

Surveying and Leveling 3(1+2)

OBJECTIVE:-

To enable the students to conduct the survey work for any area and also to prepare layout of engineering structures

THEORY-

Surveying: introduction, classification and basic principles; Linear measurements, chain surveying, cross staff survey, compass survey, planimeter; Errors in measurements, their elimination and correction; Plane table surveying, methods, advantages and disadvantages. Levelling, levelling difficulties and error in levelling, contouring, computation of area and volume. Theodolite traversing, introduction to setting of curves; Total station, electronic theodolite; Introduction to GPS survey.

PRACTICAL:-

Linear measurements using different instruments; Reconnaissance survey in the field; Use of field book; Study on various types of chain used in chain survey and its components; Study of errors in chain surveying; Use of ranging rods and ranging in the field; Obstacles during chaining; Offsets in chain survey; Cross Staff; Survey of an area; Preparation of map; Study on various types of compass; Compass survey of an area; Plotting of compass survey; Plane table surveying and different methods; Study on various types of levels and its components; Setting up of dumpy level in the field; Computation of various methods for RL; Study on Levelling, L section and X sections and its plotting; Measurement of slope in the field; Study on contour and its characteristics; Contour survey of an area and preparation of contour map; Introduction of software in drawing contour; Theodolite surveying; Ranging by Theodolite; Height of object by using Theodolite; Setting out curves by Theodolite; Use of minor instruments; Use of total station, EDM in the field; Use of modern computers for surveying.

SUGGESTED READINGS :-

1. Agor R. A Text Book of Surveying & Levelling. Khanna Publishers, New Delhi .
2. Arora K R. 1990. Surveying (Vol. I), Standard Book House, Delhi.
3. Kanetkar T P. 1993. Surveying and Levelling. Pune Vidyarthi Griha, Prakashan, Pune.
4. Punmia B C. 1987. Surveying (Vol. I). Laxmi Publications, New Delhi.