

LESSON PLAN FOR SUMMER SESSION (2023-24)

PROGRAMME : CIVIL ENGINEERING
 COURSE NAME : LAND SURVEYING - I
 COURSE CODE : TH.3
 SEMESTER : 6TH
 PERIODS/WEEK: 5
 TOTAL PERIODS:75

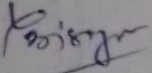
NAME OF THE FACULTY : MR. YOGESWAR BISOYEE
 SESSION : 2023-24
 DATE : 16/01/2024 - 26/04/2024

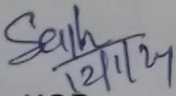
Jan. 3rd Week	1	1	SURVEYING: DEFINITIONS, AIMS & OBJECTIVES
	2	1	Principles of survey-Plane surveying- Geodetic Surveying- Instrumental surveying.
	3	1	Precision and accuracy of measurements, instruments used for measurement of distance,
	4	1	Types of tapes and chains.
	5	1	Errors and mistakes in linear measurement – classification, Sources of errors and remedies.
Jan. 4th Week	6	1	Corrections to measured lengths due to-incorrect length, temperature, variation, pull, sag.
	7	1	numerical problem applying corrections
	8	2	CHAINING AND CHAIN SURVEYING : Equipment and accessories for chaining
	9	2	Ranging – Purpose, signaling, direct and indirect ranging, Line ranger – features and use, error due to incorrect ranging.
	10	2	Methods of chaining –Chaining on flat ground, Chaining on sloping ground – stepping method, Clinometer-features and use, slope correction
Feb. 1st Week	11	2	Setting perpendicular with chain & tape.
	12	2	Chaining across different types of obstacles
	13	2	Numerical problems on chaining across obstacles
	14	2	Purpose of chain surveying, Its Principles, concept of field book
	15	2	Setting perpendicular with chain & tape
Feb. 2nd Week	16	2	Chaining across different types of obstacles
	17	2	Numerical problems on chaining across obstacles
	18	2	Purpose of chain surveying, Its Principles, concept of field book
	19	2	Selection of survey stations, base line, tie lines, Check lines
	20	2	Offsets – Necessity, Perpendicular and Oblique offsets, instruments for setting offset – Cross Staff, Optical Square.
Feb. 3rd	21	2	Errors in chain surveying – compensating and accumulative errors causes & remedies, Precautions to be taken during chain surveying.

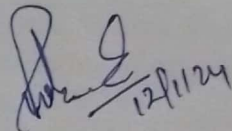
Week	22	3	ANGULAR MEASUREMENT AND COMPAS SURVEYING : Measurement of angles with chain
	23	3	Measurement of angles tape & compass
	24	3	Compass – Types, features, parts, merits & demerits, testing & adjustment of compass
	25	3	Designation of angles- concept of meridians – Magnetic, True, arbitrary; Concepts of bearings
Feb. 1st Week	26	3	Whole circle bearing, Quadrantal bearing, Reduced bearing, suitability of application
Week	27	3	numerical problems on conversion of bearings
	28	3	Use of compasses – setting in field-centering, leveling, taking readings, concepts of Forebearing & Backbearing
	29	3	Numerical problems on computation of interior & exterior angles from bearings.
	30	3	Effects of earth's magnetism – dip of needle
Mar. 1st Week	31	3	magnetic declination, variation in declination, numerical problems on application of correction for declination.
	32	3	Errors in angle measurement with compass – sources & remedies.
	33	3	Principles of traversing – open & closed traverse
	34	3	Local attraction – causes, detection, errors, corrections
	35	3	Numerical Problems of application of correction due to local attraction.
Mar. 2nd Week	36	3	Errors in compass surveying – sources & remedies
	37	3	Plotting of traverse – check of closing error in closed & open traverse,
	38	3	Bowditch's correction, Gales table
	39	4	MAP READING CADASTRAL MAPS & NOMENCLATURE: Study of direction, Scale
	40	4	Grid Reference and Grid Square Study of Signs and Symbols
Mar. 3rd Week	41	4	Cadastral Map Preparation Methodology
	42	4	Positions of existing Control Points and its types
	43	4	Adjacent Boundaries and Features, Topology Creation and verification
	44	5	PLANE TABLE SURVEYING : Objectives, principles and use of plane table surveying
	45	5	Instruments & accessories used in plane table surveying.
Mar. 4th Week	46	5	Methods of plane table surveying
	47	5	Statements of TWO POINT and THREE POINT PROBLEM.
	48	5	Errors in plane table surveying and their corrections, precautions in plane table surveying
	49	6	THEODOLITE SURVEYING AND TRAVERSING: Purpose and definition of theodolite surveying
	50	6	Transit theodolite- Description of features, component parts

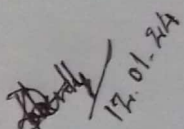
Mar. 5 th Week	51	6	Concept of transiting – Measurement of horizontal and vertical angles
	52	6	Measurement of magnetic bearings, deflection angle, direct angle
	53	6	Errors in Theodolite observations
	54	6	Methods of theodolite traversing with – inclined angle method, deflection angle method, bearing method
	55	6	Checks for open and closed traverse.
Apr. 1 st Week	56	6	INTERNAL EXAMINATION
	57	6	Traverse computation – consecutive coordinates, latitude and departure, Gale's traverse table, Numerical problems on omitted measurement of lengths & bearings
	58	6	Closing error – adjustment of angular errors, adjustment of bearings, numerical problems
	59	6	Balancing of traverse – Bowditch's method
	60	7	LEVELLING AND CONTOURING : Definition and Purpose and types of leveling– concepts of level surface,
Apr. 2 nd Week	61	7	Horizontal surface, vertical surface, datum, R. L., B.M Instruments used for leveling, concepts of line of collimation, axis of bubble tube, axis of telescope, Vertical axis.
	62	7	Levelling staff- Temporary adjustments of level, taking reading with level, concept of benchmark, BS, IS, FS, CP, HI
	63	7	height of collimation method and Rise & Fall method, comparison, Numerical problems on reduction of levels applying both methods, Arithmetic checks
	64	7	Effects of curvature and refraction, numerical problems on application of Correction.
	65	7	Reciprocal levelling
Apr. 3 rd Week	66	7	Errors in leveling and precautions, Permanent and temporary adjustments of different types of levels.
	67	7	Definitions, concepts and characteristics of contours
	68	7	Methods of contouring, plotting contour maps, Interpretation of contour maps,
	69	7	Use of contour maps on civil engineering projects
	70	7	Map Interpretation: Interpret Human and Economic Activities (i.e.: Settlement, Communication, Land use etc.)
Apr. 4 th	71	7	Interpret Physical landform (i.e.: Relief, Drainage Pattern etc.), Problem Solving and Decision Making

Week	72	8	COMPUTATION OF AREA & VOLUME: Determination of areas, computation of areas from plans.
	73	8	Calculation of area by using ordinate rule, trapezoidal rule, Simpson's rule.
	74	8	Calculation of volumes by prismoidal formula and trapezoidal formula, Prismoidal corrections, curvature correction for volumes
	75	8	REVISION


Concern faculty


HOD
Civil engineering


Academic Coordinator
GP Nabarangpur


Principal
GP Nabarangpur