

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2022-2023

Discipline: Civil Engg. Semester: 4th

Name of the Teaching Faculty: Satyamayan Bhuiagar

Subject: Land Surveying-1 No. of Days/per week class allotted 05

Semester From Date: 14/2/23 To Date: 23/5/23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
1	1st	Surveying: Definition; Aim of objective
	2nd	Principle of Survey - Plane Surveying
	3rd	Geodetic Surveying Instrumental Surveying
	4th	Precision & accuracy of measurements Instrument used for measurement & distance types of tapes & chains
	5th	Errors & mistakes in linear measurement, classification, sources, of errors & remedies
2	1st	correction to measured length due to incorrect length, temperature variation
	2nd	pull, sag, numerical problem applying corrections
	3rd	Equipment & accessories for chaining, Ranging & purpose signaling error
	4th	Methods of chaining, chaining on flat ground, chaining on slope ground stepping method, slope correction.
	5th	Setting perpendicular with chain & tape, chaining across different types of obstacles, Numerical problems.
3	1st	Purpose of chain surveying, its concept field book, Survey stations, base line, tie lines, check lines
	2nd	Offsets; Necessity, perpendicular & oblique, offsets, cross staff, optical square

Satyanarayan Bhushan
Signature of the Faculty

Subject: Land Surveying-1 No. of Days/per week class allotted 05

Semester From Date : 14/2/23 To Date : 23/5/23 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
	3rd	Errors in chain surveying, compensating & accumulative errors, causes & remedies.
	4th	Precautions to be taken during chain surveying
	5th	Measurement of angles with chain, tape & compass
4	2nd	compass - types features, parts merits & demerits, testing & adjustment of compass.
	2nd	Designation of angles - concept of meridians, magnetic, true, arbitrary concepts of bearing
	3rd	WCB, QB, RB, suitability of application numerical problems on conversion of bearing.
	4th	Uses of compass - setting in field centering, levelling, taking readings.
	5th	Concepts of fore bearing, BB, numerical problems on computation of interior & exterior angles from bearing
5	2nd	Effects of earth magnetism, dip of needle, magnetic declination, variation in declination, Numerical problems
	2nd	Errors in angle measurement with compass, Sources & remedies
	3rd	Principles of traversing - open & closed traverse, methods of traversing.
	4th	Local attraction - causes detection errors corrections, Numerical problems on application of correction due to local attraction.

Satyanarayan
Bhusalger
Signature of the Faculty

Subject: Land Surveying-I No. of Days/per week class allotted 05

Semester From Date : 14/2/23 To Date : 23/5/23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
	5th	Errors in compass surveying. Sources & remedies, plotting of traverse
6	28th	check of closing error in closed & open traverse, Bowditch's correction, Gauss table.
	2nd	Study of detection, scale, Grid reference & grid square
	3rd	Study of sign & symbols of map
	4th	cadastal map preparation methodology
	5th	Unique identification number of parcel
7	28th	positions of existing control points and its types
	2nd	Adjacent boundaries & features Topology creation & verification
	3rd	Revision about map reading cadastal maps & nomenclature
	4th	objectives, principles & use of Plane table surveying
	5th	Instrument & accessories used in Plane table surveying
8	28th	Methods of plane table surveying Radiation, Intersection.

Satyanarayan
Bhusagar

Signature of the Faculty

Subject: Land Surveying-I No. of Days/per week class allotted 05
 Semester From Date: 14/5/23 To Date: 23/5/23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
	2nd	Methods of plane table surveying Traversing, ^{Resection}
	3rd	statements of TWO POINT & THREE POINT Problems.
	4th	Errors in plane table surveying & their corrections, precautions on plane table
	5th	Revision about plane table surveying
9	28th	Purpose & definition of theodolite surveying
	2nd	Transit theodolite - Description of features component parts, fundamental axis of theodolite
	3rd	concept of vernier, reading a vernier, Temporary adjustment of theodolite
	4th	concept of transiting - measure- ment of horizontal & vertical angles.
	5th	Measurement of magnetic bearings deflection angle, direct angle setting out angles.
10	28th	Prolonging a straight line with theodolite, Errors in theodolite observations.
	2nd	Methods of theodolite traversing with included angle method, direct angle method, bearing method.
	3rd	Plotting the traverse by co-ordinate methods, check for open & closed traverse

Satyanarayan Bhusagar
 Signature of the Faculty

Subject: Land Surveying-I No. of Days/per week class allotted 05

Semester From Date : 14/2/23 To Date : 23/5/23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
	4th	Traverse computation, consecutive co-ordinates, latitude & departure Gales traverse table.
	5th	Numerical problem on omitted measurement of length & bearings.
11	28th	Closing error - adjustment of angular error
	2nd	Closing error - adjustment of bearings, numerical problems
	3rd	Balancing of traverse - Bowditch method, transit method, graphical method
	4th	Balancing of traverse - area method, calculation of area of closed traverse.
	5th	Revision about theodolite surveying & traverse
12	28th	Definition & purpose of type of levelling, concept of level surface
	2nd	Concept of horizontal surface, vertical surface, datum, R.L., B.M.
	3rd	Instrument used for levelling, concepts line of collimation, axis of bubble tube, axis of telescope, vertical axis.
	4th	Levelling staff - Temporary adjustment of level taking reading with level
	5th	Concepts of bench marks, BS, IS, FS, CP, HI.

Satyanarayan Bhusagar

Signature of the Faculty

Subject: Land Surveying-I No. of Days/per week class allotted 05

Semester From Date : 14/5/23 To Date : 23/5/23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
13	1st	Field data entry - level book, height of collimation method & rise fall method comparison.
	2nd	Numerical problems on reduction of levels applying both methods, Arithmetic checks.
	3rd	Effects of curvature & refraction, numerical problems on application of correction
	4th	Reciprocal Levelling - principles methods, numerical problems, precise levelling
	5th	Errors in levelling & precautions permanent & temporary adjustment of different types of levels.
14	1st	Definitions, concepts & characteristics of contours, methods of contouring plotting, contour map, interpretation of contour map
	2nd	Use of contour maps in civil Engg. projects, drawing cross section from contour maps, locating proposed routes of road/railways
	3rd	Canal on a contour map computation of volume of earthwork, from contour map for simple structure
	4th	Map interpretation, interpret human & economic activities, settlement, communication, land use etc.
	5th	Interpret physical land form (line relief of relief drainage, pattern etc). problem solving & decision making
15	1st	Determination of areas computations of areas from plan
	2nd	calculation of area by using ordinate rule.

*Satyanarayan
Bhuteshwar*

Signature of the Faculty

Subject: Land Surveying - I No. of Days/per week class allotted 05

Semester From Date : 14/2/23 To Date : 23/5/23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
	3rd	calculation of area by using trapezoidal rule, simpson's rule
	4th	calculation of volumes by prismoidal rule, & trapezoidal formula
	5th	prismoidal corrections, curvature corrections for volume, Revision of computation of area & volume

Satyanarayan
Bhusagar

Signature of the Faculty