

ANNAMACHARYA UNIVERSITY
CIVIL ENGINEERING DEPARTMENT

Name of the Lab: Surveying Lab

Name of the Lab in-charge: Mr. S. Venkata Vara Prasad

S.No.	Equipment Photo	Name of the Equipment	Specifications	Price
1.		Total Station	<ul style="list-style-type: none"> • Electronic theodolite + EDM + microprocessor • Angle accuracy: 2"-5" • Distance range: 3–5 km with prism, 300–500 m without prism • Dual side LCD • Data storage with USB • Rechargeable battery: 6–8 hours backup 	Rs. 4,40,000/-

2.		Theodolite	<ul style="list-style-type: none"> • Vernier/Digital • Least count: 20" (vernier), 1"-5" (digital) • Telescope magnification • Field of view: 2° • Accuracy: $\pm 5''$ 	Rs. 1,10,880/-
3.		Auto Level	<ul style="list-style-type: none"> • Magnification: 30times of original • Accuracy: ± 2 mm/km double run • Automatic compensator • Working range= $\pm 15'$ • Objective aperture: ~36 mm • Min. focus distance: 0.3–0.5 m. 	Rs. 1,00,000/-

4.	 <p>A Dumpy Level instrument is shown on a white surface next to a row of six wooden carrying cases. Above the cases, a blue sign reads "DUMPY LEVEL".</p>	Dumpy Level	<ul style="list-style-type: none"> Optical levelling instrument Magnification: 25times of original Accuracy: ± 3 mm/km double run Rigid telescope Min. focusing distance: 0.5 m. 	Rs. 81,000/-
5.	 <p>A rack holding several leveling staffs. A blue sign above the staffs reads "LEVELLING STAFF". The staffs are made of aluminum and are graduated in meters.</p>	Levelling Staffs	<ul style="list-style-type: none"> Length: 5 m Graduated in meters (E-pattern) 4 sections Lightweight aluminium. 	Rs. 7200/-

6.		Tripod stands	<ul style="list-style-type: none"> • Aluminium • Adjustable height: 1.8 m • Telescopic legs with pointed shoes • Flat head fitting. 	
7.		Compass	<ul style="list-style-type: none"> • Graduation: 0–360° (WCB) and 0–90° (QB) • Least count: 30'–1° • Needle: 100–150 mm • Magnetic damping. 	Surveyor's: Rs. 25,000/- Prismatic: Rs. 21,000/-

8.		Plane Tables	<ul style="list-style-type: none"> • Board size: 600×750 mm • Wooden • Mounted on tripod 	Rs. 29,925
9.		Tapes	<ul style="list-style-type: none"> • Types: Cloth • Lengths: 5m and 30m • Graduated in cm & m • Width: 16 mm; • Accurate for linear measurements. 	Rs. 8,885/-

10.		Chains	<ul style="list-style-type: none"> • Types: Metric • Length: 20 m and 30 m • 100 links of 20cm • Material: Galvanized steel wire (4 mm) • Brass handles and tallies. 	Rs. 18,000/-
11.		Arrows	<ul style="list-style-type: none"> • Steel wire (3 mm thick) • Length:400 mm • One end bent into a ring for handling • Used for marking chain lengths. 	Rs. 1,400/-

12.



Ranging rods

- Length: Standard lengths are 2 m, 3 m, or 4 m (most common is 3 m).
- Diameter: Approximately 30 mm (3 cm).
- Material: Made of seasoned wood, bamboo, or light metal (aluminium/steel tubing).
- Markings: Painted with alternating bands of black and white or red, white, and black, each band usually 20 cm to 30 cm wide to make it visible at a distance.

Rs. 7,500/-

13.



Cross staff

- Height: Fixed to a pole about 1.2 m to 1.5 m long for comfortable handling.
- Material: Made of brass, gunmetal, or aluminium.
- Sighting: Slits or sights are about 5–8 mm wide.

Rs. 8,000/-

14.



Plane Table Accessories

- A simple straightedge (about 50–60 cm long) with sight vanes at ends.
- Made of brass or steel, fork shape holds the plumb bob below.
- Small compass in a trough-shaped box, 100–150 mm long, with a magnetic needle.
- Small tubular or circular bubble level, detachable, kept on the table during leveling.

Rs. 36,000/-