

DEPARTMENT OF CIVIL ENGINEERING

LABORATORY FACT SHEET

SOIL MECHANICS LABORATORY



Introduction: Soil Mechanics is an important branch of civil engineering that contributes to the understanding of ground behaviour. Laboratory testing forms an integral part of the studies required to provide engineering parameters in the design of building and bridge foundations, dams, road and airfield pavements, tunnels, embankments and slopes. Our soil mechanics laboratory is well equipped and provides students with all facilities required to deepen their understanding of the principles governing soil engineering properties and behaviour.

Equipment list



Apparatus

Cone penetration test for determination of liquid limit



Compaction test for determination of dry density v/s moisture content relationship



California Bearing Ratio (CBR) for determination of subgrade strength

List of Experiments

The laboratory facilities are used by students to experiment on the following aspects of the ground:

Soil classification

- Soil identification & description
- Particle size distribution, including sedimentation test
- Specific gravity
- Plasticity of cohesive soils
- Linear shrinkage

Mechanical stabilisation

- Standard and Modified Proctor tests
- Unsoaked and soaked CBR tests

In-situ density

- Sand cone replacement test

Soil permeability

- Constant head test
- Variable head test



Oedometer to study consolidation characteristics

One dimensional consolidation and swell characteristics of soils

Total stress and effective stress shear strength of soils

Compressive strength of rock



Shear box for determination of shear strength parameters

Consultancy services

The Soil Mechanics Laboratory has been offering its testing services to industry for more than 25 years. It has been involved in the testing of soils and rocks for most of the major civil engineering projects in Mauritius. Examples of most recent involvement are:

- **SSR Airport New Terminal Building**
- **Bagatelle Dam**
- **Terre Rouge – Verdun – Trianon Link Road**
- **Port-Louis Ring Road**
- **High rise buildings in Port Louis and Ebene**



Triaxial test for determination of shear strength parameters with measurement of porewater pressures.



Computer controlled triaxial test for simulation of stress paths

Contact Details

Academic staff:

Dr A. Chan Chim Yuk
(achan@uom.ac.mu)

Technical staff:

Mr. S.A. Venkatasawmy
(vencat@uom.ac.mu)



Point load index test for determination of compressive strength of rock cores

