



RAAJDHANI ENGINEERING COLLEGE, BHUBANESWAR
Department of Civil Engineering

LESSONPLAN

2023-2024

Session : March 2024- Aug 2024
Course Type : Theory
Semester/Branch :: 4th Semester, Civil Engineering
Subject (with code) :: Land Surveying – I (Th.3)
Contact hours/week :: 5 hours
Name of Faculty :: Prof. Geetanjali Mahanta

S L. N O.	CLASS ID	COURSECONTENT	EXHIBIT/REFERENCE
1	1.1	Surveying: Definition Aims and objectives	https://www.youtube.com/playlist?list=PL20A0651466E8A776
2	1.2	Principles of survey-Plane surveying-	https://www.youtube.com/playlist?list=PL20A0651466E8A776
3	1.3	Geodetic Surveying- Instrumental surveying.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
4	1.4	Precision and accuracy of measurements, instruments used for measurement of distance,	https://www.youtube.com/playlist?list=PL20A0651466E8A776
5	1.5	Types of tapes and chains.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
6	1.6	Errors and mistakes in linear measurement	https://www.youtube.com/playlist?list=PL20A0651466E8A776
7	1.7	linear measurement –classification,	https://www.youtube.com/playlist?list=PL20A0651466E8A776
8	1.8	Sources of errors and remedies.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
9	1.9	Corrections to measured lengths due to-incorrect length, temperature variation, pull, sag,	https://www.youtube.com/playlist?list=PL20A0651466E8A776
10	1.10	numerical problem applying corrections	https://www.youtube.com/playlist?list=PL20A0651466E8A776
11	2.1	Chaining and chain surveying:	https://www.youtube.com/playlist?list=PL20A0651466E8A776
12	2.2	Equipment and accessories for chaining	https://www.youtube.com/playlist?list=PL20A0651466E8A776
13	2.3	Ranging – Purpose, signaling, direct and indirect ranging, Line ranger –	https://www.youtube.com/playlist?list=PL20A0651466E8A776
14	2.4	features and use, error due to incorrect ranging.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
15	2.5	Methods of chaining –Chaining on flat ground, Chaining on sloping ground – stepping method, Clinometer-features and use, slope correction	https://www.youtube.com/playlist?list=PL20A0651466E8A776
16	2.6	Setting perpendicular with chain & tape, Chaining across different types of obstacles –	https://www.youtube.com/playlist?list=PL20A0651466E8A776

17	2.7	Numerical problems on chaining across obstacles – Purpose of chain surveying, Its Principles, concept of field book	https://www.youtube.com/playlist?list=PL20A0651466E8A776
18	2.8	Selection of survey stations, base line, tie lines, Check lines	https://www.youtube.com/playlist?list=PL20A0651466E8A776
19	2.9	Offsets – Necessity, Perpendicular and Oblique offsets,	https://www.youtube.com/playlist?list=PL20A0651466E8A776
20	2.10	Selection of survey stations, base line, tie lines, Check lines Instruments for setting offset – Cross Staff, Optical Square	https://www.youtube.com/playlist?list=PL20A0651466E8A776
21	2.11	Errors in chain surveying – compensating and accumulative errors causes & remedies, Precautions to be taken during chain surveying	https://www.youtube.com/playlist?list=PL20A0651466E8A776
22	3.0	Angular measurement and compass surveying: Measurement of angles with chain, Measurement of angles tape & compass	https://www.youtube.com/playlist?list=PL20A0651466E8A776
23	3.1	Compass – Types, features, parts, merits & demerits, testing & adjustment of compass	https://www.youtube.com/playlist?list=PL20A0651466E8A776
24		Designation of angles- concept of meridians – Magnetic, True, arbitrary; Concept of bearings	https://www.youtube.com/playlist?list=PL20A0651466E8A776
25	3.2	Whole circle bearing, Quadrantal bearing, Reduced bearing, suitability of application	https://www.youtube.com/playlist?list=PL20A0651466E8A776
26	3.3	Quiz Test	
27	3.4	Use of compasses – setting in field-centering, leveling, taking readings, concepts of Fore bearing, Back Bearing	https://www.youtube.com/playlist?list=PL20A0651466E8A776
28	3.5	Numerical problems on computation of interior & exterior angles from bearings.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
29	3.6	Effects of earth's magnetism – dip of needle	https://www.youtube.com/playlist?list=PL20A0651466E8A776
30	3.7	magnetic declination, variation in declination, numerical problems on application of correction for declination.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
31	3.8	Errors in angle measurement with compass – sources & remedies.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
32	3.9	Principles of traversing – open & closed traverse Local attraction – causes, detection, errors, corrections	https://www.youtube.com/playlist?list=PL20A0651466E8A776
33	3.10	Numerical problems of application of correction due to local attraction. Errors in compass surveying – sources & remedies	https://www.youtube.com/playlist?list=PL20A0651466E8A776
34	3.11	Plotting of traverse – check of closing error in closed & open traverse Bowditch's correction, Gale's table	https://www.youtube.com/playlist?list=PL20A0651466E8A776
35	4.1	Map reading cadastral maps & nomenclature: Study of direction, scale, Grid Reference and Grid Square Study of Signs and Symbols	https://www.youtube.com/playlist?list=PL20A0651466E8A776
36	4.2	Cadastral Map Preparation Methodology	https://www.youtube.com/playlist?list=PL20A0651466E8A776

37	4.3	Unique identification number of parcel	https://www.youtube.com/playlist?list=PL20A0651466E8A776
38	4.4	Positions of existing Control Points and its types	https://www.youtube.com/playlist?list=PL20A0651466E8A776
39	4.5	Adjacent Boundaries and Features, Topology Creation and verification.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
40	5.1	Objectives, principles, and use of plane table surveying.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
41	5.2	Instruments & accessories used in plane table surveying.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
42	5.3	Methods of plane table surveying – (1) Radiation, (2) Intersection, (3) Traversing, (4) Resection	https://www.youtube.com/playlist?list=PL20A0651466E8A776
43	5.4	Statements of two point and three-point problem.Errors in plane table surveying and their corrections, precautions in plane Table surveying.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
44	5.5	Quiz test	
45	6.1	Theodolite surveying and traversing:	https://www.youtube.com/playlist?list=PL20A0651466E8A776
46	6.2	Transit theodolite- Description of features, component parts, Fundamental axes of a theodolite, concept of vernier, reading a vernier, Temporary adjustment of theodolite	https://www.youtube.com/playlist?list=PL20A0651466E8A776
47	6.3	Concept of transiting –Measurement of horizontal and vertical angles,	https://www.youtube.com/playlist?list=PL20A0651466E8A776
48	6.4	Measurement of magnetic bearings, deflection angle, direct angle, setting out angles, prolonging a straight line with theodolite, Errors in Theodolite observations.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
49	6.5	Methods of theodolite traversing with –inclined angle method, deflection angle method, bearing method, Plotting the traverse by coordinate method, Checks for open and closed traverse	https://www.youtube.com/playlist?list=PL20A0651466E8A776
50	6.6	Traverse computation – consecutive coordinates, latitude and departure, Gale’s traverse table, Numerical problems on omitted measurement of lengths & bearings	https://www.youtube.com/playlist?list=PL20A0651466E8A776
51	6.7	Closing error – adjustment of angular errors, adjustment of bearings, numerical problems	https://www.youtube.com/playlist?list=PL20A0651466E8A776
52	6.8	Balancing of traverse – Bowditch’s method, transit method, graphical method, axis method, calculation of area of closed traverse.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
53	7.1	Levelling and contouring,definition and Purpose and types of leveling– concepts of level surface, Horizontal surface, vertical surface, datum, R. L., B.M	https://www.youtube.com/playlist?list=PL20A0651466E8A776
54	7.2	Instruments used for leveling, concepts of line of collimation, axis of bubble tube, axis of telescope, Vertical axis.	https://www.youtube.com/playlist?list=PL20A0651466E8A776

55	7.3	Levelling staff – Temporary adjustments of level, taking reading with level, concept of bench mark, BS, IS, FS, CP, HI	https://www.youtube.com/playlist?list=PL20A0651466E8A776
56	7.4	Field data entry – level Book – height of collimation method and Rise & Fall method, comparison, Numerical problems on reduction of levels applying both methods, Arithmetic checks.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
57	7.5	Effects of curvature and refraction, numerical problems on application of correction	https://www.youtube.com/playlist?list=PL20A0651466E8A776
58	7.6	Reciprocal leveling – principles, methods, numerical problems, precise leveling.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
59	7.7	Errors in leveling and precautions, Permanent and temporary adjustments of different types of levels	https://www.youtube.com/playlist?list=PL20A0651466E8A776
60	7.8	Definitions, concepts, and characteristics of contours Methods of contouring, plotting contour maps, Interpretation of contour maps, oposheets	https://www.youtube.com/playlist?list=PL20A0651466E8A776
61	7.9	Use of contour maps on civil engineering projects – drawing crosssections from contour maps, locating proposal routes of roads / railway / canal on a contour map, computation of volume earthwork from contour map for simple structure	https://www.youtube.com/playlist?list=PL20A0651466E8A776
62	7.10	ap Interpretation: Interpret Human and Economic Activities (i.e.: Settlement, Communication, Land use etc.), Interpret Physical landform (i.e.: Relief, Drainage Pattern etc.), Problem Solving aDecision Making	https://www.youtube.com/playlist?list=PL20A0651466E8A776
63	8.1	Computation of area & volume:	https://www.youtube.com/playlist?list=PL20A0651466E8A776
64	8.2	Determination of areas, computation of areas from plans	https://www.youtube.com/playlist?list=PL20A0651466E8A776
65	8.3	Calculation of area by using ordinate rule, trapezoidal rule, Simpson’s rule.	https://www.youtube.com/playlist?list=PL20A0651466E8A776
66		CLASS TEST	PERFORMANCE DISCUSSION
67		MONTHLY CLASS TEST	PERFORMANCE DISCUSSION
68		PRIVIOUS YEAR QUESTION DISCUSSION	PERFORMANCE DISCUSSION

