

Terminology

The activities included on this disk are closely related to Surveying and therefore the students may not be familiar with some of the jargon associated with the profession.

INSTRUMENTS

These are items of equipment surveyors use for measurements of various types:

Theodolite	Measures horizontal and vertical angles.
Total Station	Measures horizontal and vertical angles, but also distances EDM
EDM	Electronic Distance Measurement – can be attached to a theodolite.
	Is included as part of a total station
Level	An instrument designed to view horizontally – so it cannot be tilted
Staff	Much like a ruler – it is used with a level to measure changes in height
Planimeter	Used measuring area from map representations.

JARGON

These terms are used in everyday conversation for surveyors:

Traverse	A series of lines observed with distances and bearings for each line. Usually a traverse will form a loop or join two other points which have known co-ordinates and/or heights
Elevation	Height above Mean Sea Level – the level the water would be if there were no tides
Vertical Angle	Also known as the Zenith angle, it is the angle measured from directly above (the zenith) – so perfectly horizontal will have a vertical angle of 90°. If you are looking to somewhere higher, the vertical angle will be less than 90°, while looking further down will be greater than 90°.
Northings and Eastings	In terms of a map, these are rectangular co-ordinates, where Northings are recorded on the y axis and Eastings on the x axis. Not surprisingly, the y axis and x axis are aligned in the Northern and Eastern directions. The co-ordinates will be based on initial values assigned to a 'false origin'.
Misclose	When completing any sort of traverse or measurement between two known places or values, any difference between the known values and your measurements is called a misclose. A small misclose is fine, as it reflect the error inherent in all types of measurement (it is not possible to measure perfectly), but a large misclose usually indicates a more serious error – such as the misrecording of some information or some miscalculation.

Bearing	Horizontal angle measured in a clockwise direction from North. These are most often given in degrees minutes and seconds form, rather than radians or decimal degrees.
Backsight and Foresight	When observing to a point you already know of, or have measured previously, you are taking a backsight. This is one of the first steps taken when traversing, to make sure the orientation of the traverse will conform with the surrounding work of previous surveys. A foresight is the term applied to observations towards the next point in the traverse. Foresight and backsight are also used in levelling, where you don't exactly traverse from point to point, but you do measure the changes in height.
False Origin	A grid reference at a known point – exactly like the origin (0,0) of functions in mathematics. The only difference is that some very large number is assigned to the Northing and Easting value at this point, to avoid negative numbers being introduced as you move South and West from that origin. The false origins used in the current national system are all 800,000mN (metres in the Northern direction), and 400,000mE (metres in the Eastern direction)
Calibration	The result of testing and adjusting a piece of equipment so that it is as accurate as possible. If it cannot be made to be accurate, then the calibrated value can be used in calculations. E.g. if you have a 10m tape, but the first 10cm has been cut off, you know you have to measure an extra 10cm to get the length you really want.