

- **Plane Table Surveying**
 - General description
 - Instruments
 - Procedure
 - Methods of Plane Tabling
 - Advantages and Disadvantages of Plane Table Surveying
 - Errors in Plane Table Surveying
 - two point & three points problems
- **Prismatic Compass Survey**
 - General description
 - Bearing
 - Compass Traverses (open and close).
 - Calculation of Included Angles & Calculated Bearings,
 - Plotting from the True North
 - Adjustment of Errors
 - Compass Sketch Surveys
 - Fixing New Station
 - Combined Traverses and Sketch Surveys
- **Triangulation Surveys**
 - Theodolite and Types of Theodolites
 - Parts of Theodolite
 - Use of Theodolite
 - Adjustments of the Instrument
 - Measurement of Horizontal and Vertical Angles
 - Measurement of Base Line
 - Triangulation Surveys
 - Filling in of Detailing with Plane Table in Triangulation Surveys.
 - Finding out Height of Inaccessible Objects.

Books Recommended:

1. Maginr D. J (1991):. Geographic Information System. Longman London
2. Brinker R.E. & W.C. Taylor (1962): Elementary Surveying, The International Text Book Company.
3. Usili G.W. (1960): Practical Surveying. The Technical Press Ltd.
4. Clendinning, J. (1960): Principles of Surveying. Blackie and Sons, Limited Glasgow,
5. Rubey, H. et .al (1958): Engineering Surveys. The Macmillan Company.
6. Breed, C.B. & G.L. Hosmer (1953): Surveying. John Wiley & Sons.
7. Thomas W.N. (1942): Surveying, John Wiley and Sons.
8. Kanetkar, T.P. & S.V. Kulkarni (nd): Surveying and Leveling part-I. Union Book Stall Karachi.