

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING



LESSON PLAN

SUBJECT: - SURVEYING LAB (PR 1)

ACCADEMIC SESSION: 2026-27

FACULTY: MRS MADHUSMITA SAHOO, LECTURER(STAGE-II)

SEMESTER: 5TH

& SHRI TAPAS KUMAR MALLICK, LECTURER(STAGE-II)

SEC: B

Sd/-

H O D (Civil Engg.)

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

COURSE OUTCOMES

CO1: EXPLAIN TYPES OF SURVEYING WORKS REQUIRED

CO2:- EXPLAIN THE TYPE OF METHOD AND EQUIPMENT TO BE USED FOR DIFFERENT SURVEYS

CO3:- DEMONSTRATE THE USE AND OPERATIONAL DETAILS OF VARIOUS SURVEYING EQUIPMENT.

CO4:- USE TOTAL STATION FOR SURVEYING

CO5:- PREPARE THE PROJECT REPORT OF SURVEY

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

Discipline: Civil Engineering	Semester: 5th B	Name of the teaching faculty: Mrs Madhusmita Sahoo & Shri Tapas Kumar Mallick
Subject: Surveying Lab	No. of Days/ per week class allotted: 02 periods per week.	Semester From Date: 01-07-2026 To Date: 05-11-2026 No. of weeks: 19 weeks
Week	Class Day	Theory Topics
1 st	1st	Measure distance between two survey stations using chain, tape and ranging rods when two stations are inter visible.
	2nd	Measure distance between two survey stations using chain, tape and ranging rods when two stations are inter visible.
2 nd	1st	Determine area of open field using chain and cross staff survey.
	2nd	Determine area of open field using chain and cross staff survey.
3 rd	1st	Measure Fore Bearing and Back Bearing of survey lines of open traverse using Prismatic Compass.
	2nd	Measure Fore Bearing and Back Bearing of survey lines of open traverse using Prismatic Compass.
4 th	1st	Undertake differential leveling; determine reduced levels by height of instrument method and rise, and fall method using dumpy level/auto level and leveling staff.
	2nd	Undertake differential leveling; determine reduced levels by height of instrument method and rise, and fall method using dumpy level/auto level and leveling staff.

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

5 th	1st	Undertake Survey Project with Leveling instrument for Profile leveling and cross-sectioning for a road length of 500 m with cross-section at 30 m interval.
	2nd	Undertake Survey Project with Leveling instrument for Profile leveling and cross-sectioning for a road length of 500 m with cross-section at 30 m interval.
6 th	1st	Use digital Theodolite as a Tacheometer to compute reduced levels and horizontal distances.
	2nd	Use digital Theodolite as a Tacheometer to compute reduced levels and horizontal distances.
7 th	1st	Set out a circular curve by Rankine's Method of Deflection Angles.
	2nd	Set out a circular curve by Rankine's Method of Deflection Angles.
8 th	1st	Measure area of irregular figure using Digital planimeter.
	2nd	Measure area of irregular figure using Digital planimeter.
9 th	1st	Use Total station instrument to measure horizontal distances and vertical angle
	2nd	Use Total station instrument to measure horizontal distances and vertical angle
10 th	1st	Internal Assessment -I
	2nd	Internal Assessment -I
11 th	1st	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.
	2nd	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

12 th	1st	Use DGPS to locate the coordinates of a station
	2nd	Use DGPS to locate the coordinates of a station
13 th	1st	Preparation of Map using GIS software
	2nd	Preparation of Map using GIS software
14 th	1st	Practice
	2nd	Practice
15 th	1st	Practice
	2nd	Practice
16 th	1st	Practice
	2nd	Practice
17 th	1st	Practice
	2nd	Practice
18 th	1st	Internal Assessment -II
	2nd	Internal Assessment -II
19 th	1st	Sessional
	2nd	Sessional