Discipline: Civil	**Semester: 6th**	**No. of weeks:17**
Subject: Land Survey-II Th.1	**No. of days/per week Class Allotted: 5**	**Name of the teaching faculty: Prakash Chandra Murmu**
Week	**Class/Day**	**Theory Topics**
1st	1st	**TACHEOMETRY:** Principles, stadia constants determination
	2nd	Stadia tacheometry with staff held vertical
	3rd	Stadia tacheometry with line of collimation horizontal
	4th	Stadia tacheometry with line of collimation Inclined
	5th	Numerical problems
2nd	1st	Numerical problems
	2nd	Numerical problems
	3rd	Elevations and distances of staff stations
	4th	Numerical problems
	5th	**CURVES :** 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	(ii) successive bisection of arc, (iii) offsets from tangents
4th	1st	(iv) offsets from chord produced, (v) Rankine's method of tangent angles (No derivation)
	2nd	Obstacles in curve ranging – point of intersection inaccessible
	3rd	**BASICS ON SCALE AND BASICS OF MAP:** Fractional or Ratio Scale, Linear Scale, Graphical Scale
	4th	What is Map, Map Scale and Map Projections
	5th	How Maps Convey Location and Extent
5th	1st	How Maps Convey characteristics of features
	2nd	How Maps Convey Spatial Relationship
	3rd	Classification of Maps :Physical Map, Topographic Map
	4th	Road Map ,Political Map
	5th	Economic & Resources Map ,Thematic Map ,Climate Map
6th	1st	**SURVEY OF INDIA MAP SERIES:** Open Series map
	2nd	Defense Series Map
	3rd	Map Nomenclature Quadrangle Name
	4th	Latitude
	5th	Longitude
7th	1st	UTM's
	2nd	Contour Lines
	3rd	Magnetic Declination
	4th	Public Land Survey System

	5th	Field Notes
8th	1st	**BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION:** Aerial Photography : Film, Focal Length, Scale
	2nd	Types of Aerial Photographs (Oblique, Straight)
	3rd	**Photogrammetry**: Classification of Photogrammetry
	4th	Aerial Photogrammetry
	5th	Terrestrial Photogrammetry
9th	1st	**Photogrammetry Process**: Acquisition of Imagery using aerial and satellite platform
	2nd	Control Survey, Geometric Distortion in Imagery
	3rd	Application of Imagery and its support data, Orientation and Triangulation
	4th	Stereoscopic Measurement X-parallax Y-parallax
	5th	DTM/DEM Generation ,Ortho Image Generation
10th	1st	**MODERN SURVEYING METHODS :** Principles, features and use of (i) Micro-optic theodolite
	2nd	(ii) Digital Theodolite
	3rd	Working principles of a Total Station
	4th	Set up and use of total station to measure angles
	5th	Distances of points under survey from total station the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
11th	1st	Distances of points under survey from total station the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	2nd	Distances of points under survey from total station the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	3rd	Distances of points under survey from total station the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	4th	Distances of points under survey from total station the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	5th	Distances of points under survey from total station the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation

12th	1st	**BASICS ON GPS & DGPS AND ETS:** GPS: - Global Positioning
	2nd	Working Principle of GPS,GPS Signals,
	3rd	Errors of GPS, Positioning Methods
	4th	DGPS: - Differential Global Positioning System
	5th	Base Station Setup , Rover GPS Set up
13th	1st	Download, Post-Process and Export GPS data Sequence to download GPS data from flashcards Sequence to Post-Process GPS data
	2nd	Sequence to export post process GPS data , Sequence to export GPS Time tags to file
	3rd	ETS: - Electronic Total Station Distance Measurement ,Angle Measurement
	4th	Leveling , Determining position
	5th	Reference networks , Errors and Accuracy
14th	1st	**BASICS OF GIS AND MAP PREPARATION USING GIS:** Components of GIS, Integration of Spatial and Attribute Information
	2nd	Three Views of Information System : Database or Table View, Map View and Model View
	3rd	Spatial Data Model
	4th	Attribute Data Management and Metadata Concept
	5th	Prepare data and adding to Arc Map.
15th	1st	Organizing data as layers.
	2nd	Editing the layers
	3rd	Switching to Layout View.
	4th	Change page orientation.
	5th	Removing Borders. Adding and editing map information, Finalize the map
16th	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
	5th	Revision
17th	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
	5th	Revision