

GEOTECHNICAL ENGINEERING LABORATORIES

VENUE

Ground Floor, Civil Engineering Department
University of Engineering & Technology, Lahore.

Objectives

- To provide geotechnical testing facilities for under-graduate and graduate classes related to their academic courses.
- To provide research facilities for post graduate scholars.
- To provide geotechnical testing and consultancy services to construction industry.

Laboratory Administration:

Head, Geotech. & Transportation Engineering Division	Prof. Dr. Aziz Akbar
Laboratory Director:	Prof. Dr Khalid Farooq
Laboratory Dy. Director	Engr. Hassan M. Shahzad

Lab. Staff:

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|---------------------|------------------|
| 1. Mr. Aslam Fareed | (Supervisor) |
| 2. Mr. M. Shoaib | (Lab Assistant) |
| 3. Mr. Saeed Akhtar | (Lab Assistant) |
| 4. Mr. M. Sadiq | (Lab Attendant) |
| 5. Mr. Ansar Abbas | (Lab Attendant) |

Laboratory Equipments Available:

- Sieve sets and shakers
- Direct shear test machines
- Triaxial test machines
- Unconfined compression test machines
- SPT
- Plate Load Test
- Automatic Compactor
- Relative Density Test
- Field Density
- CBR Testing machines
- Specific Gravity
- Hydrometer

- Atterberg Limits
- Consolidometers,
- Permeameters
- Dilatometer
- Pressuremeter

Lab Softwares

- DS6
- Picolog

Courses Related to the Laboratory

- Geotechnical Engineering-I
- Geotechnical Engineering-II
- Pavement and Foundation

List of Experiments

Geotechnical Engineering-I

- Determination of Moisture content
 - By oven dry method (ASTM D 2216)
 - By speedy moisture meter (ASTM D 4944)
- Determination of specific gravity of soils (ASTM D 854)
- Grain size analysis of soil (ASTM D 422)
 - Sieve analysis
 - Hydrometer analysis
- Determination of Atterberg's Limit
 - Liquid limit
 - Plastic Limit
 - Shrinkage Limit
- Determination of field density of soil
 - Core cutter method (ASTM D 2937)
 - Sand replacement method (ASTM D 4914)
- Performance of Compaction Test
 - Standard AASHTO method (ASTM D 698)
 - Modified AASHTO method (ASTM D 1557)
- Performance of consolidation test on soil sample (ASTM D 2435)
- Performance of Permeability test on soil samples (ASTM D 2434)
 - Constant head permeameter
 - Falling head permeameter

Geotechnical Engineering-II

- Calibration of speedy moisture meter (ASTM D 4944)
- Performance of Index Density test and Unit weight of granular soils (ASTM D 4253 & 4254)
- Performance of Direct shear test (ASTM D 3080)
- Unconfined Compressive Strength of cohesive soils (ASTM D 2166)
- Performance of triaxial compression test (ASTM D 2850)
- Effect of cement stabilization on compressive strength of soil
- Performance of standard penetration test (ASTM D 1586)

Pavement & Foundations

- Calibration of Pressure Transducer and Displacement Transducer
- Demonstration of Pressuremeter (PMT)
- Demonstration of Dilatometer (DMT)
- Design of flexible pavement by Group Index Method
- Design of Flexible pavement by California Bearing Ratio (CBR) method
- Design of Rigid pavement by Westerguard's method
- Demonstration of Benkelman beam

Research Projects:

- Stabilization of subgrade soil using Tensar
- In-situ testing using Pressuremeter and Dilatometer
- Stabilization of expansive soils using different additives

Students at Work



Performing Atterberg Limits Test



Performance of CBR Test



Plate Load Test



Dilatometer Test



Digital Triaxial Testing