

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING



LESSON PLAN

SUBJECT: - BUILDING MATERIALS & CONCRETE TECHNOLOGY LAB.(PR 4)

ACCADEMIC SESSION: 2026-27

FACULTY: SHRI TAPAS KUMAR MALLICK, LECTURER(STAGE-II)

SEMESTER:3RD

SEC: A & B

Sd/-

H O D (Civil Engg.)

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COURSE OUTCOMES

CO1: DESCRIBE VARIOUS CONSTRUCTION MATERIALS, AND THEIR RELEVANT CHARACTERISTICS.

CO2:- IDENTIFY DIFFERENT TYPES OF CEMENT BY PERFORMING LABORATORY TESTS.

CO3:- ILLUSTRATE PHYSICAL PROPERTIES OF FINE AND COARSE AGGREGATES.

CO4:- PREPARE CONCRETE OF REQUIRED SPECIFICATION.

CO5:- MAINTAIN THE QUALITY OF CONCRETE APPLYING SCIENTIFIC PRINCIPLES.

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Discipline: Civil Engineering	Semester: 3rd (A & B)	Name of the teaching faculty: Shri Tapas Kumar Mallick
Subject: Building Material & Concrete Technology Lab	No. of Days/ per week class allotted: 02 periods per week.	Semester From Date: 01-07-2026 To Date: 05-11-2026 No. of weeks: 19 weeks
Week	Class Day	Theory Topics
1 st	1st	Identify various sizes of available coarse aggregates from sample of 10 kg in laboratory and prepare report (60,40, 20,10 mm).
	2nd	Identify various sizes of available coarse aggregates from sample of 10 kg in laboratory and prepare report (60,40, 20,10 mm).
2 nd	1st	Identify various layers and types of soil in foundation pit by visiting at least 3 construction sites in different locations of city and prepare report consisting photographs and samples.
	2nd	Identify various layers and types of soil in foundation pit by visiting at least 3 construction sites in different locations of city and prepare report consisting photographs and samples.
3 rd	1st	Select first class, second class and third-class bricks from the stake of bricks and prepare report based on its properties.
	2nd	Select first class, second class and third-class bricks from the stake of bricks and prepare report based on its properties.
4 th	1st	Measure dimensions of 10 bricks and find average dimension and weight. Perform field tests - dropping, striking and scratching by nail and correlate the results obtained.

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	2nd	Measure dimensions of 10 bricks and find average dimension and weight. Perform field tests - dropping, striking and scratching by nail and correlate the results obtained.
5 th	1st	Identify different types of flooring tiles such as vitrified tiles, ceramic tiles, glazed tiles, mosaic tiles, anti- skid tiles, chequered tiles, paving blocks and prepare report about the specifications.
	2nd	Identify different types of flooring tiles such as vitrified tiles, ceramic tiles, glazed tiles, mosaic tiles, anti- skid tiles, chequered tiles, paving blocks and prepare report about the specifications.
6 th	1st	Apply two or more coats of selected paint on the prepared base of a given wall surface for the area of 1m x 1m using suitable brush/rollers adopting safe practices.
	2nd	Prepare the cement mortar of proportion 1:3 or 1:6 using cement and sand only.
7 th	1st	Determine fineness of cement by Blaine's air permeability apparatus Or by sieving.
	2nd	Determine fineness of cement by Blaine's air permeability apparatus Or by sieving.
8 th	1st	Determine specific gravity, standard consistency, initial and final setting times of cement..
	2nd	Determine specific gravity, standard consistency, initial and final setting times of cement.
9 th	1st	Determine compressive strength of cement.

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	2nd	Determine compressive strength of cement.
10 th	1st	Internal Assessment -I
	2nd	Internal Assessment -I
11 th	1st	Determine bulk density of fine and coarse aggregates.
	2nd	Determine bulk density of fine and coarse aggregates.
12 th	1st	Determine water absorption of fine and coarse aggregates.
	2nd	Determine water absorption of fine and coarse aggregates.
13 th	1st	Determine Fineness modulus of fine aggregate by sieve analysis.
	2nd	Determine Fineness modulus of fine aggregate by sieve analysis.
14 th	1st	Determine workability of concrete by slump cone test.
	2nd	Determine workability of concrete by slump cone test.
15 th	1st	Determine workability of concrete by compaction factor test.
	2nd	Determine workability of concrete by compaction factor test.
16 th	1st	To prepare concrete mix of a particular grade as per IS 10262:2019 and determine compressive strength of Concrete for 7 and 28 days.
	2nd	To prepare concrete mix of a particular grade as per IS 10262:2019 and determine compressive strength of Concrete for 7 and 28 days.
17 th	1st	Demonstration of NDT equipment

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	2nd	Demonstration of NDT equipment
18 th	1st	Internal Assessment -II
	2nd	Internal Assessment -II
19 th	1st	Sessional
	2nd	Sessional