

Yogoda Satsanga Palpara Mahavidyalaya

DEPARTMENT OF GEOGRAPHY

TEACHING PLAN SESSION : 2019-2020

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by			
Semester-1	C1T:Geotectonics and Geomorphology	Geotectonics		Binod Sardar	10				
			Earth's tectonic and structural evolution with reference to geological time scale			1 st Month			
			Earth's interior with special reference to seismology. Isostasy: Models of Airy and Pratt			2 nd month			
			Plate Tectonics: Processes at constructive, conservative, destructive margins and hotspots; resulting landforms			3 rd month			
				Geomorphology	Degradational processes: Weathering, mass wasting and resultant landforms	Pragna Bhattacharya	10	4 th month	
								Folds and Faults—origin and types	
				Geomorphology	Processes of entrainment, transportation and deposition by different geomorphic agents. Role of humans in landform development.	Sudipta Das	20	1 st Month	
								Swapan Mishra	2 nd month
						Ranjan Khatua			Development of river network and landforms on uniclinal and folded structures
								Binod Sardar	Landforms on igneous rocks with special reference to Granite

			and Basalt			
			Karst landforms: Surface and sub-surface. Coastal processes and landforms.	Arpita Samanta		4 th Month
			Glacial and fluvio-glacial processes and landforms; fluvio-glacial landforms	Pragna Bhattacharya		5 th Month
			Aeolian and fluvio-aeolian processes and landforms; fluvio-aeolian processes	Arpita Samanta	20	1 st month
		Models on landscape evolution	Views of Davis and King	Ranjan Khatua		2 nd month
			Views of Penck and Hack	Sudipta Das		3 ^d and 4 th month

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by
Semester-1	C2T: Cartographic Techniques					
		Maps: Classification and types. Components of a map		Arpita Samanta	8	1 st month
		Concept and application of scales	Plain, comparative	Ranjan Khatua		2 nd month
			Diagonal and Vernier	Swapn Mishra	12	1 st month
		Coordinate systems:	Polar and rectangular. Concept of geoid and spheroid	Pragna Bhattacharya		2 nd month
		Concept of generating globe. Grids: angular and linear systems of measurement		Binod Sardar Ranjan Khatua		3 rd and 4 th month
		Bearing: Magnetic and true, whole-circle and reduced.		Sudipta Das	18	1 st month
		Map projections: Classification, properties and uses.		Binod Sardar		
		Concept and significance of UTM projection.		Swapn Mishra		
		Basic concepts of surveying and survey equipment:	Survey equipment: Prismatic compass Dumpy level Theodolite Abney level, Clinometer	Pragna Bhattacharya Swapn Mishra Sudipta Das		
		Survey of India topographical maps: Reference scheme of old		Arpita Samanta	2	2 nd month

		and open series. Information on the margin of maps				
	C2P: Cartographic Techniques Lab	Graphical construction of scales:	Plain, comparative Diagonal Vernier	Arpita Samanta Swapan Mishra Ranjan Khatua	6	1 st month
		Construction of projections	PolarZenithal Stereographic CylindricalEqual Area, <i>Mercator's</i> . Simple conic with two standard parallels Bonne's	Binod Sardar Swapan Mishra Ranjan Khatua	5	1 st 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 nd month
		Relative relief map, slope map (Wentworth) Transect chart		Sudipta Das	5	2 nd month
		Stream ordering (Strahler) on a drainage basin				

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by		
Semester-II	C3T:Human Geography	Unit :I: Nature and Principles	Nature and scope and recent trends. Elements of Human Geography	Pragna Bhattacharya	4	1 st and 2 nd month		
			Approaches to the study of Human Geography; Resource, Locational,		4	3 rd month		
			Landscape, Environmental	Sudipta Das	2	3 rd and 4 th month		
					Evolution of humans. Concept of race and ethnicity	Binod Sardar	4	4 th month
					Space, society and cultural regions (language and religion)	Arpita Samanta	4	1 st , 2 nd and 3 rd month
				Unit: II: Society, Demography and Ekistics	Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies	Ranjan Khatua	6	1 st , 2 nd and 3 rd month
					Human adaptation to environment: Eskimo, Masai	Arpita Samanta	5	1 st month
					Jarwa, Gaddi, Santhals.	Swapan Mishra		2 nd and 3 rd month
					Population growth and distribution, population composition;	Binod Sardar	4	4 th month
					Demographic transition model	Sudipta Das	2	1 st month
			Population–Resource regions (Ackerman)	Binod Sardar	2			
			Human population and environment with special	Pragna Bhattacharya	4	3 rd month		

			reference to development–environment conflict			
			Social morphology and rural house types in India	Swapan Mishra	6	3 rd month
			Types and patterns of rural settlements			4 th month
			Types and patterns of urban settlements	Sudipta Das		4th month

Semester II	C4T:Cartograms and Thematic Mapping		Concepts of rounding, scientific notation, logarithm and anti-logarithm, natural and log scales	Sudipta Das	7	4 th month
			Diagrammatic representation of data: Line, Bar, and Circle	Arpita Samanta		
			Representation of point data: Isopleths	Swapan Mishra	3	3 rd month
			Representation of area data: Dots, proportional circles and choropleth	Ranjan Khatua	3	1 st month
		Preparation and interpretation of large scale thematic maps:	Geomorphological maps	Pragna Bhattacharya	2	2 nd and 3 rd month
			Climatological maps	Binod Sardar		
			Land use land cover maps	Ranjan Khatua	2	1 st month
			Socio-economic maps	Swapan Mishra		2 nd and 3 rd month
	C4 P: Cartography (Lab)		Traverse survey using Prismatic Compass	Pragna Bhattacharya Arpita Samanta	8	1 st , 2 nd and 3 rd month
			Levelling by Dumpy Level and Prismatic Compass	Swapan Mishra Ranjan Khatua	6	1 st , 2 nd and 3 rd month
			Thematic maps: Proportional squares,	Ranjan Khatua	4	1 st , 2 nd and 3 rd month
			pie diagrams with proportional circles	Binod Sardar Sudipta Das	12	1 st , 2 nd and 3 rd month
			dots and spheres			
			Thematic maps: Choropleth	Pragna Bhattacharya		
			isoline map	Arpita Samanta	4	4 th and 5 th month
			chorochromatic map			

Semester-III	Core – C5T	Unit: I: Elements of the Atmosphere	Nature, composition and layering of the atmosphere	Arpita Samanta	10	1 st and 2 nd month
			Isolation: controlling factors. Heat budget of the atmosphere.			
			Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.			
			Greenhouse effect and importance of ozone layer.	Binod Sardar	14	3 rd , 4 th and 5 th month
		Unit: II: Atmospheric Phenomena and Climatic Classification	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.	Ranjan Khatua		
			Fronts: warm and cold; frontogenesis and frontolysis.	Sudipta Das		
			Weather: stability and instability; barotropic and baroclinic conditions.	Sudipta Das		
			Circulation in the atmosphere: Planetary winds, jet stream, index cycle	Pragna Bhattacharya	8	1 st and 2 nd month
			Tropical and mid-latitude cyclones			
			Monsoon circulation and mechanism with reference to India	Pragna Bhattacharya	7	2 nd , 3 rd and 4 th month
		Climatic classification	Koppen, Oliver	Arpita Samanta		
			Thorntwaite	Binod Sardar		

	Core – C6T Statistics Unit I:	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	12	1 st month
		Collection of data and formation of statistical tables	Sudipta Das		
		Sampling: Need, types, and significance and methods of random sampling	Pragna Bhattacharya		1 st month
		Theoretical distribution: frequency, cumulative frequency,	Pragna Bhattacharya	4	
		Theoretical distribution: Normal and Probability		3	

	Statistics Unit II:		Central tendency: Mean, median, mode, partition values	Arpita Samanta	3	2 nd month
			Measures of dispersion range, mean deviation, standard deviation, coefficient of variation	Swapan Mishra	7	2 nd month
			Association and Correlation: Rank correlation, Product moment	Binod Sardar	4	
			Regression (linear and non-linear) Time series analysis (moving average)	Binod Sardar	2	3 rd month
	C6P: Statistical Methods in Geography	<p><i>A Project File, comprising one exercise each is to be submitted</i></p> <ol style="list-style-type: none"> 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. 3. Histograms and frequency curve would be prepared on the data set. 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. 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. 				
				Sudipta Das	12	2 nd and 3 rd month
				Pragna Bhattacharya Arpita Samanta Pragna Bhattacharya		
				Sudipta Das		
				Binod Sardar Sudipta Das		

Semester	Paper	Unit/Module	Teacher	No. of lectures	To be completed by	
	Core – C7T	Unit: I: Geography of India	Tectonic and stratigraphic provinces, physiographic divisions	Swapan Mishra		
			Climate, soil and vegetation: Characteristics and classification	Arpita Samanta	18	1 st month
			Population: Distribution, growth, structure and policy	Binod Sardar		2 nd month
			Distribution of population by race, caste, religion, language, tribes and their correlates	Arpita Samanta Ranjan Khatua		3 rd month
			Agricultural regions. Green revolution and its consequences	Pragna Bhattacharya		4 th month
			Mineral resources distribution and utilisation of iron ore,	Arpita Samanta		5 th month
			Power resources distribution and utilisation of coal, petroleum, gas;	Swapan Mishra		4
	Unit: II Geography of West Bengal		Physical perspectives: Physiographic divisions, forest and water resources	Arpita Samanta		5
			Population: Growth, distribution and human development	Binod Sardar	12	1 st , 2 nd and 3 rd month
			Resources: Mining, agriculture and industries	Sudipta Das Pragna Bhattacharya		4 th month
			Regional Problem: Darjeeling Hills Jangal Mahal Sundarban	Pragna Bhattacharya Sudipta Das	6	5 th month
	SEC – 1T: COASTAL MANAGEMENT	COASTAL MANAGEMENT	Components of a coastal zone. Coastal morphodynamic variables and their role in evolution of coastal forms.	Pragna Bhattacharya	4	1 st month
			Environmental impacts and management of mining, oil exploration, salt manufacturing, land reclamation and tourism.	Swapan Mishra	4	3 rd 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 th month
			Principles of Coastal Zone Management. Exclusive Economic Zone and Coastal Regulation Zones with reference to India.	Sudipta Das	4	5 th month

SEM-IV	C8T: Regional Planning and Development	Unit: I: Regional Planning	Concept of regions: Types of regions and their delineation.	Ranjan khatua	10	1 st month
			Types of planning, principles and objectives of regional planning, multi- level planning in India	Swapan Mishra		2 nd month
			Tools and techniques of regional planning, need for regional planning in India	Ranjan khatua		3 rd month
			Metropolitan concept: metropolitan areas, and urban agglomerations	Arpita samanta		1 st month
		Unit: II: Regional Development	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 Bhattacharya		1 st and 2 nd month
			Changing concept of development, concept of underdevelopment; efficiency-equity debate.	Sudipta Das		3 rd month
			Indicators of development: Economic, social and environmental. Human development. Regional development in India, regional inequality, disparity and diversity	Binod Sardar		4 th month
			Need and measures for balanced development in India	Sudipta Das		5 th month
	C9T Economic Geography	Unit: I: Concepts	Meaning and approaches to Economic Geography, new Economic Geography Concepts in Economic Geography: Goods and services, production, exchange and consumption.	Sudipta Das	12	1 st month
			Concept of economic man, theories of choices Economic distance and transport costs.	Pragna Bhattacharya		2 nd and 4 th month

		Unit: II: Economic Activities	Concept and classification of economic activities	Swapna Mishra		1 st month
			Factors affecting location of economic activity with special reference to agriculture (Von Thunen), and industry (Weber).	Binod Sardar		1 st month
			Primary activities: Subsistence and commercial agriculture, forestry, fishing and mining	Arpita Samanta		2 nd month
			Secondary activities: Manufacturing (cotton textile, iron and steel),	Swapna Mishra	12	2 nd month
			concept of manufacturing regions, special economic zones and technology parks. Tertiary activities: transport, trade and services	Ranjan khatua	6	3 rd month
			Agricultural systems: Case studies of tea plantation in India and mixed farming in Europe	Arpita Samanta	2	3 rd month
			Transnational sea-routes, railways and highways with reference to India	Swapna Mishra	2	4 th month
			International agreements and trade blocs: GATT and OPEC	Binod Sardar	2	5 th month

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by
	Core – 10T Environmental Geography	Environmental Geography	Geographers' approach to environmental studies	Pragna Bhattacharya	20	1 st month
			Perception of environment in different stages of civilization	Sudipta Das		1 st month
			Concept of holistic environment and system approach	Swapan Mishra		2 nd month
			Ecosystem: Concept, structure and functions Environmental pollution and degradation: Land, water and air	Arpita Samanta		2 nd and 3 rd month
			Space–time hierarchy of environmental problems: Local, regional and global	Binod Sardar		3 rd month
			Urban environmental issues with special reference to waste management. Environmental programmes and policies – Global, national and local levels.	Ranjan khatua		4 th month
				Environment Geography Lab		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.
			Interpretation of air quality using CPCB / WBPCB data	Pragna Bhattacharya		5 th month

	SEC -2T: Research Methods	Research Methods	Geographic Enquiry: Definition and Ethics; Literature Review; Framing Research Questions ,Objectives and Hypothesis;	Pragna Bhattacharya	12	1 st month
			Preparing Sample Questionnaires and inventories	Sudipta Das		2 nd month
			Data Collection: Type and Sources of Data;	Arpita Samanta		3 rd month
			Methods of data Collection; Data Input and Editing	Ranjan khatua		3 rd month
			Data Analysis: Qualitative and Quantitative Analysis; Techniques Data Representation	Swapan Mishra		4 th month
			Structure of a Research Report: Preliminaries; Text; Citation, Notes	Binod Sardar		5 th month
			References, Bibliography and Abstract and Key words	Sudipta Das		5 th month
SEM - V	Core – 11T Research Methodology	Unit: I: Research Methodology	Research in Geography: Meaning, types and significance	Sudipta Das	14	1 st month
			Literature review and formulation of research design Defining research problem, objectives and hypothesis. Research materials and methods	Pragna Bhattacharya		1 st month
			Techniques of writing scientific reports: Preparing notes, references, bibliography, abstract and keywords	Binod Sardar		2 nd month
		Unit: II: Fieldwork	Fieldwork in Geographical studies – Role and significance. Selection of study area and objectives. Pre-field preparations. Ethics of fieldwork	Pragna Bhattacharya	12	3 rd month
			Field techniques and tools: Observation (participant, non participant), questionnaires (open, closed, structured, non-structured	Sudipta Das		3 rd month

			Field techniques and tools: Interview with special reverence to focused group discussions.	Sudipta Das		4 th month
			Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.	Sudipta Das		4 th month
			Positioning and collection of samples. Preparation of inventory from field data. Post-field tasks.	Binod Sardar		5 th month
	Core – 12T Remote Sensing	Unit – I Remote Sensing	Principles of Remote Sensing (RS): Types of RS satellites and sensors	Binod Sardar	14	1 st month
			Sensor resolutions and their applications with reference to IRS	Pragna Bhattacharya		1 st month
			Landsat missions, image referencing schemes and data acquisition)	Swapan Mishra		2 nd month
			Preparation of False Colour Composites from IRS LISS-3 and Landsat TM and OLI data. Principles of image interpretation. Preparation of inventories of land use land cover (LULC) features from satellite images.	Ranjan Khatua		3 rd month
		Unit: II: G.I.S and GNSS	GIS data structures: types (spatial and non-spatial), raster and vector	Pragna Bhattacharya		4 th month
			Principles of preparing attribute tables, data manipulation and overlay analysis	Arpita Samanta		4 th month
			Principles of GNSS positioning and waypoint collection Transferring of waypoints to GIS. Area and length calculations from GNSS data.	Sudipta Das		5 th month

		C12 P: Remote Sensing and GIS Lab	<p>1. Georeferencing of maps and images.</p> <p>2. Image enhancement. Preparation of reflectance libraries of LULC features across different image bands of IRS L3 or Landsat OLI data.</p> <p>3. Image classification, post-classification analysis and class editing.</p> <p>4. Digitization of features. Data attachment, overlay and preparation of thematic map.</p>	Ranjan Khatua	10	4 th and 5 th month
	DSE – 1T: HYDROLOGY AND OCEANOGRAPHY	Unit: I: Hydrology	Systems approach in hydrology. Global hydrological cycle: Its physical and biological role	Swapan Mishra	2	1 st month
			Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle	Sudipta Das	4	1 st month
			Drainage basin as a hydrological unit. Principles of water harvesting and watershed Management.	Arpita Samanta	4	2 nd month
			Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement.	Pragna Bhattacharya, Arpita Samanta	3	2 nd month
		Unit: II: Oceanography	Major relief features of the ocean floor: characteristics and origin according to plate tectonics.	Arpita Samanta	2	3 rd month
			Physical and chemical properties of ocean water	Ranjan Khatua	2	3 rd month
			Water mass, T-S diagram	Pragna Bhattacharya	2	3 rd month
			Air-Sea interactions, ocean circulation, wave	Swapan Mishra	3	4 th month
			Tide	Pragna Bhattacharya	1	4 th month
			Ocean temperature and salinity: Distribution and determinants	Swapan Mishra	2	5 th month

			Coral reefs: Formation, classification and threats. Marine resources: Classification and sustainable utilization	Binod Sardar	3	4 th and 5 th month
			Sea level change: Types and causes	Sudipta Das	2	5 th month
	DSE – 2T: RESOURCE GEOGRAPHY	Unit: I	Natural Resources: Concept and classification	Ranjan Khatua	2	1 st month
			Approaches to Resource Utilization: Utilitarian, Conservational, Community based adaptive	Arpita Samanta	3	1 st month
			Significance of Resources: Backbone of Economic growth and development.	Pragna Bhattacharya	4	2 nd month
			Pressure on resources. Appraisal and Conservation of Natural Resources	Binod Sardar	2	
			Problems of resource depletion—global scenario (forest, water, fossil fuels	Binod Sardar Sudipta Das	4	2 nd month
			Sustainable Resource Development	Swapan Mishra	2	3 rd month
		Unit: II	Distribution, Utilisation, Problems and Management of Metallic Mineral Resources: Iron ore, Bauxite, copper	Arpita Samanta	3	3 rd month
			Distribution, Utilisation, Problems and Management of Non-Metallic Mineral Resources: Limestone, Mica, Gypsum	Swapan Mishra	3	3 rd month
			Distribution, Utilisation, Problems and Management of Energy Resources: Conventional and Non-Conventional	Ranjan Khatua	3	4 th month
			Contemporary Energy Crisis and Future Scenario. Politics of Power resources.	Binod Sardar	2	4 th month
			Limits to Growth and Sustainable Use of Resources; Concept of Resource sharing	Sudipta Das	3	5 th month
SEM - VI	Core – 13T	Unit: I: Nature of Pre Modern Geography	Development of Geography and contributions of Greek, Chinese, and Indian geographers Impact of 'Dark Age' on	Arpita Samanta	4	1 st month

			Geography and Arab contributions			
			Geography during the Age of 'Discovery' and 'Exploration' (Contributions of Portuguese Voyages, Columbus, Vasco da Gama, Magellan, Thomas Cook)	Swapan Mishra	2	1 st month
			Transition from Cosmography to Scientific Geography (Contributions of Bernard Varenius and Immanuel Kant)	Arpita Samanta	2	2 nd month
			Dualism and Dichotomies (General vs. Particular), Physical vs. Human	Sudipta Das	3	1 st month
			Regional vs. Systematic	Binod Sardar	2	2 nd and 3 rd month
			Determinism vs. Possibilism	Ranjan Khatua		3 rd month
			Ideographic vs. Nomeothetic	Pragna Bhattacharya	2	4 th month
		Unit: II: Foundations of Modern Geography and Recent Trends	Evolution of Geographical thoughts in Germany, France, Britain and United States of America.	Ranjan Khatua	3	4 th month
			Contributions of Humboldt and Ritter	Arpita Samanta	2	4 th month
			Contributions of Richthofen, Hettner and Ratzel	Swapan Mishra	2	2 nd month
			Schools of geographical thought: French, British and American	Ranjan Khatua	2	4 th month
			Trends of Geography in the post World War-II period	Sudipta Das	2	3 rd month
			Evolution of Geography in India: formative periods, establishments and emerging trends	Pragna Bhattacharya, Binod Sardar, Sudipta Das	3	4 th month
			Quantitative Revolution and its impact, behaviouralism, systems approach, radicalism, feminism	Pragna Bhattacharya, Binod Sardar	4	5 th month
			Towards Post Modernism: Changing concept of space in geography. Geography in the 21st Century	Sudipta Das	4	2 nd and 4 th month

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by
	Core – 14T Disaster Management	Unit: I: Concepts	Classification of hazards and disasters Approaches to hazard study: Risk perception and vulnerability assessment. Hazard paradigms	Pragna Bhattacharya	5	1 st month
			Responses to hazards: Preparedness, trauma and aftermath. Resilience and capacity building	Swapan Mishra	3	2 nd month
			Hazards mapping: Data and techniques	Pragna Bhattacharya	2	3 rd month
		Unit: II: Disaster Case Studies	Earthquake: Factors, vulnerability, consequences and management	Binod Sardar	2	3 rd month
			Landslide: Factors, vulnerability, consequences and management	Sudipta Das	2	1 st month
			Cyclone: Factors, vulnerability, consequences and management	Ranjan Khatua	2	4 th month
			Fire: Factors, vulnerability, consequences and management	Arpita Samanta	2	5 th month
		C14P: Disaster Management based Project Work	1. Thunderstorm 2. Landslide 3. Flood 4. Coastal / riverbank erosion 5. Fire 6. Industrial accident 7. Structural collapse	ALL FACULTY	8	3 rd , 4 th month
	DSE – 3T: Soil and Biogeography	Soil and Biogeography	Factors of soil formation. Man as an active agent of soil transformation	Ranjan Khatua	2	1 st month
			Soil profile. Origin and profile characteristics of Lateritic, Podzol and Chernozem soils	Pragna Bhattacharya	5	2 nd month
			Definition and significance of soil properties: Texture, structure and moisture	Sudipta Das	4	2 nd month
			Definition and significance of soil properties: pH, organic matter and NPK	Binod Sardar	4	3 rd month
			Soil erosion and degradation: Factors, processes and mitigation measures	Swapan Mishra	2	4 th month

			Principles of soil classification: Genetic and USDA. Concept of land capability and its classification	Arpita Samanta	2	4 th month
			Concepts of biosphere, ecosystem, biome, ecotone, community and ecology	Ranjan Khatua	2	1 st month
			Concepts of trophic structure, food chain and food web. Energy flow in ecosystems	Arpita Samanta	3	2 nd month
			Geographical extent and characteristic features of: Tropical rain forest	Binod Sardar	2	3 rd month
			Geographical extent and characteristic features of: Taiga	Sudipta Das	2	4 th month
			Geographical extent and characteristic features of: Grassland biomes	Pragna Bhattacharya	2	4 th month
			Bio-geochemical cycles with special reference to carbon dioxide and nitrogen	Pragna Bhattacharya, Binod Sardar	3	5 th month
			Deforestation: Causes, consequences and management	Sudipta Das	1	2 nd month
			Bio-diversity: Definition, types, threats and conservation measures	Binod Sardar	2	4 th month
	DSE – 4T: Urban Geography	Unit: I	Urban Geography: nature and scope, different approaches and recent trends in urban geography	Pragna Bhattacharya	3	1 st month
			Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods factors, stages, and characteristics.	Arpita Samanta	2	4 th month
			Theories of Urban Evolution and Growth: Hydraulic Theory, Economic Theory	Pragna Bhattacharya	2	2 nd month
			Aspects of urban places: Location, site and situation, Size and Spacing of Cities: The Rank Size Rule, The Law of the Primate City	Sudipta Das	4	1 st month
			Urban Hierarchies: Central Place Theory; August Loch's theory of Market Centers.	Binod Sardar	4	1 st month

			Patterns of urbanisation in developed and developing countries	Swapan Mishra	2	4 th month
		Unit: II	Ecological processes of urban growth; Urban fringe; City- Region	Arpita Samanta	2	5 th month
			Theories of city structure- concentric zone theory, sector theory, multiple nuclei theory	Swapan Mishra	3	2 nd month
			Urban Issues: problems of housing, slums, civic amenities (water and transport)	Ranjan Khatua	2	3 rd month
			Patterns and trends of urbanization in India	Binod Sardar	1	4 th month
			Policies on urbanization. Urban change/landscape in post-liberalized period in India	Ranjan Khatua	1	5 th month
			Case studies of Delhi with reference to land use	Pragna Bhattacharya	2	3 rd month
			Case studies of Kolkata with reference to land use	Binod Sardar	2	4 th month
			Case studies of Chandigarh with reference to land use	Sudipta Das	2	4 th month

Pragna Bhattacharya
11/07/2019

Dr. Pragna Bhattacharya
H.O.D.
Department Of Geography
Y.S. Palpara Mahavidyalaya
Palpara, Purba Medinipur