GOVERNMENT POLYTECHNIC, BALANGIR

DEPARTMENT OF CIVIL ENGINEERING

LESSION PLAN

SESSION 2023-24

SUBJECT: LAND SURVEY-II	BRANCH: CIVIL ENGINEERING
NAME OF THE FACULTY: KSHIROD BIHARI RANA	SEMESTER: 6TH

SL NO.	CHAPTER	HOURS	LECTURE NO.	TOPIC TO BE COVERED
1	CHAPTER 01	09		TACHEOMETRY
			1	Principles
			2	stadia constants determination
			3	Stadia tacheometry
			4	staff held vertical
			5	collimation horizontal
			6	numerical problems
			7	numerical problems
			8	Elevations and distances of staff stations – numerical problems
			9	numerical problems
2	CHAPTER 02	08		CURVES
			1	compound, reverse, transition curve, Purpose & use of different types of curves in field
			2	Elements of circular curves, numerical problems
			3	Elements of circular curves, numerical problems
			4	Elements of circular curves, numerical problems
			5	Preparation of curve table for setting out
			6	Setting out of circular curve by chain, tape and by instrument angular methods (I) offsets from long chord, (ii) successive bisection of arc
			7	offsets from tangents, (iv) offsets from chord produced, (v) Rankine's method of tangent angles
			8	Obstacles in curve ranging – point of intersection inaccessible

4	CHAPTER 03	08		BASICS ON SCALE AND BASICS OF MAP
			1	Fractional or Ratio Scale, Linear Scale, Graphical Scale
			2	What is Map, Map Scale and Map Projections
			3	How Maps Convey Location and Extent
			4	How Maps Convey characteristics of features
			5	How Maps Convey Spatial Relationship
			6	Classification of Maps Physical Map Topographic Map
			7	Road Map Political Map
			8	Economic & Resources Map Thematic Map Climate Map
5	CHAPTER 04	10		SURVEY OF INDIA MAP SERIES
			1	Open Series map
			2	Défense Series Map
			3	Quadrangle Name
			4	Latitude, Longitude
			5	UTM's Map Nomenclature
			6	Contour Lines
			7	Magnetic Declination
			8	Magnetic Declination
			9	Public Land Survey System Field Notes
			10	Public Land Survey System Field Notes
6	CHAPTER 05	10		BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION

			1	Aerial Photography Film, Focal Length, Scale Types of Aerial Photographs (Oblique, straight
			2	Types of Aerial Photographs (Oblique, straight)
			3	Photogrammetry
			4	Classification of Photogrammetry Aerial Photogrammetry
			5	Terrestrial Photogrammetry, Photogrammetry Process:
			6	Acquisition of Imagery using aerial and satellite platform
			7	Control Survey
			8	Geometric Distortion in Imagery Application of Imagery and its support data Orientation and Triangulation
			9	Stereoscopic Measurement X-parallax Y-parallax
			10	DTM/DEM Generation
				Ortho Image Generation
7	CHAPTER 06	10		MODERN SURVEYING METHODS
			1	Principles, features and use of (i) Micro-optic theodolite, digital theodolite
			2	Principles, features and use of (i) Micro-optic theodolite, digital theodolite
			3	Principles, features and use of (i) Micro-optic theodolite, digital theodolite
			4	Working principles of a Total Station
			5	Working principles of a Total Station
			6	Set up and use of total station to measure angles, distances of points under survey
			7	Set up and use of total station to measure angles, distances of points under survey
			8	survey from total station and the co-ordinates (X, Y & Z or northing, easting, and elevation
			9	survey from total station and the co-ordinates (X, Y & Z or northing, easting, and elevation
			10	surveyed points relative to Total Station position using trigonometry and triangulation.

8	CHAPTER 07	10		**BASICS ON GPS & DGPS AND ETS**
			1	Working Principle of GPS, GPS Signals
			2	Errors of GPS, Positioning Methods
			3	DGPS: - Differential Global Positioning System
			4	Base Station Setup Rover GPS Set up
			5	Download, Post-Process and Export GPS data Sequence to download GPS data from flashcards
				Sequence to download GPS data from flashcards Sequence to Post-Process GPS data
			6	Sequence to export post process GPS data Sequence to export GPS Time tags to file
			7	ETS: - Electronic Total Station
			8	Distance Measurement Angle Measurement Levelling
			9	Determining position Reference networks
			10	Errors and Accuracy
9	CHAPTER 08	10		BASICS OF GIS AND MAP PREPARATION USING
			1	Components of GIS, Integration of Spatial and Attribute Information
			2	Components of GIS, Integration of Spatial and Attribute Information
			3	Three Views of Information System Database or Table View, Map View and Model View
			4	Three Views of Information System Database or Table View, Map View and Model View
			5	Spatial Data Model
			6	Attribute Data Management and Metadata Concept
			7	Prepare data and adding to Arc Map.

			8	Organizing data as layers. Editing the layers.
			9	Switching to Layout View. Change page orientation.
			10	Removing Borders. Adding and editing map information. Finalize the map