

ACADEMIC SESSION: SUMMER-2024

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: 16/01/2024 to 26/04/2024 No. of Weeks : 15
Week	Class day	Theory/Practical Topics:
1 st	1 st	Principles of tacheometry
	2 nd	stadia constants determination
	3 rd	Numerical problems on stadia constants
	4 th	Stadia tacheometry with staff held vertical and with line of collimation horizontal Case-1: considering angle of elevation
	5 th	Numerical problem
2 nd	1 st	Stadia tacheometry with staff held vertical and with line of collimation horizontal Case-2: considering angle of depression
	2 nd	Numerical problem
	3 rd	Stadia tacheometry with staff held vertical and with line of collimation inclined
	4 th	numerical problems
	5 th	compound, reverse and transition curve
3 rd	1 st	Purpose & use of different types of curves in field
	2 nd	Elements of circular curves, numerical problems
	3 rd	Preparation of curve table for setting out
	4 th	Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord
	5 th	Numerical problem
4 th	1 st	Setting out of circular curve by chain and tape and by instrument angular methods (ii) successive bisection of arc
	2 nd	Numerical problem
	3 rd	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

S. Behera
Prepared By: 16/01/24

Approved By:

P. S.
16/1/24

HOD(Civil)