LESSON PLAN		
DISCIPLINE- CIVIL ENGG.	**SEMESTER-6th**	**NAME OF THE TEACHING FACULTY- JAYALAXMI BEHERA**
SUBJECT- CT(TH-4)	**NO. OF DAYS PER WEEK CLASS ALLOTTED- 04**	**SEMESTER FROM DATE-13/02/23 TO DATE-23/05/23 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.
2ND	1st	**Cement:** 2.1 Composition, hydration of cement
	2nd	water cement ratio and compressive strength, fineness of cement, setting time
	3rd	soundness, types of cement
	4th	**Aggregate, Water and Admixtures:** 3.1 Classification and characteristics of aggregate
`3RD	1st	Discussion
	2nd	fineness modulus of aggregate
	3rd	grading of aggregate,I.S.383
	4th	3.2 Quality of water for mixing and curing
4TH	1st	3.3 Important functions of admixture.
	2nd	classification of admixtures, I.S 9103
	3rd	accelerating admixtures, retarding admixtures,
	4th	water reducing admixtures, air containing admixtures
5TH	1st	**Properties of fresh concrete:** 4.1 Concept of fresh concrete, workability,
	2nd	slump test, compacting factor test
	3rd	V-bee consistency test and flow test, requirement of workability,I.S.1199.
	4th	**Properties of hardened concrete:**

		5.1 Cube and cylinder compressive strengths
6TH	1st	flexural strength of concrete
	2nd	stress-strain and elasticity of concrete
	3rd	phenomena of creep and shrinkage, permeability of concrete
	4th	durability of concrete, sulphate, chloride and acid attack on concrete, efflorescence
7TH	1st	**Concrete mix Design** 6.1 a) Introduction
	2nd	b) Data or input required for mix design.
	3rd	6.2 Nominal mix concrete &design mix concrete
	4th	6.3 Basic consideration for concrete mix design
8TH	1st	Discussion
	2nd	Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)
	3rd	**Production of concrete:** 7.1 Batching of materials,
	4th	mixing of concrete materials
9TH	1st	transportation, placing of concrete
	2nd	compaction of concrete (vibrators), Curing of concrete
	3rd	Formwork-requirements and types ,stripping of forms. (Concepts only)
	4th	**Inspection and Quality Control of Concrete** 8.1 Quality control of Concrete as per I.S.456,
10TH	1st	Factors causing the variations in the quality of concrete
	2nd	8.2 Mixing, Transporting
	3rd	**Discussion**
	4th	Placing requirement of Concrete as per I.S.456.
11TH	1st	curing requirement of Concrete as per I.S.456.
	2nd	Discussion
	3rd	8.3 Inspection and Testing as per Clause 17 of IS:456.

	4th	8.4 Durability requirements of Concrete as per I.S:456.
12TH	1st	**Special Concrete** 9.1 Introduction to ready mix concrete
	2nd	high performance concrete
	3rd	silica fume concrete
	4th	shot-crete concrete or gunitting (Concepts only).
13TH	1st	Discussion
	2nd	**Deterioration of concrete and its prevention:** 10.1 Types of deterioration
	3rd	prevention of concrete deterioration
	4th	corrosion of reinforcement
14TH	1st	effects and prevention
	2nd	**Repair technology for concrete structures:** 11.1 Symptom
	3rd	cause and prevention and remedy of defects during construction
	4th	cracking of concrete due to different reasons
15TH	1st	Repair of cracks for different purposes,
	2nd	Discussion
	3rd	selection of techniques, polymer based repairs
	4th	common types of repairs.