

Badriprasad Institute of Technology, Sambalpur

Lesson plan for Theory -4(a), Concrete Technology

Semester & Branch : 6th Sem Civil Engineering

Total Periods-60

Name of the faculty : Mrs. Swagatika Panda

No of periods /week-4

WEEK	CLASS DAY	THEORY TOPICS
1st	1st	Concrete as a construction material:
		Grades of concrete.
	2nd	Advantages and disadvantages of concrete.
	3rd	Cement:
		Composition
	4th	hydration of cement
2nd	1st	water cement ratio and compressive strength
	2nd	fineness of cement
	3rd	setting time
	4th	soundness
3rd	1st	types of cement.
	2nd	Aggregate, Water and Admixtures:
		Classification and characteristics of aggregate
	3rd	fineness modulus
	4th	grading of aggregate, I.S.383
4th	1st	Quality of water for mixing and curing.
	2nd	Important functions,
	3rd	classification of admixtures, I.S 9103,
	4th	accelerating admixtures,
5th	1st	retarding admixtures,
	2nd	water reducing admixtures,
	3rd	air containing admixtures
	4th	Properties of fresh concrete:
		Concept of fresh concrete, workability,
6th	1st	slump test, ,
	2nd	compacting factor test,
	3rd	V-bee consistency test and flow test
	4th	requirement of workability, I.S.1199.
7th	1st	Properties of hardened concrete
		Cube and cylinder compressive strengths,
	2nd	flexural strength of concrete
	3rd	stress-strain and elasticity
	4th	phenomena of creep and shrinkage,
8th	1st	permeability
	2nd	durability of concrete, sulphate,
	3rd	chloride and acid attack on concrete, efflorescence.
	4th	Concrete mix Design
		a) Introduction

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9th	1st	b) Data or input required for mix design.
	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)
10th	1st	Production of concrete: Batching of materials, mixing of concrete materials,
	2nd	transportation, placing of concrete,
	3rd	compaction of concrete (vibrators)
	4th	Curing of concrete,
11th	1st	Formwork-requirements and types ,
	2nd	stripping of forms. (Concepts only)
	3rd	Inspection and Quality Control of Concrete Quality control of Concrete as per I.S.456,
	4th	Factors causing the variations in the quality of concrete
12th	1st	Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456.
	2nd	Inspection and Testing as per Clause 17 of IS:456.
	3rd	Durability requirements of Concrete as per I.S:456.
	4th	Special Concrete Introduction to ready mix concrete, high performance concrete, silica fume concrete, .
13th	1st	shot-crete concrete or gunnitting (Concepts only)
	2nd	Deterioration of concrete and its prevention
	3rd	Types of deterioration
	4th	prevention of concrete deterioration
14th	1st	corrosion of reinforcement
	2nd	effects and prevention
	3rd	Repair technology for concrete structures Symptom, 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, of techniques,
	2nd	polymerselectionbased repairs, common types of repairs.
	3rd	Continue of 2nd Class
	4th	Continue of 3rd Class

Sign of Faculty

Sign of HOD