

II Year – II SEMESTER

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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 will be able to

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

List of Experiments:

At least 10 experiments must be conducted (at least one for each property)

- 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 compresso meter
- Universal testing Machine (UTM)/Compression Testing Machine (CTM).
- Rebound hammer, Ultrasonic pulse velocity machine, micro cover meter etc.

