CONCRETE TECHNOLOGYLABORATORY

V Semester: CE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
ACE108	Core	-	-	3	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 36				Total Classes: 36		

COURSE OBJECTIVES:

The course should enable the students to:

I. Achieve the practical knowledge regarding concrete testing equipment and their operation.
II. Demonstrate tests on cement, aggregates and concrete.
III. Observe the behavior of concrete materials and their properties.
IV. Emphasize the knowledge and application of safety regulations.

COURSE LEARNING OUTCOMES (CLOs):

1. Understand the basics of Concrete Technology laboratory.
2. Determination of Fineness of cement.
3. To understand the normal consistency of cement.
4. Analyze the initial and final setting time of cement.
5. Determine the specific gravity of cement.
6. Analyze the compressive strength of cement.
7. To determine soundness of cement.
8. Calculate the fineness modulus of fine aggregate and coarse aggregate.
9. Determine the bulking of sand.
10. Calculate the workability tests on fresh concrete.
11. Analyze the compressive strength of cement concrete.

Week-1	INTRODUCTION TO CONCRETE TECHNOLOGY-I

Batch I: Introduction to concrete technology laboratory. Do's and Don'ts in concrete lab
Batch II: Introduction to concrete technology laboratory. Do's and Don'ts in concrete lab

Week-2	FINENESS OF CEMENT

Batch I: Fineness of cement
Batch II: Fineness of cement

Week-3	NORMAL CONSISTENCY OF CEMENT

Batch I: Normal consistency of cement
Batch II: Normal consistency of cement

Week-4	INITIAL AND FINAL SETTING TIMES OF CEMENT

Batch I: Initial and final setting times of cement
Batch II: Initial and final setting times of cement.

Week-5	**SPECIFIC GRAVITY OF CEMENT**
Batch I:Specific gravity of cement Batch II: Specific gravity of cement	
Week-6	**COMPRESSIVE STRENGTH OF CEMENT**
Batch I:Compressive strength of cement Batch II: Compressive strength of cement	
Week-7	**SOUNDNESS OF CEMENT**
Batch I: Soundness of cement Batch II: Soundness of cement	
Week-8	**FINENESS MODULUS OF FINE AND COARSE AGGREGATE**
Batch I:Fineness modulus of fine and coarse aggregate Batch II: Fineness modulus of fine and coarse aggregate	
Week-9	**BULKING OF SAND**
Batch I: Bulking of sand Batch II: Bulking of sand	
Week-10	**WORKABILITY TESTS ON FRESH CONCRETE**
Batch I: Workability tests on fresh concrete Batch II: Workability tests on fresh concrete	
WeeK-11	**TEST FOR COMPRESSIVE STRENGTH OF CEMENT CONCRETE**
Batch I: Test for compressive strength of cement concrete Batch II: Test for compressive strength of cement concrete	
Week-12	**REVISION**
Batch I: Revision Batch II: Revision	
Reference Books	
1. Hemanthsood and LN Mittal, ―Laboratory Manual on concrete technology‖, CBS Publishers Pvt. Ltd., New Delhi, 2nd Edition, 2013. 2. Khanna S.K & Justo C.E.G. ―Pavement materials and testing‖, Tata McGraw Hill Education, 2012.	
Web References:	
1. https://nptel.ac.in/courses/105102012/	
E-Text Books:	
1. https://www.emiliaecarlo.it/2018/20/03/concrete-technology-textbook-free-down/ 2. https://www.pdfdrive.com/concrete-technology-2nd-edition-book-d18823000.html	