

**JHARSUGUDA ENGINEERING SCHOOL,  
JHARSUGUDA**

**Department of Civil Engineering**

**6th Sem (3rd Year) Summer 2022**

**Theory No: 1**

**Subject: LAND SURVEY II**

**Name Of The  
Faculty:**

**Sri Amit kumar sahu**

**Sri Soumyasagar Tripathy**

<b>Sl No</b>	<b>Week No</b>	<b>No. Of classes</b>	<b>Topics to be covered</b>	<b>Remarks</b>
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	
		1	1.3 Elevations and distances of staff stations – numerical problems	
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	

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		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	W8	1	5.2.3 Terrestrial Photogrammetry	
30		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	W11	1	7.2.2 Rover GPS Set up		
42		1	7.2.3 Download, Post-Process and Export GPS data		
43		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		W12	1	7.2.7 Sequence to export GPS Time tags to file	
46			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	W13	1	7.3.5 Reference networks		
50		1	7.3.6 Errors and Accuracy		
51		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	
60		1	REVISION	
		1	REVISION	
<b>Total</b>		<b>75</b>		

  
 21/02/22  
 Signature of Faculty  
  
 21/03/2022  
 (Amit Iw. Sahu)

  
 Signature of H.O.D.  
 (Amit Iw. Sahu)

