Lesson Plan

Name of the Faculty:

Discipline: CIVIL ENGINEERING

Semester: 3rd SEM

Subject: SURVEYING - I

Work Load (Lecture/Practical) per week (in hours): Lectures- , Practicals-

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1st	1st	About subject	1st	ABOUT LAB AND INSTRUMENTS
	2nd	Basic principles of surveying		
	3rd	Concept and purpose of surveying, measurements-linear and angular, units of measurements		
	4th	Instruments used for taking these measurements, classification based on surveying instruments		
2nd	5th	Purpose of chain surveying, principles of chain surveying and its advantages and disadvantages	2nd	Chain surveying: i) a) Ranging a line b) Chaining a line and recording in the field book c) Taking offsets - perpendicular and oblique (with a tape only) d) Setting out right angle with a tape
	6th	Obstacles in chain surveying		
	7th	Direct and indirect ranging offsets and recording of field notes		
	8th	Errors in chain surveying and their corrections		
3rd	9th	Purpose of compass surveying. Use of prismatic compass: Setting and taking observations	3rd	Chaining of a line involving reciprocal ranging
	10th	Concept of following with simple numerical problems: a) Meridian - Magnetic and true b) Bearing - Magnetic, True and Arbitrary		
	11th	c) Whole circle bearing and reduced bearing d) Fore and back bearing e) Magnetic dip and declination		
	12th	Local attraction - causes, detection, errors and corrections, problems on local attraction, magnetic declination		

4th	13th	calculation of included angles in a compass traverse	4th	Chaining a line involving obstacles to ranging
	14th	CH. 1,2,3 TEST		
	15th	Purpose of levelling, concept of a level surface		
	16th	horizontal surface, vertical surface, datum, reduced level and bench mar		
5th	17th	Identification of various parts of Dumpy level and use of Dumpy level	5th	Chain Survey of a small area.
	18th	Engineer' level, Auto level: advantages and disadvantages, use of auto level.		
	19th	Concepts of line of collimation, axis of the bubble tube		
	20th	axis of the telescope and vertical axis		
6th	21st	Levelling staff: single piece, folding, invar precision staff, telescopic	6th	Compass Surveying: i) a) Study of prismatic compass b) Setting the compass and taking observations c) Measuring angles between the lines meeting at a point
	22nd	Temporary adjustment and permanent adjustment of dumpy level by two peg method.		
	23rd	Concept of back sight, foresight, intermediate sight, change point, to determine reduce levels		
	24th	Level book and reduction of levels by Height of collimation method		
7th	25th	Rise and fall method	7th	Levelling: i) a) Study of dumpy level and levelling staff b) Temporary adjustments of various levels
	26th	Arithmetic checks, problem on reduction of levels, fly levelling,		
	27th	check leveling and profile leveling (L-section)		
	28th	errors in levelling, permissible limits, reciprocal leveling		
8th	29th	Numerical problems.	8th	c) Taking staff readings on different stations from the single setting and finding differences of level between them
	30th	Computations of Areas of regular figures and irregular figures. Simpson's rule: prismatic formula		
	31st	graphical method use of planimeter for computation of areas, numerical problems		

	32nd	Purpose of plane table surveying, equipment used in plane table survey		
9th	33rd	Setting of a plane table: (a) Centering	9th	To find out difference of level between two distant points by shifting the instrument
	34th	(b) Leveling		
	35th	(c) Orientation		
	36th	numerical problems		
10th	37th	CH. 4,5 TEST	10th	Longitudinal and cross sectioning of a road/railway/canal
	38th	SURVEY AT FIELD LEVELING		
	39th	SURVEY AT FIELD LEVELING		
	40th	Concept of Two point and Three point problems		
11th	41st	Errors in plane table survey	11th	Setting a gradient by dumpy and auto-level
	42nd	precautions to control them		
	43rd	Testing and adjustment of plane table and alidade		
	44th	numerical problems		
12th	45th	Methods of plane table surveying (a) Radiation,	12th	Plane Table Surveying: i) a) Study of the plane table survey equipment b) Setting the plane table
	46th	(b) Intersection		
	47th	(c) Traversing		
	48th	(d) Resection		
13th	49th	leveling and profile leveling (X-SECTION)	13th	c) Marking the North direction d) Plotting a few points by radiation method
	50th	permissible limits, reciprocal leveling		
	51st	graphical method use of planimeter for computation of areas, numerical problems		
	52nd	calculation of included angles in a compass traverse		
14th	53rd	, numerical problems	14th	a) Orientation by - Trough compass - Back sighting b) Plotting few points by intersection, radiation and resection method
	54th	, numerical problems		
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	56th	CH. 7,8,9 TEST		
15th	57th	Numerical Problems	15th	Layout of Buildings (from given drawing of two room residential building) by use of surveying instruments.
	58th	1ST SESIONAL REVISION		
	59th	2ND SESIONAL REVISION		
	60th	3RD SESIONAL REVISION		