LESSON PLAN FOR LAND SURVEYING-II

Discipline: Civil Engineering	Semester :6th	Name of the Teaching Faculty: SUBRAT KUMAR PANIGRAHI
Subject - LAND SURVEYING-II	Numbers of classes per week:5	Semester from date: 04.02.2025 to date:17.05.2025 No. of weeks: 15 Session: 2024-25 (SUMMER)
week	Class day	Theory
1st		TACHEOMETRY:
	1	1.1 Principles, stadia constants determination
	2	1.1 Principles, stadia constants determination
	3	1.2 Stadia tacheometry with staff held vertical and
	4	with line of collimation horizontal or inclined, numerical problems
	5	1.2 Stadia tacheometry with staff held vertical and
2nd	6	with line of collimation horizontal or inclined, numerical problems
	7	1.3 Elevations and distances of staff stations – numerical problems
	8	1.3 Elevations and distances of staff stations – numerical problems
	9	1.3 Elevations and distances of staff stations – numerical problems
	10	2.1 compound, reverse and transition curve, Purpose & use of different types of curves in field
3rd	11	2.1 compound, reverse and transition curve, Purpose & use of different types of curves in field
	12	2.2 Elements of circular curves, numerical problems
	13	2.3 Preparation of curve table for setting out
	14	2.4 Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord, (ii) successive bisection of arc,
	15	(iii) offsets from tangents, (iv) offsets from chord produced , (v) Rankine's method of tangent angles (No derivation)
4th	16	2.5 Obstacles in curve ranging – point of intersection inaccessible
	17	2.5 Obstacles in curve ranging – point of intersection inaccessible
	18	3.1 Fractional or Ratio Scale, Linear Scale, Graphical Scale
	19	3.2 What is Map, Map Scale and Map Projections
	20	3.3 How Maps Convey Location and Extent
5th	21	3.4 How Maps Convey characteristics of features
	22	3.5 How Maps Convey Spatial Relationship
	23	3.5.1 Classification of Maps 3.5.1 Physical Map 3.5.2 Topographic Map
	24	3.5.3 Road Map 3.5.4 Political Map
	25	3.5.5 Economic & Resources Map 3.5.6 Thematic Map

		3.5.7 Climate Map
6th	26	4.1 Open Series map
	27	4.2 Defense Series Map
	28	4.3 Map Nomenclature
	29	4.3.1 Quadrangle Name
	30	4.3.2 Latitude, Longitude, UTM's
7th	31	4.3.4 Contour Lines
	32	4.3.5 Magnetic Declination
	33	4.3.6 Public Land Survey System
	34	4.3.7 Field Notes
	35	4.3.7 Field Notes
8th	36	5.1 Aerial Photography: 5.1.1 Film, Focal Length, Scale 5.1.2 Types of Aerial Photographs (Oblique, Straight)
	37	5.2 Photogrammetry: 5.2.1 Classification of Photogrammetry
	38	5.2.2 Aerial Photogrammetry 5.2.3 Terrestrial Photogrammetry
	39	5.3 Photogrammetry Process: 5.3.1 Acquisition of Imagery using aerial and satellite platform
	40	5.3.2 Control Survey 5.3.3 Geometric Distortion in Imagery
9th	41	Application of Imagery and its support data Orientation
	42	and Triangulation Stereoscopic Measurement
	43	19.9.1 X-parallax 19.2.2 Y-parallax
	44	5.4 DTM/DEM Generation
	45	5.5 Ortho Image Generation
10th	46	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	47	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	48	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	49	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	50	6.2 Working principles of a Total Station (Set up and use of total station to measure angles,
11th	51	distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation)
	52	of surveyed points relative to Total Station position using trigonometry and triangulation.
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	54	distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation)
	55	of surveyed points relative to Total Station position using trigonometry and triangulation.
12th	56	7.1 GPS: - Global Positioning

		7.1.1 Working Principle of GPS,GPS Signals, 7.1.2 Errors of GPS,Positioning Methods
	57	7.2 DGPS: - Differential Global Positioning System 7.2.1 Base Station Setup
	58	7.2 DGPS: - Differential Global Positioning System 7.2.1 Base Station Setup
	59	7.2.4 Sequence to download GPS data from flashcards
	60	7.2.5 Sequence to Post-Process GPS data
13th	61	7.2.6 Sequence to export post process GPS data 7.2.7 Sequence to export GPS Time tags to file
	62	7.3 ETS: - Electronic Total Station 7.3.1 Distance Measurement
	63	7.3.2 Angle Measurement 7.3.3 Leveling
	64	7.3.4 Determining position 7.3.5 Reference networks
	65	7.3.6 Errors and Accuracy
14th	66	8.1 Components of GIS, Integration of Spatial and Attribute Information
	67	8.2 Three Views of Information System
	68	8.2.1 Database or Table View, Map View and Model View
	69	8.3 Spatial Data Model
	70	8.4 Attribute Data Management and Metadata Concept
15th	71	8.5 Prepare data and adding to Arc Map.
	72	8.6 Organizing data as layers. 8.7 Editing the layers.
	73	8.8 Switching to Layout View. 8.9 Change page orientation.
	74	8.10 Removing Borders.
	75	8.11 Adding and editing map information. 8.12 Finalize the map

Lecturer 3/2/25 HOD (Civil) 3/2/25 Academic Co-ordinator Principal

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