Lesson Plan

Discipline: Civil	Semester: 6th	Name of the teaching faculty: SushreeSouravi Rout
Subject: CONCRETE TECHNOLOGY (TH-4)	No. of days/per week Class Allotted: 4	Semester from: 16.01.24 to 26.04.24 No. of weeks:15
Week	**Class day**	**Theory Topics**
1st	1st	**1.0 Concrete as a construction material:** 1.1 Grades of concrete.
	2nd	1.2 Advantages and disadvantages of concrete.
	3rd	**2.0 Cement:** 2.1 Composition
	4th	hydration of cement
2nd	1st	water cement ratio and compressive strength
	2nd	fineness of cement
	3rd	setting time, soundness,
	4th	types of cement.
3rd	1st	**3.0 Aggregate:** 3.1 Classification and characteristics of aggregate,
	2nd	deleterious substances in aggregates,
	3rd	fineness modulus,
	4th	grading of aggregate,I.S.383
4th	1st	**4.0 Water:**

	2nd	4.1 Quality of water for mixing and curing
	3rd	**5.0 Admixtures:** 5.1 Important functions,
	4th	classification of admixtures, I.S 9103
5th	1st	accelerating admixtures
	2nd	retarding admixtures
	3rd	water reducing admixtures,
	4th	air containing admixtures.
6th	1st	**6.0 Properties of fresh concrete:** Concept of fresh concrete
	2nd	workability,
	3rd	slump test, compacting factor test,
	4th	V-bee consistency test and flow test
7th	1st	requirement of workability,I.S.1199.
	2nd	**7.0 Properties of hardened concrete:** 7.1 Cube and cylinder compressive strengths
	3rd	flexural strength of concrete, stress-strain and elasticity
	4th	phenomena of creep and shrinkage, permeability, durability of concrete,
8th	1st	sulphate, chloride and acid attack on concrete, efflorescence.
	2nd	**8.0 Concrete mix Design**
	3rd	8.1 a) Introduction b) Data or input required for mix design.
	4th	c) Nominal mix concrete &design mix concrete.
9th	1st	d) Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)
	2nd	**9.0 Production of concrete:**

	3rd	9.1 Batching of materials
	4th	mixing of concrete materials, transportation, placing of concrete
10th	1st	compaction of concrete, compaction methods, vibrators
	2nd	curing ,when to start and time of curing
	3rd	formwork-requirements and types ,stripping of forms
	4th	**10.0 Inspection and Quality Control of Concrete** 10.1 Quality control of Concrete as per I.S.456
11th	1st	Factors causing the variations in the quality of concrete, field quality control,
	2nd	Sampling &acceptance criteria as per Clause15&16 of IS:456.
	3rd	10.2 Mixing, Transporting,
	4th	Placing &curing requirements of Concrete as per I.S.456.
12th	1st	10.3 Inspection and Testing as per Clause 17 of IS:456.
	2nd	10.4Durability requirements of Concrete as per I.S:456.
	3rd	**11.0 Special Concrete** 11.1 Introduction to ready mix concrete,
	4th	high performance concrete,
13th	1st	silica fume concrete,
	2nd	shot-crete concrete or gunitting
	3rd	**12.0 Deterioration of concrete and its prevention:** 12.1 Types of deterioration,
	4th	prevention of concrete deterioration,
14th	1st	corrosion of reinforcement,
	2nd	effects and prevention
	3rd	**13.0 Repair technology for concrete structures:**

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	4th	13.1 Symptom, cause and prevention and remedy of defects during construction,
15th	1st	cracking of concrete due to different reasons,
	2nd	repair of cracks for different purposes,
	3rd	selection of techniques,
	4th	polymer based repairs, common types of repairs

13/1/24

Signature of faculty