

ACADEMIC SESSION: SUMMER-2025

Discipline :Civil engg	Semester: 6th	Name of the Teaching Faculty : Subhasmita behera
Subject: Land Survey-II	No. of Days / Week class allotted: 5	Semester Duration: 04/02/2025 to 17/05/2025 No. of Weeks : 15
Week	Class day	Theory/Practical Topics:
1st	1st	Principles of tacheometry
	2nd	stadia constants determination
	3rd	Numerical problems on stadia constants
	4th	Stadia tacheometry with staff held vertical and with line of collimation horizontal Case-1: considering angle of elevation
	5th	Numerical problem
2nd	1st	Stadia tacheometry with staff held vertical and with line of collimation horizontal Case-2: considering angle of depression
	2nd	Numerical problem
	3rd	Stadia tacheometry with staff held vertical and with line of collimation inclined
	4th	numerical problems
	5th	compound, reverse and transition curve
3rd	1st	Purpose & use of different types of curves in field
	2nd	Elements of circular curves, numerical problems
	3rd	Preparation of curve table for setting out
	4th	Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord
	5th	Numerical problem
4th	1st	Setting out of circular curve by chain and tape and by instrument angular methods (ii) successive bisection of arc
	2nd	Numerical problem
	3rd	Setting out of circular curve by chain and tape and by instrument angular methods (iii) offsets from tangents

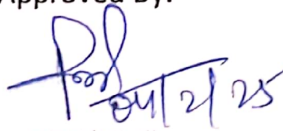
	4 th	Setting out of circular curve by chain and tape and by instrument angular methods (iv) offsets from chord produced
	5 th	Setting out of circular curve by chain and tape and by instrument angular methods (v) Rankine's method of tangent angles (No derivation)
5 th	1 st	Numerical problem
	2 nd	Obstacles in curve ranging – point of intersection inaccessible
	3 rd	Fractional or Ratio Scale, Linear Scale, Graphical Scale
	4 th	What is Map, Map Scale and Map Projections
	5 th	How Maps Convey Location and Extent
6 th	1 st	How Maps Convey characteristics of features
	2 nd	How Maps Convey Spatial Relationship
	3 rd	Classification of Maps 1) Physical Map 2) Topographic Map
	4 th	Road Map , Political Map
	5 th	Economic & Resources Map ,Thematic Map,Climate Map
7 th	1 st	Open Series map
	2 nd	Defense Series Map
	3 rd	Map Nomenclature
	4 th	Quadrangle Name
	5 th	Latitude, Longitude, UTM's
8 th	1 st	Contour Lines
	2 nd	Magnetic Declination
	3 rd	Public Land Survey System
	4 th	Field Notes
	5 th	Aerial Photography: Film, Focal Length, Scale

9 th	1 st	Types of Aerial Photographs (Oblique, Straight)
	2 nd	Photogrammetry: Classification of Photogrammetry
	3 rd	Aerial Photogrammetry, Terrestrial Photogrammetry
	4 th	Photogrammetry Process: Acquisition of Imagery using aerial and satellite platform
	5 th	Control Survey Geometric Distortion in Imagery
10 th	1 st	Application of Imagery and its support data Orientation and Triangulation
	2 nd	Stereoscopic Measurement
	3 rd	X-parallax, Y-parallax
	4 th	DTM/DEM Generation
	5 th	Ortho Image Generation
11 th	1 st	Principles, features and use of (i) Micro-optic theodolite
	2 nd	Principles, features and use of (ii) digital theodolite
	3 rd	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
	4 th	Continued
	5 th	Continued
12 th	1 st	GPS: - Global Positioning Working Principle of GPS, GPS Signals,
	2 nd	Errors of GPS, Positioning Methods
	3 rd	DGPS: - Differential Global Positioning System
	4 th	Base Station Setup, Rover GPS Set up Download, Post-Process and Export GPS data
	5 th	Sequence to download GPS data from flashcards, Sequence to Post-Process GPS data

13 th	1 st	Sequence to export post process GPS data, Sequence to export GPS Time tags to file
	2 nd	ETS: - Electronic Total Station, Distance Measurement Angle Measurement
	3 rd	Leveling
	4 th	Determining position, Reference networks
	5 th	Errors and Accuracy
14 th	1 st	Components of GIS, Integration of Spatial and Attribute Information, Three Views of Information System
	2 nd	Database or Table View, Map View and Model View
	3 rd	Spatial Data Model, Attribute Data Management and Metadata Concept
	4 th	Prepare data and adding to Arc Map, Organizing data as layers.
	5 th	Editing the layers
15 th	1 st	Switching to Layout View.
	2 nd	Change page orientation.
	3 rd	Removing Borders
	4 th	Adding and editing map information.
	5 th	Finalize the map


Prepared By :

Approved By:


HOD(Civil)