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:**
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

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

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

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

S. Behera
Prepared By : 16/01/24

Approved By:
16/1/24
HOD(Civil)