GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR

BRANCH:- CIVIL ENGINEERING

SEMESTER:- 4th

SUBJECT:- Th3. SURVEY – I

Name of the Faculty - ER. ROJALI PATRA & ER. SWADHIN MUND

		Topic to be taken				Actual topic taken		
Sl. No	**Topic/Module**	**No. of period**	**Details of the topics**	**Date**	**Topic No.**	**Topic Name**	**Date**	**Remarks**
1	Introduction To Surveying, Linear Measurements	7	1.1 Surveying: Definition, Aims and objectives 1.2 Principles of survey-Plane surveying- Geodetic Surveying- Instrumental surveying. 1.3 Precision and accuracy of measurements, instruments used for measurement of distance, Types of tapes and chains. 1.4 Errors and mistakes in linear measurement 1.5 Corrections to measured lengths due to-incorrect length, temperature variation etc.	16.01.2024-24.01.2024	1.1 1.2 1.3 1.4 1.5	Surveying: Definition, Aims and objectives Principles of survey-Plane surveying- Geodetic Surveying- Instrumental surveying. Precision and accuracy of measurements, instruments used for measurement of distance, Types of tapes and chains. Errors and mistakes in linear measurement Corrections to measured lengths due to-incorrect length, temperature variation etc.	18.01.2024 19.01.2024 24.01.2024 25.01.2024 31.01.2024 01.02.2024 03.02.2024	
2	Chaining and Chain Surveying	7	2.1 Equipment and accessories for chaining 2.2 Ranging. 2.3 Methods of chaining. 2.4 Setting perpendicular with chain & tape, Chaining across different types of obstacles. 2.5 Purpose of chain surveying, Its Principles, concept of field book. Selection of survey stations, base line, tie lines, Check lines. 2.7 Offsets. 2.8 Errors in chain surveying.	25.01.2024-06.02.2024	2.1 2.2 2.3 2.4 2.5 2.7 2.8	Equipment and accessories for chaining Ranging. Methods of chaining. Setting perpendicular with chain & tape, Chaining across different types of obstacles. Purpose of chain surveying, Its Principles, concept of field book. Selection of survey stations, base line, tie lines, Check lines. Offsets. Errors in chain surveying.	05.02.2024 06.02.2024 07.02.2024 08.02.2024 09.02.2024 12.02.2024 13.02.2024	

3	Angular Measurement and Compas Surveying	12	3.1 Measurement of angles with chain, tape & compass 3.2 Compass – Types, features, parts, merits & demerits, testing & adjustment of compass 3.3 Designation of angles- concept of meridians – Magnetic, True, arbitrary; Concept of bearings. 3.4 Use of compasses. 3.5 Effects of earth's magnetism. 3.6 Errors in angle measurement. 3.7 Principles of traversing – open & closed traverse. 3.8 Local attraction. 3.9 Errors in compass surveying.	07.02.2024- 21.02.2024	3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9	Measurement of angles with chain, tape & compass Compass – Types, features, parts, merits & demerits, testing & adjustment of compass Designation of angles- concept of meridians – Magnetic, True, arbitrary; Concept of bearings. Use of compasses. Effects of earth's magnetism. Errors in angle measurement. Principles of traversing – open & closed traverse. Local attraction. Errors in compass surveying.	15.02.2024 16.02.2024 19.02.2024 20.02.2024 21.02.2024 22.02.2024 23.02.2024 26.02.2024 27.02.2024 28.02.2024 29.02.2024 01.03.2024	
4	Map Reading Cadastral Maps & Nomenclature	7	4.1 Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols 4.2 Cadastral Map Preparation Methodology 4.3 Unique identification number of parcel 4.4 Positions of existing Control Points and its types. 4.5 Adjacent Boundaries and Features, Topology Creation and verification.	22.02.2024- 29.02.2024	4.1 4.2 4.3 4.4 4.5	Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols Cadastral Map Preparation Methodology Unique identification number of parcel Positions of existing Control Points and its types. Adjacent Boundaries and Features, Topology Creation and verification.	04.03.2024 06.03.2024 07.03.2024 11.03.2024 12.03.2024 13.03.2024 14.03.2024	

5	Plane Table Surveying	7	5.1 Objectives, principles and use of plane table surveying. 5.2 Instruments & accessories used in plane table surveying. 5.3 Methods of plane table surveying – (1) Radiation, (2) Intersection, (3) Traversing, (4) Resection. 5.4 Statements of TWO POINT and THREE POINT PROBLEM. Errors in plane table surveying and their corrections, precautions in plane table surveying.	01.03.2024- 11.03.2024	5.1 5.2 5.3 5.4	Objectives, principles and use of plane table surveying. Instruments & accessories used in plane table surveying. Methods of plane table surveying – (1) Radiation, (2) Intersection, (3) Traversing, (4) Resection. Statements of TWO POINT and THREE POINT PROBLEM. Errors in plane table surveying and their corrections, precautions in plane table surveying.	15.03.2024 18.03.2024 19.03.2024 20.03.2024 21.03.2024 22.03.2024 27.03.2024	
6	Theodolite Surveying and Traversing	15	6.1 Purpose and definition of theodolite surveying 6.2 Transit theodolite. 6.3 Concept of transiting –Measurement of horizontal and vertical angles. 6.4 Measurement of magnetic bearings, deflection angle etc. 6.5 Methods of theodolite traversing with. 6.6 Traverse computation. 6.7 Closing error. 6.8 Balancing of traverse.	12.03.2024- 02.04.2024	6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.8	Purpose and definition of theodolite surveying Transit theodolite.Concept of transiting –Measurement of horizontal and vertical angles. Measurement of magnetic bearings,deflection angle etc. Methods of theodolite traversing with. Traverse computation. Closing error. Balancing of traverse.	28.03.2024 02.04.2024 03.04.2024 04.04.2024 05.04.2024 08.04.2024	

7	Levelling and Contouring	15	7.1 Definition and Purpose and types of leveling. 7.2 Instruments used for leveling, concepts of line of collimation. 7.3 Levelling staff. 7.4 Field data entry – level Book. 7.5 Effects of curvature and refraction, numerical problems on application of correction. 7.6 Reciprocal leveling. 7.7 Errors in leveling and precautions. 7.8 Definitions, concepts and characteristics of contours. 7.9 Methods of contouring, plotting contour maps. 7.10 Use of contour maps on civil engineering projects. 7.11 Map Interpretation.	03.04.2024- 22.04.2024	7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11	Definition and Purpose and types of leveling. Instruments used for leveling, concepts of line of collimation. Levelling staff. Field data entry – level Book. Effects of curvature and refraction, numerical problems on application of correction. Reciprocal leveling. Errors in leveling and precautions. Definitions, concepts and characteristics of contours. Methods of contouring, plotting contour maps. Use of contour maps on civil engineering projects. Map Interpretation.	09.04.2024 10.04.2024 12.04.2024 15.04.2024 16.04.2024 18.04.2024	
8	Computation of Area & Volume	5	8.1 Determination of areas, computation of areas from plans. 8.2 Calculation of area by using ordinate rule, trapezoidal rule, Simpson's rule. 8.3 Calculation of volumes by prismoidal formula and trapezoidal formula, Prismoidal corrections, curvature correction for volumes.	23.04.2024- 26.04.2024	8.1 8.2 8.3	Determination of areas, computation of areas from plans. Calculation of area by using ordinate rule, trapezoidal rule, Simpson's rule. Calculation of volumes by prismoidal formula and trapezoidal formula, Prismoidal corrections, curvature correction for volumes.	19.04.2024 22.04.2024 24.04.2024 25.04.2024 26.04.2024	

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