SURVEYING LAB

Courses Covered:

1. CET-112-L-Surveying

DEPARTMENT OF CIVIL ENGINEERING TECHNOLOGY

PUNJAB TIANJIN UNIVERSITY OF TECHNOLOGY, LAHORE

Course Title: CET-112-L-Surveying

List of Experiments:

1. To range out a survey line using ranging rods (Direct & indirect ranging).
2. To measure the horizontal distance between two terminal stations by different methods (Pacing, Measuring Tape and Chain).
3. To determine the horizontal distance between the two terminal stations on a sloping ground by **(i).** Stepping Method. **(ii).** Using Abney Level.
4. To set out baseline and perpendicular line/offsets in the field using optical square and 3-4-5 method.
5. Layout of rooms of a house by offset method using Pythagoras Theorem.
6. To measure the magnetic bearing of a lines with the help of Prismatic Compass.
7. Introduction to Auto level and its temporary adjustment and determine staff reading on natural ground by using Auto Level.
8. To draw profile (L-section) and cross-sectional levelling of an existing road by obtaining data using Auto level. (In two Sessions).
9. Introduction to Digital Theodolite, its temporary adjustment and determine horizontal angle, vertical angle and bearing.
10. To determine latitude and departure of lines and calculate the area of closed traversed by coordinate's method.
11. To determine the Horizontal distances and Vertical distances by Tachometric Surveying.
12. To determine the independent coordinates of an existing building by Theodolite Traversing and plot its coordinates by using AutoCAD Software. (In two Sessions).
13. To measure the Heights of buildings and determine R.L at top of elevated object by Trigonometric Levelling.
14. To perform Contouring activity using Total Station.
15. To perform Stake-out activity using Total Station.

List of Equipment's:

1. DSZ3 Leveling Instrument (Quantity = 15).
2. Leveling Instrument Tripod (Quantity = 15).
3. Double Side Leveling Rod (Quantity = 15 Pairs).
4. Foot Pad (Quantity = 30).
5. Total Station (Quantity = 12).
6. Prism (Quantity = 24).
7. Plumbing Pole (Quantity = 24).
8. Tripod (Quantity = 36).
9. Digital Transits (Quantity = 02).
10. Automatic Levels (Quantity = 05).
11. Plane Table Apparatus (Quantity = 02 Sets).
12. Ranging Rods (Quantity = 30).
13. Prismatic Compass (Quantity = 08).
14. Surveyor Compass (Quantity = 03).
15. Engineer's Chain (Quantity = 10).
16. Gunter's chain (Quantity = 05).
17. Revenue Chain (Quantity = 05).
18. Metric Chain (Quantity = 01).
19. Handheld GPS (Quantity = 01).

20. Differential GPS (Quantity = 01).
21. Planimeter (Quantity = 01).
22. Surveyor Safety Jacket (Quantity = 50).
23. Survey Umbrella (Quantity = 10).
24. Safety Hat/Helmet (Quantity = 50).

Total Station

Digital Transits

Planimeter

Surveyor Compass

Automatic Levels

Prism

Differential GPS

Handheld GPS

Prismatic Compass

Tripod, Staff, Ranging Rod, Prism Pole Stand etc.