

MINE SURVEY – I

Module-I(10 Hours)

Linear Measurements and Chain Survey: Uses of various types of chains and tapes. Measurement of correct length of line. Direct and Indirect ranging. Chaining along sloping ground. Obstacles in chaining. Errors and their elimination.

Module-II(10Hours)

Compass Survey: Uses of prismatic compass, Temporary adjustment, Bearing of a line, Local attractions, Correction of bearing.

Theodolite Survey: Use of theodolite, Temporary adjustment, Measuring horizontal and vertical angles, Theodolite traversing.

Module-III(10Hours)

Levelling: Use of dumpy level and levelling staff. Temporary and permanent adjustment of dumpy level. Reduction of levels by HI and rise & fall method. Error due to curvature & refraction. Sensitiveness of bubble tube, reciprocal levelling, levelling difficulties and common errors. Automatic and Electronic or Digital levels, Contouring: Contour interval and horizontal equivalent, characteristics of contours, methods of contouring- different and indirect method, contour gradient.

Module-IV(6Hours)

Modern Surveying Instruments – Electromagnetic Spectrum, Radar, Electronic Distance Measurement, EDM Equipment, Corrections to measurement, Digital Theodolite, Total Stations, Introduction to Remote Sensing and GIS

Text Books

1. *Surveying & Levelling. Vol-I by T.P.Kanethar&S.V.Kulkarni, Pune VidyarthiGrihaPrakashan*
2. *Surveying and Leveling by R. Subramanian, Oxford University Press*
3. *Surveying- Vol.I, by B.C. Purmia, Laxmi Publications*

Reference Books

1. *Surveying Vol-1 by R Agor, Khanna Publishers*
2. *Mine Surveying and Levelling S.Ghatak*
3. *A Textbook of Surveying, C. Venkatramaiah, Universities Press*
4. *Surveying And Levelling, N.N. Basak, McGraw-Hill Education*