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

Pre-requisites: Concrete technology

Learning objectives:

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

Course outcomes:

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

1. Determine the properties of the constituent materials of concrete.
2. 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