

Yogoda Satsanga Palpara Mahavidyalaya

DEPARTMENT OF GEOGRAPHY

TEACHING PLAN

SESSION: 2020-2021

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

			Aeolian and fluvio-aeolian processes and landforms; fluvio-aeolian processes	Arpita Samanta	4	1 st month
		Models on landscape evolution	Views of Davis and King	Ranjan Khatua	5	2 nd month
			Views of Penck and Hack	Sudipta Das		3 rd and 4 th month
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, Diagonal	Swapan Mishra		2 nd month
			Vernier	Ranjan Khatua	12	1 st month
		Coordinate systems:	Polar and rectangular. Concept of geoid and spheroid	Pragna Bhattacharya		2 nd month
		Concept of generating globe.		Binod Sardar		3 rd and 4 th month
		Grids: angular and linear systems of measurement		Ranjan Khatua		
		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.		Swapan Mishra		
		Basic concepts of surveying and survey equipment:	Prismatic compass Dumpy level Theodolite Abney level, Clinometer	Pragna Bhattacharya Swapan Mishra Sudipta Das		
		Survey of India topographical maps: Reference scheme of old and open series. Information on the margin of maps		Arpita Samanta	2	2 nd month
	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	Polar Zenithal Stereographic, Cylindrical Equal 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, Stream ordering (Strahler) on a drainage basin		Sudipta Das	5	2 nd month
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	Swapan Mishra	5	1 st month
			Jarwa, Gaddi, Santhals.	Arpita Samanta		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 reference to development–environment conflict	Pragna Bhattacharya	4	3 rd month
			Social morphology and rural house types in India	Swapan Mishra	2	3 rd month
			Types and patterns of rural settlements	Swapan Mishra	2	4 th month
			Types and patterns of urban settlements	Sudipta Das	2	4 th 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		
			Landuse landcover maps	Sudipta Das	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	6	1 st , 2 nd and 3 rd month
			dots and spheres	Sudipta Das		
			Thematic maps: Choropleth	Pragna Bhattacharya		
			Isoline map	Swapan Mishra	4	4 th and 5 th month
			chorochromatic map	Arpita Samanta	2	
Semester-III	Core – CST	Unit: I: Elements of the Atmosphere	Nature, composition and layering of the atmosphere	Arpita Samanta		
			Insolation: controlling factors. Heat budget of the atmosphere.	Sudipta Das	10	1 st and 2 nd month
			Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.	Swapan Mishra		
			Greenhouse effect and importance of ozone layer.	Binod Sardar		
		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	14	3 rd , 4 th and 5 th month
			Fronts: warm and cold; frontogenesis and frontolysis.	Sudipta Das		

			Weather: stability and instability; barotropic and baroclinic conditions.	Sudipta Das		1 st and 2 nd month
			Circulation in the atmosphere: Planetary winds, jet stream, index cycle	Pragna Bhattacharya	8	
			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	Swapan Mishra Ranjan Khatua		
			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, Normal and Probability		Pragna Bhattacharya	4	
	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, Product moment	Binod Sardar	4	
			Regression (linear and non-linear) Time series analysis (moving average)	Ranjan Khatua Binod Sardar	4	3 rd 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.		7	2 nd and 3 rd month
		2. Based on the above, a frequency table, measures of central tendency and dispersion would be computed and interpreted.	Sudipta Das		
		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		
			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	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,	Ranjan Khatua		5 th month
			Power resources distribution and utilisation of coal, petroleum, gas;	Swapan Mishra	4	5 th month

			Industrial Development: Automobile and Information technology	Swapan Mishra Ranjan Khatua		
			Regionalization of India: Physiographic (R.L. Sing), Socio-cultural (Sopher) Economic (Sengupta)	Pragna Bhattacharya Sudipta Das		
		Unit: II Geography of West Bengal	Physical perspectives: Physiographic divisions, forest and water resources	Arpita Samanta	5	1 st , 2 nd , 3 rd and 4 th month
			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	3	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	2	2 nd month
			Coastal hazards and their management using structural and non-structural measures: Erosion, flood, sand encroachment, dune degeneration, estuarine sedimentation and pollution	Binod Sardar, Ranjan Khatua	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	12	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		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	Swapan 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),	Swapan Mishra	12	2 nd month
			Concept of manufacturing regions, special economic zones and technology parks. Tertiary activities: transport, trade and services	Swapan Mishra	6	3 rd month
			Agricultural systems: Caste 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	Swapan Mishra	2	4 th month
			International agreements and trade blocs: GATT and OPEC	Binod Sardar	2	5 th month
	Core – 10T Environmental Geography	Environmental Geography	Geographers' approach to environmental studies	Pragna Bhattacharya		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	20	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.	Ranjan Khatua		4 th month
			Environmental programmes and policies – Global, national and local levels.			
		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.	Sudipta Das	8	2 nd month and 3 rd month
			Interpretation of air quality using CPCB / WBPCB data	Pragna Bhattacharya	4	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;	Ranjan Khatua		3 rd month
			Methods of data Collection; Data Input and Editing	Arpita Samanta		3 rd month
			Data Analysis: Qualitative and Quantitative Analysis; Techniques Data Representation	Sudipta Das		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.	Arpita Samanta		4 th month
				Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.	Swapan Mishra		4 th month
			Positioning and collection of samples. Preparation of inventory from field data. Post-field tasks.	Ranjan Khatua	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.			3 rd month	

			Principles of image interpretation. Preparation of inventories of landuse land cover (LULC) features from satellite images.	Ranjan Khatua		
		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	1. Georeferencing of maps and images. 2. Image enhancement. Preparation of reflectance libraries of LULC features across different image bands of IRS L3 or Landsat OLI data. 3. Image classification, post-classification analysis and class editing. 4. Digitization of features. Data attachment, overlay and preparation of thematic map.	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,	Pragna Bhattacharya,	3	2 nd month

			discharge and movement.	Arpita Samanta		
		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. Pressure on resources. Appraisal and Conservation of Natural Resources	Pragna Bhattacharya	4	2 nd month
			Problems of resource depletion—global scenario (forest, water, fossil fuels)	Binod Sardar Sudipta Das	3	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 Geography and Arab contributions	Arpita Samanta	4	1 st month
			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. Nomothetic	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
	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 or 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,	Arpita Samanta	2	4 th month

			and characteristics.			
			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 Losch's theory of Market Centres	Binod Sardar	4	1 st month
			Patterns of urbanization 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

Sd/-
Dr. Pragna Bhattacharya
H.O.D, Department of Geography