

Land Surveying & Setting Out courses

S4 - SETTING OUT FOR ENGINEERS FIVE-DAY COURSE

THIS COURSE IS DESIGNED TO GIVE ENGINEERING GRADUATES AND PERSONS WORKING IN THE CONSTRUCTION INDUSTRY EXPERIENCE IN THE PRINCIPLES AND PRACTICAL APPLICATION OF SITE SETTING-OUT

The automatic level and the Total Station are still the most widely used site setting-out instruments and this course ensures that staff are competent to use both of these instruments correctly and effectively on site.

Although some participants may have some previous experience with surveying instruments these are revised from basics to ensure that everyone has a full understanding of their application and use.

Emphasis is put on making use of the many built-in functions of the Total Station, which can greatly speed up operations and efficiency on the site.

The participant is expected to have a fair grasp of mathematics as the syllabus includes calculation of gradients, co-ordinates and bearings and distances.

SUMMARY OF MAIN TOPICS COVERED BY THE COURSE

- Efficient use of the scientific calculator
- The metric system and angular measurement
- Principles of levelling and levelling equipment
- Practical levelling to find the elevation of a new point
- Adjustment of levelling misclosure
- Checking the level instrument for collimation error and adjusting
- Practical exercise to calculate gradients and set out construction profiles to the required level
- Revision of the Total Station including setting up over a known point, operation of the instrument and the required settings
- Understanding prism constant, temperature and pressure corrections
- Using the Total Station – starting a new job, entering known station co-ordinates and co-ordinates for setting-out
- Using the Total Station – finding the instrument position by free-station (resection) from known points
- Establishing site control with the Total Station
- Calculation of co-ordinates and conversion from rectangular and polar systems
- Setting-out structures by co-ordinates
- Setting-out structures using the Total Station built-in functions
- Transfer of data between computer and instrument for setting-out in the field