

COURSE TITLE : SURVEY PRACTICAL II
COURSE CODE : 3017
COURSE CATEGORY : B
PERIODS/WEEK : 3
PERIODS/SEMESTER: 45
CREDITS : 2

TIME SCHEDULE

Module	Topics	Period
I	Longitudinal leveling, cross sectioning, contouring	15
II	Theodolite practice	12
III	Traversing with theodolite	6
IV	Height and distances	12
TOTAL		45

COURSE OUTCOME

Student will be able to

- **Set out alignments for roads , railways, canals etc.**
- **Prepare contour map**
- **Conduct theodolite traversing**
- **Use theodolite for computation of height and distance**

SPECIFIC OUTCOME

Upon completion of the course the student should be able to:

1.1.0 Perform profile leveling

1.1.1 Explain the principles and procedures of profile levelling

1.1.2 Carry out longitudinal section and cross section of the site

1.1.3 Prepare the longitudinal section and cross section

1.1.4 Select the appropriate formation level on the longitudinal section

1.2.0 Perform contouring

1.2.1 Explain the principles and methods of contouring

1.2.2 Take spot levels for preparing contour map

1.2.3 Select suitable contour interval

1.2.4 Locate the contour points on the drawing sheet and draw the contour lines

2.1.0 Conduct theodolite survey

- 2.1.1 Identify the parts of theodolite and carryout temporary adjustments
- 2.1.2 Measure horizontal angles by general methods, repetition method and reiteration method
- 2.1.3 Record the observation in the field book
- 3.1.0 Determine the height and distances using theodolite
- 3.1.1 Measure vertical angles
- 3.1.2 Determine the elevations and distance between objects
- 3.1.3 Find the horizontal distance between two objects by taking theodolite observations from one station and also from stations at the ends of a known base line.
- 3.1.4 Find the horizontal distance, level difference and gradient of the line joining two objects by taking observations from the ends of a base line.
- 3.1.5 Find the height and elevation of a tall object whose base is accessible, and inaccessible
- 4.1.0 Perform theodolite traversing
- 4.1.1 Conduct the traversing by the method of included angle.
- 4.1.2 Compute the included angle and bearing of the lines.
- 4.1.3 Measure the length of sides of a traverse.
- 4.1.4 Calculate latitude and departure of the sides
- 4.1.5 Apply the corrections to the traverse by appropriate method and find independent Co -ordinates
- 4.1.6 Prepare the Gale's traverse table
- 4.1.7 Plot the traverse using independent co-ordinates.

CONTENT DETAILS

MODULE - I

Profile leveling

1. Longitudinal sectioning and cross sectioning
2. Take spot levels for preparing contour map
3. Prepare contour map

MODULE - II

1. Perform temporary adjustments of theodolite
2. Measurement of horizontal angles- different methods-

MODULE - III

1. Measurement of vertical angles.
2. Find the difference in elevation and distances between two objects (single station)
3. Determine difference in level and horizontal distance between two points by observation from the ends of the base line.
4. Find the height of tall object (base accessible) by using theodolite
5. Find the height of a tall object (base inaccessible) by using theodolite (single plane and observation)

MODULE - IV

1. Perform theodolite traverse, compute included angles, latitude and departure, prepare Gale's traverse table, and plot the traverse after adjusting the closing error and find the area