

Total Stations (For Topographic Surveying and Setting Out) Three-Day Course

Course Overview

This course is designed to give Junior Surveyors, engineers and personnel in the surveying and construction industry a good grounding in how to use modern total stations and is aimed at new recruits or staff who have little or no experience of using modern total stations. Please Note: - a separate 2 day levelling course is also available.

The course covers best practice in the use of total stations for both basic detail surveying and setting out and is applicable to candidates working in either the surveying or the construction industries. Practical exercises back up the theory learned in the classroom.

The Total Station will be used to measure angles and distances, also to store measurements and co-ordinates to be downloaded to a computer for mapping, and checking against required measurements. The course is taught with a Manual (Non Robotic) instrument, to give students confidence in accurate pointing.

Hand calculations are kept to a minimum, but a knowledge of mathematics and the use of the scientific calculator prior to coming on the course would be an advantage.

Summary of main topics covered by the course:

- Introduction; Health & Safety (Using a total station)
- Horizontal and vertical angles Total station – angle measurement theory
- Total station – distance measurement theory
- Total station – setting up and using the instrument and Target.
- Practical field exercise familiarising with the Total Station
- Menu system – creating a job – entering co-ordinates
- Slope, horizontal distances and Height Difference Reduction (in the Instrument)
- Practical field exercise measuring targets with the Total Station
- Prism constants and atmospheric settings and Non Prism reflector less measurements
- Introduction to co-ordinates and how to establish a new station from a base line.
- Using known stations, and back sights, for orientation,
- Observing, downloading and plotting of field surveyed points – Field exercise
- Resection and free-station Programs
- Menu system – setting out
- Field practice setting out by co-ordinates
- Menu system – overview of other functions (such as reference line, remote height, tie distance and area.)
- Review, questions and close –

At the end of the course students receive a certificate of attendance/completion.

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