

# Yogoda Satsanga Palpara Mahavidyalaya

## DEPARTMENT OF GEOGRAPHY

### TEACHING PLAN

SESSION: 2018-2019

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by		
Semester-1	C1T:Geotectonics and Geomorphology	Geotectonics	Earth's tectonic and structural evolution with reference to geological time scale	Binod Sardar	10	1 <sup>st</sup> Month		
			Earth's interior with special reference to seismology. Isostasy: Models of Airy and Pratt			2 <sup>nd</sup> month		
			Plate Tectonics: Processes at constructive, conservative, destructive margins and hotspots; resulting landforms			3 <sup>rd</sup> month		
			Folds and Faults—origin and types			4 <sup>th</sup> month		
				Geomorphology	Degradational processes: Weathering, mass wasting and resultant landforms	Sudipta Das	4	1 <sup>st</sup> Month
					Processes of entrainment, transportation and deposition by different geomorphic agents. Role of humans in landform development.	Swapan Mishra	8	2 <sup>nd</sup> month
					Development of river network and landforms on uniclinal and folded structures			3 <sup>rd</sup> month
					Landforms on igneous rocks with special reference to Granite and Basalt	Binod Sardar	2	4 <sup>th</sup> Month
					Karst landforms: Surface and sub-surface. Coastal processes and landforms.	Arpita Samanta	4	4 <sup>th</sup> Month
					Glacial and fluvio-glacial processes and landforms; fluvio-glacial landforms	Pragna Bhattacharya	4	5 <sup>th</sup> Month

			Aeolian and fluvio-aeolian processes and landforms; fluvio-aeolian processes	Arpita Samanta	4	1 <sup>st</sup> month
		Models on landscape evolution	Views of Davis and King	Sudipta Das	5	2 <sup>nd</sup> month
			Views of Penck and Hack			3 <sup>rd</sup> and 4 <sup>th</sup> month
<b>Semester-1</b>	<b>C2T: Cartographic Techniques</b>	Maps: Classification and types. Components of a map		Arpita Samanta	8	1 <sup>st</sup> month
		Concept and application of scales	Plain, comparative	Swapan Mishra		2 <sup>nd</sup> month
			Diagonal and Vernier	Sudipta Das		1 <sup>st</sup> month
		Coordinate systems:	Polar and rectangular. Concept of geoid and spheroid	Binod Sardar		2 <sup>nd</sup> month
		Concept of generating globe.		Pragna Bhattacharya	12	3 <sup>rd</sup> and 4 <sup>th</sup> month
		Grids: angular and linear systems of measurement				
		Bearing: Magnetic and true, whole-circle and reduced.		Sudipta Das		1 <sup>st</sup> month
		Map projections: Classification, properties and uses.		Binod Sardar	18	
		Concept and significance of UTM projection.		Pragna Bhattacharya		
		Basic concepts of surveying and survey equipment:	Prismatic compass	Swapan Mishra		
			Dumpy level	Sudipta Das		
			Theodolite Abney level, Clinometer			
		Survey of India topographical maps: Reference scheme of old and open series. Information on the margin of maps		Pragna Bhattacharya	2	2 <sup>nd</sup> month
	<b>C2P: Cartographic Techniques Lab</b>	Graphical construction of scales:	Plain, comparative	Arpita Samanta	6	1 <sup>st</sup> month
			Diagonal	Swapan Mishra		
			Vernier	Sudipta Das		

		Construction of projections	PolarZenithal Stereographic, CylindricalEqual Area, <i>Mercator's</i> . Simple conic with two standard parallels, <i>Bonne's</i>	Binod Sardar	5	1 <sup>st</sup> month
		Delineation of drainage basin from Survey of India topographical map. Construction and interpretation of relief profiles (superimposed, projected and composite),		Pragna Bhattacharya	4	2 <sup>nd</sup> month
		Relative relief map, slope map (Wentworth) Transect chart, Stream ordering (Strahler) on a drainage basin		Sudipta Das	5	2 <sup>nd</sup> month
Semester-II	C3T:Human Geography	Unit :I: <b>Nature and Principles</b>	Nature and scope and recent trends. Elements of Human Geography	Pragna Bhattacharya	4	1 <sup>st</sup> and 2 <sup>nd</sup> month
			Approaches to the study of Human Geography; Resource, Locational,		4	3 <sup>rd</sup> month
			Landscape, Environmental	Sudipta Das	2	3 <sup>rd</sup> and 4 <sup>th</sup> month
			Evolution of humans. Concept of race and ethnicity	Binod Sardar	4	4 <sup>th</sup> month
			Space, society and cultural regions (language and religion)	Arpita Samanta	4	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
		<b>Unit: II: Society, Demography and Ekistics</b>	Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies	Sudipta Das	6	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Human adaptation to environment: Eskimo, Masai	Arpita Samanta	5	1 <sup>st</sup> month
			Jarwa, Gaddi, Santhals.			2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Population growth and distribution, population composition;	Binod Sardar	4	4 <sup>th</sup> month

			Demographic transition model	Sudipta Das	2	1 <sup>st</sup> month
			Population–Resource regions (Ackerman)	Binod Sardar	2	
			Human population and environment with special reference to development–environment conflict	Pragna Bhattacharya	4	3 <sup>rd</sup> month
			Social morphology and rural house types in India	Swapan Mishra	2	3 <sup>rd</sup> month
			Types and patterns of rural settlements	Swapan Mishra	2	4 <sup>th</sup> month
			Types and patterns of urban settlements	Sudipta Das	2	4 <sup>th</sup> month
<b>Semester II</b>	<b>C4T: Cartograms and Thematic Mapping</b>		Concepts of rounding, scientific notation, logarithm and anti-logarithm, natural and log scales	Sudipta Das	7	4 <sup>th</sup> month
			Diagrammatic representation of data: Line, Bar, and Circle	Arpita Samanta		
			Representation of point data: Isopleths	Swapan Mishra	3	3 <sup>rd</sup> month
			Representation of area data: Dots, proportional circles and choropleth	Pragna Bhattacharya	3	1 <sup>st</sup> month
		Preparation and interpretation of large scale thematic maps:	Geomorphological maps.	Pragna Bhattacharya	2	2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Climatological maps	Binod Sardar		
			Land use land cover maps	Sudipta Das	2	1 <sup>st</sup> month
			Socio-economic maps	Swapan Mishra		2 <sup>nd</sup> and 3 <sup>rd</sup> month
	<b>C4 P: Cartography (Lab)</b>		Traverse survey using Prismatic Compass	Pragna Bhattacharya & Arpita Samanta	8	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month

			Levelling by Dumpy Level and Prismatic Compass	Swapan Mishra Sudipta Das	6	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Thematic maps: Proportional squares,	Sudipta Das	4	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
			pie diagrams with proportional circles	Binod Sardar	12	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
			dots and spheres Thematic maps: Choropleth	Pragna Bhattacharya		
			Isoline map	Swapan Mishra	4	4 <sup>th</sup> and 5 <sup>th</sup> month
			chorochromatic map	Arpita Samanta		
<b>Semester-III</b>	<b>Core – C5T</b>	<b>Unit: I: Elements of the Atmosphere</b>	Nature, composition and layering of the atmosphere	Arpita Samanta		
			Insolation: controlling factors. Heat budget of the atmosphere.	Sudipta Das	10	1 <sup>st</sup> and 2 <sup>nd</sup> month
			Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.	Swapan Mishra		
			Greenhouse effect and importance of ozone layer.	Binod Sardar	3	
		<b>Unit: II: Atmospheric Phenomena and Climatic Classification</b>	Condensation: Process and forms. Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence. Forms of precipitation.	Binod Sardar		
			Air mass: Typology, origin, characteristics and modification.	Pragna Bhattacharya	14	3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> month
			Fronts: warm and cold; frontogenesis and frontolysis.	Sudipta Das		
			Weather: stability and instability; barotropic and baroclinic conditions.	Sudipta Das		1 <sup>st</sup> and

			Circulation in the atmosphere: Planetary winds, jet stream, index cycle	Pragna Bhattacharya	8	2 <sup>nd</sup> month
			Tropical and mid-latitude cyclones	Pragna Bhattacharya	8	
			Monsoon circulation and mechanism with reference to India	Pragna Bhattacharya	7	2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> month
		Climatic classification	Koppen, Oliver	Arpita Samanta		
			Thornthwaite	Binod Sardar		

	<b>Core – C6T Statistics Unit I:</b>	Importance and significance of Statistics in Geography. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio), sources of data		Sudipta Das	10	1 <sup>st</sup> month
		Collection of data and formation of statistical tables				Sudipta Das
		Sampling: Need, types, and significance and methods of random sampling		Pragna Bhattacharya	4	1 <sup>st</sup> month
		Theoretical distribution: frequency, cumulative frequency, Normal and Probability		Pragna Bhattacharya	7	
	<b>Statistics Unit II:</b>		Central tendency: Mean, median, mode, partition values	Arpita Samanta	3	2 <sup>nd</sup> month
				Measures of dispersion range, mean deviation, standard deviation, coefficient of variation	Swapan Mishra	7

			Association and correlation: Rank, Product moment	Binod Sardar	4	
			Regression (linear and non-linear ) Time series analysis (moving average)	Binod Sardar	4	3 <sup>rd</sup> month
	C6P: Statistical Methods in Geography	A Project File, comprising one exercise each is to be submitted				
			1. Construction of data matrix with each row representing an aerial unit (districts / blocks / mouzas/ towns) and corresponding columns of relevant attributes.			
			2. Based on the above, a frequency table, measures of central tendency and dispersion would be computed and interpreted.	Sudipta Das	7	2 <sup>nd</sup> and 3 <sup>rd</sup> month
			3. Histograms and frequency curve would be prepared on the dataset.			
			4. From the data matrix a sample set (20%) would be drawn using, random, systematic and stratified methods of sampling and locate the samples on a map with a short note on methods used.	Pragna Bhattacharya	2	
			5. Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted and residual from regression would be mapped with a short interpretation.	Binod Sardar & Sudipta Das	3	

	Core – C7T	Unit: I: Geography of India	Tectonic and stratigraphic provinces, physiographic divisions	Swapan Mishra		1 <sup>st</sup> month
			Climate, soil and vegetation: Characteristics and classification	Arpita Samanta	18	
			Population: Distribution, growth, structure and policy	Binod Sardar		2 <sup>nd</sup> month
			Distribution of population by race, caste, religion, language, tribes and their correlates	Arpita Samanta		3 <sup>rd</sup> month
			Agricultural regions. Green revolution and its consequences	Pragna Bhattacharya		4 <sup>th</sup> month

			Mineral resources distribution and utilisation of iron ore,	Arpita Samanta		5 <sup>th</sup> month
			Power resources distribution and utilisation of coal, petroleum, gas;	Arpita Samanta	4	5 <sup>th</sup> month
			Industrial Development: Automobile and Information technology	Swapan Mishra	2	
			Regionalisation of India: Physiographic (R.L. Sing), Socio-cultural (Sopher) Economic (Sengupta)	Pragna Bhattacharya Sudipta Das	5	
		Unit: II Geography of West Bengal	Physical perspectives: Physiographic divisions, forest and water resources	Arpita Samanta	12	1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> month
			Population: Growth, distribution and human development	Binod Sardar		1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Resources: Mining, agriculture and industries	Sudipta Das Pragna Bhattacharya		4 <sup>th</sup> month
			Regional Problem: Darjeeling Hills Jangal Mahal Sundarban	Pragna Bhattacharya Sudipta Das	3	5 <sup>th</sup> month
	<b>SEC – 1T: COASTAL MANAGEMENT</b>	<b>COASTAL MANAGEMENT</b>	Components of a coastal zone. Coastal morphodynamic variables and their role in evolution of coastal forms.	Pragna Bhattacharya	4	1 <sup>st</sup> month
			Environmental impacts and management of mining, oil exploration, salt manufacturing, land reclamation and tourism	Swapan Mishra	2	2 <sup>nd</sup> month
			Coastal hazards and their management using structural and non-structural measures: Erosion, flood, sand encroachment, dune degeneration, estuarine sedimentation and pollution	Binod Sardar	6	4 <sup>th</sup> month
			Principles of Coastal Zone Management. Exclusive Economic Zone and Coastal Regulation Zones with reference to India.	Sudipta Das	4	5 <sup>th</sup> month



<b>SEM-IV</b>	<b>C8T: Regional Planning and Development</b>	<b>Unit: I: Regional Planning</b>	Concept of regions: Types of regions and their delineation.	Pragna Bhattachaa	10	1 <sup>st</sup> month
			Types of planning, principles and objectives of regional planning, multi- level planning in India	Swapan Mishra		2 <sup>nd</sup> month
			Tools and techniques of regional planning, need for regional planning in India	Pragna Bhattachya		3 <sup>rd</sup> month
			Metropolitan concept: metropolitan areas, and urban agglomerations	Arpita samanta	16	1 <sup>st</sup> month
		<b>Unit: II: Regional Development</b>	Development: Meaning, growth versus development, Concept and strategies of regional development with reference to India, Theories and models for regional development : Growth pole model of perroux; growth centre model in Indian context, Theories and models for regional development: Cumulative causation (Myrdal) and core periphery (Hirschman, Rostov and Friedman)	Pragna Bhattachra		1 <sup>st</sup> and 2 <sup>nd</sup> month
			Changing concept of development, concept of underdevelopment; efficiency-equity debate.	Sudipta Das		3 <sup>rd</sup> month
			Indicators of development: Economic, social and environmental. Human development. Regional development in India, regional inequality, disparity and diversity	Binod Sardar		4 <sup>th</sup> month
			Need and measures for balanced development in India	Sudipta Das		5 <sup>th</sup> month
	<b>C9T Economic Geography</b>	<b>Unit: I: Concepts</b>	Meaning and approaches to Economic Geography, new Economic Geography Concepts in Economic Geography: Goods and services, production, exchange and consumption.	Sudipta Das	12	1 <sup>st</sup> month
			Concept of economic man, theories of choices Economic distance and transport costs.	Pragna Bhattacharya		2 <sup>nd</sup> and 4 <sup>th</sup> month
		<b>Unit: II: Economic Activities</b>	Concept and classification of economic activities	Swapan Mishra		1 <sup>st</sup> month

			Factors affecting location of economic activity with special reference to agriculture (Von Thunen), and industry (Weber).	Binod Sardar	12	1 <sup>st</sup> month
			Primary activities: Subsistence and commercial agriculture, forestry, fishing and mining	Arpita Samanta		2 <sup>nd</sup> month
			Secondary activities: Manufacturing (cotton textile, iron and steel),	Swapan Mishra		2 <sup>nd</sup> month
			Concept of manufacturing regions, special economic zones and technology parks. Tertiary activities: transport, trade and services	Swapan Mishra	6	3 <sup>rd</sup> month
			Agricultural systems: Caste studies of tea plantation in India and mixed farming in Europe	Arpita Samanta	2	3 <sup>rd</sup> month
			Transnational sea-routes, railways and highways with reference to India	Swapan Mishra	2	4 <sup>th</sup> month
			International agreements and trade blocs: GATT and OPEC	Binod Sardar	2	5 <sup>th</sup> month
	<b>Core – 10T Environmental Geography</b>	<b>Environmental Geography</b>	Geographers' approach to environmental studies	Pragna Bhattacharya		1 <sup>st</sup> month
			Perception of environment in different stages of civilization	Sudipta Das		1 <sup>st</sup> month
			Concept of holistic environment and system approach	Swapan Mishra		2 <sup>nd</sup> month
			Ecosystem: Concept, structure and functions Environmental pollution and degradation: Land, water and air	Arpita Samanta	20	2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Space–time hierarchy of environmental problems: Local, regional and global			3 <sup>rd</sup> month

			Urban environmental issues with special reference to waste management.	Binod Sardar		4 <sup>th</sup> month
			Environmental programmes and policies – Global, national and local levels.			
		<b>Environment Geography Lab</b>	Preparation of questionnaire for perception survey on environmental problems. Preparation of check-list for Environmental Impact Assessment of an urban / industrial project. Quality assessment of soil using field kit: pH and NPK.	Sudipta Das	8	2 <sup>nd</sup> month and 3 <sup>rd</sup> month
			Interpretation of air quality using CPCB / WBPCB data	Pragna Bhattacharya	4	5 <sup>th</sup> month
	<b>SEC -2T: Research Methods</b>	<b>Research Methods</b>	Geographic Enquiry: Definition and Ethics; Literature Review; Framing Research Questions, Objectives and Hypothesis;	Pragna Bhattacharya	12	1 <sup>st</sup> month
			Preparing Sample Questionnaires and inventories			
			Data Collection: Type and Sources of Data;	Sudipta Das		3 <sup>rd</sup> month
			Methods of data Collection; Data Input and Editing			3 <sup>rd</sup> month
			Data Analysis: Qualitative and Quantitative Analysis; Techniques Data Representation	Pragna Bhattacharya		4 <sup>th</sup> month
			Structure of a Research Report: Preliminaries; Text; Citation, Notes	Swapan Mishra		5 <sup>th</sup> month
			References, Bibliography and Abstract and Key words	Sudipta Das		5 <sup>th</sup> month

**PART – III (HONS.) [ 3 TIER SYLLABUS]**

<b>YEAR : PART - III</b>	<b>Paper</b>	<b>Teacher Unit/Module</b>		<b>Teacher</b>	<b>No. of lectures</b>	<b>To be completed by</b>
	VI	1.0 POPULATION GEOGRAPHY -I	1.1 Definition, scope and content of population geography; Basic sources of population data. Difference between population geography and demography.	Arpita Samanta	15	1 <sup>st</sup> month
			1.2 Measures of population density. Population growth: Concept, type, changing trend. Spatial variation in developed and developing countries.			2 <sup>nd</sup> month
			1.3 Population composition in India: Sex ratio and its determinants, rural urban and caste composition.			3 <sup>rd</sup> month
			1.4 Age composition and its determinants, different structures of Age-Sex Pyramid found in developing and developed countries and their significance.			4 <sup>th</sup> month
		2.0 POPULATION GEOGRAPHY -II	2.1 Critical analysis of overpopulation, optimum population and under population; Demographic Transition Model.			Binod Sardar
			2.2 Migration: Types, pattern, streams and consequences on place of destination and origin.	Binod Sardar	4	5 <sup>th</sup> month
			2.3 Fertility and Mortality: Concept, determinants, different measures and interregional variation in India.		3	6 <sup>th</sup> month
			2.4 Concept of HDI and GDI. Population policy in India and China, Population – Resource relationships. Population-Resource regions (Ackerman model).		4	6 <sup>th</sup> month
		3.0 INTRODUCTION TO SETTLEMENT GEOGRAPHY	Settlement: General definition, evolution of settlement, site and situation. Concept of settlement systems.		Sudipta Das	4
			3.2 Rural settlement: Type and pattern, factors affecting settlement pattern.	Swapan Mishra	6	7 <sup>th</sup> month & 8 <sup>th</sup> month
			3.3 Urban settlement: Definition, size-class distribution and census			

			category.			
			3.4 Urban Morphology: Concentric Zone, Sector Model, Multiple Nuclei Theory. Urban function and functional classification of urban centres (C.D. Harris, Nelson).	Sudipta Das	3	8 <sup>th</sup> month
		4.0 REGION, REGIONAL PLANNING AND DEVELOPMENT	4.1 Concept of region and regionalisation in geography; Types of region: Formal, functional and planning region and methods of their delineation; Hierarchy of regions: Macro, meso and micro regions with suitable examples.	Pragna Bhattacharya	20	9 <sup>th</sup> & 10 <sup>th</sup> month
			4.2 Regional Planning: Concept, principle, types and role in regional development. Schemes of regionalization in India: V. Nath (1964), P. Sengupta (1968) and Chandrasekhara (1972).			
			4.3 Planning: Types and hierarchy. Objectives of physical, economic and environmental planning.			
			4.4 Concept and purpose of rural and urban planning centralised and decentralised planning with special reference to Panchayati Raj.			
		5.0 REMOTE SENSING AND GIS	5.1 Remote Sensing: Definition, stages and its importance in geographical studies	Binod Sardsar	8	10 <sup>th</sup> month
			5.2 Sources of energy, EMR spectrum (short wave to long wave bands), energy interaction with the atmosphere (scattering, atmospheric window). Energy interactions with the earth surface features (spectral signature).			
			5.3 Satellite, sensor and its function; satellite platforms (ground, air and space); Geostationary and Sun synchronous satellites, Concept of resolution (spatial, spectral, radiometric and temporal resolution).	Sudipta Das	5	11 <sup>th</sup> month
			5.4 Geographic Information System (GIS): Definition,	Pragna Bhattacharya	7	11 <sup>th</sup> month

			scope, concept of map layers in GIS, Data features of GIS: Points, lines and polygon (area). Data structures in GIS, Data Base Management System (DBMS).			
	VII	1.0 INTERPRETATION OF TOPOGRAPHICAL MAPS: PLATEAU AND PLAIN REGIONS	1.1 Characteristics of topographical maps (numbering system and scale),	Pragna Bhattacharya	6	2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> month
			1.2 Construction of profiles: superimposed, projected and composite.	Pragna Bhattacharya		
			1.3 Drawing of representative profiles, broad physiographic divisions and general interpretation.	Sudipta Das		
		2.0 MORPHOMETRIC ANALYSIS	2.1 Interpretation of relief [Amplitude of relief, Average slope (Wentworth's method) and Ruggedness Index], drainage (Drainage Density, Stream Ordering and Bifurcation Ratio after Strahler) and vegetation characteristics. (for morphometric technique basic spatial unit would be 1sq. km)	Binod Sardar	4	
			2.2 Interpretation of settlement (types and patterns), transportation systems (density measurement), Shortest Path Analysis (Shimbel Index).	Sudipta Das	2	
			2.3 Relationship between physical and cultural elements.	Pragna Bhattacharya	2	7 <sup>th</sup> , 8 <sup>th</sup> month
		3.0 Cartograms [Graphical Construction and Computer Use (MS Excel)]	3.1 Linear Diagrams: (Simple, Comparative and Composite). Age-Sex Pyramid (Graphical Methods only)	Sudipta Das	2	
			3.2 Proportional Diagram: Square and Pie Diagrams.	Binod Sardar	2	
		4.0 ANALYSIS OF CLIMATIC DATA & MAPS	4.1 Rainfall Dispersion Diagram.	Swapan Mishra	3	
			4.2 Climograph, Hythergraph and Ergograph	Arpita Samanta	4	
			4.3 Interpretation of weather map (Pre-Monsoon, Monsoon and Winter) (Pressure, Wind, Cloud and Rainfall, Identification of Season).			

			4.4 Weather Instruments: Reading of Barometer, Hygrometer.			
		5.0 LABORATORY WORK & PREPARATION OF SURVEY SCHEDULE	5.1 Analysis of Soil Texture (Sieve),	Sudipta Das		9 <sup>th</sup> month, 10 <sup>th</sup> month
			5.2 Determination of soil pH by soil kit.			
			5.3 Preparation of Survey Schedule and collection of Primary Data (20 Household Units)			
	VIII	1.0 DATA COLLECTION AND REPRESENTATION	1.1 Data: Classification, collection, tabulation. Concept of Sampling.	Sudipta Das	3	1 <sup>st</sup> month, 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> month
			1.2 Frequency distribution: Graphical representation (histogram, frequency polygon, curve and ogives).			
			1.3 Measures of central tendencies: Mean, median and mode; Skewness. Characteristics of Normal Distribution; Partition Value (Quartile, Decile and Percentile).	Pragna Bhattacharya	5	
			1.4 Measures of dispersion and variability: Range, quartile deviation, mean deviation and standard deviation, co- efficient of variation.			
		2.0 DATA ANALYSIS AND INTERPRETATION	2.1 Simple correlation and regression (bivariate data). Scatter diagram and fitting of straight line by least square method, product moment correlation coefficient, Rank correlation coefficient.	Swapan Mishra	5	
			2.2 Measures of Inequality: Location quotient, Lorenz curve (Spatial Data), Gini coefficient.			
			2.3 Time Series Analysis (Moving Average and Regression).	Binod Sardar	2	5 <sup>th</sup> month
			2.4 Rank-size rule, Crop combination (Weaver), Nearest neighbour analysis.	Binod Sardar	3	
		3. Satellite image interpretation & GPS Tracking (Laboratory Work):	3.1 Reference scheme of IRS satellite data: L3 and L4 images. Procedure of indenting procedure.	Pragna Bhattacharya	3	6 <sup>th</sup> month, 7 <sup>th</sup> month, 8 <sup>th</sup> month
			3.2 Visual interpretation of satellite images.	Pragna Bhattacharya	2	
			3.3 Change detection from satellite images and maps	Sudipta Das	2	

			using visual techniques.			
			3.4 Principles of Global Positioning System (GPS), Reading at Survey Points and Graphical Plotting.	Pragna Bhattacharya & Sudipta Das	3	9 <sup>th</sup> month
		4.0 FIELD REPORT [WRITTEN REPORT (15) + VIVA VOCE ON FIELD REPORT (10)];		All faculty		10 <sup>th</sup> , 11 <sup>th</sup> month

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12/07/2018

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