

Theory - 03

**LESSON PLAN**

Discipline: Civil Engg. , UGMIT Rayagada  
Semester: 4<sup>TH</sup>  
Name of the Teaching Faculty:  
Subject: SURVEY-1 (TH-3)  
No of Days/week class allotted: 05  
Session: 2019-20

Week	Class Day	Theory/Practical Topics	Remarks
1	1-5	<b>1.0 Introduction to Surveying, Linear Measurements:</b> 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. <b>2.0 Chaining and Chain Surveying :</b> 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. <b>3.0 Angular Measurement and Compass Surveying :</b> 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	<p>3.9 Plotting of traverse – check of closing error in closed &amp; open traverse, Bowditch's correction, Gales table.</p> <p><b>4.0 Map Reading Cadastral Maps &amp; Nomenclature:</b></p> <p>4.1 Study of direction, Scale, Grid Reference and Grid Square Study of Signs and Symbols</p> <p>4.2 Cadastral Map Preparation Methodology</p> <p>4.3 Unique identification number of parcel</p>	
7	31-35	<p>4.4 Positions of existing Control Points and its types</p> <p>4.5 Adjacent Boundaries and Features, Topology Creation and verification.</p> <p><b>5.0 Plane Table Surveying :</b></p> <p>5.1 Objectives, principles and use of plane table surveying.</p> <p>5.2 Instruments &amp; accessories used in plane table surveying.</p>	
8	36-40	<p>5.3 Methods of plane table surveying:</p> <p>5.3.1 Radiation</p> <p>5.3.2 Intersection</p> <p>5.3.3 Traversing</p> <p>5.3.4 Resection.</p> <p>5.4 Statements of two point and three point problem.</p>	
9	41-45	<p><b>6.0 Theodolite Surveying And Traversing:</b></p> <p>6.1 Purpose and definition of theodolite surveying</p> <p>6.2 Transit theodolite</p> <p>6.3 Concept of transiting</p>	
10	46-50	<p>6.4 Measurement of magnetic bearings</p> <p>6.5 Methods of theodolite traversing with</p>	
11	51-56	<p>6.6 Traverse computation -Numerical problems.</p> <p>6.7 Closing error – adjustment of angular errors, adjustment of bearings, numerical problems.</p> <p>6.8 Balancing of traverse.</p>	
12	45-48	<p><b>7.0 Leveling and Contouring :</b></p> <p>7.1 Definition and Purpose and types of leveling.</p> <p>7.2 Instruments used for leveling.</p> <p>7.3 Leveling staff</p> <p>7.4 Height of collimation method and Rise &amp; Fall method, comparison.</p>	
13	49-52	<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, Permanent and temporary adjustments of different types of levels.</p> <p>7.8 Definitions, concepts and characteristics of contours.</p>	
14	53-56	<p>7.9 Methods of contouring, plotting contour maps, Interpretation of contour maps.</p> <p>7.10 Use of contour maps on civil engineering projects</p> <p>7.11 Map Interpretation: Interpret Human and Economic Activities.</p>	

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

Signature of Faculty:

Signature of HOD: