

Discipline: CIVIL	Semester: 6th	Name of the Teaching Faculty: AMARPREET SAHU
Subject: LAND SURVEY – 2	No. of Days/per week class allotted: 05	Semester From Date:14-02-2023 To Date: 23-05-2023 No. of Weeks: 15
Week	Class Day	Theory Topics
1 st	01	TACHEOMETRY: (Only concepts; applications without derivation)
	02	Principles
	03	stadia constants determination
	04	Stadia tacheometry with staff held vertical
	05	line of collimation horizontal
2 nd	01	inclined
	02	numerical problems
	03	Elevations and distances of staff stations
	04	numerical problems
	05	CURVES: compound, reverse and transition curve, Purpose & use of different types of curves in field
3 rd	01	Elements of circular curves
	02	numerical problems
	03	Preparation of curve table for setting out
	04	Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord, (ii) successive bisection of arc
	05	(iii) offsets from tangents, (iv) offsets from chord produced
4 th	01	(v) Rankine's method of tangent angles (No derivation)
	02	Obstacles in curve ranging – point of intersection inaccessible
	03	BASICS ON SCALE AND BASICS OF MAP: Fractional or Ratio Scale, Linear Scale, Graphical Scale
	04	What is Map, Map Scale
	05	Map Projections
5 th	01	How Maps Convey Location and Extent
	02	How Maps Convey characteristics of features
	03	How Maps Convey Spatial Relationship
	04	Classification of Maps Physical Map
	05	Topographic Map
6 th	01	Road Map
	02	Political Map
	03	Economic & Resources Map
	04	Thematic Map
	05	Climate Map
7 th	01	SURVEY OF INDIA MAP SERIES
	02	Open Series map
	03	Defense Series Map
	04	Map Nomenclature
	05	Quadrangle Name
8 th	01	Latitude, Longitude, UTM's

	02	Contour Lines
	03	Magnetic Declination
	04	Public Land Survey System
	05	Field Notes
9 th	01	BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION: Aerial Photography: Film, Focal Length, Scale
	02	Types of Aerial Photographs (Oblique, Straight)
	03	Photogrammetry: Classification of Photogrammetry
	04	Aerial Photogrammetry
	05	Terrestrial Photogrammetry
10 th	01	Photogrammetry Process: Acquisition of Imagery using aerial and satellite platform
	02	Control Survey
	03	Geometric Distortion in Imagery Application of Imagery and its support data Orientation and Triangulation Stereoscopic Measurement X-parallax Y-parallax
	04	DTM/DEM Generation
	05	Ortho Image Generation
11 th	01	MODERN SURVEYING METHODS: Principles, features and use of
	02	Micro-optic theodolite
	03	digital theodolite
	04	Working principles of a Total Station
	05	Set up and use of total station to measure angles, distances of points under survey from total station
12 th	01	the co-ordinates (X, Y& Z or northing, easting, and elevation)
	02	surveyed points relative to Total Station position using trigonometry and triangulation
	03	BASICS ON GPS & DGPS AND ETS: GPS: - Global Positioning
	04	Working Principle of GPS, GPS Signals
	05	Errors of GPS, Positioning Methods
13 th	01	DGPS: - Differential Global Positioning System Base Station Setup
	02	Rover GPS Set up Download, Post-Process and Export GPS data
	03	Sequence to Post-Process GPS data Sequence to export post process GPS data Sequence to export GPS Time tags to file
	04	ETS: - Electronic Total Station Distance Measurement Angle Measurement
	05	Leveling Determining position Reference networks Errors and Accuracy
14 th	01	BASICS OF GIS AND MAP PREPARATION USING GIS

		Components of GIS, Integration of Spatial and Attribute Information
	02	Three Views of Information System Database or Table View, Map View and Model View
	03	Spatial Data Model Attribute Data Management and Metadata Concept
	04	Prepare data and adding to Arc Map.
	05	Organizing data as layers
15 th	01	Editing the layers
	02	Switching to Layout View
	03	Change page orientation
	04	Removing Borders
	05	Adding and editing map information. Finalize the map