

<u>Detailed Teaching Plan</u>					
Lecture No.	Unit No	Topics to be covered	Planned Date	Execution Date	Remark
1	1	1.1.1 Introduction to surveying, Plane and Geodetic surveying , 1.1.2 Purpose of engineering surveys			
2		1.1.3 Principles of surveying , 1.2 CHAIN SURVEY : 1.2.1 Instrument used in chain survey:- Types of chain and tapes, Study of 20m and 30m chain, Chain, Tapes, Arrow, Ranging rod, Offset rod, Open cross staff, optical square, prism square			
3		1.2.2 Ranging: Direct/indirect/ reciprocal, offsets and recording in field book. 1.2.3 Use of Line Ranger			
4		Chaining on plane and sloping ground , 1.2.4 Obstacles in Chaining.			
5		1.2.5 Offsets:- Types- Perpendicular/Oblique Instruments used to take offsets.			
6		1.2.6 Chain Triangulation- Principal of Chain Triangulation, Survey Stations, Survey lines Arrangement of survey lines, conditions to be fulfilled by survey lines or survey stations, Recording field book: Single line and Double line booking , chain traversing,			
7		1.2.7 Errors in chain surveying and their corrections, 1.2.8 Symbols and signs to indicate ground features			
8		2.1 Traverse Survey – Traversing, Closed and Open Traverse, Name of instruments used for measurement of directions and angles , 2.2 Bearings and Angles – Bearing, Meridian, Types of meridian and bearing,			
9		Systems of bearing, Conversion of bearings from one system to other, Fore and Back Bearing, Calculation of angles from bearings and			

10	2	Calculation of angles from bearings and bearings from angles....Continue			
11		2.3 Magnetic Compass – Magnetic Compass ,Prismatic Compass, Surveyor's Compass, Temporary adjustment of prismatic compass and taking observation, Magnetic dip and declination.			
12		2.4 Local attraction - causes, detection, errors and corrections, problems on local attraction, magnetic declination and calculation of included angles in a compass traverse, Graphical adjustment of closing error.			
13		problems on local attraction, magnetic declination and calculation of included angles in a compass traverse, Graphical adjustment of closing error....Continue			
14	3	3.1 Levelling- Levelling ,Level surfaces,Level Line, Horizontal Plane, Horizontal Line, Vertical Line, Datum, Bench Marks, Reduced Level, Mean Sea Level.			
15		3.2 Levelling Instruments –Dumpy Level, , Tilting Level, AutoLevel, Digital Level Leveling Staff, Temporary adjustment of Dumpy Level.			
16		3.3 Terms used in leveling - Line of collimation, Axis of Telescope, Axis of bubble tube, Station, Height of instruments, Back sight, Fore sight, intermediate sight, Change point, Rise,Fall			
17		3.4 Classification of Levelling - Simple Levelling, Differential Levelling, Fly Levelling, Profile Levelling, Cross Sectioning			
18		3.5 Examples & methods of finding out the R. L. in Level Book by H.I. Methods and Rise & Fall Methods with necessary check.			
19		3.5 Examples & methods of finding out the R. L. in Level Book by H.I. Methods and Rise & Fall Methods with necessary check....Continue			

20		3.6 Correction for Curvature and refraction and related examples, Balancing of backsight and foresight.			
21		3.7 Errors in Levelling ,Degree of Precision			
22	4	4.1 Contour , 4.2 Contour interval, horizontal equivalent ,Uses of contours , 4.3 Characterstics of Contouring			
23		4.4 Methods of contours			
24		4.5 Interpolation of contours			
25		4.6 Preparation of contour map.			
26		4.7 Uses of Contour Map- Drawing of Sections, Determination of intervisibilty between two points, Tracing of contour gradient and location of route,			
27		measurement of drainage areas ,calculation of capacity of reservoirs & related examples , 4.8 Use of Topo sheet			
28	5	5.1.1 Principles of plane table surveying, Advantages and disadvantages of plane table survey , 5.1.2 Plane table and its accessories,			
29		5.1.3 Setting of a plane table: (a) Centering , (b) Levelling , (c) Orientation , Methods of plane table survey : Radiation Method			
30		Methods of plane table survey : Intersection , Traversing , Resection (Three Point Problem)and precautions to control them.			
31		Methods of plane table survey : Resection (Two Point Problem), 5.1.5 Errors in plane table survey and precautions to control them.			
32		5.2 Minor instruments:- Construction and use of Hand Level, Abney Level, Box Sextant , Pentagraph and Ceylon Ghat Tracer , Planimeter			