

**Lesson plan (for Even-semester as per revised curriculum and study scheme)**

<b>Name of Faculty</b>	Sandeep Goyal			
<b>Discipline</b>	Civil Engineering			
<b>Semester</b>	4 <sup>th</sup> (Even- semester)			
<b>Subject</b>	SURVEYING-II			
<b>Lesson Plan</b>	From 15 feb 2024 to 14 June 2024			
<b>Work load</b>	(02+04)			
<b>Week</b>	<b>Day</b>	<b>Topics</b>	<b>No.</b>	<b>Practical</b>
1st	1	Electronic Digital Theodolite and Tachometric surveying Concept/Difference of Transit Theodolite and Electronic Digital Theodolite	1	Study of a transit vernier theodolite; temporary adjustments of theodolite.
	2	Temporary adjustments of an Electronic Digital Theodolite		
2nd	1	Concept of transiting, swinging, face left, face right and changing face	2	Measurement of vertical angles and use of tachometric tables and Measurement of magnetic bearing of a line
	2	Prolonging a line (forward and backward) , Traversing by included angles and deflection angle method		
3rd	1	Plotting a traverse; concept of coordinate and solution of omitted measurements (one side affected)	3	Running a closed traverse with a theodolite (at least five sides) and its plotting , Height of objects with and without accessible bases
	2	Errors in theodolite survey and precautions taken to minimize them ,Height of objects with and without accessible bases		
4th	1	Concept, general principles of stadia tachometry and methods of tachometry and (with numerical problems) , Instruments to be used in tachometry	4	Setting out of a simple circular curve with given data by the following methods a) Offsets from the chords produced by Digital Theodolite b) One theodolite method
	2	Definition and types of horizontal curve		
5th	1	Elements of simple circular curve - Degree of the curve, radius of the curve, tangent length, point of intersection (Apex tangent point, length of curve, long chord deflection angle,	5	Setting out of simple circular curve by tangential angles using a Digital Theodolite
	2	Apex distance and Mid- ordinate.		
6th	1	Numerical problems	6	Setting out of a transition curve by tangential offsets using a Digital Theodolite
	2	of transition curve ,Length of transition curve for roads; by cubic parabola		
7th	1	Need (centrifugal force and super elevation), Calculation of offsets for a transition curve	7	Setting out of a transition curve by tangential offsets using a Digital Theodolite
	2	Definition and types of vertical curve , Types of vertical curves ,Setting out of a vertical curve		
8th	1	Principle of EDM, its component parts and their functions ,Uses of EDM , Distomat	8	Temporary adjustments of a Total station
	2	Remote sensing system ,Application of remote sensing system in civil engineering, land uses/land cover, mapping, and		

9th	1	GPS, DGPS and GIS applications, Planimeter (Digital) ,Introducti	9	Measurement of distance, horizontal angle and vertical angle. ,To plot an area with the help of Total Station
	2	Concept and uses of TS ,Uses of function keys, various parts of TS ,Accessories used in TS survey		
10th	1	Applications of TS in various engineering area. , Temporary adjustments of TS	10	Layout of any building, school, college, factory etc. with total station showing topographic map
	2	Measurement of horizontal angle, vertical angle distance and coordinates using Total station, Traversing, profile survey and contouring with TS		
11th	1	Errors in TS	11	Computation of earth work and reservoir capacity with DGPS
	2	Concept of DGPS, various parts, applications and software used for DGPS ,Comparison between DGPS and TS		
12th	1	Temporary adjustments of a DGPS	12	Layout of drain, canal, road with DGPS.
	2	REVISION		
13th	1	How does DGPS work	13	Demarcation of roads, plots, commercial spaces and agricultural land etc. with DGPS
	2	How does DGPS work		
14th	1	Errors in DGPS	14	Demarcation of roads, plots, commercial spaces and agricultural land etc. with DGPS
	2	TEST		
15th	1	REVISION	15	File Checking
	2	REVISION		