

Polba Mahavidyalaya

Departmental Lesson Plan 2020 – 2021

Name of the Department: Geography

Name of the Programme: B.A. /B.Sc. (Honours/ ~~General~~)

Name of the Course: (Subject) : B.A. /B.Sc. Geography [Honours/ ~~General~~]

Period of the Lesson Plan : 1st July 2020 – 30th June 2021

Academic Period	Class.	Paper	Topic to be covered		No of Lectures /Practical	Name of the Teachers	Internal Assessment				
			Unit	Topic							
July 2020 – January 2021	SEM-I	CC1: GEOTECTONICS AND GEOMORPHOLOGY	Unit I: Geotectonics	Earth's tectonic and structural evolution with reference to geological time scale	60	BD	3rd Week of December				
				Earth's interior with special reference to seismology.		BD					
				Concept of Isostasy : Theories of Airy and Pratt		BD					
				Plate Tectonics: Processes at constructive, conservative, destructive boundaries and hotspots: resulting landforms		RH					
			Unit II Geomorphology	Degradational processes: Weathering, mass wasting and resultant landforms		AB					
				Models of landscape evolution: Views of Davis, Penck, and Hack		MB					
				Slope Development: Concept of Wood		MB					
				Development of river network and landforms on uniclinal and folded structures		MB					
				Types of rocks, mineralogical composition of igneous rocks; Landforms on igneous rocks with special reference to Granite and Basalt		RH					
				Karst landforms: Surface and sub-surface		RH					
				Glacial and fluvio-glacial processes and landforms		RH					
				Aeolian and fluvio-aeolian processes and landforms		RH					
				CC2: CARTOGRAPH		Theory		Maps: Classification and Types. Components of a Map	60	RH	3 rd Week of December

	IC TECHNIQUES AND GEOLOGICAL MAP STUDY		Concept of Scales: Plain, Comparative, Diagonal and Vernier		B D						
			Coordinate Systems: Polar and Rectangular. Concept of Geoid and Spheroid. Map Projections: Classification, Properties and Uses. Concept and Significance of UTM Projection		A B						
			Concept of Generating Globe, Grids: Angular and Linear Systems of Measurement		A B						
			Survey of India Topographical Maps: Reference scheme of Old and Open series		A B						
			Delineation of Drainage Basin from Survey of India Topographical Map. Concept of Relief, Slope and Stream Order.		M B						
			Types of rocks and minerals. Characteristics of Granite, Basalt, Dolerite, Pegmatite, Gneiss, Shale, Sandstone, Slate, Marble, Quartzite, Quartz, Feldspar, Mica, Limestone, Calcite, Bauxite, Magnetite, Hematite, Galena		RH						
			Concept of Bedding Plane, Unconformity and Non-conformity, thickness of Bed, Dip, Throw, Hade, heave		M B						
			Practical		Construction of Scales: Plain, Comparative, Diagonal and Vernier		B D				
					Construction of Projections: Polar Zenithal Stereographic, Simple Conic with two Standard Parallels, Bonne's and Mercator's		A B				
					Construction and Interpretation of Relief Profiles (Superimposed, Projected and Composite), Preparation of Relative Relief Map, Slope map (Wentworth), and Stream Ordering (Strahler) on a Drainage Basin.		AB+MB				
					Geological Map (Problems related to Horizontal, Uniclinal, Folded and Faulted structure); Drawing of Geological section and Interpretation of the Map.		MB				
							Unit 1:	Nature, composition and layering of the atmosphere,	60	BD	2 nd Week of December

SEM-III	CC5: CLIMATOLOGY	Elements of the Atmosphere	Insolation: controlling factors. Heat budget of the atmosphere.	60	BD	2 nd Week of December
			Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.		BD	
			Greenhouse effect and importance of ozone layer		RH	
		Unit II Atmospheric Phenomena, Climate Change and Climatic Classification	Condensation: Processes and forms. Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence. Forms of precipitation.		MB	
			Air mass: Typology, origin, characteristics and modification.		MB	
			Fronts: warm and cold; frontogenesis and frontolysis.		MB	
			Weather: stability and instability; barotropic and baroclinic conditions.		MB	
			Circulation in the atmosphere: Planetary winds, jet stream and monsoons		RH	
			Tropical and mid-latitude cyclones		RH	
			Evidences and causes of climate change		AB	
	Climatic classification after Köppen, Thorntwaite (1948)	AB				
	CC6: STATISTICAL METHODS IN GEOGRAPHY	Unit-1:Theory	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	AB		
			Collection of data and formation of statistical tables	AB		
			Sampling: Need, types, and significance and methods of random sampling	MB		
			Distribution: frequency, cumulative frequency	MB		
		Unit-2:Theory	Central tendency: Mean, median, mode, partition values	RH		
			Measures of dispersion range, mean deviation, standard deviation, coefficient of variation	RH		
			Association and correlation: Rank correlation, product moment correlation	RH		
			Linear Regression and time series analysis	RH		
		Practical	Construction of data matrix with each row representing an aerial unit (districts / blocks / mouzas /	BD		

				towns) and corresponding columns of relevant attributes. Based on the above, a frequency table, measures of central tendency and dispersion would be computed and interpreted. Histograms and frequency curve would be prepared on the dataset. 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.		BD BD RH+MB				
		CC7: GEOGRAPHY OF INDIA	Unit 1: Geography of India	Geology and physiographic divisions	60	MB	2 nd Week of December			
				Climate, soil and vegetation: Characteristics and classification		MB				
				Population: Distribution, growth, structure and policy		RH				
				Distribution of population by race, caste, religion, language, tribes		RH				
				Agricultural regions, Green revolution and its consequences		BD				
				Mineral and power resources distribution and utilisation of iron ore, coal, petroleum		BD				
				Industrial development since independence.		AB				
				Regionalisation of India: Views of Spate and Bhatt.		AB				
			Unit 1: Geography of West Bengal	Physical perspectives: Physiographic divisions, forest and water resources		MB				
				Population: Growth, distribution and human development		RH				
				Resources: Mining, agriculture and industries		BD				
				Regional Development: Darjeeling Hills and Sundarban		AB				
			SEC- 1: COMPUTER BASICS AND COMPUTER APPLICATION S			Numbering Systems; Binary Arithmetic		40	AB	2 nd Week of December
						Data Computation, Storing and Formatting in Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation, Moving Averages, Derivation of Correlation, Covariance and regression; Selection			AB	

				of technique and interpretation.					
				Preparation of Annotated Diagrams and its interpretation: Scatter diagram and Histogram		MB			
				Internet Surfing: Generation and extraction of information		AB			
SEM-V	CC11: RESEARCH METHODOLOGY AND FIELD WORK	Unit I: Research Methodology	Research in Geography: Meaning, types and significance	60	AB	1 st Week of December			
			Significance of Literature review in research		AB				
			Defining research problem, objectives and hypothesis. Research materials and methods		RH				
			Techniques of writing scientific reports: Preparing notes, references, bibliography (APA Style), abstract and keywords		RH				
		Unit II Field Work	Fieldwork in Geographical studies – Role and significance. Selection of study area and objectives. Pre-field preparations. Ethics of fieldwork		MB				
		Field techniques and tools: Questionnaires (open, closed, structured, non-structured). Interview with special reverence to focused group discussions	MB						
		Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.	RH						
		Collection of samples. Preparation of inventory from field data. Post-field tasks	RH						
		CC12: REMOTE SENSING AND GIS	Unit-1: Remote Sensing		Definition, Concepts and Principles of Remote Sensing (RS): Types of Air Photo, RS satellites, sensors and platforms		60	MB	1 st Week of December
					EMR Interaction with Atmosphere and Earth Surface, Sensor resolutions and their applications with reference to IRS			MB	
Principles of False Colour Composites (FCC) from IRS LISS-III and Landsat Images (ETM+) data: Image Processing, Pre-processing; Enhancement; Classification.	AB								
Principles of image interpretation for Forest, Water and Soil	AB								
Unit-2: GIS & GNSS	Definition and Components of Geographical Information System (GIS) and raster and vector data structures		RH						

				Principles of preparing attribute tables and overlay analysis		RH	
				Principles of GNSS positioning - Uses and Waypoint Collection Methods		BD	
				Applications of Geographical Information System in Flood Management and Urban Sprawl		RH	
			Practical	Georeferencing of Scanned Maps		RH	
				Preparation of FCC using IRS LISS-III and/or Landsat (ETM+) data		AB	
				Preparation of LULC Map by Supervised Image Classification (Maximum Likelihood) using IRS LISS-III or Landsat (ETM+) data		AB	
				Digitisation of Point, Line and Polygon Features and Preparation of Thematic Map (using bar, pie and choropleth method)		RH	
		DSE1: CULTURAL AND SETTLEMENT GEOGRAPHY	Unit I: Cultural Geography	Definition, Scope and Content of Cultural Geography	60	MB	1 st Week of December
				Development of Cultural Geography		MB	
				Concept of Cultural Hearth, Realm; Cultural Landscape		MB	
				Cultural Innovation and Diffusion; Diffusion of Major World Religions		MB	
				Cultural Segregation, Cultural Diversity, and Acculturation		MB	
				Major Races of the World: Distribution and Characteristics		MB	
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			Unit II Settlement Geography	Scope and Content of Settlement Geography		BD	
				Definition and Characteristics of Rural Settlement		BD	
				Rural Settlements: Site and Situation		BD	
				Urban Settlements: Census Definition, Urban Outgrowth, Urban Agglomeration		BD	
				Urban Morphology: Classical Models of Burgess, Hoyt, Harris and Ullman		BD	
				Functional Classification of Cities: Harris and Nelson		BD	
			Unit I			60	

		DSE 2: POPULATION GEOGRAPHY		Development of Population Geography; Relation between Population Geography and Demography Determinants of Population Dynamics; Concept of Optimum Population Theories of population growth: Malthusian Theory and Marxian Approach, Demographic Transition Model Distribution, Density and Growth of Population in India since 1951		AB AB AB AB	1st Week of December
			Unit II	Population Composition and Characteristics: Age-Sex; Female-Male Ratio Measures of Fertility and Mortality Population Composition of India: Rural and Urban, Occupational Structure as per Census of India Migration: Theories, Causes and Types Concept of Human Development Index Population and development: population-resource regions, Population policies in Selected Countries: Sweden and China 8. Contemporary Issues in Population: Health and Unemployment Population Composition and Characteristics: Age-Sex; Female-Male Ratio		RH RH RH RH RH RH RH RH	
February 2021 – June 2021	SEM-2	CC3: HUMAN GEOGRAPHY	<u>Unit1: Nature and Principles</u>	Nature, scope and recent trends of Human Geography Evolution of humans, concept of race and ethnicity; Major Racial Groups of the world Space, society and cultural regions (language and religion) Concept of Culture, Cultural Diffusion, Convergence, Cultural Realms of the world	60	RH BD BD BD	3rd Week of May
			<u>Unit II Society, Demography and Ekistics</u>	Evolution of human societies: Hunting and gathering, Pastoralnomadism, Subsistence		AB	

				farming, Industrial and urban societies			
				Human-environment relations with special reference to Arctic and hot desert regions		AB	
				Population growth and distribution, composition; demographic transition		RH	
				Population–resource regions (Ackerman)		RH	
				Human, population and environment relations with special reference to Development–environment conflict		RH	
				Social morphology and rural house types in India		MB	
				Types and patterns of rural settlements		MB	
				Functional Classification of urban settlements		MB	
		CC4: CARTOGRAMS, SURVEY AND THEMATIC MAPPING	Theory	Concepts of Cartograms and Thematic Maps	60	RH	3 rd Week of May
				Concept and utility of Isopleths and Choropleth,		RH	
				Concept, utility, and interpretation of: Climograph, Hythergraph and Ergograph		BD	
				Preparation and interpretation of demographic charts and diagrams (Age-Sex Pyramid)		BD	
				Concepts of Bearing: magnetic and true, whole-circle and reduced		AB	
				Basic concepts of surveying and survey equipment: Abneys Level, Clinometer		AB	
				Basic concepts of surveying and survey equipment: Prismatic Compass, Dumpy Level, Transit Theodolite		MB	
				Interpretation of Land use and land cover maps		MB	
SEM-4	CC8: Regional Planning and Development	<u>Unit 1: Regional Planning</u>	Concept and Classification of Regions	60	MB	2 nd Week of May	
			Types of Planning; Principles and Techniques of Regional Planning		MB		
			Need for Regional Planning; Multilevel Planning in India		MB		
			Metropolitan Concept: Metropolitan		MB		

				Areas, Metropolitan Region			
			<u>Unit II Regional Development</u>	Development: Meaning, Growth versus Development		BD	
				Models for Regional Development: Growth Pole		BD	
				Model for development India		BD	
				Concept of Regional Inequality and Disparity		BD	
				Human Development: Significance, Indicators and Measurement		BD	
				Status of Regional Imbalances in India		BD	
				Strategies for Regional Development in India		BD	
				NITI Aayog and its Functions		BD	
	CC9: Economic Geography	<u>Unit 1: Concepts and Approaches</u>	Meaning and Approaches to Economic Geography	60	RH	2 nd Week of May	
			Concepts in Economic Geography		RH		
			Factors Influencing Location of Economic Activity		RH		
			Determining Factors of Transport Cost		RH		
		<u>Unit II Economic Activities</u>	Concept and Classification of Economic Activities		AB		
			Location Theories: Von Thünen and Alfred Weber		AB		
			Primary Activities:		AB		
			Secondary Activities: Manufacturing (Iron and Steel in India and Japan, Petrochemical in India and USA)		AB		
			Tertiary Activities: Types of Trade and Services		AB		
			Agricultural Systems: Tea Plantation in India and Mixed Farming in Europe		AB		
			Highways: Roles in Economic Development of India since 1990s		AB		
			International Trade Blocs: WTO and OPEC		AB		
	CC10: Environmental Geography	Theory	Geographers' Approach to Environmental Studies	60	MB	2 nd Week of May	
			Changes in Perception		MB		
			Ecosystem: Concept, Structure and Functions		BD		
			Environmental Degradation and Pollution: Water and Air		BD		
			Environmental Issues related to Agriculture		AB		
			Urban Environmental issues related to Waste Management		AB		

				Concept and Issues related to Bio-diversity		RH	
				Environmental Programs and Policies on Forest and Wetland: National and Global		RH	
			Practical	Preparation of questionnaire for perception survey on environmental problems		RH	
				Environmental Impact Assessment: Leopold Matrix		BD	
				Quality assessment of soil using field kit: pH and NPK		MB	
				Interpretation of air quality using CPCB / WBPCB data		AB	
		SEC-2: ADVANCED SPATIAL STATISTICAL TECHNIQUES	Theory	Concept of Probability and Normal Distribution and their Geographical Applications, Skewness (Pearson's Method)	40	BD	2 nd Week of May
				Differences between Spatial and non-Spatial data, Nearest Neighbour Analysis		MB , RH	
				Correlation and Regression Analysis, t-test, Spearman's Rank Correlation Product Moment Correlation; Linear Regression		MB , RH	
				Time Series Analysis; Smoothing time series by Least Square and/or Moving Average Method		AB	
SEM-6		CC13: EVOLUTION OF GEOGRAPHIC AL THOUGHTS	Unit 1	Definition, Scope and Content of Geography; Geography as a Spatial Science	60	MB	1 st Week of May
				Geography in Ancient Period: Greek and Roman		MB	
				Development of Geography in Medieval period: Arabian		MB	
				Development of Mapping and Knowledge about the World Regional Geography in the Age of Explorations		MB	
				Classical Geography in 19th Century: Humboldt, Ritter		MB	
				Quantitative Revolution and its Critique		MB	
			Unit 2	German School of Thought		BD	
				French School of Thought		BD	
				American School of Thought		BD	
				Indian Contribution to Geography		BD	
				Concept of Determinism, Possibilism and Neo-Determinism		BD	

				Approaches to the study of Geography: Systematic and Regional		BD		
	CC14: DISASTER MANAGEMENT	Unit-I	Classification of hazards and disasters	60	RH	1 st Week of May		
Approaches to hazard study: Risk perception and vulnerability assessment. Hazard paradigms			RH					
Responses to hazards: Preparedness, trauma and aftermath. Resilience and capacity building			RH					
Hazards mapping: Data and techniques.			RH					
Unit-II		Earthquake: Factors, vulnerability, consequences and management	AB					
		Landslide: Factors, vulnerability, consequences and management	AB					
		Cyclone: Factors, vulnerability, consequences and management	AB					
		Fire: Factors, vulnerability, consequences and management	AB					
DSE 3: RESOURCE GEOGRAPHY		Unit-I	Resource Geography: Its Importance and relation with other sub-disciplines		60		MB	1 st Week of May
			Resource: Concept and Classification				MB	
	Functional Theory of Resource		MB					
	Problems of Resource Depletion with Special Reference to Forest, Water and Fossil Fuels		AB					
	Resource Conservation: Principles and Methods		AB					
	Concept of 'Limits to Growth'		AB					
	Unit-II	Distribution and Utilisation of Metallic Mineral Resources in Indian Context: Iron ore, Bauxite	BD					
		Distribution and Utilisation of Non-Metallic Mineral Resources in Indian Context: Mica, Limestone	BD					
		Distribution, Problems and Management of Energy Resources in Indian Context: Conventional (Coal) and Non-Conventional (Solar)	BD					
		Power resources and problems with reference to Petroleum	RH					
		Contemporary Energy Crisis and Future Scenario	RH					
		Sustainable Resource Development	RH					
	Unit 1:	Soil: Definition, Factors of Formation	60	RH	1 st Week of May			

		DSE 4: SOIL AND BIO GEOGRAPHY	Soil Geography	Development and Characteristics of an ideal Soil Profile	RH
				Physical and Chemical Properties of Soil with special reference to Texture, Structure, Organic Carbon and pH	AB
				Concept of Zonal, A zonal and Intra zonal Soil; Formation and Profile	AB
				Characteristics of Laterite and Podsol	AB
				Classification of Soil: Russian and Indian(ICAR)	AB
			Unit 2:Bio Geography	Soil Degradation and Management	BD
				Definition and Scope of Bio-geography, Meaning of Biosphere, Ecology, Ecosystem, Environment, Communities, Habitats, Niche, Ecotone and Biotopes	BD
				Biosphere and Energy: Laws of Energy Exchange, Food Chain, Food Web and Energy Flow	BD
				Bio-Geo Chemical Cycle: Carbon,Nitrogen	MB
				Factors of Plant Growth: Light, Heat, Moisture, Wind, Soil andTopography	MB
				Biomes–Concept and Classification; Tropical Rain forest &Temperate Grassland	MB
				Threat to Biodiversity-Causes, Consequences and Conservation	MB

RH- Dr. Rituparna Hajra

MB- Dr. Mohona Basu

AB- Ayan Banerjee

BD- Biswajit Dhara