





ANNAMACHARYA UNIVERSITY
CIVIL ENGINEERING DEPARTMENT



Name of the Lab: Strength of Materials Lab

Name of the Lab in-charge: Mr. Ashraf Ali Shaik

S.No.	Equipment Photo	Name of the Equipment	Specifications	Price
1.		Universal Testing Machine	Capacity: 100 Ton (1000 kN) Make: Enkay	Rs. 10,00,000/-

2.	 <p>The image shows a Charpy impact testing machine. It features a vertical pendulum arm with a hammer at the end, mounted on a base. A large circular scale is visible on the side of the pendulum arm. Above the machine, there are two blue labels: one titled 'Impact Testing Machine' and another titled 'INTERNAL'.</p>	Impact testing Machine	<p>Charpy and Impact Tension Test (Izod Test)</p> <p>Pendulum drop angle: $140^\circ / 85^\circ 21'$</p> <p>Effective Weight: 20.996 kg / 22.057 kg</p> <p>Speed: 5.346 m/sec / 3.857 m/sec</p> <p>Impact Energy: 300 J / 164 J</p> <p>Min. Graduation: 2 J</p> <p>Distance of axis of hammer rotation and center of test piece: 825 mm</p> <p>Max. permission loss by friction & windage etc: 0.5 of max. impact energy</p> <p>Make: Heico</p>	Rs 1,57,700/-
3.	 <p>The image shows a beam bending apparatus. It consists of a horizontal beam supported by a fixed support on the left and a hanger on the right. The hanger is used to apply a load to the beam. A dial gauge is attached to the beam to measure deflection. Above the apparatus, there is a blue label that reads 'Unsymmetrical Bending Beam Apparatus'.</p>	Unsymmetrical Bending Beam Apparatus	<p>Beam Material: Mild steel</p> <p>Beam Cross-Section: Rectangular</p> <p>Loading Mechanism: Hanger with slotted weights.</p> <p>Support Type: One end fixed, other end loaded.</p> <p>Measuring Device: Dial gauge</p>	Rs 33,750/-

4.	 <p>The image shows a laboratory setup for studying the elastic properties of a deflected beam. A horizontal beam is supported by two blue rigid clamps on a white table. A hanger with slotted weights is attached to the center of the beam. A dial gauge is positioned to measure the deflection at the mid-span. A sign above the setup reads 'Elastic Properties of Deflected beam Apparatus'.</p>	Elastic Properties of Deflected beam Apparatus	<p>Beam Length: 100cm. Beam Material: Steel. Supports: Rigid clamps. Loading Mechanism: Hanger with slotted weights applied at mid-span or different positions. Measurement: Dial gauge to measure deflection at mid-span.</p>	Rs 27,500/-
5.	 <p>The image shows a laboratory setup for Clerk Maxwell's Reciprocal Theorem. A horizontal beam is supported by two blue knife-edge supports on a white table. A hanger with slotted weights is attached to the center of the beam. A dial gauge is positioned to measure the deflection at the mid-span. A sign above the setup reads 'Clerk Maxwell Reciprocal Theorem Apparatus'.</p>	Clerk Maxwell Reciprocal Theorem Apparatus	<p>Beam Setup: Simply supported beam. Supports: Knife-edge supports (rigid). Loading Mechanism: Hangers with slotted weights applied at two points. Deflection Measurement: Dial gauge Beam Material: Mild steel.</p>	Rs 27,500/-

6.		Brinell Hardness Testing Machine	<p>Rockwell cum Brinell Hardness Testing Machine</p> <p>Test Loads (Kgf): 60, 100, 150 (Rockwell); 187.5 (Brinell)</p> <p>Initial Loads (Kgf): 10</p> <p>Max. Test Height (mm): 215</p> <p>Depth of Throat (mm): 132</p> <p>Max. Depth of Elevating Screw Below Base (mm): 230</p> <p>Size of Base (mm Approx.): 430 x 180</p> <p>Machine Height (mm): 635</p> <p>Net Weight (kg Approx.): 70</p> <p>Make: Heico</p>	Rs. 1,24,500/-
7.		Continuous Beam Apparatus	<p>Beam Length: 100 cm</p> <p>Supports: Combination of knife-edge, hinged, and roller supports (to simulate real boundary conditions).</p> <p>Loading Mechanism: Hangers with slotted weights applied at different spans.</p> <p>Measurement: Dial gauges</p>	Rs 31,500/-

8.	 <p>A photograph of a laboratory setup for testing the deflection of a steel beam. A horizontal beam is supported by two red vertical stands. A dial gauge is attached to the beam to measure deflection. Several black weights are placed on the beam to apply load. A sign above the setup reads 'Deflection of steel Beam Apparatus'.</p>	<p>Deflection of Steel Beam Apparatus</p>	<p>Beam Length: 70–100 cm (approx.). Beam Material: Mild steel, brass, or aluminium. Supports: Simple supports (knife-edge supports). Loading Mechanism:</p> <ul style="list-style-type: none"> Hanger with slotted weights applied at mid-span or at various positions. <p>Measurement:</p> <ul style="list-style-type: none"> Dial gauge / deflection indicator placed under load point or at mid-span. Experimental values compared with theoretical 	<p>Rs 27,500/-</p>
9.	 <p>A photograph of a Heico Digital Torsion Testing Machine. The machine is white and blue, with a digital display and control panel. It is used for testing the torsional strength of materials. A sign on the wall behind it reads 'Torsion Testing Machine (100 NM Capacity)'.</p>	<p>Torsion Test</p>	<p>Specification: HI 110.60 Max Torque Capacity (N-m): 100 Torque Ranges (N-m): 0-20, 20-100 Resolution (N-m): 0.01, 0.1 Torsion Speed: 0.5 R.P.M Clearance between Grips (mm): 0-420 Grips for Round bars (mm): 4-8, 8-12 Grips for Flat bars Width (mm): 1-5, 25 Motor: 3ph H.P. (approx.) 0.5 Make: Heico</p>	<p>Rs. 2,90,500/-</p>

10.		Spring Test	<p>Force in Tension & Compression (N): 2000</p> <p>Clearance for Compression (mm): 0-500</p> <p>Clearance for Tension (mm): 5-500</p> <p>Sensitivity of Load (N): 1</p> <p>Sensitivity of Displacement (mm): 0.1</p> <p>Power Supply: 220V AC, 50Hz</p> <p>Make: Heico</p>	Rs. 3,11,250/-
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