DEPARTMENT OF CIVIL ENGINEERING
INTEGRAL UNIVERSITY, LUCKNOW
GEOTECHNICAL LAB

This course provides a scientific and engineering basis for understanding soil issues and problems. The design of a structure which is economical and safe to construct, is durable and has low maintenance costs, depends upon an adequate understanding of the nature of the ground. This understanding comes from an appreciation of the distribution of the materials in the ground, and their properties and behavior under various influences and constraints during the construction and lifetime of the structure. An adequate and properly structured site investigation is therefore an essential part of any civil engineering or building project.

S.NO.	APPARATUS NAME	IMAGE	DISCRIPTION
1	**PYCNOMETER FOR SPECIFIC GRAVITY OF SOIL** **IS: 2720-3**		**The Pycnometer is used for determination of the specific gravity of solid particles of both fine grained and coarse grained soils. The specific gravity of solids is determined using the relation:**

2	**DENSITY BOTTLE** **IS: 2720-3-1**		**Density bottle is used to determine the specific gravity of soil fraction passing 4.75 mm I.S sieve by density bottle**

3	**PROCTOR TEST MOULD IS: 2720-7**		**The proctor instruments are used to achieve maximum dry density and optimum moisture content in lab (controlled condition & efforts).**
4	**CORE CUTTERAPPARATUS IS:2720-29**		**The apparatus is used to determining the dry density of in-situ soil (generally is sandy soil).**

5	**SAND CONE APPARATUS IS:2720-28**		**The apparatus is used to determine in-situ density of soil.**
6	**PERMEABILITY OF SOIL TEST (FALLING HEAD METHOD) IS: 2720-17**		**The apparatus is used to determine the permeability of the sample by falling head method in laboratory.**

7	**TRIAXIAL TEST APPARATUS IS: 2720-11**		**The apparatus is used to determine the shear strength and angle of repose of a soil sample.**
8	**CONSOLIDATION TEST APPARATUS IS: 2720-15**		**The apparatus is useful is obtaining the required data of coefficient of consolidation recompression.**

9	CASAGRANDE APPARATUS FOR P.I OF COHESIVE SOIL IS: 2720-5		The apparatus is use to determine the index properties of the soil sample.
10	VIBRATORY TABLE (FOR R.D. OF COHESSIONLESS SOIL) IS:2792		The apparatus to be used for maximum and minimum relative density of given soil sample.

11	**DIRECT SHEAR TESTING MACHINE IS: 2720-13**		**It is used to determine the shearing strength of the soil sample**