

LESSON PLAN

Discipline:

Civil Engg. , UGMIT Rayagada

Semester:

4TH

Subject:

SURVEY-1 (TH-3)

class allotted:

05 P/week

Session:

2023 Summer

Week	Class Day	Theory Topics	Remarks
1	1-5	1.0 Introduction to Surveying, Linear Measurements: 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 1.4 Errors and mistakes in linear measurement – classification, Sources of errors and remedies.	
2	6-10	1.5 Corrections to measured lengths due to-incorrect length, temperature variation, pull, sag, numerical problem applying corrections. 2.0 Chaining and Chain Surveying : 2.1 Equipment and accessories for chaining 2.2 Ranging – Purpose, signaling, direct and indirect ranging. 2.3 Methods of chaining	
3	11-15	2.4 Setting perpendicular with chain & tape, Chaining across different types of obstacles –Numerical problems on chaining across obstacles. 2.5 Purpose of chain surveying, Its Principles, concept of field book 2.7 Offsets – Necessity, Instruments for setting offset. 2.8 Errors in chain surveying –causes & remedies, Precautions. 3.0 Angular Measurement and Compass Surveying : 3.1 Measurement of angles with chain, tape & compass	
4	16-20	3.2 Compass – Types, & 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, magnetic dip.	
5	21-25	3.6 Errors in angle measurement with compass – sources & remedies. 3.7 Principles of traversing – open & closed traverse, Methods of traversing. 3.8 Local attraction – causes, detection, errors, corrections. 3.9 Errors in compass surveying – sources & remedies.	
6	26-30	3.9 Plotting of traverse – check of closing error in closed & open traverse, Bowditch's correction, Gales table. 4.0 Map Reading Cadastral Maps & Nomenclature: 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	

7	31-35	4.4 Positions of existing Control Points and its types 4.5 Adjacent Boundaries and Features, Topology Creation and verification. 5.0 Plane Table Surveying : 5.1 Objectives, principles and use of plane table surveying. 5.2 Instruments & accessories used in plane table surveying.	
8	36-40	5.3 Methods of plane table surveying: 5.3.1 Radiation 5.3.2 Intersection 5.3.3 Traversing 5.3.4 Resection. 5.4 Statements of two point and three point problem.	
9	41-45	6.0 Theodolite Surveying And Traversing: 6.1 Purpose and definition of theodolite surveying 6.2 Transit theodolite 6.3 Concept of transiting	
10	46-50	6.4 Measurement of magnetic bearings 6.5 Methods of theodolite traversing with	
11	51-56	6.6 Traverse computation - Numerical problems. 6.7 Closing error – adjustment of angular errors, adjustment of bearings, numerical problems. 6.8 Balancing of traverse.	
12	45-48	7.0 Leveling and Contouring : 7.1 Definition and Purpose and types of leveling. 7.2 Instruments used for leveling. 7.3 Leveling staff 7.4 Height of collimation method and Rise & Fall method, comparison.	
13	49-52	7.5 Effects of curvature and refraction, numerical problems on application of correction. 7.6 Reciprocal leveling 7.7 Errors in leveling and precautions, Permanent and temporary adjustments of different types of levels. 7.8 Definitions, concepts and characteristics of contours.	
14	53-56	7.9 Methods of contouring, plotting contour maps, Interpretation of contour maps. 7.10 Use of contour maps on civil engineering projects 7.11 Map Interpretation: Interpret Human and Economic Activities.	
15	57-60	8.0 Computation of Area & Volume: 8.1 Determination of areas, computation of areas from plans. 8.2 Calculation of area 8.3 Calculation of volumes	

Chinmaya Maharana
Signature of Faculty: 15/2/23

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Signature of ROD: 15/2/23