

ANNAMACHARYA UNIVERSITY
CIVIL ENGINEERING DEPARTMENT

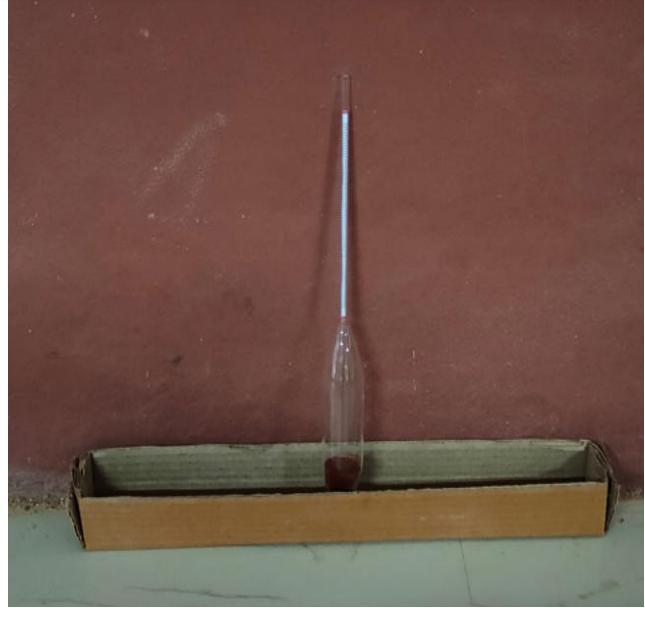
Name of the Lab: Soil Mechanics

Name of the Lab in-charge: Mr. V. Haneef

S.No.	Equipment Photo	Name of the Equipment	Specifications	Price
1.		Casagrande Apparatus	<ul style="list-style-type: none"> Brass cup with hard rubber base. Cup drop height: $10 \text{ mm} \pm 0.2 \text{ mm}$. Handle providing 2 revolutions/sec (approx.). Grooving tools: Casagrande type & ASTM type 	Rs.4,892/-
2.		CBR Test	<ul style="list-style-type: none"> Loading frame: capacity 50 kN or more. Penetration piston: 50 mm diameter, length $\geq 100 \text{ mm}$. Proving ring / load cell: 50 kN capacity, accuracy $\pm 0.5\%$. Dial gauge: 0.01 mm sensitivity, range 25 mm. Mould: 150 mm diameter \times 175 mm height. 	Rs.1,28,781/-

3.		Consolidation Test	<ul style="list-style-type: none"> • Fixed ring oedometer cell. • Specimen size: 60 mm diameter, 20 mm thickness (standard). • Load frame: capacity 10 kN, lever ratio 1:10 or 1:12. • Dial gauge: 0.002 mm sensitivity, range 10 mm. • Porous stones top and bottom. 	Rs. 52,066/-

4.		<p>Direct Shear Test</p>	<ul style="list-style-type: none"> • Shear box size: 60 mm × 60 mm × 25 mm (standard). • Loading frame: capacity 5–10 kN. • Proving ring/load cell: accuracy $\pm 0.5\%$. • Horizontal displacement dial gauge: 0.01 mm sensitivity. • Vertical dial gauge: 0.01 mm sensitivity 	Rs.1,34,608/-
5.		<p>Hot Air Oven</p>	<ul style="list-style-type: none"> • Temperature range: 50 °C to 250 °C. • Oven to maintain temperature at :105°C to 105 °C. • Thermostatic control with sensitivity ± 1 °C. • Double-walled, insulated chamber. • Inside 450x450x450 mm 	Rs.23954/-

6.		<p>Hydrometer</p>	<ul style="list-style-type: none"> • Conforming to IS: 2720 (Part 4). • Range: specific gravity of soil suspension. • Calibration at 27 °C. • Graduated to read 0.995 to 1.030 (g/cm³). 	Rs.3.104/-
7.		<p>Plastic Limit test</p>	<ul style="list-style-type: none"> • Porcelain evaporating dish. • Ground glass plate: 300 mm × 300 mm. • Spatula: 75 mm long. • Rod: 3 mm diameter for rolling threads. 	Rs.1,621/-

8.	 <p>COMPACTIION TEST A . STANDARD PROCTOR TEST B . MODIFIED PROCTOR TEST</p>	<p>Compaction Test Apparatus</p>	<ul style="list-style-type: none"> • Cylindrical mould: 1000 cc capacity, 100 mm diameter \times 127 mm height (Light compaction). • Rammer: 2.5 kg, free fall 310 mm (Light compaction). • For Heavy compaction: <ul style="list-style-type: none"> • Mould same as above. • Rammer: 5 kg, free fall 450 mm. 	Rs.21,399/-
9.		<p>Pycnometers</p>	<ul style="list-style-type: none"> • Capacity: 1 liter. • Fitted with conical brass cap with a hole 6 mm dia. • Glass type or brass type (per IS: 2720 Part 3). 	Rs.3,049/-

10.		Sieves	<ul style="list-style-type: none"> As per IS: 460. Diameter: 200 mm or 300 mm. Mesh sizes commonly used: 4.75 mm, 2.36 mm, 1.18 mm, 600 μm, 425 μm, 212 μm, 150 μm, 75 μm. Frame: brass or stainless steel. Brass sieves IS Sieves(4.75mm to 150μ) (7) 	Rs.12,603/-
11.		Electronic Balance	<ul style="list-style-type: none"> Electronic balance of 5kg with 0.5 g Sensitivity: 0.01 g. Counterpoise weights for moisture content and Atterberg limits. Temperature $23 \pm 2^\circ\text{C}$ Related humidity $50 \pm 10\%$ 	Rs.16,992/-

12.	 <p>A photograph of a tri-axial test apparatus. The main unit is a white control panel with two pressure gauges and a central digital display. Above the control panel is a vertical assembly with a large dial gauge and a smaller gauge. The entire setup is mounted on a wooden base. A blue sign at the bottom of the base reads 'Tri axial test apparatus'.</p>	<p>Tri-axial Test</p>	<ul style="list-style-type: none"> • Specimen size: 38 mm dia × 76 mm height (standard). • Cell pressure range: up to 10 kg/cm². • Loading frame: 50 kN capacity. • Dial gauges: 0.01 mm sensitivity. • Pressure panel with mercury or digital gauge. <p>Rs.3,11,991/-</p>
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13.

Vane Shear Test

- Vane size: 12.7 mm × 12.7 mm (height = 2 × dia).
- Torque measuring device: proving ring or torque head.
- Range: 0–2 kg/cm² (for soft to stiff clays).

Rs.23,588/-

14.		<p>Water Permeability Test</p>	<ul style="list-style-type: none"> • Specimen: 37.5 mm dia \times 1 m height (standard). • Standpipe (falling head): internal diameter 5–10 mm. • Compaction permeameter mould for remoulded soil. • Pressure head arrangement for constant head. 	<p>Rs.39,250/-</p>
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