

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Diploma in Mining Engineering**  
**Semester: 4**

**Subject Name**    Mine Surveying I

<b>Sr. No.</b>	<b>Course content</b>
<b>1.</b>	<b>THEODOLITE-I :-</b>  PARTS - Terms used - Temporary adjustments - Tachometers. Measurements - such as ranging, Establishing new station, horizontal angle, vertical angle, bearings, permanent adjustment.
<b>2.</b>	<b>THEODOLITE-II :-</b>  Purpose of traversing first, second and third order traverse, closed closed and open traverse. Included and direct angles, Latitude, Departures, checks-corrections of the traverse- Bowditch rule and transit rule.
<b>3.</b>	<b>DIAL SURVEY:-</b>  Miners dial- Dial and telescopic - Minersdial construction - temporary and permanent adjustment. Booking survey -Graphic Method. - Field & line Method. Setting out underground road ways with the help of dial, Plotting by protactor, Test for Minersdial, precautions to be taken. Methods used in dial surveying- Loose needle survey- Fast needle survey.
<b>4.</b>	<b>USE OF LEVEL IN UNDERGROUND:-</b>  Measuring the depth of shaft and other working, underground bench mark - Datum - determining throw of fault - gradient of underground road. - Measuring subsidence.
<b>5.</b>	<b>DIP STRIKE PROBLEMS:-</b>  Determining the true and apparent dip and strike from bore hole data, Determining the deviation in the borehole drilling - Determining the throw of fault and length of drift to cross the fault, Finding out the bearings and dip of various mine working.

**LABORATORY EXPERIENCES:**

1. Theodolite traverse survey.
2. Method of co-ordinates.
3. Close traversing by Theodolite & balancing by Bowditch rule & transit rule.
4. Study of Miners Dial its constructional features & adjustments
5. Study of measurement of Depth of a vertical shaft.
6. Study of measuring subsidence.
7. Determine the true apparent dip & strike from bore hole data.

**Reference Books:**

<b>Sr. No.</b>	<b>Name of Books</b>	<b>Author</b>
1.	Surveying	Kanetakar
2.	Mine Surveying	Ghatak
3.	U.M.S.	I.S.M.,Dhanbad