

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 3

Civil Engineering

Subject Code 130601

Subject Name Surveying

Sr.No	Course contents
1	Plane Table Survey: Introduction, principle, instruments, setting up the plane table, methods of plane tabling, advantages, sources of Errors.
2	Theodolite Traversing: Introduction, definitions, the vernier transit theodolite, temporary and permanent adjustment of theodolite, measuring horizontal and vertical angles, methods of traversing, closing error, computation of latitudes and departure, check in closed and open traverse, balancing of traverse, Gale's table, traverse area, omitted measurements.
3	Trigonometric levelling: Indirect levelling, levelling on steep ground- methods.
4	Curves: Introduction, theory and setting out methods of simple circular curve, elements of a compound and reverse curves, transition curve, types of transition curve, combined curve, types of vertical curves.
5	Computation of Areas: Methods to compute area of traverse- Determining areas from Plans, Trapezoidal rule- Simpson's rule, Use of planimeter Computation of Volumes- Volume from cross sections, Trapezoidal and Prismoidal formulae, Prismoidal correction, Curvature correction, Determination of capacity of reservoir and volume from borrow pits.
6	Hydrography: Introduction, purposes, control points, soundings, instruments & methods of locating soundings.
7	Setting out Works: Building, Culvert, Bridge, Tunnel

Term Work:

Term work shall be based on the above mentioned course content.

Project Work:

- 1) Plane table survey project.
- 2) Theodolite traverse survey project.
- 3) Setting out of curve.

Reference Books:

1. Surveying Vol.I, II and III by Dr. B.C. Punamia
2. Surveying and Levelling Vol. I and II by T.P Kanetkar and S.V Kulkarni
3. Surveying Vol. I, II and III by Dr. K.R. Arora
4. Surveying Vol. I and II by S. K. Duggal
5. Surveying and Levelling by N.N. Basak
6. Surveying and Levelling by R. Agor
7. Advanced Surveying by R. Agor.
8. Roy, S.K., Fundamentals of Surveying, Prentice Hall India, New Delhi
9. Subramanian, R., Surveying and Leveling, Oxford University Press, New Delhi