

KIIT POLYTECHNIC, BHUBANESWAR

LESSON PLAN

Session: **2023-2024 Summer**

Discipline: Civil Engineering	Semester: 6 th Summer-2024	Name of the Teaching Faculty: Ananyashree Moharana (Lecturer) Mail.id ananya.moharanafce@kp.kiit.ac.in
Subject: Concrete Technology (Th-4)	No. Of Days/Week: 4	Start Date: 16/1/2024 End Date: 26/4/2024
Week	Class Day	Theory/Practical Topics
1st	1st	Concrete as a construction material Grades of concrete.
	2nd	Advantages and disadvantages of concrete
	3rd	Cement: Composition, hydration of cement
	4th	Water cement ratio , compressive strength, and fineness of cement
2nd	1st	Setting time, soundness,
	2nd	Types of cement
	3rd	Aggregate, Introduction, Classification
	4th	Characteristics of aggregate, fineness modulus
3rd	1st	Grading of aggregate,
	2nd	Quality of water for mixing and curing
	3rd	Impurities present in water
	4th	Introduction, Important functions, classification of admixtures,

4th	1st	Accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures
	2nd	Concept of fresh concrete
	3rd	Workability ,factors affecting workability
	4th	Slump test, compacting factor test
5th	1st	V-bee consistency test and flow test,
	2nd	Requirement of workability,
	3rd	Properties of hardened concrete introduction
	4th	Cube and cylinder compressive strengths
6th	1st	Flexural strength of concrete, stress-strain and elasticity
	2nd	Phenomena of creep and shrinkage, permeability
	3rd	Durability of concrete
	4th	Sulphate, chloride and acid attack on concrete, efflorescence.
7th	1st	Quiz Test
	2nd	Concrete mix Design introduction
	3rd	Data or input required for mix design
	4th	Nominal mix concrete & design mix concrete
8 th	1st	Basic consideration for concrete mix design, 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, transportation, placing of concrete
	4th	Compaction of concrete (vibrators), Curing of concrete
9 th	1st	Formwork-requirements

	2nd	Formwork types ,
	3rd	Stripping of forms
	4th	Doubt Clearing class
10 th	1st	Inspection and Quality Control of Concrete Quality control of Concrete as per I.S.456
	2nd	Factors causing the variations in the quality of concrete
	3rd	Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456
	4th	Inspection and Testing as per Clause 17 of IS:456
11 th	1st	Durability requirements of Concrete as per I.S:456
	2nd	Special Concrete Introduction to ready mix concrete
	3rd	High performance concrete
	4th	Silica fume concrete
12 th	1st	Shot-Crete concrete or gunitting
	2nd	Quiz Test
	3rd	Deterioration of concrete and its prevention, introduction
	4th	Types of deterioration
13 th	1st	Prevention of concrete deterioration
	2nd	Corrosion of reinforcement
	3rd	Effects and prevention
	4th	Repair technology for concrete structures Symptoms
14 th	1st	Cause and prevention of defect in concrete
	2nd	Remedy of defects during construction
	3rd	Cracking of concrete due to different reasons
	4th	Repair of cracks for different purposes

15 th	1st	Selection of techniques
	2nd	Polymer based repairs ,
	3rd	Common types of repairs of concrete
	4th	Previous year question paper discussion