Course Code	Course Name	L-T-P - Credits
CE255	CIVIL ENGINEERING MATERIALS LAB	(0-0-2: 1)

Prerequisite: Corequisite:

Course Objective:

To study and observe the physical properties of various civil engineering materials used in construction practices

Course Outcome:

1. To reproduce the basic knowledge of mathematics and engineering in finding the strength in tension, compression, shear and torsion.
2. To Identify, formulate and solve engineering problems of structural elements subjected to flexure.
3. To Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to unsuitable materials.

Syllabus (List of Experiments)

1. Determine the standard consistency, initial and final setting time of cement sample using Vicat's apparatus.
2. Determine the soundness of given sample of cement.
3. Determine the compressive & tensile strength of cement sample.
   Determine the fineness modulus and particle size distribution of coarse, fine, and all in aggregates.
4. Determine the specific gravity and water absorption of aggregate.
5. Determine the percentage bulking of a fine aggregate sample.
6. Determine the impact & crushing strength of coarse aggregate
7. Design a Concrete Mix using IS Method.
8. Workability comparison of concrete by Slump test, compaction factor test, Flow table test.
9. Determine the strength of concrete (cube, cylinder & beam) of given proportion and given water cement ratio.
10. Determine cement and concrete permeability of a given mix
11. Determine the water absorption and porosity of given stone sample and burnt clay bricks.
12. Determine the compressive strength & efflorescence of a stone sample and burnt clay bricks.
13. Determine the tensile and elongation of reinforcing steel bar.
14. Non destructive test: Rebound hammer & UPV

Supplementary Readings:

1. IS codes : Specifications and methods
2. Neville M and Brooks J.J., "Concrete Technology", Pearson Education, Twelfth impression, 2014
3. A.R Santhakumar "Concrete Technology", Oxford Higher Education, Ninth impression, 2012