Geotechnical Engineering Lab

Lab In charge: Mr. K. Shyam Chamberlin

The laboratory is equipped with all modern machineries required for advanced research and consultancy services. All the equipments mentioned in the syllabus content of the undergraduate and postgraduate program can be carried out in the laboratory. The obsolete equipments and methods are periodically replaced with latest arrivals and methods, and the condemned equipments are used to explain the historical development. The strength test of soils using latest triaxial testing machine with CPU is attached with an Electronics Instrumentation system in which the LVDT shows the display of pore pressure, deformations and load, spring type unconfined compression test & direct shear test apparatus also use for various soils.

The compaction method of determining maximum density was replaced by Relative density test apparatus and laboratory standard proctor test. Field tests like consolidation test, Plate Load Test and Standard Penetration Test are demonstrated to students. The student's theoretical knowledge is reinforced with practical problems by explaining the consultancy reports. The proctor compaction test is coupled with proctor penetrometer to explain its field significance which are well equipped.

LIST OF EXPERIMENTS
1. Determination of water content by Oven Dry method.
2. Visual Identification of soil.
3. Determination of specific gravity by
a) Density Bottle Method
b) Pycnometer Method
4. Determination of Grain size analysis by IS Sieve method.
5. Determination of Field Unit Weight by Core Cutter method.
6. Determination of Field Unit Weight by Sand Replacement method.
7. Determination of Liquid Limit by
a) Casagrande Apparatus
b) Uppal's Method
8. Determination of Plastic limit & Shrinkage Limit.
9. Determination of Relative Density of Cohesionless soil.
10. Determination of Grain size analysis by Hydrometer method.
11. Determination of Coefficient of permeability by Constant head permeability.

method.
12. Determination of Coefficient of permeability by Variable head permeability method.
13. Determination Swelling characteristics by Free Swell Index Test.
14. Determination of Compaction characteristics by
a) Standard Proctor Compaction Test
b) Modified Proctor Compaction Test
15. Determination of Shear strength parameters of soils by Direct shear test.
16. Determination of Undrained shear strength of soft clays by Vane shear test.
17. Determination of Unconfined Compressive Strength of soils.
18. Determination of shear strength parameters of soils by Tri axial test apparatus.

TRIAXIAL APPARATUS

UNCONFINED COMPRESSION TEST APPARATUS

RELATIVE DENSITY APPARATUS