



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.	13.02.2023 - 16.02.2023	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.	06.02.2023 09.02.2023 11.02.2023 13.02.2023 16.02.2023	

2	Chaining and Chain Surveying	7	<p>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.</p>	<p>18.02.2023 - 06.03.2023</p>	<p>2.1 2.2 2.3 2.4 2.5 2.7 2.8</p>	<p>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.</p>	<p>18.02.2023 20.02.2023 23.02.2023 25.02.2023 27.02.2023 03.03.2023 06.03.2023</p>	
3	Angular Measurement and Compass Surveying	12	<p>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.</p>	<p>08.03.2023 - 06.04.2023</p>	<p>3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9</p>	<p>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.</p>	<p>08.03.2023 10.03.2023 13.03.2023 20.03.2023 24.03.2023 27.03.2023 29.03.2023 01.04.2023 04.04.2023 06.04.2023</p>	

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.	11.04.2023 - 22.04.2023	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.	11.04.2023 13.04.2023 18.04.2023 20.04.2023 22.04.2023	
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.	14.02.2023 - 09.03.2023	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.	14.02.2023 17.02.2023 23.02.2023 24.02.2023 28.02.2023 03.03.2023 09.03.2023	

6	Theodolite Surveying and Traversing	15	<p>6.1 Purpose and definition of theodolite surveying</p> <p>6.2 Transit theodolite.</p> <p>6.3 Concept of transiting –Measurement of horizontal and vertical angles.</p> <p>6.4 Measurement of magnetic bearings, deflection angle etc.</p> <p>6.5 Methods of theodolite traversing with.</p> <p>6.6 Traverse computation.</p> <p>6.7 Closing error.</p> <p>6.8 Balancing of traverse.</p>	<p>14.03.2023</p> <p>-</p> <p>18.04.2023</p>	<p>6.1 Purpose and definition of theodolite surveying</p> <p>6.2 surveying</p> <p>6.3 Transit theodolite.</p> <p>Concept of transiting –Measurement of horizontal and vertical angles.</p> <p>6.4 Measurement of magnetic bearings, deflection angle etc.</p> <p>6.5 Methods of theodolite traversing with.</p> <p>6.6 Traverse computation.</p> <p>6.7 Closing error.</p> <p>6.8 Balancing of traverse.</p>	<p>14.03.2023</p> <p>16.03.2023</p> <p>17.03.2023</p> <p>21.03.2023</p> <p>23.03.2023</p> <p>24.03.2023</p> <p>28.03.2023</p> <p>04.04.2023</p> <p>13.04.2023</p> <p>18.04.2023</p>	
7	Levelling and Contouring	15	<p>7.1 Definition and Purpose and types of leveling.</p> <p>7.2 Instruments used for leveling, concepts of line of collimation.</p> <p>7.3 Levelling staff.</p> <p>7.4 Field data entry – level Book.</p> <p>7.5 Effects of curvature and refraction, numerical problems on application of correction.</p> <p>7.6 Reciprocal leveling.</p> <p>7.7 Errors in leveling and precautions.</p> <p>7.8 Definitions, concepts and characteristics of contours.</p> <p>7.9 Methods of contouring, plotting contour maps.</p> <p>7.10 Use of contour maps on civil engineering projects.</p> <p>7.11 Map Interpretation.</p>	<p>20.04.2023</p> <p>-</p> <p>12.05.2023</p>	<p>7.1 Definition and Purpose and types of leveling.</p> <p>7.2 Instruments used for leveling, concepts of line of collimation.</p> <p>7.3 Levelling staff.</p> <p>7.4 Field data entry – level Book.</p> <p>7.5 Effects of curvature and refraction, numerical problems on application of correction.</p> <p>7.6 Reciprocal leveling.</p> <p>7.7 Errors in leveling and precautions.</p> <p>7.8 Definitions, concepts and characteristics of contours.</p> <p>7.9 Methods of contouring, plotting contour maps.</p> <p>7.10 Use of contour maps on civil engineering projects.</p> <p>7.11 Map Interpretation.</p>	<p>20.04.2023</p> <p>21.04.2023</p> <p>25.04.2023</p> <p>27.04.2023</p> <p>28.04.2023</p> <p>02.05.2023</p> <p>04.05.2023</p> <p>09.05.2023</p> <p>11.05.2023</p> <p>12.05.2023</p>	

8	Computation of Area & Volume	5	8.1 Determination of areas, computation of areas from plans.	16.05.2023 - 23.05.2023	8.1 Determination of areas, computation of areas from plans.	16.05.2023	
			8.2 Calculation of area by using ordinate rule, trapezoidal rule, Simpson's rule.		8.2 Calculation of area by using ordinate rule, trapezoidal rule, Simpson's rule.	18.05.2023	
			8.3 Calculation of volumes by prismoidal formula and trapezoidal formula, Prismoidal corrections, curvature correction for volumes.		8.3 Calculation of volumes by prismoidal formula and trapezoidal formula, Prismoidal corrections, curvature correction for volumes.	23.05.2023	


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