

LESSON PLAN OF Th1. LAND SURVEY 2

Discipline: civil engineering	Semester: 6TH	Name of the Teaching Faculty: ER. JYOTIRMAYEE MUNI
Subject: Th1. LAND SURVEY 2	No. of days/ per week class allotted: 5	Semester From Date : _____ to Date: _____ No. of Weeks: 15
Week	Class Day	Theory/ Practical Topics
		TACHEOMETRY:
1st	1st	1.1 Principles, stadia constants determination
	2nd	1.1 Principles, stadia constants determination
	3rd	1.1 Principles, stadia constants determination
	4th	1.2 Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems
	5th	1.2 Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems
2nd	1st	1.2 Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems
	2nd	1.3 Elevations and distances of staff stations – numerical problems
	3rd	1.3 Elevations and distances of staff stations – numerical problems
	4th	1.3 Elevations and distances of staff stations – numerical problems
		CURVES :
	5th	2.1 compound, reverse and transition curve, Purpose
3rd	1st	use of different types of curves in field
	2nd	2.2 Elements of circular curves, numerical problems
	3rd	2.3 Preparation of curve table for setting out
	4th	2.4 Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord,
	5th	2.4 Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord,
4th	1st	(ii) successive bisection of arc, (iii) offsets from tangents, (iv) offsets from chord produced, (v) Rankine's method of tangent angles
	2nd	2.5 Obstacles in curve ranging – point of intersection inaccessible
		BASICS ON SCALE AND BASICS OF MAP

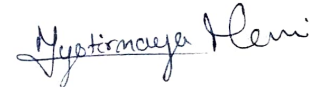
	3rd	3.1 Fractional or Ratio Scale, Linear Scale, Graphical Scale
	4th	3.2 What is Map, Map Scale and Map Projections
	5th	3.3 How Maps Convey Location and Extent
5th	1st	3.4 How Maps Convey characteristics of features
	2nd	3.5 How Maps Convey Spatial Relationship 3.5.1 Classification of Maps
	3rd	3.5 How Maps Convey Spatial Relationship 3.5.1 Physical Map 3.5.2 Topographic Map
	4th	3.5.3 Road Map 3.5.4 Political Map 3.5.5 Economic & Resources
	5th	3.5.5 Economic & Resources Map 3.5.6 Thematic Map 3.5.7 Climate Map
		SURVEY OF INDIA MAP SERIES:
6th	1st	4.1 Open Series map
	2nd	4.2 Defense Series Map
	3rd	4.3 Map Nomenclature
	4th	4.3.1 Quadrangle Name
	5th	4.3.2 Latitude, Longitude, UTM's
7th	1st	4.3.4 Contour Lines
	2nd	4.3.5 Magnetic Declination
	3rd	4.3.6 Public Land Survey System
	4th	4.3.7 Field Notes
	5th	4.3.7 Field Notes
		BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION:
8th	1st	5.1 Aerial Photography: 5.1.1 Film, Focal Length, Scale
	2nd	5.1.2 Types of Aerial Photographs (Oblique, Straight)
	3rd	5.2 Photogrammetry: 5.2.1 Classification of Photogrammetry
	4th	5.2.2 Aerial Photogrammetry 5.2.3 Terrestrial Photogrammetry
	5th	5.3 Photogrammetry Process:
9th	1st	5.3.1 Acquisition of Imagery using aerial and satellite platform 5.3.2 Control Survey

	2nd	5.3.3 Geometric Distortion in Imagery Application of Imagery and its support data Orientation and Triangulation
	3rd	Stereoscopic Measurement 19.9.1 X-parallax 19.2.2 Y-parallax
	4th	5.4 DTM/DEM Generation
	5th	5.5 Ortho Image Generation
		MODERN SURVEYING METHODS :
10th	1st	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	2nd	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	3rd	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	4th	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite
	5th	6.2 Working principles of a Total Station (Set up and use of total station to measure angles, distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
11th	1st	6.2 Working principles of a Total Station (Set up and use of total station to measure angles, distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	2nd	6.2 Working principles of a Total Station (Set up and use of total station to measure angles, distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	3rd	the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	4th	the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	5th	the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
		BASICS ON GPS & DGPS AND ETS:
12th	1st	7.1 GPS: - Global Positioning 7.1.1 Working Principle of GPS,GPS Signals, 7.1.2 Errors of GPS,Positioning Methods
	2nd	,GPS Signals, 7.1.2 Errors of GPS,Positioning Methods
	3rd	7.2 DGPS: - Differential Global Positioning System 7.2.1 Base Station Setup
	4th	7.2.2 Rover GPS Set up 7.2.3 Download, Post-Process and Export GPS data
	5th	7.2.4 Sequence to download GPS data from flashcards 7.2.5 Sequence to Post-Process GPS data

13th	1st	7.2.6 Sequence to export post process GPS data 7.2.7 Sequence to export GPS Time tags to file
	2nd	7.3 ETS: - Electronic Total Station 7.3.1 Distance Measurement
	3rd	7.3.2 Angle Measurement 7.3.3 Leveling
	4th	7.3.4 Determining position
	5th	7.3.5 Reference networks 7.3.6 Errors and Accuracy
		BASICS OF GIS AND MAP PREPARATION USING GIS
14th	1st	8.1 Components of GIS, Integration of Spatial and Attribute Information
	2nd	8.2 Three Views of Information System
	3rd	8.2.1 Database or Table View, Map View and Model View 8.3 Spatial Data Model
	4th	8.4 Attribute Data Management and Metadata Concept
	5th	8.5 Prepare data and adding to Arc Map.
15th	1st	8.6 Organizing data as layers. 8.7 Editing the layers.
	2nd	8.8 Switching to Layout View.
	3rd	8.9 Change page orientation.
	4th	8.10 Removing Borders.
	5th	8.11 Adding and editing map information. 8.12 Finalize the map


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