



SNS COLLEGE OF TECHNOLOGY

Coimbatore – 641 035

An Autonomous Institution



DEPARTMENT OF CIVIL ENGINEERING

23GET102-BASIC CIVIL AND MECHANICAL ENGINEERING

I YEAR / I SEMESTER

UNIT 1 : CIVIL ENGINEERING MATERIALS AND SURVEYING

Topic : SURVEYING



UNIT 1 : CIVIL ENGINEERING MATERIALS AND SURVEYING

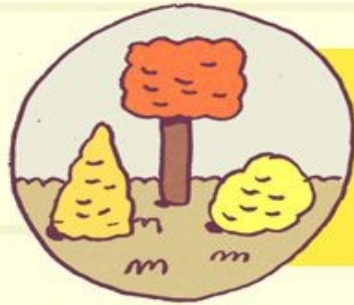


1. *Introduction to Civil engineering*
2. *Scope of civil engineering*
3. *Building materials*
4. *Brick, stone, cement, concrete, properties-uses*
5. *Introduction to Surveying*
6. *Objectives – types – classification – principles of Surveying*
7. *Measurements of distances, angles*
8. *Concepts of Levelling*
9. *determination of areas*
10. *Illustrative examples.*



A DAY IN THE LIFE OF A *SURVEYOR*

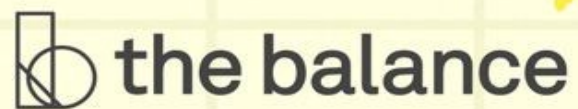
Calculate areas of land parcels and easements using mathematics and computer software



Interface with civil engineers, landscape architects, cartographers, or urban planners

Conduct physical site surveys using a variety of equipment and tools

Prepare sketches and notes, and perform electronic data collection





What is Surveying?

- Surveying is the *art of determining the relative positions* of distinctive features on the earth's surface.
- This is achieved by the *measurement of distances, directions and elevations.*
- A branch of surveying which deals with *the measurement of the relative heights* of the features is known as *levelling.*





Objectives of Surveying

1. *The main object of any survey is the **preparation of a plan** or a map showing all the features of the area under consideration.*
2. *To determine the distance and angle between different objects.*
3. *To **develop methods** through the knowledge of modern science and the technology and use them in the field.*

A **plan** may be defined as a **projection of the ground** and the features upon it on a horizontal plane.



Types of Surveying

Plane
Surveying

*the curvature of the earth
is ignored.*

Geodetic
Surveying

*curvature of the earth is
taken into account*



CLASSIFICATION OF SURVEYS



Classification based upon the Nature of the field

- 1. Land surveying*
- 2. Marine (or) hydrographic surveys*
- 3. Astronomical survey*

Classification based upon the Objective of survey

- 1. Engineering surveys*
- 2. Military or defence surveys*
- 3. Geological surveys*
- 4. Mine surveys*
- 5. Archaeological surveys*



CLASSIFICATION OF SURVEYS



Classification Based Upon the Instruments Used

- Chain surveying
- Compass surveying
- Plane table surveying
- Theodolite surveying
- Tacheometric surveying
- Aerial surveying
- Photographic surveying



Assessment 1

prepare maps of ancient cultures.

observing the fluctuations of the ocean tide.

the construction of streets, water supply systems, sewers and other works

ascertain the composition of the earth's crust.

two categories: closed traverse normal open traverse.

mineral wealth below the earth surface.

observation of heavenly bodies

preparation of maps of important military areas.

Measured using triangles

useful for the designing of engineering works.



Principle of Surveying



1. *Working from the whole to the part*
2. *fixing new points by at least two independent processes*



