सर्वेक्षण प्रयोगशाला

Survey Lab

Major Equipments:

- Total Station
- Theodolite
- Auto-Level
- Dumpy Level
- Plain Table
- Prismatic compass
- Surveyor compass

Newly Procured Equipments

- Total Station (Trimble C5)

In Charge

Prof. A.K. Dwivedi
(99425737429)

Associate Faculty:

Prof. Shivam Gupta (8447447079)

Physical In Charge:

Mr. Rajendra Pawse
(*9753588069*)

Department Of Civil Engineering

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Survey Lab

SAFETY PRACTICESTO BE FOLLOWED IN LABORATORY:

•Always wear shoes before entering lab.
•Do not touch anything without permission of instructor /lab assistant.
•Check electrical connections before staring the equipment .
•Do not unplug any electrical connection.
•Do not put your hand while the machine is in operation.
•Do not tamper measuring instrument.
•Do not open the casing of the equipment
•Switch off the power supply to the experimental.
•Any injuries should be reported immediately for proper care.

DO's

•Be on time, at the start of the lab period, there will be a short introduction to the experiment you will perform that day.
•Thoroughly CLEAN your laboratory work space at the end of the laboratory session.
•Maintain silence and clean environment in the lab and put bags at allocated Locations.

DON't

•Do not try to run and operate any machine without permission and knowledge of the lab Personnel
•In case of any mishap - Do not be Panicky, be calm but quick report at once to the Lab Personnel.
•Do not eat or Drink in the Lab room at any time.

Department Of Civil Engineering

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Survey Lab

Basic Civil Engineering & Mechanics (100205)

LIST OF EXPERIMENTS:

1. Study of various types of chain and Tapes.
2. Measurement of distance involving direct and indirect Ranging.
3. Chain and tape survey of given area.
4. Study of Prismatic and Surveyor's compass.
5. Measurement of direction by Prismatic compass.
6. Calculation of distance between two inaccessible points by prismatic compass.
7. Study of Dumpy Level, Levelling staff and Tripod.
8. Exercise of differential levelling and fly leveling.
9. Study of Theodolite.
10. To measure the horizontal angle by repetition method

Course Outcomes:

Upon completion of the course, the students will be able to:

CO 1: Explain concepts and terminologies of building materials, surveying and mechanics.

CO 2: Apply various methods for surveying and mechanics.

CO 3: Determine the location, area and volume of objects on ground surface.

CO 4: Solve the problems of surveying and mechanics by using various methods.

CO 5: Analyse the effects of system of forces on rigid bodies in static conditions.

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Survey Lab

Surveying (110304)

LIST OF EXPERIMENTS

1. To study different parts of transit Theodolite and Temporary adjustments.
2. To measure the horizontal angle by repetition method
3. To measure the horizontal angles by reiteration method.
4. To determine the reduced level of an object when base is accessible by single plane method.
5. To determine the reduced level of an object when base is inaccessible by using single plane method.
6. To determine the multiplying constant and additive constant of the given theodolite
7. Mesurement of horizontal distance and vertical height by using Tacheometric surveying
8. Setting out of simple circular curve by using Rankine method.
9. To set out a simple circular curve using linear method by offset by chords produced.
10. To plot a closed traverse using theodolite.

Course Outcomes:

Upon completion of the course, the students will be able to:

CO 1: Explain the techniques used for linear & angular measurements in surveying.

CO 2: Analyse different geodetic methods of survey such as triangulation, trigonometric levelling, tachometry, photographic survey & GIS.

CO 3: Apply methods in control surveys.

CO 4: Apply tachometry in traverse computations.

CO 5: Apply various methods for setting curves, area & volume computations

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Survey Lab

110407: Survey Practice Lab

LIST OF EXPERIMENTS:

1. To plot the contour map for a given land.
2. To plot the longitudinal section and cross section along a proposed alignment of a highway.
3. To draw the position in plan of given points by radiation method.
4. To draw the position in plan of the given points by intersections method.
5. To survey a small piece of land by closed traverse technique using plan table and do corrections for closing errors.
6. To locate the positions on the plan, of the station occupies by the plan table by mean of observations to two well defined point whose positions have been previously plotted on the plan.
7. To locate the position on the plan of the station occupies by the plane table by means of observations to three well defined points whose positions have been previously plotted on the plan.
8. Setting out of simple circular curves by Rankine method of tangential angle
9. To determine the horizontal and vertical measurement using total station
10. To find the area of a closed traverse using total station.

Course Outcomes

CO 1: Observe topographical characteristics.
CO 2: Differentiate methods to perform ground survey.
CO 3: Prepare longitudinal & cross section profiles
CO 4: Develop contour map by using tachometer & total station.
CO 5: Prepare the details of features using Plane table surveying.
CO 6: Produce a simple circular curve by using Rankine's method for alignment.