GEOTECHNICAL ENGINEERING LAB

Course Code: 20CE1116 **L T P C**
0 0 3 1.5

Course Outcomes: At the end of the course, the student will be able to:

CO1: Identify index properties of soils for classification purposes (L2)
CO2: Estimate the soil permeability (L3)
CO3: Determine the settlement characteristics of soils (L3)
CO4: Determine the compaction characteristics of soils (L3)
CO5: Estimate the strength parameters of soils (L3)

(Any 12 out of 16 experiments)

LIST OF EXPERIMENTS:

1. Plot the particle size distribution curve and determination of coefficients of uniformity andcurvature and classification of a given soil sample.
2. Determination of specific gravity of a given soil sample.
3. Determination of in situ density using Core cutter.
4. Determination of in situ density using Sand Replacement method.
5. Determination of Liquid Limit of a given soil sample using Casagrande's apparatus.
6. Determination of Liquid Limit of a given soil sample using Cone penetration method.
7. Determination of coefficient of permeability of a soil sample using Constant Head test.
8. Determination of coefficient of permeability of a soil sample using Variable Head test.
9. Determination of OMC & MDD of a given soil sample.
10. Determination of CBR value.
11. Determination of coefficient of consolidation and compression index.
12. Determination of shear strength parameters using the unconfined compression test.
13. Determination of shear strength parameters using the direct shear test.
14. Determination of undrained shear strength parameters using the vane shear test.
15. Determination of shear strength parameters using triaxial test.
16. Determination of free swell index.

References:

1. IS 2720 all parts.
2. IS 9198-1979, Specification for compaction hammer for soil testing.
3. IS:10074-1982, Specification for compaction mould assembly for light and heavy compactiontest for soils.
4. Braja.M.Das, "Geotechnical Engineering Handbook", Cengage Learning, 1st Edition, 2014.