

3/4 B.Tech. FIFTH SEMESTER

CE5L2

CONCRETE TECHNOLOGY LAB

Credits: 2

Lecture: --

Internal assessment: 25 marks

Lab : 3 periods/week

Semester end examination: 50 marks

Objectives:

- To test the quality of concrete in various parameters and materials used in concrete

Learning outcomes:

After performing the experiments listed in the syllabus, the students will be able to

- Determine the properties of the constituent materials of concrete.
- Test and evaluate properties of fresh concrete and the properties of hardened concrete including strength and durability.

LIST OF EXPERIMENTS:

I. TESTS ON CEMENT AND AGGREGATES:

- Normal Consistency and fineness of cement.
- Initial setting time and final setting time of cement.
- Specific gravity and soundness of cement.
- Compressive strength of cement.
- Sieve analysis, Specific gravity and Bulking of sand.
- Tests on Coarse aggregate: Flakiness index, elongation index, specific Gravity and sieve analysis.

II. TESTS ON FRESH CONCRETE:

Workability test on concrete by

- compaction factor,
- slump ,
- Vee-bee.

III. TESTS ON HARDENED CONCRETE:

- compressive strength,
- Split tensile strength of concrete.

IV. NON-DESTRUCTIVE TESTING ON CONCRETE (for demonstration):

- Rebound Hammer test
- Pulse Velocity test

LIST OF EQUIPMENTS:

1. Length and elongation gauges
2. Vicat's apparatus
3. Specific gravity bottle.
4. Lechatlier's apparatus.
5. Slump and compaction factor setups
6. Longitudinal compresso meter
7. Rebound hammer, Pulse velocity machine