LESSON PLAN 2024-2025 (S)					
Discipline:Civil Engineering				Name of The Teaching Faculty:Jyotirmayee samal	
Subject:Land Survey-I(Th-3)				Semester From Date:-04-02-2025 to -17-05-2025	
SEMESTER-4th				No. Of Weeks:15	5 P/WEEK
No. of Days/week class allotted:04 period per week(Mon,Tues,Wed , Thu,Fri day 1 Period each)					TOTAL PERIOD-75
MONTH	WEEK	DATE	DAYS /PERIOD	SYLLABUS TO BE COVERED	NOS. OF PERIODS AVAILABLE
				INTRODUCTION TO SURVEYING, LINEAR MEASUREMENTS:	7
	2ND	04-02-2025	Tue	1.1 Surveying: Definition, Aims and objectives	1
		05-02-2025	Wed	1.2 Principles of survey-Plane surveying-Geodetic Surveying- Instrumental surveying.	1
		06-02-2025	Thu	1.3 Precision and accuracy of measurements, instruments used for measurement of distance	1
		07-02-2025	Fri	Types of tapes and chains	1
	3RD	10-02-2025	Mon	1.4 Errors and mistakes in linear measurement – classification, Sources of errors and remedies.	1
		11-02-2025	Tue	1.5 Corrections to measured lengths due to-incorrect length, temperature variation, pull, sag, numerical problem applying corrections.	1
		12-02-2025	Wed	Problems	1
				CHAINING AND CHAIN SURVEYING :	7

FREBUARY		13-02-2025	Thu	2.1 Equipment and accessories for chaining	1
		14-02-2025	Fri	2.2 Ranging – Purpose, signaling, direct and indirect ranging, Line ranger – features and use, error due to incorrect ranging.	1
		15-02-2025	Sat	2.3 Methods of chaining –Chaining on flat ground, Chaining on sloping ground – stepping method, Clinometer-features and use, slope correction.	1
	4TH	17-02-2025	Mon	2.4 Setting perpendicular with chain & tape, Chaining across different types of obstacles –Numerical problems on chaining across obstacles.	1
		18-02-2025	Tue	2.5 Purpose of chain surveying, Its Principles, concept of field book. Selection of survey stations, base line, tie lines, Check lines.	1
		19-02-2025	Wed	2.7 Offsets – Necessity, Perpendicular and Oblique offsets, Instruments for setting offset – Cross Staff, Optical Square.	1
		20-02-2025	Thu	2.8 Errors in chain surveying – compensating and accumulative errors causes & remedies, Precautions to be taken during chain surveying.	
				ANGULAR MEASUREMENT AND COMPAS SURVEYING	**12**
		21-02-2025	Fri	3.1 Measurement of angles with chain, tape & compass	1
	5TH	24-02-2025	Mon	3.2 Compass – Types, features, parts, merits & demerits, testing & adjustment of compass	1
		25-02-2025	Tue	3.3 Designation of angles- concept of meridians – Magnetic, True, arbitrary; Concept of bearings – Whole circle bearing, Quadrantal bearing, Reduced bearing, suitability of application,	1

		27-02-2025	Thu	Numerical problems on conversion of bearings	1
		28-02-2025	Fri	3.4 Use of compasses – setting in field-centering, leveling, taking readings, concepts of Fore bearing, Back Bearing .	1
	1ST	01-03-2025	Sat	Class test 1	2
	2ND	03-03-2025	Mon	3.5 Effects of earth's magnetism – dip of needle, magnetic declination, variation in declination, numerical problems on application of correction for declination.	1
		04-03-2025	Tue	3.6 Errors in angle measurement with compass – sources & remedies	1
		05-03-2025	Wed	3.7 Principles of traversing – open & closed traverse, Methods of traversing.	1
		06-03-2025	Thu	3.8 Local attraction – causes, detection, errors, corrections, Numerical problems of application of correction due to local attraction.	1
		07-03-2025	Fri	.3.9 Errors in compass surveying – sources & remedies. Plotting of traverse – check of closing error in closed & open traverse, Bowditch's correction, Gales table	1
MARCH	3RD	10-03-2025	Mon	PROBLEMS	1
				MAP READING CADASTRAL MAPS & NOMENCLATURE:	7
		11-03-2025	Tue	4.1 Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols	1
		12-03-2025	Wed	4.1 Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols	1
		13-03-2025	Thu	4.2 Cadastral Map Preparation Methodology	1

	17-03-2025	Mon	4.3 Unique identification number of parcel	1
	18-03-2025	Tue	4.4 Positions of existing Control Points and its types	1
	19-03-2025	Wed	4.5 Adjacent Boundaries and Features, Topology Creation and verification.	1
4TH	20-03-2025	Thu	4.5 Adjacent Boundaries and Features, Topology Creation and verification.	1
			PLANE TABLE SURVEYING	7
	21-03-2025	Fri	5.1 Objectives, principles and use of plane table surveying. .	1
	24-03-2025	Mon	5.2 Instruments & accessories used in plane table surveying.	1
	25-03-2025	Tue	5.3 Methods of plane table surveying – (1) Radiation, (2) Intersection,	1
	26-03-2025	Wed	5.3 Methods of plane table surveying – (3) Traversing, (4) Resection	1
5TH	27-03-2025	Thu	5.4 Statements of TWO POINT and THREE POINT PROBLEM	1
	28-03-2025	Fri	Errors in plane table surveying and their corrections, Precautions in plane table surveying	1
	29-03-2025	Sat	Class test 2	2
			THEODOLITE SURVEYING AND TRAVERSING	**15**
	02-04-2025	Wed	6.1 Purpose and definition of theodolite surveying	1
	03-04-2025	Thu	6.2 Transit theodolite- Description of features, component parts, Fundamental axes of a theodolite, concept of vernier, reading a vernier, Temporary adjustment of theodolite	1
1st	04-04-2025	Fri	Fundamental axes of a theodolite, concept of vernier, reading a vernier, Temporary adjustment of theodolit	1
	05-04-2025	Sat	6.4 Measurement of magnetic bearings, deflection angle, direct angle	2

APRIL	2nd	07-04-2025	Mon	Setting out angles, prolonging a straight line with theodolite, Errors in Theodolite observations.	1
		08-04-2025	Tue	6.5 Methods of theodolite traversing with – inclined angle method, deflection angle method,	1
		09-04-2025	Wed	Checks for open and closed traverse.	1
		10-04-2025	Thu	Methods of theodolite traversing with bearing method, Plotting the traverse by coordinate method,	1
		11-04-2025	Fri	6.6 Traverse computation – consecutive coordinates, latitude and departure	1
	3rd	15-04-2025	Tue	6.7 Closing error – adjustment of angular errors, adjustment of bearings, numerical problems	1
		16-04-2025	Wed	Gale's traverse table, Numerical problems on omitted measurement of lengths & bearings	1
		17-04-2025	Thu	6.8 Balancing of traverse – Bowditch's method, calculation of area of closed traverse.	1
		19-04-2025	Sat	Transit method,Axis method,calculation of area of closed traverse. Problems	2
	4th	21-04-2025	Mon	Graphical method,	1
		22-04-2025	Tue	Transit method,Axis method,calculation of area of closed traverse. Problems	1
		23-04-2025	Wed	calculation of area of closed traverse. Problems	1
		24-04-2025	Thu	class test 3	1
				LEVELLING AND CONTOURING	**15**
		25-04-2025	Fri	7.1 Definition and Purpose and types of leveling– concepts of level surface, Horizontal surface, vertical surface, datum, R. L., B.M	1
	5TH	28-04-2025	Mon	7.2 Instruments used for leveling, concepts of line of collimation, axis of bubble tube, axis of telescope, Vertical axis.	1
		29-04-2025	Tue	7.3 Levelling staff – Temporary adjustments of level, taking reading with level, concept of bench mark, BS, IS, FS, CP, HI.	1

		30-04-2025	Wed	7.4 Field data entry – level book of collimation method and Rise & Fall method, comparison	1
MAY	1ST	01-05-2025	Thu	Numerical problems on reduction of levels applying both methods, Arithmetic checks.	1
		02-05-2025	Fri	7.5 Effects of curvature and refraction, numerical problems on application of correction.	2
		03-05-2025	Sat	7.6 Reciprocal leveling – principles, methods, numerical problems, precise leveling.	1
	2ND	05-05-2025	Mon	7.7 Errors in leveling and precautions, Permanent and temporary adjustments of different types of levels.	1
		06-05-2025	Tue	7.8 Definitions, concepts and characteristics of contours.	1
		07-05-2025	Wed	7.9 Methods of contouring, plotting contour maps, Interpretation of contour maps, toposheets.	1
		08-05-2025	Thu	7.9 Methods of contouring, plotting contour maps, Interpretation of contour maps, toposheets.	1
		09-05-2025	Fri	7.10 Use of contour maps on civil engineering projects – drawing crosssections from contour maps, locating proposal routes of roads / railway / canal on a contour map, computation of volume of earthwork from contour map for simple structure.	1
	3RD	13-05-2025	Tue	7.10 Use of contour maps on civil engineering projects – drawing crosssections from contour maps, locating proposal routes of roads / railway / canal on a contour map, computation of volume of earthwork from contour map for simple structure.	1
		14-05-2025	Wed	7.11 Map Interpretation: Interpret Human and Economic Activities (i.e.: Settlement, Communication, Land use etc.)	1
		15-05-2025	Thu	Interpret Physical landform (i.e.: Relief, Drainage Pattern etc.), Problem Solving and Decision Making	1

		16-05-2025	Fri	COMPUTATION OF AREA & VOLUME(5P)	1
		17-05-2025	Sat	8.1 Determination of areas, computation of areas from plans.	2
		EXTRA CLASS		8.2 Calculation of area by using ordinate rule	18P
				Calculation of area by using trapezoidal rule, Simpson's rule.	
				8.3 Calculation of volumes by Prismoidal corrections, curvature correction for volumes.	
				8.3 Calculation of volumes by trapezoidal formula, curvature correction for volumes.	