



**GANPATI INSTITUTE OF ENGINEERING AND TECHNOLOGY(POLY) JAGATPUR, CUTTACK**  
**LESSON PLAN OF 6<sup>TH</sup> SEMESTER(2025-26)**

DISCIPLINE- CIVIL ENGG.	SEMESTER-6 <sup>th</sup>	NAME OF THE TEACHING FACULTY- PRIYABRATA TRIPATHY (LECTURER)
SUBJECT- LAND SURVEY-II (Th.I)	NO. OF DAYS/WEEK CLASS ALLOTTED: 5	SEMESTER FROM DATE-22/12/25 TO -18/04/26 NO. OF WEEKS-17
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1 <sup>st</sup>	1 <sup>st</sup>	TACHEOMETRY: (Only concepts; applications without derivation) Principles, stadia constants determination
	2 <sup>nd</sup>	Numerical Problems
	3 <sup>rd</sup>	Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined,
	4 <sup>th</sup>	Stadia tacheometry with staff held vertical and with line of collimation
	5 <sup>th</sup>	
2 <sup>nd</sup>	1 <sup>st</sup>	numerical problems
	2 <sup>nd</sup>	numerical problems
	3 <sup>rd</sup>	numerical problems
	4 <sup>th</sup>	Elevations and distances of staff stations – numerical problems
	5 <sup>th</sup>	Elevations and distances of staff stations – numerical problems CURVES2.1 compound, reverse and transition curve
3 <sup>rd</sup>	1 <sup>st</sup>	Purpose & use of different types of curves in field
	2 <sup>nd</sup>	Purpose & use of different types of curves in field
	3 <sup>rd</sup>	Elements of circular curves
	4 <sup>th</sup>	numerical problems
	5 <sup>th</sup>	numerical problems
4 <sup>th</sup>	1 <sup>st</sup>	Preparation of curve table for setting out
	2 <sup>nd</sup>	Setting out of circular curve by chain and tape and by instrument angular methods
	3 <sup>rd</sup>	(i) offsets from long chord
	4 <sup>th</sup>	(ii) successive bisection of arc
	5 <sup>th</sup>	(iii) offsets from tangents
5 <sup>th</sup>	1 <sup>st</sup>	(iv) offsets from chord produced (No derivation)
	2 <sup>nd</sup>	(v) Rankine's method of tangent angles
	3 <sup>rd</sup>	Obstacles in curve ranging – point of intersection inaccessible
	4 <sup>th</sup>	3-BASICS ON SCALE AND BASICS OF MAP Fractional or Ratio Scale, Linear Scale, Graphical Scale
	5 <sup>th</sup>	What is Map, Map Scale and Map Projections
6 <sup>th</sup>	1 <sup>st</sup>	How Maps Convey Location and Extent
	2 <sup>nd</sup>	How Maps Convey characteristics of features
	3 <sup>rd</sup>	How Maps Convey Spatial Relationship
	4 <sup>th</sup>	How Maps Convey Spatial Relationship
	5 <sup>th</sup>	Classification of Maps
7 <sup>th</sup>	1 <sup>st</sup>	Physical Map3.5.2 Topographic Map
	2 <sup>nd</sup>	Road Map3.5.4 Political Map
	3 <sup>rd</sup>	Economic & Resources Map
	4 <sup>th</sup>	Thematic Map3.5.7 Climate Map
	5 <sup>th</sup>	4-SURVEY ON INDIA MAP SERIES open series map
8 <sup>th</sup>	1 <sup>st</sup>	Defense Series Map4.3 Map Nomenclature
	2 <sup>nd</sup>	.Quadrangle Name4.3.2 Latitude, Longitude, UTM's
	3 <sup>rd</sup>	Contour Lines
	4 <sup>th</sup>	Magnetic Declination
	5 <sup>th</sup>	Public Land Survey System Field Notes
9 <sup>th</sup>	1 <sup>st</sup>	5-BASICS OF AERIAL PHOTOGRAPHY,PHOTOGRAMMETRY ORTHO IMAGE GENERATION Aerial Photography: 5.1.1 Film, Focal Length, Scale
	2 <sup>nd</sup>	Types of Aerial Photographs (Oblique, Straight)
	3 <sup>rd</sup>	Photogrammetry: Classification of Photogrammetry
	4 <sup>th</sup>	Aerial Photogrammetry
	5 <sup>th</sup>	Terrestrial Photogrammetry
10 <sup>th</sup>	1 <sup>st</sup>	Photogrammetry Process
	2 <sup>nd</sup>	Acquisition of Imagery using aerial and satellite platform
	3 <sup>rd</sup>	Control Survey

*23/12/25*

	4 <sup>th</sup>	Geometric Distortion in Imagery
	5 <sup>th</sup>	Application of Imagery and its support data
		Orientation and Triangulation
11 <sup>th</sup>	1 <sup>st</sup>	Stereoscopic Measurement X-parallax Y-parallax
	2 <sup>nd</sup>	DTM/DEM Generation
	3 <sup>rd</sup>	Ortho Image Generation
	4 <sup>th</sup>	6-MODERN SURVEYING METHODS Principles, features and use of (i) Micro-optic theodolite
	5 <sup>th</sup>	Principles, features and use of digital theodolite
	1 <sup>st</sup>	Working principles of a Total Station (Set up and use of total station to measure angles)
	2 <sup>nd</sup>	Working principles of a Total Station (Set up and use of total station to measure angles )
	3 <sup>rd</sup>	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 <sup>th</sup>	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.
	5 <sup>th</sup>	7-BASICSON GPS & DGPS AND ETS GPS: - Global Positioning
12 <sup>th</sup>	1 <sup>st</sup>	Working Principle of GPS GPS Signals, 7.1.2 Errors of GPS, Positioning Methods
	2 <sup>nd</sup>	DGPS: - Differential Global Positioning System Base Station Setup
	3 <sup>rd</sup>	Rover GPS Set up
	4 <sup>th</sup>	Download, Post-Process and Export GPS data
	5 <sup>th</sup>	Sequence to download GPS data from flashcards
13 <sup>th</sup>	1 <sup>st</sup>	Sequence to Post-Process GPS data
	2 <sup>nd</sup>	Sequence to export post process GPS data
	3 <sup>rd</sup>	Sequence to export GPS Time tags to file
	4 <sup>th</sup>	ETS: - Electronic Total Station Distance Measurement
	5 <sup>th</sup>	Angle Measurement Leveling
14 <sup>th</sup>	1 <sup>st</sup>	Determining position
	2 <sup>nd</sup>	Reference networks
	3 <sup>rd</sup>	Errors and Accuracy
	4 <sup>th</sup>	8-BASICS OF GIS AND MAP PREPARATION USING GIS Components of GIS,
	5 <sup>th</sup>	Integration of special and attribute information
	1 <sup>st</sup>	8. Three views of information system
	2 <sup>nd</sup>	.1Database of table view map view and modal view
	3 <sup>rd</sup>	Spital data method
	4 <sup>th</sup>	Attribute data management and meta data concept
	5 <sup>th</sup>	Attribue data management and meta data concept
16 <sup>th</sup>	1 <sup>st</sup>	Prepare data and adding to Arc Map. . Organizing data as layers
	2 <sup>nd</sup>	Editing the layers. Switching to lay out view
	3 <sup>rd</sup>	Change page orientation.
	4 <sup>th</sup>	Removing Borders.
	5 <sup>th</sup>	Adding and editing map information
17 <sup>th</sup>	1 <sup>st</sup>	Extra question discuss
	2 <sup>nd</sup>	Finalize the map

LECTURER

*B. S. Borthakur*  
23/12/25

SR.LECTURER

*R. B. Borthakur*

23/12/25

PRINCIPAL *23/12/25*

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