

## GEOTECHNICAL ENGINEERING LAB

The Geotechnical Engineering Lab plays a vital role in understanding the behavior of soil and rock materials under various conditions, enabling engineers to design safe and efficient foundations, retaining structures, and earthworks. Through laboratory studies such as soil classification, compaction, permeability, shear strength, and consolidation tests, students gain hands-on experience that bridges theoretical knowledge with real-world applications. The lab outcomes include improved decision-making in site selection, foundation design, slope stability analysis, and risk assessment for infrastructure projects. Students have the opportunity to do their final year projects in the lab especially in the area of Slope stability, Foundation design and soil profile identification. For consultancy, the lab delivers reliable data on soil properties crucial for designing foundations, assessing slope stability, and evaluating site suitability for construction projects.

## LABORATORY DETAILS

Name of the laboratory	<b>TRANSPORTATION ENGINEERING LAB</b>
Carpet area	<b>164 m<sup>2</sup></b>
No. of machines or experiment setups	<b>20</b>
No. of experiments conducted	<b>17</b>

## SPECIFICATION OF EQUIPMENTS/SETUPS AVAILABLE

Sl. No	Equipment
1	Field Density Measurement – 1. Core Cutter
2	Field Density Measurement – 2. Sand Replacement
3	Compaction Test Apparatus – 1. Light
4	Compaction Test Apparatus – 2. Heavy
5	Permeability Apparatus – 1. Constant Head
6	Permeability Apparatus – 2. Falling Head
7	Consistency Limit Apparatus – 1. Liquid Limit
8	Consistency Limit Apparatus – 2. Plastic Limit
9	Consistency Limit Apparatus – 3. Shrinkage Limit
10	Sieve Analysis Apparatus – Sieve Shaker And Sieves
11	Vane Shear Test Apparatus
12	Direct Shear Apparatus
13	Triaxial Shear Test Apparatus
14	Consolidometer
15	UCC Test Machine
16	Soil Sample Extractor
17	Soil Hydrometer
18	CBR Testing Apparatus
19	Universal Automatic Compactor
20	Pycnometer