

LESSON PLAN-SUMMER 2023
SWAMI VIVEKANANDA SCHOOL OF ENGG & TECH, BBSR

Discipline- CIVIL DEPARTMENT	Semester-4TH	Name of teaching faculty- <i>Prabhudatta N. R Jena</i>
Subject- SURVEY-1	No class allotted/ per week -6	SEM From date- 14/02/2023 to 25/05/2023 No of weeks- 17
Week	Class day	Theory Topics
3RD	2/14/2023	INTRODUCTION TO SURVEYING, LINEAR MEASUREMENTS
	2/15/2023	1.1 Surveying: Definition, Aims and objectives
	2/16/2023	1.2 Principles of survey-Plane surveying- Geodetic Surveying- Instrumental surveying.
	2/17/2023	1.3 Precision and accuracy of measurements, instruments used for measurement of distance, Types of tapes and chains.
4TH	2/20/2023	1.4 Errors and mistakes in linear measurement – classification, Sources of errors and remedies.
	2/21/2023	1.4 Errors and mistakes in linear measurement – classification, Sources of errors and remedies.
	2/22/2023	1.4 Errors and mistakes in linear measurement – classification, Sources of errors and remedies.
	2/23/2023	1.5 Corrections to measured lengths due to-incorrect length, temperature variation, pull, sag, numerical problem applying corrections.
	2/24/2023	1.5 Corrections to measured lengths due to-incorrect length, temperature variation, pull, sag, numerical problem applying corrections.
	2/25/2023	2. CHAINING AND CHAIN SURVEYING
5TH	2/27/2023	2.1 Equipment and accessories for chaining
	2/28/2023	2.2 Ranging – Purpose, signaling, direct and indirect ranging, Line ranger – features and use, error due to incorrect ranging.
1ST	3/1/2023	2.3 Methods of chaining –Chaining on flat ground, Chaining on sloping ground – stepping method, Clinometer-features and use, slope correction.
	3/2/2023	2.4 Setting perpendicular with chain & tape, Chaining across different types of obstacles –Numerical problems on chaining across obstacles.
	3/3/2023	2.5 Purpose of chain surveying, Its Principles, concept of field book. Selection of survey stations, base line, tie lines, Check lines.
	3/4/2023	2.6 Offsets – Necessity, Perpendicular and Oblique offsets, Instruments for setting offset – Cross Staff, Optical Square.
2ND	3/6/2023	2.7 Errors in chain surveying – compensating and accumulative errors causes & remedies, Precautions to be taken during chain surveying.
	3/7/2023	3. ANGULAR MEASUREMENT AND COMPAS SURVEYING :
	3/9/2023	3.1 Measurement of angles with chain, tape & compass
	3/10/2023	3.2 Compass – Types, features, parts, merits & demerits, testing & adjustment of compass

	3/11/2023	3.3 Designation of angles- concept of meridians – Magnetic; True, Concept of bearings – Whole circle bearing, Quadrantal bearing, Reduced bearing, suitability of application, numerical problems on conversion of bearings
3RD	3/13/2023	3.3 Designation of angles- concept of meridians – Magnetic, True, Concept of bearings – Whole circle bearing, Quadrantal bearing, Reduced bearing, suitability of application, numerical problems on conversion of bearings
	3/14/2023	3.3 Designation of angles- concept of meridians – Magnetic, True, Concept of bearings – Whole circle bearing, Quadrantal bearing, Reduced bearing, suitability of application, numerical problems on conversion of bearings
	3/15/2023	3.4 Use of compasses – setting in field-centering, leveling, taking readings, concepts of Fore bearing, Back Bearing, Numerical problems on computation of interior & exterior angles from bearings
	3/16/2023	3.4 Use of compasses – setting in field-centering, leveling, taking readings, concepts of Fore bearing, Back Bearing, Numerical problems on computation of interior & exterior angles from bearings
	3/17/2023	3.5 Effects of earth's magnetism – dip of needle, magnetic declination, variation in declination, numerical problems on application of correction for declination
	3/18/2023	3.6 Errors in angle measurement with compass – sources & remedies
	3/20/2023	3.7 Principles of traversing – open & closed traverse, Methods of traversing
4TH	3/21/2023	3.8 Local attraction – causes, detection, errors, corrections, Numerical problems of application of correction due to local attraction.
	3/22/2023	3.8 Local attraction – causes, detection, errors, corrections, Numerical problems of application of correction due to local attraction.
	3/23/2023	3.9 Errors in compass surveying – sources & remedies. Plotting of traverse – check of closing error in closed & open traverse, Bowditch's correction, Gales table
	3/24/2023	4. MAP READING CADASTRAL MAPS & NOMENCLATURE
	3/25/2023	4.1 Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols
5TH	3/27/2023	4.1 Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols
	3/28/2023	4.2 Cadastral Map Preparation Methodology
	3/29/2023	4.2 Cadastral Map Preparation Methodology
	3/30/2023	4.3 Unique identification number of parcel
1ST	3/31/2023	4.4 Positions of existing Control Points and its types
	4/1/2023	4.5 Adjacent Boundaries and Features, Topology Creation and verification.
2ND	4/3/2023	5. PLANE TABLE SURVEYING
	4/4/2023	5.1 Objectives, principles and use of plane table surveying.
	4/5/2023	5.2 Instruments & accessories used in plane table surveying.
	4/6/2023	5.2 Instruments & accessories used in plane table surveying.
	4/7/2023	5.3 Methods of plane table surveying – (1) Radiation, (2) Intersection, (3) Traversing, (4) Resection

	4/8/2023	5.3 Methods of plane table surveying – (1) Radiation, (2) Intersection, (3) Traversing, (4) Resection
	4/10/2023	5.4 Statements of TWO POINT and THREE POINT PROBLEM. Errors in plane table surveying and their corrections, precautions in plane table surveying
	4/11/2023	5.5 Statements of TWO POINT and THREE POINT PROBLEM. Errors in plane table surveying and their corrections, precautions in plane table surveying
	4/12/2023	6. THEODOLITE SURVEYING AND TRAVERSING:
	4/13/2023	6.1 Purpose and definition of theodolite surveying
	4/14/2023	6.2 Transit theodolite- Description of features, component parts, Fundamental axes of a theodolite, concept of vernier, reading a vernier, Temporary adjustment of theodolite
	4/15/2023	6.2 Transit theodolite- Description of features, component parts, Fundamental axes of a theodolite, concept of vernier, reading a vernier, Temporary adjustment of theodolite
	4/17/2023	INTERNAL ASSESSMENT
	4/18/2023	INTERNAL ASSESSMENT
	4/19/2023	6.3 Concept of transiting – Measurement of horizontal and vertical angles
4TH	4/20/2023	6.4 Measurement of magnetic bearings, deflection angle, direct angle, setting out angles, prolonging a straight line with theodolite, Errors in Theodolite
	4/21/2023	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.
	4/22/2023	6.6 Traverse computation – consecutive coordinates, latitude and departure, Gale's traverse table, Numerical problems on omitted measurement of lengths & bearings
	4/24/2023	6.6 Traverse computation – consecutive coordinates, latitude and departure, Gale's traverse table, Numerical problems on omitted measurement of lengths
	4/25/2023	6.7 Closing error – adjustment of angular errors, adjustment of bearings, numerical problems
5TH	4/26/2023	6.7 Closing error – adjustment of angular errors, adjustment of bearings, numerical problems
	4/27/2023	6.8 Balancing of traverse – Bowditch's method, transit method, graphical method, axis method, calculation of area of closed traverse.
	4/28/2023	6.8 Balancing of traverse – Bowditch's method, transit method, graphical method, axis method, calculation of area of closed traverse.
	4/29/2023	7. LEVELLING AND CONTOURING :
	5/1/2023	7.1 Definition and Purpose and types of leveling– concepts of level surface, Horizontal surface, vertical surface, datum, R. L., B.M.
	5/2/2023	7.2 Instruments used for leveling, concepts of line of collimation, axis of bubble tube, axis of telescope, Vertical axis.
	5/3/2023	7.3 Levelling staff – Temporary adjustments of level, taking reading with level, concept of bench mark, BS, IS, FS, CP, HI.
1ST	5/4/2023	7.3 Levelling staff – Temporary adjustments of level, taking reading with level, concept of bench mark, BS, IS, FS, CP, HI.

	5/5/2023	7.4 Field data entry – level Book – height of collimation method, Fall method, comparison, Numerical problems on reduction of levels, both methods, Arithmetic checks
	5/6/2023	7.5 Effects of curvature and refraction, numerical problems on application correction.
2ND	5/8/2023	7.6 Reciprocal leveling – principles, methods, numerical problems, practical leveling
	5/9/2023	7.7 Errors in leveling and precautions, Permanent and temporary adjustments of different types of levels.
	5/10/2023	7.8 Definitions, concepts and characteristics of contours.
	5/11/2023	7.9 Methods of contouring, plotting contour maps, Interpretation of contour maps, toposheets.
	5/12/2023	7.10 Use of contour maps on civil engineering projects – drawing cross-sections from contour maps, locating proposal routes of roads / railway / canal on a contour map, computation of volume of earthwork from contour map for simple structure.
	5/13/2023	7.11 Map Interpretation: Interpret Human and Economic Activities (i.e.: Settlement, Communication, Land use etc.), Interpret Physical landform (i.e.:
3RD	5/15/2023	8. COMPUTATION OF AREA & VOLUME:
	5/16/2023	8.1 Determination of areas, computation of areas from plans.
	5/17/2023	8.1 Determination of areas, computation of areas from plans.
	5/18/2023	8.2 Calculation of area by using ordinate rule, trapezoidal rule, Simpson's rule.
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	5/20/2023	Revision
4TH	5/22/2023	Revision

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