

**Chhotubhai Gopalbhai Patel Institute of Technology,  
Civil Engineering Department,  
Uka Tarsadia University**

**Three Day Educational tour for  
Tacheometry Survey on  
29/02/2016 to 2/03/2016  
B.Tech 4<sup>th</sup> Semester (Div.-A, B and C)**

**Educational Visit**

**Site:** Abu - Ambaji

**Date of Visit:** 29/02/2016 to 2/03/2016

**Total No. of Student:** 117(UG-IV Semester Division - A, B and C of B.Tech Civil Branch)

**Total No. of Faculty:** 05

**Faculty Coordinator:** Prof. Mehul Patel

**Other Faculty:-** Prof. Urvi Rathod, Prof. Minal Kachhadiya, Prof. Nikunj Gohil, Prof. Bhavesh Donde,

The department has arranged an Educational visit to Abu – Ambaji site for 3<sup>rd</sup> Year students of Civil department. The visit was organized with the prior permission and guidance of Hon. Director Dr. N.C. Shah and Head of Civil Engineering Department, Mr. K.N. Gandhi.

**Details of Visit:**

Tacheometry survey is carried out for preparation of topographical map. **Tacheometry** is a system of rapid surveying, by which the horizontal and vertical positions of points on the earth's surface relative to one another are determined without using a chain or tape, or a separate levelling instrument.

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**DEPARTMENT OF CIVIL ENGINEERING**

Instead of the pole formerly employed to mark a point, a staff similar to a level staff is used. This is marked with heights from the base or foot, and is graduated according to the form of tacheometer in use.

A contour map is a map illustrated with contour lines, for example a topographic map, which thus shows valleys and hills, and the steepness of slopes. The contour interval of a contour map is the difference in elevation between successive contour lines.

Topographic maps are also commonly called contour maps or topo maps. Topographic maps conventionally show topography, or land contours, by means of contour lines. Contour lines are curves that connect contiguous points of the same altitude. In other words, every point on the marked line of 100 m elevation is 100 m above mean sea level.

These maps usually show not only the contours, but also any significant streams or other bodies of water, forest cover, built-up areas or individual buildings (depending on scale), and other features and points of interest.

A contour line is a imaginary line which connects points of equal elevation. Such lines are drawn on the plan of an area after establishing reduced levels of several points in the area. The contour lines in an area are drawn keeping difference in elevation of between two consecutive lines constant. For example,

Contour maps are extremely useful for various engineering works:

1. A civil engineer studies the contours and finds out the nature of the ground to identify. Suitable site for the project works to be taken up.
2. By drawing the section in the plan, it is possible to find out profile of the ground along that line. It helps in finding out depth of cutting and filling, if formation level of road/railway is decided.
3. Intervisibility of any two points can be found by drawing profile of the ground along that line.
4. The routes of the railway, road, canal or sewer lines can be decided so as to minimize and balance earthworks.
5. Catchment area and hence quantity of water flow at any point of nalla or river can be found. This study is very important in locating bunds, dams and also to find out flood levels.
6. From the contours, it is possible to determine the capacity of a reservoir.