

Devi Ahilya University, Indore, India Institute of Engineering & Technology				II Year B.E. (Civil Engineering)			
Subject Code & Name		Instructions per Week		Hours		Credits	
VLR3C3: Surveying		L	T	P	L	T	P
Duration of Theory Paper:3 Hours		3	1	2	3	1	1
							Total 5

Unit-I

Introduction to Surveying :

Overview of Surveying, branches of surveying, principles of Surveying. Instruments Used for various measurements, Electronic Distance Measurement (EDM), Various EDM Instruments, Remote Sensing, GPS and GIS

Unit-II

Vertical Measurements :

Overview and terminologies, Leveling Instruments-Different Types of Levels, Leveling Staff. Temporary and Permanent Adjustments of a Level. Leveling: Classification Based on Purpose of Leveling –Simple leveling, Differential or Compound or Continuous Leveling, Booking and Reducing Levels. Height of Collimation or Height of Instruments Method. Rise and Fall Method, Errors and Precautions in leveling, Balancing Back Sight and Foresight, Error Due to Earth's Curvature and Refraction, Field Problems or Difficulties in Leveling, Numerical Problems.

Unit-III

Angular measurements: Overview and terminologies, Principle of Compass, Types of Compass, Compass Surveying, Traversing, Traversing with Chain and Compass, Designation of Bearings, Calculation of Included Angle from Bearings, Calculation of Bearing From Included Angles Errors and Precautions in Compass Surveying, Local attraction, Correction to Measured Bearing for Local Attraction ,Adjustment of Closing Error. Magnetic Declination, Dip, Introduction Plane Table Surveying, Methods of Plane Table Surveying- Radiation Method and Intersection Method. Introduction to Theodolite. Numerical Problems

Unit –IV

Measurement of Area

Measurement of Areas and Volumes: Introduction, Areas: Areas from Field Measurements – Area Consisting of Irregular Boundary, Area from Plan –Graphical Method, Measurement of area by Planimeter Errors & Precautions in Computation of Area.

Unit –V

Measurement of Volume

Volumes: Measurement of Volume. –from Cross Sections, from Spot Levels , from Contours, Area of Sections, Capacity of a Reservoir, Elevation - Capacity Curve, Earthwork, Mass Diagram. Numerical Problems.