



MANIPAL UNIVERSITY JAIPUR

School of Civil and Chemical Engineering

Department of Civil Engineering
Course Hand-out

Surveying | CV 1303 | 4 Credits

Session: Jul- Dec 2017 | Faculty: Sagar Gupta

Course Outcomes: At the end of the course, students will be able to

I303.1: Take measurement on the field.

I303.2: Analyse the problem and solution for all possible challenge on the field

I303.3: Learn and understand working of basic and advance instrument to perform different exercises on the field.

I303.4: Make entry in field book.

I303.5: To fulfils the requirements of present day employers, who demand sound engineering skills employability.

A. SYLLABUS

Introduction: Overview and scope of the subject, Principle of surveying-methods-plane and geodetic survey- Principle of Chain Surveying: Offsets, cross staff and principle of optical square- error in offsets- obstacle in chaining, Compass Survey- principle, prismatic compass, surveyor compass, bearing and included angles declination- local attraction- graphical adjustment of compass transverse-latitude and departures, Plane Table survey- method of computation of areas and volumes, areas calculation, volume calculation, Levelling - introduction- simple levelling-differential levelling- errors in levelling-curvature and refraction-sensitiveness of bubble tube-cross sectioning, profile and reciprocal levelling. Contours: Introduction-application and uses-method-characteristics of planimeter, Theodolite Survey: introduction and description of theodolite-repetition and reiteration- trigonometric levelling; Study of Minor Instrument: Hand level, abney level, electronic theodolite, Ceylon ghat tracer, Indian pattern clinometer, box sextant. Tachometry: Principles, methods, analytic tachometer, distance and elevation formulae; Curves: Introduction, simple curve, compound curve, reverse curve, transition curve, lemniscate curve, vertical curve. Triangulation and Theory of Errors, Electronic Distance Measurement.

B. TEXT BOOKS

- I. Chandra A.M., Plane Surveying, New Age International Pvt. Ltd., 2011.
- II. Punmia B.C., Surveying and Leveling Vol. I and II, Lakshmi Publishers, New Delhi 2005.
- III. Arora K.R., Surveying, Vol. I & II, Standard Book house, New Delhi, 2015.
- IV. Subramanian R., "Surveying and Levelling", Oxford University Press 2012.
- V. Chandra A.M., "Plane Surveying", New Age International Pvt. Ltd., 2011.
- VI. Arora K.R., Surveying, Vol. I and II, Standard Book House, New Delhi, 1993.
- VII. Punmia B.C., Surveying Vol. I and II, Lakshmi Publications, New Delhi, 2005.

