

CONCRETE TECHNOLOGY LABORATORY

III SEMESTER: CE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIA	SEE
ACEC11	Core	0	0	2	1	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 24			Total Classes: 24			

Prerequisite: No prerequisites required

I. COURSEOVERVIEW

Concrete production process also forms a part of the discussion. Going through the course one would develop first-hand knowledge on concrete production process and properties and uses of concrete as a modern material of construction. The courses will enable one to make appropriate decision regarding ingredient selection and use of concrete.

II. COURSE OBJECTIVES

The students will try to learn:

1. The practical knowledge regarding concrete testing equipment and their operation.
2. The demonstration tests on cement, aggregates and concrete.
3. The observation of the behavior of concrete materials and their properties.
4. The knowledge and application of safety regulations.

III. COURSE SYLLABUS

Week-1: INTRODUCTION TO CONCRETE TECHNOLOGY

Introduction to concrete technology laboratory

Week-2: FINENESS OF CEMENT

Fineness of cement.

Week-3: NORMAL CONSISTENCY OF CEMENT

Normal consistency of cement.

Week-4: INITIAL AND FINAL SETTING TIMES OF CEMENT

Initial and final setting times of cement

Week-5: SPECIFIC GRAVITY OF CEMENT

Specific gravity of cement

Week-6: COMPRESSIVE STRENGTH OF CEMENT

Compressive strength of cement

Week-7: SOUNDNESS OF CEMENT

Soundness of cement

Week-8: FINENESS MODULUS OF FINE AND COARSE AGGREGATE

Fineness modulus of fine and Coarse Aggregate

Week-9: BULKING OF SAND

Bulking of sand

Week-10: WORKABILITY TESTS ON FRESH CONCRETE

Workability tests on fresh concrete

Week-11: TEST FOR COMPRESSIVE STRENGTH OF CEMENT CONCRETE

Test for compressive strength of cement concrete.

Week-12: STUDIES ON NON-DESTRUCTIVE TESTING OF CONCRETE

Introduction to Non-destructive test methods.

IV. TEXT BOOK

1. Humanhood and LN Mittal, "Laboratory Manual on Concrete Technology", CBS Publishers Pvt. Ltd., New Delhi, 2nd Edition, 2013.
2. Khanna S.K and Justo C.E.G., "Pavement Materials and Testing" Tata McGraw Hill Education, 2012.

V. WEB REFERENCES

1. <https://nptel.ac.in/courses/105102012/>