SYNERGY SCHOOL OF ENGINEERING, DHENKANAL
LAB LESSON PLAN & PROGRESS
SESSION 2026-2027 (WINTER)
DEPARTMENT OF CIVIL ENGINEERING

Discipline: Civil Engineering	**Semester:** 5th/Winter 2026	**Name of the Faculty: Manmohan Murmu** **Email: manmohan19murmu@gmail.com**
Subject: Surveying Lab	**No. of Days/week class:** 04	**Start Date:** 01/07/26 **End Date:** 05/11/26

No. of Week	No. of Lab Classes	Topics to be Taught	Date of Delivery	
			G1	G2
1st	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.		
2nd	1st	Determine area of open field using chain and cross staff survey.		
	2nd	Determine area of open field using chain and cross staff survey.		
3rd	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.		
4th	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		
5th	1st	Undertake Survey Project with Leveling instrument for Profile leveling and cross-sectioning for a road length of 500m 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 500m with cross-section at 30 m interval		
6th	1st	Use digital Theodolite as a Tacheometer to compute reduced levels and horizontal 14 distances		
	2nd	Use digital Theodolite as a Tacheometer to compute reduced levels and horizontal 14 distances		
7th	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.		
8th	1st	Set out a circular curve by Rankine's Method of Deflection Angles.		
	2nd	Measure area of irregular figure using Digital planimeter.		
9th	1st	Measure area of irregular figure using Digital planimeter.		
	2nd	Measure area of irregular figure using Digital planimeter.		

M. Murmu 11/06/26

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10th	1st	Use Total station instrument to measure horizontal distances and vertical angle		
	2nd	Use Total station instrument to measure horizontal distances and vertical angle		
11th	1st	Use Total station instrument to measure horizontal distances and vertical angle		
	2nd	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.		
12th	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.		
13th	1st	Use DGPS to locate the coordinates of a station		
	2nd	Use DGPS to locate the coordinates of a station		
14th	1st	Use DGPS to locate the coordinates of a station		
	2nd	Preparation of Map using GIS software		
15th	1st	Preparation of Map using GIS software		
	2nd	Preparation of Map using GIS software		

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