II Year II Semester	**L**	**T**	**P**	**C**
Code: 17CE413	**0**	**0**	**3**	**2**

CONCRETE TECHNOLOGY LAB

Course Learning Objectives:

To test the basic properties ingredients of concrete, fresh and hardened concrete properties.

Course Outcomes:

Upon successful completion of this course, student can able to

1. Determine the consistency and fineness of cement, the setting times of cement.
2. Determine the specific gravity and soundness of cement, the compressive strength of cement, the workability of cement concrete by compaction factor, slump and Vee – Bee tests
3. Determine the specific gravity of coarse aggregate and fine aggregate by Sieve analysis.
4. Determine the flakiness and elongation index of aggregates.
5. Determine the bulking of sand.
6. Understand the non-destructive testing procedures on concrete.

List of Experiments:

At least 10 experiments must be conducted

1. Determination of normal Consistency and fineness of cement.
2. Determination of initial setting time and final setting time of cement.
3. Determination of specific gravity and soundness of cement.
4. Determination of compressive strength of cement.
5. Determination of grading and fineness modulus of coarse aggregate by sieve analysis.
6. Determination of specific gravity of coarse aggregate
7. Determination of grading and fineness modulus of fine aggregate (sand) by sieve analysis.
8. Determination of bulking of sand.
9. Determination of workability of concrete by compaction factor method.
10. Determination of workability of concrete by Slump test
11. Determination of workability of concrete by Vee-bee test.
12. Determination of compressive strength of cement concrete and its Young's modulus.
13. Determination of split tensile strength of concrete.
14. Non-Destructive testing on concrete (for demonstration)

List of Equipment:

1. Standard set of sieves for coarse aggregate and fine aggregate
2. Vicat's apparatus
3. Specific gravity bottle.
4. Lechatlier's apparatus.
5. Slump Test Apparatus.
6. Compaction Factor Test Apparatus.
7. Vee- Bee test apparatus
8. Longitudinal compress meter
9. Universal testing Machine (UTM)/Compression Testing Machine (CTM).
10. Rebound hammer, Ultrasonic Pulse Velocity machine, Micro covermeter etc.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	-	1	-	-	-	-	-	-	-	2	2	-	2
CO2	1	2	-	1	-	-	-	-	-	-	-	2	2	-	2
CO3	1	2	-	1	-	-	-	-	-	-	-	2	2	-	2
CO4	1	2	-	1	-	-	-	-	-	-	-	2	2	-	2
CO5	1	2	-	1	-	-	-	-	-	-	-	2	2	-	2
CO6	1	2	-	1	-	-	-	-	-	-	-	2	2	-	2