

Surveying-II

Course Code CE 286	Credit Hours 1-2
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Course Description

This course is the follow up of Surveying-I in which students were taught basic surveying skills by doing most of the data acquisition with manual measurements. However, in this course all the practical work is done by using the modern hardware and software. Field data is acquired and stored in the Total Stations and GNSS Receivers. It is downloaded in the computers in the lab and further processed by using computer software (Micro Survey CAD) The output, which is in the shape of maps, is plotted on colour plotters for field users.

Students are also taught the basic concepts of advance topics like Geodesy, Map Projections and Grid Systems. This enables them to understand our National Mapping/Grid System. Introductory lectures on Photogrammetry educate them on the possibilities of using this technology for planning mega projects.

Text Book:

1. Survey & Levelling by T.P.Kanetkar and S.V.Kulkarni (Vol -I & Vol -II)
2. Surveying Principles and Applications by Barry Kavanagh

Reference Book:

1. Survey for Engineers by John Uren & Bill Price

Prerequisites :

CE-182 Surveying-I.

ASSESSMENT SYSTEM FOR THEORY

	Without Project (%)	With Project/Complex Engineering Problems (%)
Quizzes	15	10-15
Assignments	10	5-10
Mid Terms	25	25
Project	-	5-10
End Semester Exam	50	45-50

ASSESSMENT SYSTEM FOR LAB

Lab Work/ Psychomotor Assessment/ Lab Reports	70%
Lab Project/ Open Ended Lab Report/ Assignment/ Quiz	10%
Final Assesment/ Viva	20%

Teaching Plan

Week No	Topics/Learning Outcomes
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1	Basic Geodesy
2-3	Triangulation
4	Trigonometric Levelling
5-6	Tachometry
7	GNSS, Introduction, and use for survey projects.
8	Mid Semester Exam
9-10	Field data acquisition with a total station for topographic mapping and highway alignments.
11-12	Introduction to Micro Survey CAD software and its use for different survey applications.
13	Map Projections
14	Introduction to Photogrammetry and Air Survey.
15-16	Setting out of work.
17-18	End Semester Exam

Practical:

Experiment No	Description
1	Triangulation.
2	Trigonometric Levelling.
3	Tachometry.
4	Use of GNSS in Differential mode and RTK mode for survey projects.
5	Field data acquisition with a total station for topographic mapping and highway alignments.
6	Processing topographic mapping data on micro–survey CAD Software.
7	Setting out of work.