JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA

Department of Civil Engineering

6th Sem (3rd Year) Summer 2023

Course Code:	TH-1
Course Name:	LAND SURVEY II
Name Of The Faculty:	Sri Amit Kumar Sahu Sri Soumyasagar Tripathy

Sl No	Week No	No. Of classes	Topics to be covered	Remarks
1	W1	1	TACHEOMETRY: 1.1 Principles, stadia constants determination	
2		1	1.2 Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems	
3		1	1.3 Elevations and distances of staff stations – numerical problems	
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4		1	1.3 Elevations and distances of staff stations – numerical problems	
5	W2	1	CURVES : 2.1 compound, reverse and transition curve, Purpose & use of different types of curves in field	
6		1	2.2 Elements of circular curves, numerical problems	
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8		1	2.3 Preparation of curve table for setting out	
9		1	2.4 Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord	

			1	(ii) successive bisection of arc, (iii) offsets from tangents, (iv) offsets from chord produced	
10		W3	1	(v) Rankine's method of tangent angles	
11			1	2.5 Obstacles in curve ranging – point of intersection inaccessible	
12			1	2.5 Obstacles in curve ranging – point of intersection inaccessible	
13			1	BASICS ON SCALE AND BASICS OF MAP: 3.1 Fractional or Ratio Scale, Linear Scale, Graphical Scale	
14		W4	1	BASICS ON SCALE AND BASICS OF MAP: 3.1 Fractional or Ratio Scale, Linear Scale, Graphical Scale	
15			1	3.2 What is Map, Map Scale and Map Projections	
			1	3.3 How Maps Convey Location and Extent	
16			1	3.4 How Maps Convey characteristics of features	
17			1	3.5 How Maps Convey Spatial Relationship	
18		W5	1	3.5.1 Classification of Maps 3.5.1 Physical Map 3.5.2 Topographic Map	
19			1	3.5.3 Road Map 3.5.4 Political Map	
			1	3.5.5 Economic & Resources Map 3.5.6 Thematic Map	
20			1	3.5.7 Climate Map	
21			1	SURVEY OF INDIA MAP SERIES: 4.1 Open Series map	
22			1	4.2 Defense Series Map	
23		W6	1	4.3 Map Nomenclature 4.3.1 Quadrangle Name	
			1	4.3.2 Latitude, Longitude, UTM's	
24			1	4.3.4 Contour Lines 4.3.5 Magnetic Declination	
25			1	4.3.6 Public Land Survey System 4.3.7 Field Notes	

26	W7	1	BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION: 5.1 Aerial Photography: 5.1.1 Film, Focal Length, Scale	
27		1	5.1.2 Types of Aerial Photographs (Oblique, Straight)	
		1	5.2 Photogrammetry: 5.2.1 Classification of Photogrammetry	
28		1	5.2.2 Aerial Photogrammetry	
29		1	5.2.3 Terrestrial Photogrammetry	
30	W8	1	5.3 Photogrammetry Process: 5.3.1 Acquisition of Imagery using aerial and satellite platform	
31		1	5.3.2 Control Survey	
		1	5.3.3 Geometric Distortion in Imagery	
32		1	Application of Imagery and its support data Orientation and Triangulation Stereoscopic Measurement 19.9.1 X-parallax 19.2.2 Y-parallax	
33		1	5.4 DTM/DEM Generation	
34		1	5.5 Ortho Image Generation	
35		1	5.5 Ortho Image Generation	
	W9	1	MODERN SURVEYING METHODS : 6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite	
36		1	6.2 Working principles of a Total Station (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) of surveyed points relative to Total Station position using trigonometry and triangulation	
37		1	BASICS ON GPS & DGPS AND ETS: 7.1 GPS: - Global Positioning	
38		1	7.1.1 Working Principle of GPS,GPS Signals,	

39	W10	1	7.1.2 Errors of GPS,Positioning Methods	
		1	7.2 DGPS: - Differential Global Positioning System	
40		1	7.2.1 Base Station Setup	
41		1	7.2.2 Rover GPS Set up	
42		1	7.2.3 Download, Post-Process and Export GPS data	
43	W11	1	7.2.4 Sequence to download GPS data from flashcards	
		1	7.2.5 Sequence to Post-Process GPS data	
44		1	7.2.6 Sequence to export post process GPS data	
45		1	7.2.7 Sequence to export GPS Time tags to file	
46	W12	1	7.3 ETS: - Electronic Total Station 7.3.1 Distance Measurement	
47		1	7.3.2 Angle Measurement	
		1	7.3.3 Leveling	
48		1	7.3.4 Determining position	
49		1	7.3.5 Reference networks	
50		1	7.3.6 Errors and Accuracy	
51	W13	1	BASICS OF GIS AND MAP PREPARATION USING GIS 8.1 Components of GIS, Integration of Spatial and Attribute Information	
		1	8.2 Three Views of Information System 8.2.1 Database or Table View, Map View and Model View	
52		1	8.3 Spatial Data Model 8.4 Attribute Data Management and Metadata Concept	
53	W14	1	8.5 Prepare data and adding to Arc Map. 8.6 Organizing data as layers.	
54		1	8.7 Editing the layers. 8.8 Switching to Layout View.	
55		1	8.9 Change page orientation.	
		1	8.10 Removing Borders.	
56		1	8.11 Adding and editing map information.	
57		1	8.12 Finalize the map	

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58	W15	1	PYQ	
59		1	PYQ	
		1	REVISION	
60		1	REVISION	
Total		**75**		

Signature of Faculty

(Comp Sc)

13/03/23

Signature of H.O.D