LESSON PLAN

Name of faculty SACHIN SHARMA

Discipline Civil Engineering

Semester 3rd

Subject Surveying-1

Week	Theory			Practical	
	Lecture	Topic		Practical	Topic
	Day			Day	
1st	1st	Definition and Purpose of Surveying , Basic principles of surveying		1st	Demonstration of chain surveying
	2nd	Primary Division of Surveying, linear and angular, units of measurements			
2nd	1st	classification based on surveying instruments , Purpose of chain surveying, principles of chain surveying , its advantages and disadvantages		2nd	Compass Surveying a) Study of prismatic compass b) Setting the compass and taking observations
	2nd	Operations in Chain Surveying (Ranging, Measurement, Offsetting), Direct and indirect ranging offsets and recording of field notes			
3rd	1st	Errors in chain surveying and their corrections ,Purpose of compass surveying. Use of prismatic compass		3rd	Levelling a) Study of Auto level and levelling staff b) Temporary adjustments of Auto levels
	2nd	Meridian - Magnetic and true Bearing - Magnetic, True and Arbitrary			
4th	1st	Whole circle bearing and reduced bearing Fore and back bearing Magnetic dip and declination		4th	To find out difference of level between two distant points by shifting the instrument
	2nd	Numerical Problems			
5th	1st	Local attraction - causes, detection, errors and corrections		5th	Longitudinal and cross sectioning of a road/railway/canal
	2nd	declination and calculation of included angles in a compass traverse			
6th	1st	Purpose of levelling, concept of a level surface, horizontal surface , vertical surface, datum, reduced level and bench marks		6th	Setting a gradient by auto-level.
	2nd	Identification of various parts of Dumpy level and use of Dumpy level, Engineer' level, Auto level			
7th	1st	advantages and disadvantages, use of auto level. Concepts of line of collimation, axis of the bubble tube		7th	Plane Table Surveying a) Study of the plane table survey equipment b) Setting the plane table
	2nd	axis of the telescope and vertical axis , Identification of various parts of Auto level			
8th	1st	levelling staff types, uses and least count of levelling staff Temporary adjustment and permanent adjustment of Auto Level leveling staff		8th	Orientation by Trough compass
	2nd	Concept of back sight, foresight, intermediate sight, change point Level book and reduction of level byHeight of collimation method and			Back Sighting
9th	1st	Rise and fall method Numerical Problems		9th	Plotting few points by intersection, radiation and resection method
	2nd	Arithmetic checks, problem on reduction of levels, fly levelling ,check leveling and profile levelling (L-section and X-section), errors in levelling,			
10th	1st	permissible limits, reciprocal leveling. Numerical problems.		10th	Traversing an area with a plane table (at least five lines)
	2nd	Numerical Problems			
11th	1st	Introduction and Definition of plane table surveying, Purpose of plane table surveying, equipment used in plane table survey:		11th	Layout of Buildings (from given drawing of two room residential building) by use of
	2nd	Setting of a plane table: (a) Centering (b) Levelling (c) Orientation , Methods of plane table surveying (a) Radiation,			Surveying instruments
12th	1st	(b) Intersection (c) Traversing (d) Resection		12th	Contouring:
	2nd	Advantages & Disadvantages of plane table surveying , Errors in plane table survey and precautions to control them , Testing and adjustment of plane table and alidad			Preparing a contour plan by radial line method by the use of a Auto level.
13th	1st	Definition and Purpose of contours , Contour interval and horizontal equivalent		13th	Preparing a contour plan by method of squares
	2nd	Factors effecting contour interval , Characteristics of contours			
14th	1st	Methods of contouring: Direct and indirect , Use of stadia measurements in contour survey		14th	Preparing a contour plan of a Road/Railway track/Canal by taking cross sections.
	2nd	Interpolation of contours; use of contour map , Drawing cross section from a contour map; marking alignment of a road, railway line			
15th	1st	Revision/TEST		15th	Computation of earth work and reservoir capacity from a contour map
	2nd	Revision/TEST			