IDEAL SCHOOL OF ENGINEERING,RETANG-752054

DISCIPLINE: CIVIL ENGINEERING	SEMESTER: 6TH SEM	NAME OF THE TEACHING FACULTY: ER. LIPSA BEHERA & ER. ADARSHI MANISHA BISWAL
SUBJECT: CONCRETE TECHNOLOGY Th-4(a)	No of Days/Per week class allotted: **4 Class P/W(60)**	Semester From Date: 13/02/2023 To Date: 23/05/2023 No. Of Weeks: 15

WEEK	CLASS DAY	THEORY
1st	1st	**Concrete as a construction material:** Grades of concrete
	2nd	Properties of concrete
	3rd	Advantages and Disadvantages of concrete
	4th	**Cement:** Composition, Hydration of cement
2nd	1st	Water cement ratio and Compressive strength, Fineness of cement
	2nd	Setting time , Soundness of cement
	3rd	Types of cement
	4th	**Aggregate, Water and Admixture:** Classification of aggregate
3rd	1st	Characteristics of aggregate, Fineness Modulus
	2nd	Grading of aggregate, I.S. 383
	3rd	Quality of water for mixing and curing
	4th	Quality of water for mixing and curing
4th	1st	Important functions, Classification of admixture, I.S. 9103
	2nd	Accelerating admixtures, Retarding admixtures
	3rd	Water reducing admixtures, air containing admixture
	4th	**Properties of fresh concrete:** Concept of fresh concrete
	1st	Workability

5th	2nd	Slump Test
	3rd	Compacting Factor Test
	4th	V-bee Consistency Test and Flow Test
6th	1st	Requirement of workability, I.S. 1199
	2nd	**Properties of hardened concrete:** Cube and Cylinder Compressive strength
	3rd	Flexural strength of concrete
	4th	Stress-Strain and Elasticity
7th	1st	Phenomena of Creep and Shrinkage
	2nd	Permeability, Durability of concrete
	3rd	Sulphate , Chloride attack on concrete
	4th	Acid attack on concrete, Efflorescence
8th	1st	**Concrete mix design:** a) Introduction
	2nd	Nominal mix concrete & design mix concrete
	3rd	Basic consideration for concrete mix design
	4th	Methods of proportioning concrete mix-I.S. code method of mix design (I.S. 10262)
9th	1st	Methods of proportioning concrete mix-I.S. code method of mix design (I.S. 10262)
	2nd	**Production of concrete:** Batching of materials
	3rd	Mixing of concrete materials
	4th	Transportation, Placing of concrete
10th	1st	Compaction of concrete(vibrators)
	2nd	Curing of concrete
	3rd	Formwork-requirements and types, Stripping of forms

	4th	**Inspection and Quality control of concrete:** Quality control of concrete as per I.S. 456
11th	1st	Factors causing the variation in the quality of concrete.
	2nd	Mixing, Transporting
	3rd	Placing &curing requirements of Concrete as per I.S.456.
	4th	Inspection and Testing as per Clause 17 of IS:456.
12th	1st	Durability requirements of Concrete as per I.S:456.
	2nd	**Special Concrete :** Introduction to ready mix concrete
	3rd	Introduction to ready mix concrete
	4th	high performance concrete
13th	1st	silica fume concrete
	2nd	shot-crete concrete or gunitting (Concepts only).
	3rd	shot-crete concrete or gunitting (Concepts only).
	4th	**Deterioration of concrete and its prevention:** Types of deterioration
14th	1st	Types of deterioration
	2nd	prevention of concrete deterioration
	3rd	corrosion of reinforcement
	4th	Effects and prevention
15th	1st	**Repair technology for concrete structures:** Symptom, cause and prevention and remedy of defects during construction
	2nd	cracking of concrete due to different reasons.
	3rd	Repair of cracks for different purposes
	4th	selection of techniques, polymer based repairs, common types of repairs.