GOVERNMENT POLYTECHNIC NAWADA

LESSON PLAN FOR SURVEYING (1615302) (CE)

Faculty name- RAHUL

Branch – Civil Engineering **Semester-3rd**

WEEK	LECTURE/ DAY	TOPIC /ASSIGNMENT/ TEST
1	1	Definition of Survey, objective of surveying ,Classification of surveying
	2	Principal of surveying ,use of surveying
	3	Primary –Plain, Geodetic
2	4	Secondary type of surveying, method, object
	5	Principal of chain surveying, study of chain and types of chain
	6	Types of tape ,ranging rod, arrows, peg, cross staff, optical square, line ranger
3	7	Types of ranging, chaining-plain and sloping ground
	8	Chain Triangulation – Survey Station and their Selections, Survey lines, Check lines,
	9	Tie lines, base line. Taking offsets .long and short offset, degree of offset.
4	10	Error in chain surveying & applying correction for chain & Tape
	11	Numerical problem on correction if chain and tape
	12	Obstacles in Chaining ,chain & cross staff survey for finding area of field, conventional sign related to survey
5	13	compass survey-Principal of Compass survey,
	14	bearing of lines – meridian –true, magnetic, and arbitrary.
	15	Bearing–fore bearing, back bearing
6	16	whole circle bearing, quadrantal bearing system and reduced bearing,
	17	Conversion of bearings, finding included angles from bearings.
	18	prismatic compass – component, construction and use.
7	19	local attraction, causes, precautions to be taken to avoid and correction of bearings affected due to local attraction
	20	calculation of included angles., traversing – open traverse, closed traverse
	21	traversing – open traverse, closed traverse, graphical adjustment for closing error.
8	22	numerical problems on calculation of bearings& angles
	23	numerical problems on calculation of local attraction
	24	test & Discussion of compass surveying
9	25	Levelling- Definitions – level surface, level line, , horizontal line
	26	Definitions – vertical line, datum surface, reduced level, bench mark and its types .
	27	dumpy level –components, construction,

10	**28**	line of sight, line of collimation, bubble tube axis,
	29	levelling staff – telescopic and folding type .foresight, back sight, intermediate sight, change point,
	30	, height of collimation .fundamental axes and their relationship
11	**31**	Recording in level book. Temporary adjustments of dumpy level.
	32	Method of reduction of levels – height of instrument method
	33	Method of reduction of levels – Rise and Fall method
12	**34**	Arithmetical checks, numerical problems of height of instrument method
	35	Problem on computation of missing readings.
	36	Classifications of levelling - simple, differential,
13	**37**	Classifications of levelling - simple, profile, cross sectional, fly and check levelling.
	38	Study and use of tilting level & auto level.
	39	Sources and errors in levelling, precautions and difficulties faced in levelling.
14	**40**	Revision test & discussion on levelling .
	41	Contouring- Definitions – contour, contour interval, horizontal equivalent
	42	Characteristics of contours .method of locating contours.
15	**43**	Interpolation of contours. Establishing grade contours.
	44	Uses of contour maps. Interpretation of typical contour sheets.
	45	*Area and volume measurements-* Construction and use of polar planimeter for measurement of area.
	46	Simple numerical problems on area measument
	47	Study and use of digital planimeter .
	48	Concept of computation of volume by trapezoidal and prismoidal formulae.