

**B. E. CIVIL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**  
**SEMESTER - V**  
**SURVEYING PRACTICE**

Course Code	18CVL57	CIE Marks	40
Teaching Hours/Week(L:T:P)	(0:2:2)	SEE Marks	60
Credits	02	Exam Hours	03

**Course Learning Objectives:** This course will enable students to

1. Apply the basic principles of engineering surveying and measurements
2. Follow effectively field procedures required for a professional surveyor
3. Use techniques, skills and conventional surveying instruments necessary for engineering practice.

1. a) Measurements of distances using tape along with horizontal planes and slopes, direct ranging.  
b) Setting out perpendiculars. Use of cross staff, optical square.

2. Measurements of bearings / directions using prismatic compass, setting of geometrical figures using prismatic compass.

3. Determination of distance between two inaccessible points using compass and

4. Determination of reduced levels of points using dumpy level/auto level (simple

5. Determination of reduced levels of points using dumpy level/auto level (differential leveling and inverted leveling).

6. To determine the difference in elevation between two points using Reciprocal leveling and to determine the collimation error.

7. To conduct profile leveling, cross sectioning and block leveling. Plotting profile and cross sectioning in excel. Block contour on graph paper to scale.

8. Measurement of horizontal angle by repetition and reiteration methods and Measurement of vertical angles using theodolite.

9. Determination of horizontal distance and vertical height to a base in accessible object using theodolite by single plane and double plane method.

10. To determine distance and elevation using tachometric surveying with horizontal and inclined line of sight.

11. Closed traverse surveying using Theodolite and applying corrections for error of closure by transit rule and Bowditch rule.

12. To locate the points using Radiation and Intersection method of Plane table surveying.

13. To solve three point problem in plane table using Bessel's graphical solution.

14. Demonstration of Minor instruments like Clinometer, Ceylon Ghat tracer, Box sextant, Hand level, Planimeter, nautical extant and Penta graph.

**Course Outcomes:** After a successful completion of the course, the student will be able to:

1. Apply the basic principles of engineering surveying and for linear and angular measurements.
2. Comprehend effectively field procedures required for a professional surveyor.
3. Use techniques, skills and conventional surveying instruments necessary for engineering practice.

**Question paper pattern:**

- All are individual experiments.
- Instructions as printed on the cover page of answer script for split up of marks to be strictly followed.
- All exercises are to be included for practical examination.

**Textbooks:**

1. B.C.Punmia, "Surveying Vol.1", Laxmi Publications Pvt. Ltd., New Delhi- 2009.
2. Kanetkar T P and S V Kulkarni, Surveying and Levelling Part I, Pune Vidyarthi Griha Prakashan, 1988.

**Reference Books:**

1. S. K. Duggal, "Surveying Vol.1", Tata Mc Graw Hill Publishing Co. Ltd. New Delhi. 2009.
2. K.R.Arora, "Surveying Vol.1" Standard Book House, New Delhi.-2010.



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