Day	Theory/ Practical Topics
1 st	1 st	Ch.1-(Concrete as a Construction Material) Grades of Concrete
	2 nd	Advantages and Disadvantages of Concrete
	3 rd	Ch.2-(Cement) Composition and hydration of Cement
	4 th	Water cement ration and compressive strength of cement
	5 th	Fineness of cement setting time of cement
2 nd	1 st	Soundness of cement and types of cement
	2 nd	Ch.3- (Aggregate, Water and Admixture) Classification and characteristics of aggregate
	3 rd	Grading of aggregates
	4 th	Quality of water or mixing and curing
	5 th	Important function of admixture
3 rd	1 st	Classification of admixture, accelerating admixture, retarding admixture, water reducing admixture, air containing admixture
	2 nd	Ch.4- (Property of Fresh Concrete) Concepts of fresh concrete
	3 rd	Work ability- slum tests, compacting factor tests
	4 th	V-bee consistency test and flow test
	5 th	Requirement of workability
4 th	1 st	Ch.5- (Properties of hardened concrete) Cubes and cylinder compressive strength
	2 nd	Flexural strength of Concrete
	3 rd	Stress- strain and elasticity
	4 th	Phenomena of creep and shrinkage
	5 th	Phenomena permeability

5 th	1 st	Durability of concrete
	2 nd	Sulphate, chloride and acid attack of concrete
	3 rd	Ch.6 (Concrete mix design) Introduction, data or input required for mix design
	4 th	Nominal mix concrete and design mix concrete
6 th	1 st	Consideration for concrete mix design
	2 nd	Methods of proportioning concrete mix IS code
	3 rd	Methods of mix design
	4 th	Ch.7 (Production of Concrete) Batching of material
7 th	1 st	Mixing of Concrete material, transportation
	2 nd	Placing of Concrete
	3 rd	Compaction of Concrete,(vibrators) curing of concrete
	4 th	Formwork- equipments and types
8 th	1 st	Stripping of formwork
	2 nd	Ch. 8 (Inspection and quality control of concrete) Quality control of concrete as per IS 456
	3 rd	Factors causing the variation in the qualities of concrete
	4 th	Mixing, transporting of concrete as per is IS 456
9 th	1 st	placing and curing requirement of concrete as per IS 456
	2 nd	Inspection and testing as per clause 17 of IS 456
	3 rd	Durability requirement of concrete as per IS 456
	4 th	Ch.9 (Special Concrete) Introduction to ready mix concrete
10 th	1 st	High performance concrete
	2 nd	Silica fume concrete
	3 rd	Shot –crate concrete or gunitting

11 th	4 th	Ch.10 (Deterioration of concrete and its prevention) Types of deterioration
	1 st	Prevention of concrete deterioration
	2 nd	Corrosion of reinforcement
	3 rd	Effects and prevention
12 th	4 th	Ch. 11 (Repair technology for concrete structure) Symptom, cause
	1 st	prevention of defect during construction
	2 nd	remedy of defect during construction
	3 rd	Cracking of concrete due to different reasons
13 th	4 th	Repair of cracks for different purposes
	1 st	Selection of techniques,
	2 nd	polymer based repairs
	3 rd	Common types of repairs.
14 th	4 th	Prevention of concrete deterioration
	1 st	Corrosion of reinforcement
	2 nd	Effects and prevention
	3 rd	Ch. 11 (Repair technology for concrete structure) Symptom, cause
15 th	4 th	prevention and remedy of defect during construction
	1 st	Cracking of concrete due to different reasons
	2 nd	Repair of cracks for different purposes
	3 rd	Selection of techniques, polymer based repairs
	4 th	Common types of repairs.

Prepared by:

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16/01/24

Approved by:

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16/01/24
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