



LESSON PLAN OF LAND SURVEY –II 6TH SEMESTER 2022-2023

Unit	Topic	Period
1 TACHEOMETRY	Basic concepts on Tacheometry and application.	1
	Principles,stadia constants determination	2
	Stadia tacheometry with staff held vertical and with line of collimation horizontal and problems	3
	Stadia tacheometry with staff held vertical and with line of collimation inclined and problems	4
	Elevationsanddistancesofstaffstations–numericalproblems	5
	Revision of class and question answer session	6
2 CURVES	compound, reverse and transition curve, Purpose & use of different types of curves in field	7
	Elements of circular curves	8
	Elements of circular curves, numerical problems	9
	Preparation of curve table for setting out	10
	Setting out of circular curve by chain and tape and by instrument angular methods(i)offsets from long chord, (ii)succcessive bisection of arc	11
	Setting out of circular curve by chain and tape and by instrument angular methods (iii)offsets from tangents, (iv)offsets from chord produced, (v)Rankine’s method of tangent angles	12
	Obstacles in curve ranging–point of intersection inaccessible	13
	Revision of class and question answer session	14
3 BASICS ON SCALE AND BASICS OF MAP	Fractional or Ratio Scale, Linear Scale,Graphical Scale	15
	What is Map,Map Scale and Map Projection	16
	How Maps Convey Location and Extent	17
	How Maps Convey Spatial Relationship	18
	Classification of Map: Physical Map, Topographic Map, Road Map	19
	Classification of Map:Road Map, Political Map	20
	Classification of Map: Economic & Resources Map, Thematic Map & Climate Map	21
	Revision of class and question answer session	22
4 SURVEY OF INDIA MAP SERIES	Open Series map	23
	Defense Series Map	24
	Map Nomenclature	25
	Quadrangle Name	26
	Latitude,Longitude,UTM’s	27
	Contour Line	28
	Magnetic Declination	29
	Public Land Survey System	30
	Field Notes	31
	Revision of class and question answer session	32
5 BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY,	Aerial Photography: Film,Focal Length,Scale	33
	Types of Aerial Photographs (Oblique,Straight)	34

DEMANDORTH 6 IMAGE GENERATION:	Photogrammetry: Classification of Photogrammetry	35
	Aerial Photogrammetry & Terrestrial Photogrammetry	36
	PhotogrammetryProcess: Acquisition of Imagery using aerial and satellite platform	37
	Control Survey, Geometric Distortion in Imagery, Application of Imagery and its support data Orientation and Triangulation Stereo	38
	Scopic Measurement: X-parallax & Y-parallax	39
	DTM/DEM Generation, Ortho Image Generation	40
7 MODERN SURVEYING METHODS	Principles, features and use of (i)Micro-optic theodolite, digital theodolite	41
	Working principles of a Total Station	42
	Set up and use of total station to measure angles,distances of points under survey from total station and the co-ordinates(X,Y &Z or northing, easting, and elevation)	43
	Total Station position using trigonometry and triangulation	44
	Total Station position using triangulation	45
	Revision of class and question answer session	46
8 BASICS ON GPS & DGPS AND ETS	GPS:-Global Positioning: Working Principle of GPS,GPS Signals, Errors of GPS, Positioning Methods	47
	DGPS:-Differential Global Positioning System: Base Station Setup, Rover GPS Setup	48
	DGPS: Download, Post-Process and Export GPS data, Sequence to download GPS data from flash cards	49
	DGPS: Sequence to Post-Process GPS data, Sequence to export post process GPS data, Sequence to export GPS Time tags to file	50
	ETS:- Electronic Total Station- Distance Measurement, Angle Measurement	51
	ETS:- Electronic Total Station- Leveling, Determining position	52
	ETS:- Electronic Total Station- Reference networks, Errors and Accuracy	53
	Revision of class and question answer session	54
9 BASICS OF GIS AND MAP PREPARATIO USING GIS	Components of GIS, Integration of Spatial and Attribute Information	55
	Three Views of Information System: Data base or Table View, MapView and Model View	56
	Spatial Data Model	57
	Attribute Data Management and Metadata Concept	58
	Prepare data and adding to ArcMap.	59
	Organizing data as layers.	60
	Modern construction equipments for roads.	61
	Editing the layers.	62
	Switching to Layout View.	63
	Change page orientation.	64
	Removing Borders.	65
	Adding and editing map information.	66
	Finalize the map	67
	Extra Class	68
	Extra Class	69
	Extra Class	70