



Bharati Vidyapeeth (Deemed to be University)

College of Engineering, Pune.

Department of Civil Engineering



Surveying Laboratory

List of Experiments

Sr. No.	Name of Experiments
Surveying and Levelling	
1.	Linear measurements with tape and accessories
2.	Study and use Levelling Instruments
3.	Compound levelling calculation by rise and fall method
4.	Study and use of 20" Vernier Theodolite
5.	Measurement of horizontal angle of triangle by repetition method and applying check.
6.	Measurement of vertical angle by transit Theodolite
7.	Trigonometrical levelling by transit Theodolite
8.	Setting out simple circular curve by Rankin's method of deflection angle
SKILLED BASED COURSE-II – Hands on Training on Total station	
1.	Setting Total station and study temporary adjustments.
2.	Study use of various keys and their function
3.	Measure horizontal and vertical angles
4.	Study back sighting operation for traverse survey.
5.	Orientation of total station by resection
6.	Plane table survey and determine area of plot .
7.	Perform contour survey of given area.
8.	Perform Stake out operation
9.	Perform survey for road
10.	Measure remote distance and remote elevation
11.	Down load data from total station to PC
12.	Produce simple survey maps using Auto Cad
13.	Detail survey project of a given area.
14.	Transfer and Establish Bench marks
Advanced Surveying with Geomatics	
1.	Study and use of total station for traverse survey.
2.	Applications of Total Station for REM, RDM.
3.	Study and Use of Mirror stereoscope with parallax bar
4.	Overview of ARC GIS and Tools
5.	Creating a Geodata base File
6.	Digitization: Create a map by digitization
7.	Georeferencing: Associate the image or map to its location on ground
8.	Topology Building: Determine topological errors and Clear.
9.	Data Exploration and Query Analysis
10.	Delineation of Water shed using DEM

Size – 2 X 3

No -1



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List of Equipment

Sr. No.	Name of Equipment
1.	Hand-held level Improved pattern.
2.	Indian Type Tangent Clinometer
3.	Surveyors compass
4.	Nautical Sextant
5.	Line Ranger
6.	Box Sextant
7.	Theodolite 1"
8.	Auto level
9.	Prizm Square
10.	Ranging rods tubular 2m & 3m length
11.	Tripods
12.	Mirror stereoscope
13.	Box sextant
14.	Abney level
15.	Transit theodolite 20"
16.	Digital planimeter
17.	Dumpy Level with Stand
18.	Aluminium Levelling Staves telescopic 4m
19.	Optical Square
20.	Open Cross staff
21.	Electronic Total station
22.	GPS handheld
23.	Plane table set with accessories
24.	Mechanical planimeter

Size – 2 X 3

No -1