

**II Year-I Semester
(20CE3102) Concrete Technology Lab**

Int. Marks	Ext. Marks	Total Marks	L	T	P	C
15	35	50	-	-	3	1.5

Pre- Requisites: Concrete Technology theory

Course Objectives:

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

List of Experiments:

At least 10 experiments must be conducted

- Determination of normal Consistency and fineness of cement.
- Determination of initial setting time and final setting time of cement.
- Determination of specific gravity and soundness of cement.
- Determination of compressive strength of cement.
- Determination of grading and fineness modulus of Coarse aggregate by sieve analysis.
- Determination of specific gravity of coarse aggregate
- Determination of grading and fineness modulus of fine aggregate (sand) by sieve analysis.
- Determination of bulking of sand.
- Determination of workability of concrete by compaction factor method.
- Determination of workability of concrete by Slump test
- Determination of workability of concrete by Vee-bee test.
- Determination of compressive strength of cement concrete and its Young's modulus.
- Determination of split tensile strength of concrete.
- Non-Destructive testing on concrete (for demonstration)

List of Equipment:

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

Course Outcomes:

S.No	Course Outcomes	BTL
1	Determine the consistency and fineness of cement & setting times of cement.	L4
2	Determine the specific gravity and soundness of cement & compressive strength of cement.	L4
3	Determine the workability of cement concrete by compaction factor, slump and Vee – Bee tests	L4
4	Determine the specific gravity of coarse aggregate , fine aggregate by Sieve analysis, flakiness and elongation index of aggregates and bulking of sand.	L4
5	Understand the non-destructive testing procedures on concrete.	L2

Correlation of COs with POs& PSOs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	1	3	-	-	2	-	2	1	-	2	2	-	2
2	3	3	1	3	-	-	2	-	2	1	-	2	2	-	2
3	3	3	1	3	-	-	2	-	2	2	-	2	2	-	2
4	3	3	3	3	3	-	2	-	2	2	-	2	2	-	2
5	3	2	1	1	3		2		1	1					