

## IDEAL SCHOOL OF ENGINEERING, RETANG-752054

DISCIPLINE: CIVIL ENGINEERING	SEMESTER: 6th Sem	NAME OF THE TEACHING FACULTY: ER. PURAK SUNDARAY & ER. ARPITA ROUT
<b>SUBJECT : LAND SURVEY– II ( Th- 1)</b>	No of Days/Per week class allotted: <b>5 Class P/W(75)</b>	Semester From Date: 13/02/2023 To Date: 23/05/2023 No. Of Weeks: 15
WEEK	CLASS DAY	THEORY
1 <sup>st</sup>	1 <sup>st</sup>	<b>TACHEOMETRY:</b> Principles of Tacheometry.
	2 <sup>nd</sup>	stadia constants determination
	3 <sup>rd</sup>	Stadia tacheometry with staff held vertical
	4 <sup>th</sup>	Stadia tacheometry with staff held vertical and with line of collimation horizontal
	5 <sup>th</sup>	Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined,
2 <sup>nd</sup>	1 <sup>st</sup>	numerical problems solve
	2 <sup>nd</sup>	numerical problems solve
	3 <sup>rd</sup>	stadia constants numerical problems solve
	4 <sup>th</sup>	Elevations and distances of staff stations – numerical problems
	5 <sup>th</sup>	<b>CURVES :</b> Purpose of curve and its necessity
3 <sup>rd</sup>	1 <sup>st</sup>	compound, reverse and transition curve, Purpose & use of different types of curves in field
	2 <sup>nd</sup>	Elements of circular curves,
	3 <sup>rd</sup>	numerical problems
	4 <sup>th</sup>	Preparation of curve table for setting out
	5 <sup>th</sup>	Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord.
	1 <sup>st</sup>	Setting out of circular curve by chain and tape and by instrument angular methods ii) successive bisection of arc, (iii)

4 <sup>th</sup>	2 <sup>nd</sup>	Obstacles in curve ranging – point of intersection inaccessible
	3 <sup>rd</sup>	<b>BASICS ON SCALE AND BASICS OF MAP:</b> Fractional or Ratio Scale, Linear Scale, Graphical Scale
	4 <sup>th</sup>	What is Map, Map Scale and Map Projections
	5 <sup>th</sup>	How Maps Convey Location and Extent
5 <sup>th</sup>	1 <sup>st</sup>	How Maps Convey characteristics of feature
	2 <sup>nd</sup>	How Maps Convey Spatial Relationship
	3 <sup>rd</sup>	1 Classification of Maps 1 Physical Map 2 Topographic Map
	4 <sup>th</sup>	3 Road Map 4 Political Map 5 Economic & Resources Map
	5 <sup>th</sup>	Thematic Map and Climate Map
6 <sup>th</sup>	1 <sup>st</sup>	<b>SURVEY OF INDIA MAP SERIES</b> Open Series map
	2 <sup>nd</sup>	Defense Series Map
	3 <sup>rd</sup>	Map Nomenclature
	4 <sup>th</sup>	Quadrangle Name
	5 <sup>th</sup>	Latitude, Longitude, UTM's
7 <sup>th</sup>	1 <sup>st</sup>	Contour Lines
	2 <sup>nd</sup>	Magnetic Declination
	3 <sup>rd</sup>	Public Land Survey System
	4 <sup>th</sup>	Field Notes
	5 <sup>th</sup>	Survey Of India Map Series and its features ,necessity
8 <sup>th</sup>	1 <sup>st</sup>	<b>BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE</b>
	2 <sup>nd</sup>	Aerial Photography Types of Aerial Photographs (Oblique, Straight)
	3 <sup>rd</sup>	Photogrammetry:.1 Classification of Photogrammetry

	4 <sup>th</sup>	1. Aerial Photogrammetry 2. Terrestrial Photogrammetry
	5 <sup>th</sup>	Photogrammetry Process: .1 Acquisition of Imagery using aerial and satellite platform
9 <sup>th</sup>	1 <sup>st</sup>	Photogrammetry Process: .2 Control Survey 3 Geometric Distortion in Imagery
	2 <sup>nd</sup>	Application of Imagery and its support data Orientation and Triangulation
	3 <sup>rd</sup>	Stereoscopic Measurement 1- X-parallax .2- Y- paralla
	4 <sup>th</sup>	DTM/DEM Generation
	5 <sup>th</sup>	Ortho Image Generation
10 <sup>th</sup>	1 <sup>st</sup>	<b>MODERN SURVEYING METHODS</b> Principles and use of (i) Micro-optic theodolite,
	2 <sup>nd</sup>	Principles, features and use of digital theodolite
	3 <sup>rd</sup>	Working principles of a Total Station
	4 <sup>th</sup>	Set up and use of total station to measure angles
	5 <sup>th</sup>	Distances of points under survey from total station
11 <sup>th</sup>	1 <sup>st</sup>	the co-ordinates (X,Y & Z or northing , easting, and elevation)
	2 <sup>nd</sup>	surveyed points relative to Total Station position using trigonometry and triangulation.
	3 <sup>rd</sup>	Features of total station
	4 <sup>th</sup>	Numerical problem solve
	5 <sup>th</sup>	Problem based upon total station
12 <sup>th</sup>	1 <sup>st</sup>	<b>BASICS ON GPS &amp; DGPS AND ETS GPS:</b> Global Positioning Working Principle of GPS,GPS Signals.
	2 <sup>nd</sup>	Errors of GPS,Positioning Methods
	3 <sup>rd</sup>	DGPS: - Differential Global Positioning System 1- Base Station Setup
	4 <sup>th</sup>	Rover GPS Set up Download, Post-Process and Export GPS data , Sequence to download GPS data from flashcar
	5 <sup>th</sup>	Sequence to Post-Process GPS data ,Sequence to export post process GPS data

13 <sup>th</sup>	1 <sup>st</sup>	Sequence to export GPS Time tags to file
	2 <sup>nd</sup>	ETS: - Electronic Total Station 1- Distance Measurement
	3 <sup>rd</sup>	Electronic Total Station Angle Measurement
		2- Leveling
	4 <sup>th</sup>	Electronic Total Station 3- Determining position 4- Reference networks
	5 <sup>th</sup>	Electronic Total Station Errors and Accuracy
14 <sup>th</sup>	1 <sup>st</sup>	<b>BASICS OF GIS AND MAP PREPARATION USING GIS</b> Components of GIS, Integration of Spatial and Attribute
	2 <sup>nd</sup>	Three Views of Information System 8.2.1 Database or Table View, Map View and Model View
	3 <sup>rd</sup>	Spatial Data Model Attribute Data Management and Metadata Concept
	4 <sup>th</sup>	prepare data and adding to Arc Map.
	5 <sup>th</sup>	Organizing data as layers.
15 <sup>th</sup>	1 <sup>st</sup>	Editing the layers.
	2 <sup>nd</sup>	Switching to Layout View
	3 <sup>rd</sup>	Change page orientation.
	4 <sup>th</sup>	Removing Borders
	5 <sup>th</sup>	Adding and editing map information. Finalize the map