

## Yogoda Satsanga Palpara Mahavidyalaya

### DEPARTMENT OF GEOGRAPHY

#### TEACHING PLAN FOR SEM – I & SEM – II (CCFUP, NEP – 2020)

SESSION: 2023 - 2024

Semester	Paper	Unit/Module		Teacher	No. of lectures	To be completed by
Semester-1	MJ1T:Geotectonics and Geomorphology	-				
			Geological time scale: Tectonic and biological history of earth; Dating of rocks: absolute and relative dating	Binod Sardar	4	1 <sup>st</sup> Month
			Earth's interior Structure: Seismological evidence.	Arpita Samanta	3	1 <sup>st</sup> month
			Isostasy: Models of Airy and Pratt	Swapn Mishra	3	2 <sup>nd</sup> month
			Continental Drift ;Plate Tectonics: Processes along different margins and resulting landforms	Pragna Bhattacharya	4	3 <sup>rd</sup> month
			Folds and Faults— origin and types	Swapn Mishra	3	4 <sup>th</sup> month
			Sea floor spreading	Pragna Bhattacharya	1	
			Geomorphic process and resultant landforms : Weathering and Mass wasting	Sudipta Das	3	2 <sup>nd</sup> month
			River, Glacier and Wind	Arpita Samanta	6	
			Structural impact on landforms: Drainage and landform development on horizontal, Homoclinal, Folded and Faulted structure	Ranjan Khatua	5	3 <sup>rd</sup> month
		Models on landscape evolution	Views of Davis, Penck	Pragna Bhattacharya	4	4 <sup>th</sup> Month
			Views of King and Hack	Sudipta Das	4	4 <sup>th</sup> Month

Semester	Paper	Unit/Module	Teacher	No. of lectures	To be completed by
Semester-1	MJ-1P: Geotectonics and Geomorphology (Practical)	1. Characteristics of <b>Igneous Rocks</b> and their identification. Characteristics of <b>Sedimentary Rocks</b> and their identification. Characteristics of <b>Metamorphic Rocks</b> and their identification. Characteristics of <b>Minerals</b> Rocks and their identification.	Sudipta Das Ranjan Khatua Swapan Mishra Arpita Samanta	2 2 2 2	2 <sup>nd</sup> and 3 <sup>rd</sup> month
	2.	Geological Maps: Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological section on Horizontal Structure.	Sudipta Das	4	1 <sup>st</sup> month
		Geological Maps: Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological section on Homoclinal	Ranjan Khatua	3	1 <sup>st</sup> month
		Geological Maps: Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological section on Folded Structure.	Pragna Bhattacharya	3	2 <sup>nd</sup> month
		Geological Maps: Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological section on faulted Structure.	Binod Sardar	3	3 <sup>rd</sup> and 4 <sup>th</sup> month

Semester-1	SEC 1: Computer Basics and Applications (Practical)	Knowing computer: what is computer, basic application of computer, computer memory, concepts of hardware and software;		Arpita Samanta	3	1 <sup>st</sup> month
		Operating system; running an application, viewing of file, folders and directories, creating and renaming of files and folders.		Ranjan Khatua	3	1 <sup>st</sup> month
		Understanding word processing		Swapan Mishra	2	2 <sup>nd</sup> month
		Using spreadsheet: basics of spreadsheet; manipulation of cells; formulas and functions; editing of spreadsheet, printing of spreadsheet		Binod Sardar	4	3 <sup>rd</sup> month
		Concept of internet; application of internet; World Wide Web; email. Making a small presentation: MS PowerPoint		Pragna Bhattacharya	3	3 <sup>rd</sup> month
			Sudipta Das	3	4 <sup>th</sup> month	
Semester II	MJ-2P: Cartographic Techniques (Practical)	Maps: Classification and types. Components of a map.		Arpita Samanta	3	1 <sup>st</sup> month
		Concept and Construction of scales:	Linear, comparative	Swapan Mishra	2	2 <sup>nd</sup> month
			Diagonal	Ranjan Khatua	2	2 <sup>nd</sup> month
			Vernier	Pragna	2	3 <sup>rd</sup> month
	Projection	Map projections: Classification of map projection.		Binod Sardar	1	2 <sup>nd</sup> month
		Construction, properties and uses of projections: Cylindrical Equal Area		Binod Sardar	2	3 <sup>rd</sup> month
		Construction, properties and uses of projections: Polar Zenithal Stereographic		Swapan Mishra	2	3 <sup>rd</sup> month

		Construction, properties and uses of projections: Simple conical with one standard parallel, Bonne's.	Sudipta Das	2	4 <sup>th</sup> month
		Construction, properties and uses of projections: Polyconic projection	Ranjan Khatua	2	4 <sup>th</sup> month
		Construction, properties and uses of projections: Mercator's.	Arpita Samanta	2	3 <sup>rd</sup> month
		Concept and significance of UTM projection	Pragna Bhattacharya	1	4 <sup>th</sup> month
	Surveying	Basic concepts and principles of surveying.	Pragna Bhattacharya	1	1 <sup>st</sup> month
		Survey with equipment:	Pragna Bhattacharya & Arpita Samanta	3	1 <sup>st</sup> month
		Prismatic Compass	Swapan Mishra & Ranjan Khatua	3	2 <sup>nd</sup> month
		Dumpy level	Binod Sardar & Sudipta Das	4	3 <sup>rd</sup> month
		Theodolite	Sudipta Das	1	4 <sup>th</sup> month
		Abney level	Ranjan Khatua	1	4 <sup>th</sup> month
		Clinometer			
Semester II	SEC 2P : Coastal Management (Practical)	Components of a coastal zone. Coastal morphodynamic variables and their role in evolution of coastal forms.	Pragna Bhattachary	4	4 <sup>th</sup> month
		Environmental impacts and management of mining, Oil exploration, Salt manufacturing Land reclamation Tourism.	Binod Sardar	2	1 <sup>st</sup> month
			Ranjan Khatua	1	1 <sup>st</sup> month
			Arpita Samanta	2	2 <sup>nd</sup> month
			Swapan Mishra	1	2 <sup>nd</sup> month
		Coastal hazards and their management using structural and non-structural measures: Erosion, flood, Sand encroachment, dune degeneration, Estuarine sedimentation Pollution	Pragna Bhattacharya	2	2 <sup>nd</sup> month
			Sudipta Das	2	3 <sup>rd</sup> month
			Ranjan Khatua	1	4 <sup>th</sup> month
			Swapan Mishra	2	4 <sup>th</sup> month

		Principles of Coastal Zone Management. Exclusive Economic Zone ICZM	Arpita Samanta Ranjan Khatua Swapan Mishra	2	3 <sup>rd</sup> month
		Coastal Regulation Zones with reference to India (2018-2019).	Sudipta Das	2	3 <sup>rd</sup> month
Semester II	MI-2: Human Geography	Definition, Nature, Major Subfields, Contemporary Relevance.	Pragna Bhattacharya	3	4 <sup>th</sup> month
		Space and Society: Cultural Regions; Race; Religion and Language	Arpita samanta		
		Population: Population Growth and Demographic Transition Theory.	Binod Sardar	2	
		World Population Distribution and Composition (Age, Gender and Literacy).	Ranjan Khatua	2	
		Settlements: Types and Patterns of Rural Settlements	Swapan Mishra	2	4 <sup>th</sup> month
		Classification of Urban Settlements; Trends and Patterns of World Urbanization.	Sudipta Das	3	

	<b>Core – C5T</b>	<b>Unit: I: Elements of the Atmosphere</b>	Nature, composition and layering of the atmosphere	Swapan Mishra	10	1 <sup>st</sup> and 2 <sup>nd</sup> month
			Insolation: controlling factors. Heat budget of the atmosphere.	Sudipta Das Binod Sardar		
			Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.	Arpita Samanta		
			Greenhouse effect and importance of ozone layer.	Ranjan Khatua	14	3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> month
		<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.	Sudipta Das Binod Sardar		
			Air mass: Typology, origin, characteristics and modification.	Swapan Mishra		
			Fronts: warm and cold; frontogenesis and frontolysis.	Ranjan Khatua		

			Weather: stability and instability; barotropic and baroclinic conditions.	Arpita Samanta		1 <sup>st</sup> and 2 <sup>nd</sup> month
			Circulation in the atmosphere: Planetary winds, jet stream, index cycle	Pragna Bhattacharya	8	
			Tropical and mid-latitude cyclones			Binod Sardar
			Monsoon circulation and mechanism with reference to India	Swapan Mishra Sudipta Das		
		Climatic classification	Koppen, Oliver	Pragna Bhattacharya		
			Thornthwaite			

	<b>Core – C6T Statistics Unit I:</b>	Importance and significance of Statistics in Geography. Discrete and continuous data, population and samples,		Ranjan Khatua	12	1 <sup>st</sup> month	
		scales of measurement (nominal, ordinal, interval and ratio), sources of data		Arpita Samanta			
		Collection of data and formation of statistical tables		Sudipta Das			
		Sampling: Need, types, and significance and methods of random sampling		Pragna Bhattacharya		1 <sup>st</sup> month	
		Theoretical distribution: frequency, cumulative frequency,  Normal and Probability		Sudipta Das  Swapan Mishra	4		
	<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	Pragna Bhattacharya	7	2 <sup>nd</sup> month	
			Association and correlation: Rank correlation Product moment			Sudipta Das Binod Sardar Ranjan Khatua	4
			Regression (linear and non-linear ) Time series analysis (moving average)	Swapan Mishra  Binod Sardar	4	3 <sup>rd</sup> month	
		C6P: Statistical Methods in Geography	A Project File, comprising one exercise each is to be submitted				

		<ol style="list-style-type: none"> <li>1. Construction of data matrix with each row representing an aerial unit (districts / blocks / mouzas/ towns) and corresponding columns of relevant attributes.</li> <li>2. Based on the above, a frequency table, measures of central tendency and dispersion would be computed and interpreted.</li> <li>3. Histograms and frequency curve would be prepared on the dataset.</li> <li>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.</li> <li>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.</li> </ol>			
			Sudipta Das	7	2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Arpita Samanta		
			Sudipta Das	2	
			Pragna Bhattacharya		
		Swapan Mishra			
		Binod Sardar	3		

	<b>Core – C7T</b>	<b>Unit: I: Geography of India</b>	Tectonic and stratigraphic provinces, physiographic divisions	Swapan Mishra		
			Climate, soil and vegetation: Characteristics and classification	Binod Sardar Arpita Samanta	18	1 <sup>st</sup> month
			Population: Distribution, growth, structure and policy	Ranjan Khatua Arpita Samanta		2 <sup>nd</sup> month
			Distribution of population by race, caste, religion, language, tribes and their correlates	Binod Sardar Arpita Samanta Sudipta Das Swapan Mishra Ranjan Khatua Pragna Bhattacharya		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,	Ranjan Khatua		5 <sup>th</sup> month
			Power resources distribution and utilisation of coal,	Arpita Samanta	4	5 <sup>th</sup> month

			petroleum, gas;			
			Industrial Development: Automobile and Information technology	Swapn Mishra		
			Regionalization of India: Physiographic (R.L. Sing), Socio-cultural (Sopher) Economic (Sengupta)	Pragna Bhattacharya Swapn Mishra Sudipta Das		
		Unit: II Geography of West Bengal	Physical perspectives: Physiographic divisions, forest and water resources	Arpita Samanta Ranjan Khatua Swapn Mishra	5	1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> month
			Population: Growth, distribution and human development	Arpita Samanta Binod Sardar Arpita Samanta Sudipta Das Ranjan Khatua	12	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Resources: Mining, agriculture and industries			4 <sup>th</sup> month
			Regional Problem: Darjeeling Hills	Pragna Bhattacharya	3	5 <sup>th</sup> month
			Jangal Mahal Sundarban	Sudipta Das Binod Sardar		
	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 <sup>st</sup> month
			Environmental impacts and management of mining, oil exploration, salt manufacturing, land reclamation and tourism	Binod Sardar Ranjan Khatua Arpita Samanta Swapn 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	Pragna Bhattacharya Sudipta Das Ranjan Khatua Swapn Mishra	6	4 <sup>th</sup> month
			Principles of Coastal Zone Management. Exclusive Economic Zone and Coastal Regulation Zones with reference to India.	Arpita Samanta Ranjan Khatua 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.	Ranjan Khatua	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	Ranjan Khatua		3 <sup>rd</sup> month
			Metropolitan concept: metropolitan areas, and urban agglomerations	Arpita Samanta	12	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 Bhattacharya		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	Swapn Mishra	12	1 <sup>st</sup> month
			Factors affecting location of economic activity with special reference to agriculture (Von Thunen), and industry (Weber).	Binod Sardar		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),	Swapn Mishra		2 <sup>nd</sup> month
			Concept of manufacturing regions, special economic zones and technology parks. Tertiary activities: transport, trade and services	Ranjan Khatua	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	Swapn 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	20	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	Swapn Mishra		2 <sup>nd</sup> month
			Ecosystem: Concept, structure and functions Environmental pollution and degradation: Land, water and air	Arpita Samanta		2 <sup>nd</sup> and 3 <sup>rd</sup> month

			Space–time hierarchy of environmental problems: Local, regional and global	Binod Sardar		3 <sup>rd</sup> month
			Urban environmental issues with special reference to waste management.	Ranjan Khatua		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	Sudipta Das		2 <sup>nd</sup> month
			Data Collection: Type and Sources of Data;	Arpita Samanta		3 <sup>rd</sup> month
			Methods of data Collection; Data Input and Editing	Ranjan Khatua		3 <sup>rd</sup> month
			Data Analysis: Qualitative and Quantitative Analysis; Techniques Data Representation	Swapan Mishra		4 <sup>th</sup> month
			Structure of a Research Report: Preliminaries; Text; Citation, Notes	Binod Sardar		5 <sup>th</sup> month
			References, Bibliography and Abstract and Key words	Sudipta Das		5 <sup>th</sup> month

<b>SEM - V</b>	<b>Core – 11T Research Methodology</b>	<b>Unit: I: Research Methodology</b>	Research in Geography: Meaning, types and significance	Binod Sardar	14	1 <sup>st</sup> month	
			Literature review and formulation of research design Defining research problem, objectives and hypothesis. Research materials and methods	Sudipta Das  Pragna Bhattacharya		1 <sup>st</sup> month	
			Techniques of writing scientific reports: Preparing notes, references, bibliography, abstract and keywords	Arpita Samanta		2 <sup>nd</sup> month	
			<b>Unit: II: Fieldwork</b>	Fieldwork in Geographical studies – Role and significance. Selection of study area and objectives. Pre-field preparations. Ethics of fieldwork	Pragna Bhattacharya	12	3 <sup>rd</sup> month
			Field techniques and tools: Observation (participant, non- participant), questionnaires (open, closed, structured, non-structured	Swapan Mishra	3 <sup>rd</sup> month		
			Field techniques and tools: Interview with special reverence to focused group discussions.	Arpita Samanta	4 <sup>th</sup> month		
			Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.	Sudipta Das	4 <sup>th</sup> month		
		Positioning and collection of samples. Preparation of inventory from field data. Post-field tasks.	Ranjan Khatua	5 <sup>th</sup> month			
	<b>Core – 12T Remote Sensing</b>	<b>Unit – I Remote Sensing</b>	Principles of Remote Sensing (RS): Types of RS satellites and sensors	Binod Sardar Arpita Samanta	14	1 <sup>st</sup> month	
			Sensor resolutions and their applications with reference to IRS	Pragna Bhattacharya		1 <sup>st</sup> month	
			Landsat missions, image referencing schemes and data acquisition)	Swapan Mishra		2 <sup>nd</sup> month	
			Preparation of False Colour Composites from IRS LISS-3 and Landsat			3 <sup>rd</sup> month	

			TM and OLI data. Principles of image interpretation. Preparation of inventories of landuse land cover (LULC) features from satellite images.	Ranjan Khatua		
		<b>Unit: II: G.I.S and GNSS</b>	GIS data structures: types (spatial and non-spatial), raster and vector	Pragna Bhattacharya		4 <sup>th</sup> month
			Principles of preparing attribute tables, data manipulation and overlay analysis	Ranjan Khatua		4 <sup>th</sup> month
			Principles of GNSS positioning and waypoint collection Transferring of waypoints to GIS. Area and length calculations from GNSS data.	Sudipta Das		5 <sup>th</sup> month
		<b>C12 P: Remote Sensing and GIS Lab</b>	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 <sup>th</sup> and 5 <sup>th</sup> month

	<b>DSE – 1T: HYDROLOGY AND OCEANOGRAPHY</b>	<b>Unit: I: Hydrology</b>	Systems approach in hydrology. Global hydrological cycle: Its physical and biological role	Pragna Bhattacharya Arpita Samanta	2	1 <sup>st</sup> month
			Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle	Swapan Mishra Ranjan Khatua	4	1 <sup>st</sup> month
			Drainage basin as a hydrological unit. Principles of water harvesting and watershed Management.	Binod Sardar Sudipta Das	4	2 <sup>nd</sup> month

			Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement.	Pragna Bhattacharya,	3	2 <sup>nd</sup> month
		<b>Unit: II: Oceanography</b>	Major relief features of the ocean floor: characteristics and origin according to plate tectonics.	Arpita Samanta	2	3 <sup>rd</sup> month
			Physical and chemical properties of ocean water	Ranjan Khatua	2	3 <sup>rd</sup> month
			Water mass, T–S diagram	Pragna Bhattacharya	2	3 <sup>rd</sup> month
			Air-Sea interactions, ocean circulation, wave	Arpita Samanta Swapan Mishra	3	4 <sup>th</sup> month
			Tide	Pragna Bhattacharya	1	4 <sup>th</sup> month
			Ocean temperature and salinity: Distribution and determinants	Swapan Mishra	2	5 <sup>th</sup> month
			Coral reefs: Formation, classification and threats. Marine resources: Classification and sustainable utilization	Binod Sardar	3	4 <sup>th</sup> and 5 <sup>th</sup> month
			Sea level change: Types and causes	Sudipta Das	2	5 <sup>th</sup> month
	<b>DSE – 2T: RESOURCE GEOGRAPHY</b>	<b>Unit: I</b>	Natural Resources: Concept and classification	Ranjan Khatua	2	1 <sup>st</sup> month
			Approaches to Resource Utilization: Utilitarian, Conservational, Community based adaptive	Arpita Samanta	3	1 <sup>st</sup> month
			Significance of Resources: Backbone of Economic growth and development.  Pressure on resources. Appraisal and Conservation of Natural Resources	Binod Sardar  Pragna Bhattacharya	4	2 <sup>nd</sup> month
			Problems of resource depletion—global scenario (forest, water, fossil fuels)	Swapan Mishra	3	2 <sup>nd</sup> month
			Sustainable Resource Development	Sudipta Das	2	3 <sup>rd</sup> month
		<b>Unit: II</b>	Distribution, Utilisation, Problems and Management of Metallic Mineral Resources: Iron	Ranjan Khatua	3	3 <sup>rd</sup> month

			ore, Bauxite, copper			
			Distribution, Utilisation, Problems and Management of Non-Metallic Mineral Resources: Limestone, Mica, Gypsum	Swapan Mishra	3	3 <sup>rd</sup> month
			Distribution, Utilisation, Problems and Management of Energy Resources: Conventional and Non-Conventional	Binod Sardar	3	4 <sup>th</sup> month
			Contemporary Energy Crisis and Future Scenario.	Pragna Bhattacharya	2	4 <sup>th</sup> month
			Politics of Power resources.	Arpita Samanta		
			Limits to Growth and Sustainable Use of Resources; Concept of Resource sharing	Sudipta Das	3	5 <sup>th</sup> month
<b>SEM - VI</b>	<b>Core – 13T</b>	<b>Unit: I: Nature of Pre Modern Geography</b>	Development of Geography and contributions of Greek, Chinese, and Indian geographers Impact of 'Dark Age' on Geography and Arab contributions	Arpita Samanta	4	1 <sup>st</sup> month
			Geography during the Age of 'Discovery' and 'Exploration' (Contributions of Portuguese Voyages, Columbus, Vasco da Gama, Magellan, Thomas Cook)	Swapan Mishra	2	1 <sup>st</sup> month
			Transition from Cosmography to Scientific Geography (Contributions of Bernard Varenus and Immanuel Kant)	Arpita Samanta	2	2 <sup>nd</sup> month
			Dualism and Dichotomies (General vs. Particular), Physical vs. Human	Sudipta Das	3	1 <sup>st</sup> month
			Regional vs. Systematic	Binod Sardar	2	2 <sup>nd</sup> and 3 <sup>rd</sup> month
			Determinism vs. Possibilism	Ranjan Khatua		3 <sup>rd</sup> month
			Ideographic vs. Nomothetic	Pragna Bhattacharya	2	4 <sup>th</sup> month
		<b>Unit: II: Foundations of Modern Geography and Recent Trends</b>	Evolution of Geographical thoughts in Germany, France, Britain and United States of America.	Ranjan Khatua	3	4 <sup>th</sup> month

			Contributions of Humboldt and Ritter	Arpita Samanta	2	4 <sup>th</sup> month
			Contributions of Richthofen, Hettner and Ratzel	Swapan Mishra	2	2 <sup>nd</sup> month
			Schools of geographical thought: French, British and American	Ranjan Khatua	2	4 <sup>th</sup> month
			Trends of Geography in the post World War-II period	Sudipta Das	2	3 <sup>rd</sup> month
			Evolution of Geography in India: formative periods, establishments and emerging trends	Pragna Bhattacharya, Binod Sardar, Sudipta Das	3	4 <sup>th</sup> month
			Quantitative Revolution and its impact, behaviouralism, systems approach, radicalism, feminism	Pragna Bhattacharya, Binod Sardar	4	5 <sup>th</sup> month
			Towards Post Modernism: Changing concept of space in geography. Geography in the 21st Century	Sudipta Das	4	2 <sup>nd</sup> and 4 <sup>th</sup> month
	<b>Core – 14T Disaster Management</b>	<b>Unit: I: Concepts</b>	Classification of hazards and disasters Approaches to hazard study: Risk perception and vulnerability assessment. Hazard paradigms	Pragna Bhattacharya	5	1 <sup>st</sup> month
			Responses to hazards: Preparedness, trauma and aftermath. Resilience and capacity building	Swapan Mishra	3	2 <sup>nd</sup> month
			Hazards mapping: Data and techniques	Pragna Bhattacharya	2	3 <sup>rd</sup> month
		<b>Unit: II: Disaster Case Studies</b>	Earthquake: Factors, vulnerability, consequences and management	Binod Sardar	2	3 <sup>rd</sup> month
			Landslide: Factors, vulnerability, consequences and management	Sudipta Das	2	1 <sup>st</sup> month
			Cyclone: Factors, vulnerability, consequences and management	Ranjan Khatua	2	4 <sup>th</sup> month
			Fire: Factors, vulnerability, consequences and management	Arpita Samanta	2	5 <sup>th</sup> month
		<b>C14P: Disaster Management based Project Work</b>	1. Thunderstorm 2. Landslide 3. Flood 4. Coastal / riverbank erosion	ALL FACULTY	8	3 <sup>rd</sup> , 4 <sup>th</sup> month



			5. Fire 6. Industrial accident 7. Structural collapse			
	<b>DSE – 3T: Soil and Biogeography</b>	<b>Soil and Biogeography</b>	Factors or soil formation. Man as an active agent of soil transformation	Ranjan Khatua	2	1 <sup>st</sup> month
			Soil profile. Origin and profile characteristics of Lateritic, Podzol and Chernozem soils	Pragna Bhattacharya	5	2 <sup>nd</sup> month
			Definition and significance of soil properties: Texture, structure and moisture	Sudipta Das	4	2 <sup>nd</sup> month
			Definition and significance of soil properties: pH, organic matter and NPK	Binod Sardar	4	3 <sup>rd</sup> month
			Soil erosion and degradation: Factors, processes and mitigation measures	Swapan Mishra	2	4 <sup>th</sup> month
			Principles of soil classification: Genetic and USDA. Concept of land capability and its classification	Arpita Samanta	2	4 <sup>th</sup> month
			Concepts of biosphere, ecosystem, biome, ecotone, community and ecology	Ranjan Khatua	2	1 <sup>st</sup> month
			Concepts of trophic structure, food chain and food web. Energy flow in ecosystems	Arpita Samanta	3	2 <sup>nd</sup> month
			Geographical extent and characteristic features of: Tropical rain forest	Binod Sardar	2	3 <sup>rd</sup> month
			Geographical extent and characteristic features of: Taiga	Sudipta Das	2	4 <sup>th</sup> month
			Geographical extent and characteristic features of: Grassland biomes	Pragna Bhattacharya	2	4 <sup>th</sup> month
			Bio-geochemical cycles with special reference to carbon dioxide and nitrogen	Pragna Bhattacharya, Binod Sardar	3	5 <sup>th</sup> month
			Deforestation: Causes, consequences and management	Sudipta Das	1	2 <sup>nd</sup> month
			Bio-diversity: Definition, types, threats and conservation measures	Binod Sardar	2	4 <sup>th</sup> month
	<b>DSE – 4T: Urban Geography</b>	<b>Unit: I</b>	Urban Geography: nature and scope, different approaches and recent trends in urban geography	Pragna Bhattacharya	3	1 <sup>st</sup> month

			Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods factors, stages, and characteristics.	Arpita Samanta	2	4 <sup>th</sup> month
			Theories of Urban Evolution and Growth: Hydraulic Theory, Economic Theory	Pragna Bhattacharya	2	2 <sup>nd</sup> 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 <sup>st</sup> month
			Urban Hierarchies: Central Place Theory; August Losch's theory of Market Centres	Binod Sardar	4	1 <sup>st</sup> month
			Patterns of urbanization in developed and developing countries	Swapan Mishra	2	4 <sup>th</sup> month
		<b>Unit: II</b>	Ecological processes of urban growth; Urban fringe; City- Region	Arpita Samanta	2	5 <sup>th</sup> month
			Theories of city structure- concentric zone theory, sector theory, multiple nuclei theory	Swapan Mishra	3	2 <sup>nd</sup> month
			Urban Issues: problems of housing, slums, civic amenities (water and transport)	Ranjan Khatua	2	3 <sup>rd</sup> month
			Patterns and trends of urbanization in India	Binod Sardar	1	4 <sup>th</sup> month
			Policies on urbanization. Urban change/landscape in post-liberalized period in India	Ranjan Khatua	1	5 <sup>th</sup> month
			Case studies of Delhi with reference to land use	Pragna Bhattacharya	2	3 <sup>rd</sup> month
			Case studies of Kolkata with reference to land use	Binod Sardar	2	4 <sup>th</sup> month
			Case studies of Chandigarh with reference to land use	Sudipta Das	2	4 <sup>th</sup> month

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