

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline: CIVIL	Semester: 6 TH	Name of the Teaching Faculty Chinmay Kumar Das.
Subject: Concrete Technology	No. of days per week Class Allotted:	Semester from Dt. 14/02/23 to Dt. 23/05/23 No. of Weeks: 15
Week	Class Day	Theory / Practical Topics
Feb - 1 st week		1. <u>Concrete as a Construction material</u>
2 nd week	1 st class	1.1. Grades of concrete
	2 nd class	1.2. Advantages and disadvantages of concrete
	3 rd class	
	4 th class	2. <u>Cement</u>
3 rd week	1 st class	2.1. Composition, hydration of cement, water cement ratio and compressive strength, fineness of cement, setting time, soundness, types of cement.
	2 nd class	3. <u>Aggregate, water and Admixtures</u>
	3 rd class	3.1. Classification and characteristics of aggregate, fineness modulus, grading of aggregate, I.S. 383
	4 th class	3.2. Quality of water for mixing and curing.
4 th week	1 st class	3.3. Important functions, Classification of admixtures, I.S. 9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures
	2 nd class	4. <u>Properties of fresh concrete</u>
	3 rd class	4.1. Concept of fresh concrete, workability, Slump test, Compacting factor test, V-bee consistency test and flow test, requirement of workability, I.S. 1199
	4 th class	

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
5 th week	1 st class	5. <u>Properties of hardened Concrete</u>
6 th week	2 nd class	5.1. Cube and cylinder Compressive strengths, flexural strength of concrete, stress-strain and elasticity, Phenomena of creep and shrinkage, Permeability, durability of concrete, sulphate, chloride and acid attack on concrete, efflorescence.
	3 rd class	
	4 th class	
	1 st class	
7 th week	2 nd class	6. <u>Concrete mix design</u>
	3 rd class	
	4 th class	
	1 st class	
8 th week	2 nd class	6.1. (a)- Introduction (b)- Data on input required for mix design 6.2. Nominal mix concrete & design mix concrete 6.3. Basic consideration for concrete mix design, methods of Proportioning concrete mix - I.S. Code method of mix design (I.S. 10262).
	3 rd class	
	4 th class	
	1 st class	
9 th week	2 nd class	7. <u>Production of concrete</u> 7.1. Batching of materials, mixing of concrete materials, transportation, Placing of concrete, Compaction of concrete, curing of concrete, form-work-requirements and types, stripping of forms, (Concepts only)
	3 rd class	
	4 th class	
	1 st class	

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
10th week	1st clay 2nd clay 3rd clay 4th clay	<u>8. Inspection and Quality Control of Concrete</u> 8.1. Quality control of concrete, factors causing the variations in the quality of concrete. 8.2. Mixing, Transporting, Placing & Curing requirements of concrete 8.3. Inspection and Testing as per clause 17 of I.S. 456 8.4. Durability requirements of concrete
11th week	1st clay 2nd clay 3rd clay 4th clay	<u>9. Special Concrete</u> 9.1. Introduction to ready mix concrete, high performance concrete, silica fume concrete, shot - crete concrete or gunnitng (Concepts only)
12th week	1st clay 2nd clay 3rd clay 4th clay	<u>10. Deterioration of Concrete and It's Prevention</u> 10.1. Types of Deterioration, Prevention of concrete deterioration, Corrosion of reinforcement, effects, and Prevention
13th week	1st clay 2nd clay 3rd clay 4th clay	

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Week	Class Day	Theory / Practical Topics
14 th week	1 st class	<u>11. Repair technology for concrete structures</u> 11.1. Symptom, Cause and Prevention and remedy of defects during construction, cracking of concrete due to different reasons. Repair of cracks for different purposes, selection of techniques, Polymer based repairs, Common types of repairs.
15 th week	2 nd class	
	3 rd class	
	4 th class	
	1 st class	
	2 nd class	
	3 rd class	
	4 th class	