

syllabus distribution

Semester	Session	Course and paper Name	Unit	Teachers	Methodology
1 st semester	2020-21	Geomorphology GGY-HC-1016 (Theory)	1. Geomorphology: Nature, Scope and Significance	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Structure and characteristics of the earth's crust and interior	Manash Jyoti Bhuyan	Lecture, notes
			3. Forces of landform development: Endogenetic forces (folding, faulting earthquakes and volcanoes)	Manash Jyoti Bhuyan	Lecture, notes, assignment,
			exogenetic forces (weathering, erosion and mass wasting).	Dr. Smarajit Ojah	Lecture, notes quiz,
			4. Earth Movements: Continental Drift Theory, Isostasy, Mountain building: views of Holmes and Kober, Plate tectonics.	Dr. Nazneen Akhter	Lecture, notes
			5. Concept of Cycle of Erosion: Davis and Penck, Landform development under Fluvial, Aeolian and Glacial conditions	Nizam Ahmed, Dr. Nilotpal Kalita, Manash Jyoti Bhuyan	Lecture, notes, power point
		GGY-HC-1016 (Practical)	1. Study of Topographical Maps: Topographical map content and numbering	Dr. Nazneen Akhter	Lecture, notes

			system, the general interpretation of topographic sheets in respect of physical characteristics.		
			2. Profile Drawing (serial, superimposed, projected and composite)	Dr. Dibyajyoti Saikia	Lecture, notes
			3. Preparation of Slope Map / Relative Relief Map: Wentworth's method and Smith's method.	Dr. Nilotpal Kalita	Lecture, notes
			4. Delineation of drainage basin and drainage network, construction of cross and long profiles, stream ordering by Horton and Strahler's method	Manash Jyoti Bhuyan	Lecture, notes, powerpoint, practical and laboratory work
			5. Interpretation of Geological map and Construction of cross-section (Two geological maps including one with interruptions) showing different sedimentary beds.	Nizam Ahmed	Lecture, notes, quiz
		Cartographic Techniques GGY-HC-1026 (Theory)	1. Cartography – Meaning, Development (Traditional and Modern Cartography) and Importance of Cartography in Geography.	Dr. Dibyajyoti Saikia	Lecture, notes, assignment
			2. Shape and size of the earth, coordinate	Dr. Smarajit Ojah	Lecture, notes

			system(latitude and longitude)		
			3. Maps: Types, scale and content, representation of point, line and area in maps	Manash Jyoti Bhuyan	Lecture, notes
			4. Map Projections: Concept of Map Projection, Classification of Map Projections; Choice of map projection.	Dr. Nilotpal Kalita	Lecture, notes
			5. Thematic mapping: Concept and types	Dr. Nazneen Akhter	Lecture, notes
	(Practical)		1. Construction of graphical scale (linear, diagonal and comparative); conversion of map scale	Nizam Ahmed	Lecture, notes, assignment
			2. Construction of graticules of Zenithal Polar Gnomonic and Stereographic, Simple Conical with one standard parallel, Bonne's conical, Gall's Stereographic Cylindrical along with their properties, uses and limitations.	Dr. Dibyajyoti Saikia, Nizam Ahmed, Dr. Nilotpal Kalita	Lecture, notes, quiz
			3. Preparation of thematic maps (choropleth, isopleth and pie diagram) for representing various physical geographic data.	Dr. Nazneen Akhter	Lecture, notes, power point
	Physical Geography		1. Physical Geography – Definition and Scope, Components of	Manash Jyoti Bhuyan	Lecture, notes

		GGY-HG-1036	EarthSystem		
			2. Atmosphere – Composition and the vertical structure, Heat Balance, Global Circulation Pattern, Monsoon, Koppen’s Climatic Classification.	Dr. Smarajit Ojah, Manash Jyoti Bhuyan, Dr. Nilotpal Kalita	Lecture, notes
			3. Lithosphere–Internal Structure of Earth based on Seismic Evidence	Dr. Nazneen Akhter	Lecture, notes
			4. Endogenetic and Exogenetic processes, Works of River, Fluvial Cycle of Erosion – Davis	Dr. Dibyajyoti Saikia, Manash Jyoti Bhuyan, Dr. Nilotpal Kalita	Lecture, notes, assignment
			5. Hydrosphere: hydrological cycle, ocean bottom relief features, oceanic deposits, tides and currents.	Manash Jyoti Bhuyan, Nizam Ahmed	Lecture, notes, power point
2 nd semester	2020-21	Human Geography GGY-HC-2016 (Theory)	1. Defining the field of human geography: Meaning and Scope; Nature of human geography and its relation with other socialsciences.	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Schoolsofhumangeography:Hu manEcology,LandscapeandLoc ational.	Manash Jyoti Bhuyan	Lecture, notes
			3. Paradigms of man-environment relationship study: Determinism, Possibilism,	Dr. Nilotpal Kalita	Lecture, notes

			Neodeterminism, and Cultural Determinism.		
			4. Man and environment relationship: Impact of environment on man in different geographical conditions; Impact of man and its activities on environment in different parts of the world; Impact of Population growth on development and environmental degradations; House types in different environmental conditions.	Nizam Ahmed	Lecture, notes, quiz
			5. Man and culture: Ethnicity and Race; Global patterns of racial composition of population and associated characteristics of major racial groups; Global patterns of religious and linguistic composition of population; Tribal people of India and their socio-economic characteristics.	Dr. Nazneen Akhter, Dr. Smarajit Ojah	Lecture, notes
			6. Human Settlements: Rural and urban settlements - Origin, growth and morphological characteristics; Types/Patterns of rural settlements; Burgess and Hoyt theories of internal structure of town; patterns of urbanization: Global and Indian scenarios.	Dr. Nazneen Akhter, Manash Jyoti Bhuyan	Lecture, notes

	Practical	1. Traditionalhousetypesofselected ethnicgroupsofN.E.IndiaandIndia.	Dr. Dibyajyoti Saikia	Lecture, notes
		2. Trend of population growth in the world in relation to five most populous countries of the world usinglinegraph.	Nizam Uddin Ahmed	Lecture, notes
		3. Religious and Linguistic composition of population in the world and five most populous countries of the world usingpie-graph.	Dr. Nilotpal Kalita	Lecture, notes
		4. Spatial patterns of scheduled tribes population and urban population in India at state level throughchoroplethmap(basedon percentageandLQ).	Manash Jyoti Bhuyan	Lecture, notes
		5. Drawing of major rural settlement types/patterns; Morphological diagram of a village and a town (preferably based on student's own village and town); Drawing of internal model structure of towns according to Burgess andHoyt.	Dr. Nazneen Akhter	Lecture, notes, power point
		6. Mappingofdistributionofmajor racialandlinguisticgroupsof populationintheworld.	Dr. Smarajit Ojah	Lecture, notes
	Climatology and Biogeography GGY-HC-	1. Meaning of climatology and its significance in geographical studies.	Dr. Dibyajyoti Saikia	Lecture, notes

		2026 (Theory) Group A			
			2. Atmospheric Composition and Structure; and their variation with altitude, latitude and season.	Manash Jyoti Bhuyan	Lecture, notes
			3. Insolation and Temperature; Factors and Distribution and Heat Budget.	Dr. Nilotpal Kalita	Lecture, notes
			4. Atmospheric Pressure and Wind system; Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams	Manash Jyoti Bhuyan	Lecture, notes
			5. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog, Precipitation Types, Stability and Instability.	Dr. Nazneen Akhter	Lecture, notes, assignment
			6. Climatic classification of Koppen and Trewartha; Monsoon - Origin and Mechanis	Dr. Dibyajyoti Saikia	Lecture, notes
			7. Cyclones and anticyclones; Tropical Cyclones, Extra-Tropical Cyclone.	Dr. Nazneen Akhter	Lecture, notes, group discussion
		Group B	1. Meaning, Scope and Significance of biogeography	Manash Jyoti Bhuyan	Lecture, notes
			2. Ecology and Ecosystem, Structure and functioning of ecosystem	Dr. Nazneen Akhter	Lecture, notes

		3. Global distribution of major plants and animals.	Dr. Dibyajyoti Saikia	Lecture, notes, group discussion
		4. Biomes and Biodiversity hotspots of the world.	Dr. Nilotpal Kalita	
		5. Soil as a component of environment , soil formation process and factors , soil composition and horizon, Soil types and their distribution in India	Dr. Smarajit Ojah, Dr. Nilotpal Kalita	
	(Practical)	1. Interpretation of Indian Weather map for Monsoon and non-monsoon seasons/months based on various weather symbols depicted on maps.	Dr. Nazneen Akhter	
		2. Preparation of weather reports of Indian subcontinent by analyzing the weather satellite images of at least three consecutive days (e.g. INSAT 3D, NOAA satellite).	Dr. Nilotpal Kalita	
		3. Preparation of rainfall-temperature graphs; hythergraph, climograph and ergograph taking data from India/N.E. India/Assam	Nizam Uddin Ahmed	Lecture, notes
		4. Calculation of average annual rainfall and variability of annual rainfall and preparation of rainfall distribution and variability maps (using isopleths)	Dr. Smarajit Ojah	Lecture, notes
		5. Mapping of protected areas	Dr. Nazneen Akhter	Lecture, notes

			(National park, biosphere reserve and wildlife sanctuary) of Assam/ N.E.India/India.		
			6. Mapping of phyto-geographic and zoogeographic regions of the world.	Dr. Dibyajyoti Saikia	Lecture, notes
			7. Mapping of Biodiversity hotspots of the world.	Dr. Nilotpal Kalita	Lecture, notes
			8. Mapping of Soil types of Assam/N.E. India and Soil horizons	Dr. Nilotpal Kalita	Lecture, notes
3 rd Semester	2020-21	Economic Geography GGY-HC-3016	1. Meaning, scope and approaches of Economic Geography.	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Economic activity: meaning and classification; Production system: Role of land, labour and capital.	Nizam Uddin Ahmed	Lecture, notes
			3. Agriculture: Factors influencing agriculture; types of agriculture; Von Thunen's model of agricultural location; Factors influencing cultivation of wheat, rice, coffee and tea, and their distribution and production in different parts of the world.	Manash Jyoti Bhuyan	Lecture, notes

			4. Manufacturing: Factors influencing industrial location; Classification of industry; Weber's theory of industrial location; Factors, distribution and production of iron and steel, cotton textile and IT industries in the world; Special economic zones and technology parks.	Dr. Nazneen Akhter	Lecture, notes, quiz
			5. Transport system: Modes of transport, factors influencing transport development and role of transport in resource mobilization and economic development.	Dr. Smarajit Ojah	Lecture, notes, assignment
			6. Trade: Factors influencing trade in different countries of the world; Trade relations of India with the countries like USA, Russia and Japan.	Dr. Nilotpal Kalita	Lecture, notes
		practical	1. Trend of rice, wheat and iron & steel production in the world/USA/India since 1960 using moving average and least squares methods.	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Trend of production of wheat, rice, maize and barley in the world/USA since 1960 using Band-graph.	Manash Jyoti Bhuyan	Lecture, notes, quiz
			3. Trend of balance of trade relations (export and import	Dr. Nazneen Akhter	Lecture, notes

			value) of India with USA, China and Japan in respect of major commodities since 1990 using Bar-graph.		
			4. Regional variation in fertilizer consumption and agricultural productivity in rice, wheat and barley in selected countries of the world using Bar-graph	Dr. Smarajit Ojah	Lecture, notes, assignment
			5. Inter-state/Inter-nation volume of movement of selected commodities and Inter-city movement of traffic/bus in N.E. India through flow cartogram.	Dr. Nilotpai Kalita	Lecture, notes
	2020-21	Geography of India with Special Reference to N.E. India GGY-HC-3026	1. India's location and its significance; administrative divisions.	Nizam Uddin Ahmed	Lecture, notes
			2. Physical setting: Physiographic divisions and their characteristics; Climate and its seasonal and regional characteristics; vegetation; soil types and its distribution.	Dr. Dibyajyoti Saikia Dr. Nazneen Akhter	Lecture, notes
			3. Population: Trend of growth,	Dr. Smarajit Ojah	Lecture, notes

			spatial variation in growth and distribution; Age and sex composition; Linguistic and religious composition.		
			4. Agriculture: Regional distribution and production patterns of rice, wheat and millet.	Dr. Nilotpal Kalita	Lecture, notes
			5. Industry: Distribution and production patterns of iron and steel, cotton textile and fertilizers; Role of transport systems in industrial development	Dr. Nilotpal Kalita	Lecture, notes, power point
			6. North-East India: Land of seven sisters and its locational significance; physiographic framework; forest cover; agricultural practices including shifting cultivation; industrial development scenario; population growth, distribution and ethnic composition.	Manash Jyoti Bhuyan	Lecture, notes
		Practical	1. Trend of population growth and growth rates in India and N.E. India since 1901 using Census data (Source: censusindia.gov.in).	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Choropleth mapping to show spatial variation in decennial population growth rate in India.	Manash Jyoti Bhuyan	Lecture, notes
			3. Spatial variation in the patterns of religious composition of	Dr. Nilotpal Kalita	Lecture, notes, test

			population in India and Social composition of population (SC, ST and General) in N.E. India using pie-graph.		
			4. Trend of foodgrains production (rice, wheat, maize, barley, jowar and bajra) in India since 1950-51 using band-graph.	Dr. Nazneen Akhter	Lecture, notes
			5. Map showing distribution of major tribal groups in North-East India.	Manash Jyoti Bhuyan	Lecture, notes
		Field Report	6. Preparation of field report based on field study of observational knowledge about the geographical personality of any part of India/N.E. India under the guidance of teacher	All Teachers	Lecture, notes, assignment
		Quantitative Methods in Geography GGY-HC-3036	1. Quantification and its significance in geographical study; advantages and limitations of quantitative methods in geography	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Geographical Data: Nature, types and sources; scale of measurement (nominal, ordinal, interval and ratio).	Nizam Uddin Ahmed	Lecture, notes
			3. Measures of central tendency	Manash Jyoti Bhuyan	Lecture, notes, quiz

			(mean, median and mode) and dispersion (range, quartile deviation, mean deviation, standard deviation and coefficient of variation) and their applications in geographical data analysis.		
			4. Sampling techniques: meaning of sampling and its need; types of sampling (simple random and stratified random).	Dr. Nazneen Akhter	Lecture, notes, assignment
			5. Time series analysis and its applications in geographical studies; Basic techniques of time series data analysis (semi-average, moving average and least squares)	Dr. Smarajit Ojah Manash Jyoti Bhuyan Dr. Nilotpai Kalita	Lecture, notes
			6. Correlation and Regression Analysis: Meaning of correlation; Bi-variate coefficient of correlation (Spearman's rank correlation and Pearson's product-moment correlation); linear regression analysis; and their applications in geographical data analysis	Dr. Nilotpai Kalita	Lecture, notes
		Practical	1. Tabulation/Grouping of geographical data for making frequency distribution table; Preparation of Histogram,	Nizam Uddin Ahmed Dr. Nilotpai Kalita	Lecture, notes

			Frequency Polygon and Frequency Curve		
			2. Computation of mean, median and mode for ungrouped and grouped geographical data; Determination of median and mode using graphical methods; Determination of the location of spatial mean centre of settlements (using centographic measure).	Manash Jyoti Bhuyan	Lecture, notes, power point
			3. Computation of the values of standard deviation and coefficient of variation of ungrouped and grouped data relating to some geographical phenomena (rainfall, landholding, income, production, etc) for comparison of distribution pattern	Dr. Nazneen Akhter	Lecture, notes
			4. Analysis of time series data of some geographical phenomena (rainfall, production, export value, import value, etc) using moving average and least squares methods.	Dr. Dibyajyoti Saikia Dr. Smarajit Ojah	Lecture, notes
			5. Computation of coefficient of correlation between two logically associated	Dr. Nilotpal Kalita	Lecture, notes

			geographical phenomena using Spearman's rank correlation and Pearson's product-moment correlation formulae; Preparation of scatter diagram and fitting the line of linear regression of Y on X for any set of bi- variate data relating to meaningful geographical phenomena		
		Thematic cartography GGY-SE-3054	1. Thematic cartography: meaning and importance	Nizam Uddin Ahmed Dr. Dibyajyoti Saikia	Lecture, notes
			2. Thematic Mapping: Principles and techniques of representation of physical and human geographic data (point, line, polygon).	Dr. Nazneen Ahter	Lecture, notes, assignment
			3. Concepts and principles of cartographic overlay and mapping	Manash Jyoti Bhuyan	Lecture, notes
			4. Concept of base map; Types of thematic map; map reading; map design, layout and typography.	Dr. Smarajit Ojah	Lecture, notes
			5. Techniques of interpretation of Topographical maps, satellite imageries and aerial	Dr. Nilotpal Kalita	Lecture, notes, assignment

			photographs for thematic mapping		
		Practical	1. Preparation of an administrative/physical map of India containing necessary map elements using appropriate typography	Nizam Uddin Ahmed Dr. Dibya Jyoti Saikia	Lecture, notes, quiz
			2. Preparation of thematic maps for representing human geographic data using choropleth, isopleth, dot, sphere and proportionate circle techniques.	Dr. Smarajit Ojah Dr. Nazneen Akhter	Lecture, notes
			3. Interpretation of topographical maps for preparation of thematic maps through overlay method (taking point, line and area layers) to show relationship between relief and agriculture; and relief, drainage and settlements	Manash Jyoti Bhuyan	Lecture, notes
			4. Locational accessibility mapping based on travel time through isochronic cartogram.	Dr. Nilotpal Kalita	Lecture, notes
			5. Preparation of land use/land cover map through visual interpretation of satellite imagery using appropriate classification scheme	Dr. Nilotpal Kalita	Lecture, notes

4 th Semester		Environmental Geography and Disaster Management GGY-HC- 4016	1. Environmental Geography: Nature, Scope and Significance	Nizam Uddin Ahmed	Lecture, notes
			2. Human-Environment Relationships – Historical progression, Adaptation in different Biomes.	Nizam Uddin Ahmed	Lecture, notes
			3. Major Global Environmental Problems: Pollution, Deforestation, Desertification, Global Warming, and Bio- Depletion	Dr. Nazneen Akhter	Lecture, notes
			4. Meaning of Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster (Natural and Manmade).	Dr. Smarajit Ojah Dr. Nazneen Akhter	Lecture, notes
			5. Disaster Management Cycle and Phases: Prevention, Preparedness, Response, Rehabilitation, Reconstruction and Mitigation	Manash Jyoti Bhuyan	Lecture, notes, assignment
			6. Major Hazards and Disasters, and their Management: Flood, Earthquake, Wildfire, and Chemical and Nuclear	Manash Jyoti Bhuyan Dr. Nilotpal Kalita	Lecture, notes

			explosions.		
			7. National Environmental Policy and National Disaster Management Plan: Environmental Protection Act 1986 and Disaster Management Act 2005	Dr. Nilotpal Kalita	Lecture, notes
		Practical	1. Exploring satellite imageries and toposheets to observe bank line change of Brahmaputra river from any selected stretch in three different time periods and preparation of map therefrom.	Dr. Nilotpal Kalita	Lecture, notes
			2. Mapping of major wetlands in a district and computation of shape and size(area) based distribution.	Manash Jyoti Bhuyan	Lecture, notes
			3. Preparation of a map of a nearby wetland and identify the changes in dimension, water level and encroachment it faced during the last one decade. Present your data in tabular form along with the map (field-based).	Manash Jyoti Bhuyan	Lecture, notes
			4. Preparation of a long-term precipitation time series curve for any selected station of N.E. India using moving average method by	Dr. Nazneen Akhter	Lecture, notes, quiz

			<p>downloading the annual rainfall data for any district/station of Assam for at least 30 years from the portal https://www.indiawaterportal.org/met_data/.</p>		
			<p>5. Drawing of a diagram of disaster management cycle with reference to some disasters (flood and earthquake) in North-East India and to indicate the activities associated with each step.</p>	Dr. Smarajit Ojah	Lecture, notes
			<p>6. Drawing of a map of Assam showing the major fault lines thereon. Also to plot at least 50 epicentres in last few years and to explain the areas of their concentration by taking the help of Bhookamp app.</p>	Manash Jyoti Bhuyan	Lecture, notes
			<p>7. Preparation of a disaster vulnerability map of Assam/ N.E. India based on data of natural disasters (Flood/earthquake/landslide/bank erosion) with respect to their occurrence and frequency in different areas.</p>	Dr. Nilotpal Kalita	Lecture, notes
		Population and Settlement	<p>1. Defining the field of population geography: nature and scope;</p>	Dr. Dibyajyoti Saikia	Lecture, notes, test

		Geography GGY-HC-4026 Unit I: Population Geography	Its relation with demography.		
			2. Sources, characteristics and problems of population data; Perspectives on Census of India publications – Primary Census Abstract, District Census Hand-Book, Sample Registration System, etc.	Dr. Nilotpal Kalita	Lecture, notes
			3. Distribution and density of population: Factors influencing population distribution and density; global pattern of population distribution; population density regions in the world.	Dr. Dibyajyoti Saikia	Lecture, notes
			4. Population Growth: Trend of global population growth; components of population growth–fertility, mortality and migration; factors influencing fertility and mortality; push and pull factors of migration; spatial variations in population growth in the world.	Dr. Nazneen Akhter	Lecture, notes
			5. Theories of population growth:	Nizam Uddin Ahmed	Lecture, notes

			Malthusian Theory and Demographic Transition Theory.		
			6. Population composition and associated characteristic patterns in global contexts: Age-Sex Composition; Rural-Urban Composition; Contemporary population issues – population ageing, declining sex ratio, pandemics.	Manash Jyoti Bhuyan Dr. Smarajit Ojah	Lecture, notes
		Unit II: Settlement Geography	1. Defining the field of settlement of geography: Nature and scope.	Dr. Dibya Jyoti Saikia	Lecture, notes
			2. Rural and urban settlements: Factors influencing distribution pattern of settlements; Types of rural settlements; Characteristics of rural and urban settlements.	Dr. Dibya Jyoti Saikia	Lecture, notes
			3. Morphology of rural and urban settlements; Burgess theory of internal structure of a town	Dr. Nazneen Akhter	Lecture, notes
			4. Concept of settlement hierarchy, primate city and urban fringe; Christaller's Central Place Theory.	Dr. Nilotpal Kalita	Lecture, notes

		Practical	1. Trend of population growth in Assam/N.E. India/India through line graph; Calculation and graphical representation of trend of decadal and annual growth rates of population in Assam/N.E. India/India	Nizam Uddin Ahmed	Lecture, notes
			2. Choropleth map to show spatial pattern of decadal variation in population growth in Assam/N.E. India/India.	Dr. Nazneen Akhter	Lecture, notes
			3. Choropleth map showing spatial pattern of population density in Assam/India. (1 Exercise)	Dr. Dibyajyoti Saikia	Lecture, notes
			4. Calculation of distribution pattern of settlements in an area using Nearest Neighbour Analysis.	Dr. Nazneen Akhter	Lecture, notes
			5. Map showing spatial variation in social/religious/rural-urban composition of population in Assam/N.E. India using pie-graph	Manash Jyoti Bhuyan	Lecture, notes
			6. Choropleth map showing spatial pattern of level of urbanization in Assam/N.E. India.	Dr. Nilotpal kalita	Lecture, notes
			7. Map showing distribution of towns and their varied population size with spheres in Assam/N.E. India.	Dr. Dibyajyoti Saikia	Lecture, notes

			8. Flow cartogram showing direction and volume of migration into Assam/N.E. India from different parts of India.	Dr. Smarajit Ojah	Lecture, notes, assignment
		Remote Sensing, GIS and GPS GGY- HC-4036 Unit 1: Remote Sensing	Remote Sensing: Definition and History of Development.	Manash Jyoti Bhuyan	Lecture, notes
			Principles of Remote Sensing System: Energy sources, EMR and its interaction with Atmosphere and Earth Features; Platform, Sensor and Resolutions; Aerial and Satellite Remote Sensing; Fundamentals of Photogrammetry.	Dr. Smarajit Ojah	Lecture, notes
			Remote Sensing data products, sources and characteristics; Elements of Image Interpretation (Visual & Digital); Digital Image Processing: Image Enhancement and Classification (Supervised and Un-supervised)	Dr. Nilotpall Kalita	Lecture, notes
			4. Application of Remote Sensing: Land, Vegetation and	Dr. Nilotpall Kalita	Lecture, notes, test

			Water		
		Unit 2: GIS	1. Geographical Information System (GIS): Definition, Development, Components, and Functions; Open source GIS.	Manash Jyoti Bhuyan	Lecture, notes
			2. GIS Data Types & Structures: Spatial and Non-Spatial Data; Raster and Vector Data Structure, Database Management System (DBMS).	Dr. Nilotpal kalita	Lecture, notes
			3. Data Layer Extraction and Spatial Analysis: Buffer, proximity and overlay analysis	Dr. Smarajit Ojah	Lecture, notes
			4. Application of GIS in geographical studies (Land Suitability analysis, Network analysis, Flood damage estimation)	Dr. Nilotpal kalita	Lecture, notes
		Unit 3: GPS	1. Global Positioning System (GPS): Types, basic principles and functions; Different Navigational Systems.	Dr. Smarajit Ojah	Lecture, notes
			2. Application of GPS in surveying and mapping	Dr. Nilotpal kalita	Lecture, notes
		Practical	1. Visual Interpretation of Aerial photograph and Satellite Imagery and preparation of thematic maps based on	Dr. Smarajit Ojah	Lecture, notes

			appropriate classification scheme		
			2. Analysis of aerial photographs and satellite image: Determination of photo scale and object height from aerial photo (Using Sterescope); Digital classification of satellite image: supervised and unsupervised	Dr. Nilotpal kalita	Lecture, notes
			3. Geo-referencing and Data layer creation: Map scanning, geometric correction, digitization of different layers using point, line and polygon, attribute data input and their thematic representation, Buffer creation, Overlay analysis	Dr. Nilotpal kalita	Lecture, notes
			4. GPS data collection, plotting and mapping of various features within college campus	Dr. Smarajit Ojah	Lecture, notes
		Surveying Techniques GGY-SE-4054	1. Surveying: Its meaning, types and significance in geography	Dr. Dibyajyoti Saikia	Lecture, notes
			2. Principles of surveying: plane and geodetic surveying; Principles of triangulation	Nizam Uddin Ahmed	Lecture, notes
			3. Techniques of surveying by Plane Table, Prismatic Compass, Theodolite and Dumpy Level.	Manash Jyoti Bhuyan	Lecture, notes

			4. Methods of radiation, intersection, traversing, contouring and leveling in surveying	Dr. Nazneen Akhter	Lecture, notes
			5. GPS: Basic concept, principles and utilities; surveying by Total Station	Dr. Nilotpal Kalita	Lecture, notes
		Practical	1. Preparation of a plan or a map of an area within the college campus or any suitable area using PlaneTable (applying both radiation and intersection methods	Dr. Dibya Jyoti Saikia	Lecture, notes
			2. Open and Closed Traverse Surveying with Prismatic Compass: Preparation of plan alongwith adjustment of closing errors.	Dr. Nazneen Akhter Manash Jyoti Bhuyan	Lecture, notes
			3. Closed Traverse Surveying with Theodolite: Plotting of data for preparation of a plan through computation of Reduced Bearing, Consecutive Co-ordinates and Independent Co-ordinates; Measurement of height of object/objects using Theodolite	Manash Jyoti Bhuyan Dr. Nilotpal Kalita	Lecture, notes
			4. Profile levelling and contouring in a selected area by Dumpy Level	Dr. Nazneen Akhter	Lecture, notes

			5. Preparing a map of a short trail along with prominent features by using hand-heldGPS and associated software/freeware	Dr. Nilotpal Kalita	Lecture, notes
V	2020-21	Social and Political Geography GGY-HC-5016 Unit 1: Social Geography	1. Social Geography: Meaning and scope; its approaches of study; and contemporarytrend of its development.	Dr. Dibya Jyoti Saikia	Lecture, notes
			2. Concept and types of social space and social groups	Manash Jyoti Bhuyan	Lecture, notes
			3. Social Well-being: Concept and Component: Housing, Health and Education; ConceptofHuman development and its measurements.	Dr. Nazneen Akhter	Lecture, notes
			4. Contribution of race, religion, language and ethnicity in promoting diversity in India.	Nizam Uddin Ahmed	Lecture, notes
			5. Social Geographies of inclusion and exclusion: Caste system, slums, gated communities, communal conflicts and crime; Gender identity.	Dr. Niotpal kalita Dr. Smarajit Ojah	Lecture, notes, group discssion
		Unit 2:	1. Political Geography: Nature,	Manash Jyoti Bhuyan	Lecture, notes

		Political Geography	scope and recent trends; Approaches to its study		
			2. Concept of state, nation, and nation-state; Attributes of State	Dr. Nazneen Akhter	Lecture, notes
			3. Concept of frontiers and boundaries; boundary problems with reference to India and North-East India; Concept of buffer zones	Dr. Nazneen Akhter	Lecture, notes
			4. Concept of Geopolitics, Heartland and Rimland; Mackinder's Heartland Theory	Nizam uddin Ahmed	Lecture, notes
			5. Concept of colonialism, neo colonialism and lebensraum	Dr. Nilotpal Kalita	Lecture, notes
		practical	1. Mapping the spatial patterns of human development in India and Assam using HDI	Dr. Dibya Jyoti Saikia	Lecture, notes
			2. Construction of Ternary Diagram representing social composition of population in India/NorthEast India.	Mabash Jyoti Bhuyan	Lecture, notes
			3. Level of Social well-being with the help of composite Z-score in India /North-East India	Mabash Jyoti Bhuyan	Lecture, notes
			4. Sex disparity in literacy in India/North-East India using Sopher's Disparity Index	Dr. Nilotpal Kalita	Lecture, notes, test

			5. Computation of Shape Index for selected states of India and countries	Dr. Nazneen Akhter	Lecture, notes
			6. Construction of a map of India/North-East India highlighting the major inter-state boundary conflict zones.	Dr. Smarajit Ojah	Lecture, notes
			7. Reorganization of the states of North-East India during Pre and Post Independence periods	Nizam Uddin Ahmed	Lecture, notes
		Field Techniques in Geography GGY-HC-5026	1. Geography and Field Studies: Geography as a field science; Need of field work in geography; Nature of field studies in physical geography and human geography	Dr. Dibya Jyoti Saikia	Lecture, notes
			2. Concept of Case Study and Its identification in the varying geographical contexts (Physical/Human/Rural/Urban/Environmental).	Nizam Uddin Ahmed	Lecture, notes
			3. Tools and Techniques in Field Studies: Nature of data and their collection techniques relating to various geographical phenomena (Physical and Human); Structure of field survey questionnaire; Collection of Physical geographic data: Observations	Dr. Nazneen Ahmed	Lecture, notes

			and photography, field interview, questionnaire survey, Equipment/Measurement-based survey, etc; Collection of Human geographic data: Questionnaire survey, Participant observation, PRA, Focus group interview/discussion, etc.		
			4. Surveying: Concept of ground surveying and mapping; Conduct of traverse surveying with Prismatic Compass; Profile levelling and contouring with Dumpy Level; Pont distribution survey with GPS; Field mapping of Village, River bank, Wetland, Landslides, Market, etc through Transect, Quadrant and sketch map	Dr. Nilotpal Kalita	Lecture, notes
			5. Preparation of Field Study Report and its broad design: Basis of selection of the theme of field study; Objectives, Methods of data collection, Location/Situation of the study area, Data Analysis and mapping, Interpretation/Findings.	Manash Jyoti Bhuyan	Lecture, notes
		Field Book	1. Field observations of a near-by area and preparation of a brief	Dr. Nazneen Akhter	Lecture, notes

			report (within 4-5 pages) about the prevailing physical and human landscape of the area along with its spot photograph		
			2. Preparation of two field survey questionnaire/schedule (within 2 pages each) for collection of data relating to two different broad phenomena/problems (one on physical phenomenon and another on human phenomenon), and processing, tabulation and graphical representation of the same.	Dr. Nazneen Akhter	Lecture, notes
			3. Closed traverse surveying within College campus with Prismatic Compass and plotting of some details within the polygon, and preparation of a plan with appropriate scale and error correction, if any	Dr. Nilotpal Kalita	Lecture, notes
			4. Longitudinal profile levelling and contouring in College campus and any nearby area with Dumpy Level, and plotting of collected data in the forms of longitudinal profile and contour map	Dr. Nilotpal Kalita	Lecture, notes
			5. Collection of point data from an area with handheld GPS and preparation of a GPS data table	Dr. Nilotpal Kalita	Lecture, notes

			and distribution map with downloaded data.		
			6. Preparation of field map of a village, urban locality/market, river bank/wetland and its adjoining area or their any section through Transect, Quadrant and sketch map along with a spot photograph of the same.	Manash Jyoti Bhuyan Dr. Nilotpall Kalita	Lecture, notes, assignment
		Urban Geography GGY-HE-5056	1. Urban Geography: Nature and scope; approaches and trends in urban geography	Dr. Nazneen Akhter	Lecture, notes
			2. Origin and growth of towns in global and national contexts; Types and characteristics of towns; Functional classification of towns; Schemes of city classification (J.M. Houston's, G. Taylor's and L. Mumford schemes)	Dr. Smarajit Ojah	Lecture, notes
			3. Patterns of Urbanisation in developed and developing countries; Components of urbanization and urban population growth	Nizam Uddin Ahmed	Lecture, notes, assignment
			4. Organization of urban space: Urban morphology and land use structure; Theories on the	Manash Jyoti Bhuyan	Lecture, notes

			internal structure of town: the Sector Theory of Homer and Hoyt, and the Multiple Nuclei Theory of Harris and Ullman		
			5. Concept of city-region, urban agglomeration, urban sprawl, umland and periphery, rural-urban dichotomy and continuum, urban fringe, satellite town, new town, smart city.	Dr. Dibyajyoti Saikia	Lecture, notes
			6. Urban Systems: Concept of urban system and hierarchy; Christaller's Central Place Theory; the rank-size distribution of cities; concept of primate city	Dr. Nilotpal Kalita	Lecture, notes
			7. Urban issues and problems: Housing, slums, civic amenities (transportation and drinking water), traffic congestion, pollution (air, noise, water), and crime	Dr. Nazneen Akhter	Lecture, notes
			8. Urbanization and urban development planning in India: Trend and regional patterns of urbanization; national urban development policies and programmes; emerging urban issues of selected cities (Delhi NCR, Mumbai, Guwahati)	Dr. Dibya Jyoti Saikia	Lecture, notes

		Practical	1. Plotting of million cities of India by using proportionate sphere method.	Dr. Nazneen Akhter	Lecture, notes
			2. Map showing distribution of class I and II urban centres in Assam/NE India by using proportionate sphere method	Dr. Nazneen Akhter	Lecture, notes
			3. Determination of spatial mean centres of urban settlements using weighted (Population as weight) centrophoric measure in Assam and NE India	Manash Jyoti Bhuyan	Lecture, notes
			4. Calculation of distribution pattern of urban settlements in a District/State of N.E.India using Nearest Neighbour Analysis.	Manash Jyoti Bhuyan	Lecture, notes
			5. Choropleth map showing spatial pattern of level of urbanization in Assam and N.E.India.	Dr. Dibya Jyoti Saikia	Lecture, notes
			6. Determination of rank-size relationship of urban centres in Assam/N.E. India/India.	Dr. Nazneen Akhter	Lecture, notes
			7. Urban population potential mapping based on selected urban centres of Assam/N.E. India.	Dr. Nilotpal Kalita	Lecture, notes

			8. Delineation of urban influence zones of selected urban centres of Assam/N.E. India using Reilly's breaking point formula	Dr. Nilotpai Kalita	Lecture, notes
		Agricultural Geography GGY-HE-5066	1. Agricultural Geography: Meaning and Scope, Significance; Its approaches of study	Dr. Dibya Jyoti Saikia	Lecture, notes
			2. Factors influencing agriculture: Physical, Socio-economic, Infra-structural and Institutional.	Manash Jyoti Bhuyan	Lecture, notes
			3. Agricultural Systems and Types: Global Agricultural Systems; Agricultural types: Intensive and Extensive, Subsistence and Commercial, Plantation Farming, Mixed Farming, Horticulture and Market Gardening	Dr. Nazneen Akhter	Lecture, notes
			4. Von Thunen's Model of Agricultural Location; Concept of Land Rent and Market forces.	Manash Jyoti Bhuyan	Lecture, notes
			5. Concept of cropping patterns: Crop Combination (Nelson's Method), Crop concentration, Intensity of cropping and Crop rotation.	Dr. Dibyajyoti Saikia	Lecture, notes
			6. Agricultural Modernization and Development: Concept of agricultural modernization;	Nizam Uddin Ahmed	Lecture, notes

			Inputs of agricultural modernization (mechanization, Irrigation, HYV seeds, fertilizers etc.); Concept of crop productivity and agricultural development.(8 classes)		
			7. Factors, distribution and production patterns of rice, wheat and sugarcane in the world	Dr. Nilotpal Kalita	Lecture, notes
			8. India's agriculture: Major characteristics and problems; Green revolution; agro-climatic regions	Dr. Smarajit Ojah	Lecture, notes
		practical	1. Trend of production of major food grains (rice, wheat, maize etc.) in India/ selected States using moving average method.	Dr. Nazneen Akhter	Lecture, notes
			2. Preparation of the crop-combination Map of Assam/ North East India based on Nelson's method	Dr. Dibyajyoti Saikia	Lecture, notes
			3. Agricultural productivity pattern in Brahmaputra Valley/Assam/ N E India based on Kendall's Ranking Method	Dr. Nilotpal Kalita	Lecture, notes
			4. Mapping of spatial pattern of Intensity of Cropping in Assam/ North East India	Dr. Dibyajyoti Saikia	Lecture, notes

			5. Spatial variation in land use pattern in Brahmaputra valley/ North East India with Pie diagram	Dr. Smarajit Ojah	Lecture, notes
			6. Spatial pattern of crop concentration in North East India/ Assam using Location Quotient Method.	Manash Jyoti Bhuyan	Lecture, notes
			7. Spatial pattern of level of agricultural development in Assam/ N E India using Composite Z-Score.	Manash Jyoti Bhuyan	Lecture, notes
			8. Correlation and regression analysis between irrigation and cropping intensity in Assam/N.E. India.	Nizam Uddin Ahmed	Lecture, notes
6 th semester		Geographical Thought GGY-HC-6016	1. Early development of Geography: Ancient, dark age, medieval, and age of exploration and discoveries.	Nizam Uddin Ahmed	Lecture, notes
			2. Foundation of modern geography: Contribution of the German, French, British and American geographers.	Dr. Dibya Jyoti Saikia	Lecture, notes
			3. Evolution of geographical thought: Determinism, possibilism, neo-determinism, human ecology, cultural landscape and areal differentiation.	Dr. Nazneen Akhter	Lecture, notes

			4. Recent trends in geography: Quantitative revolution and its impact, logical positivism, locational school of thought, behaviouralism, humanistic geography and post-modernism	Manash Jyoti Bhuyan	Lecture, notes
			5. Geographical debates: Regional and systematic; ideographic and nomothetic	Dr. Dibya Jyoti Saikia	Lecture, notes
			6. Models in geography: Meaning, types and significance; basic concepts of Gravity Model, Spatial Diffusion Model and Distance Decay Model.	Dr. Nilotpal Kzallita	Lecture, notes
		practical	1. Mapping of routes of exploration and discoveries (Marco Polo, Christopher Columbus, Vasco-dagama, and James Cook)	Dr. Nazneen Akhter	Lecture, notes
			2. Intensity of spatial interaction of Guwahati city with neighbouring urban centres	Dr. Nazneen Akhter	Lecture, notes
			3. Mapping of population potential surfaces in Assam using the gravity model	Dr. Nazneen Akhter	Lecture, notes
			4. Demarcation of urban influence zone by using Reilly's breaking point formula	Manash Jyoti Bhuyan	Lecture, notes, power point

			5. Population Density gradient analysis of Guwahati or any other city	Dr. Dibya jyoti Saikia	Lecture, notes
			6. Trend of development of paradigms in geography (from Environmental Determinism to Post Modernism) through time-scale graph indicating advocates, tentative time of emergence and overriding theme.	Dr. Nilotpal Kalita	Lecture, notes
			7. Preparation of a world map highlighting the major developments of geography (Greek, Arab, France, Germany, Russia, UK and USA) indicating the contribution, name of the contributor and year of contribution	Manash Jyoti Bhuyan	Lecture, notes
			8. Greek and Arabian contributions to the development of Geography in different ages (Name of contributor and name of contribution at different points of time) through time-scale graph	Dr. Nilotpal Kalita Dr. Dibya Jyoti Saikia	Lecture, notes
		Research Methods in	1. Meaning and significance of research; types of research; Basics of research	Dr. Dibya Jyoti Saikia	Lecture, notes, power point

		Geography and Project Work GGY-HC-6026	methodology; Review of literature and its need; Ethics of research		
			2. Geographic Research: Meaning and Characteristics; Formulation of research problem	Dr. Dibya Jyoti Saikia	Lecture, notes
			3. Research Design: Statement of the problem, Review of research works, Objectives, Research questions, Hypotheses, Database and methodology, Significance, Organization of the Work and Referencing	Manash Jyoti Bhuyan	Lecture, notes
			4. Data Collection: Types and Sources of Data; Methods of primary data collection (both qualitative and quantitative, and physical and human geographic data); Concept of sample survey; Pilot survey; Data processing (Manual and computerized)	Dr. Nazneen Akhter	Lecture, notes
			5. Statistical Analysis of Data: Qualitative data analysis; Quantitative data analysis; Data representation (Manual and	Dr. Smarajit Ojah	Lecture, notes

			computerised).		
			6. Structure of a Research Report: Preliminaries; Text; Tables, Figures and Appendices; Citations, References and Bibliography; Research/Project Report Writing; Executive Summary.	Dr. Nilotpal Kalita	Lecture, notes
		Project Report	7. Each student will have to prepare a Project Report on a suitable geographical problem under the guidance of respective teacher following appropriate methodology, data base and literature review	All teachers	Lecture, notes
		Geography of Tourism GGY-HE-6056	1. Geography of Tourism: Nature and scope; Concepts and Issues of tourism; Recreation and leisure inter-relations; Robinson's geographical parameters of tourism.	Dr. Dibya Jyoti Saikia Nizam Uddin Ahmed Manash Jyoti Bhuyan	Lecture, notes
			2. Factors and types of tourism: Nature tourism, Cultural tourism, Medical tourism, Agri	Manash Jyoti Bhuyan	Lecture, notes
			3. Recent trends in tourism: International and Domestic (India); Eco-Tourism; Sustainable tourism; Meetings, Incentives, Conventions and Exhibitions (MICE	Dr. Nazneen Akhter	Lecture, notes

			4. Impact of tourism on economy, environment and society	Dr. Dibya Jyoti Saikia	Lecture, notes
			5. Tourism development in India: Tourism infrastructures; Case studies of tourism development in Himalaya, Desert, Coastal Areas and North-East India with special reference to Assam; National Tourism Policies and prospects	Dr. Nilotpal kalita Dr. Smarajit Ojah Dr. Dibya Jyoti Saikia	Lecture, notes
		Practical	1. Trend of growth of tourist arrivals in the World/India/Assam since 1960 using Moving average method and least squares method	Dr. Nazneen Akhter	Lecture, notes
			2. Trend of tourist arrivals in the north-eastern states of India and a few top-ranking tourist arriving states of India since 1980 using Band-graph.	Manash Jyoti Bhuyan	Lecture, notes
			3. Line Graph showing pattern of tourist arrival (Domestic and International) in relation to rainfall and temperature in a year for selected tourist spots of North-East India / Assam	Dr. Dibya Jyoti Saikia	Lecture, notes
			4. Spatial Patterns of Seasonal variation (Spring, Summer, Autumn and Winter) in tourist arrival in capital	Dr. Nazneen Akhter	Lecture, notes

			cities of North-East Indian states using Pie diagram and Bar Diagram. (2 assignments)		
			5. Preparation of a transport connectivity (road, railway and air) map of Assam/North-East India for major tourist destinations	Dr. Dibya Jyoti Saikia	Lecture, notes
			6. Preparation of a tourist map of North-East India showing locations of important national parks and wildlife sanctuaries from tourism potential perspectives (indicating the major highlights of the respective destinations including distance from Guwahati city within box)	Dr. Nilotpal Kalita	Lecture, notes
			7. Preparation of a tourist guide map of North-East India showing location of major tourist destinations and road connectivity routes from Guwahati city.	Manash Jyoti Bhuyan	Lecture, notes
			8. Mapping of trekking route in a hilly area suitable for adventure tourism using GPS (Field based).	Dr. Nilotpal Kalita	Lecture, notes
		Geograph	1. Geography of Resources and	Manash Jyoti Bhuyan	Lecture, notes,

		y of Resources and Development GGY-HE-606	Development: Concept of resource; Relationship between resource- base and development; Significance of resource and development studies in geography; Classification and characteristics of resources		assignment
			2. Natural Resources for Development: Distribution, utilisation, and management of land (soil), water, forests, minerals and energy resources in the World and their contribution to development.	Dr. Dibya Jyoti Saikia Dr. Smarajit Ojah	Lecture, notes
			3. Development and Environment: Concept of Development; Urban and Rural Development; Rationale use of resources and the concept of Sustainable Development; Environment and development, Sustainable Development Goals, natural resources management for sustainable rural livelihood	Dr. Nazneen Akhter	Lecture, notes
			4. Global issues of Natural Resources and Development: Sustainable Natural Resource Management; United Nations Framework of Classification for Resources (UNFC); Applications of geospatial	Dr. Nilotpal Kalita Dr. Dibya Jyoti Saikia	Lecture, notes

			technology in sustainable natural resource management; Resource and development planning; Conservation of resources , and integrated environment and resource management		
			5. Pattern of Economic Development and Resource use: Patterns of development between developed and developing countries; Resource management in developed countries (USA, Israel and Japan) and resource management in developing countries (Nepal, Bangladesh and Ethiopia); Concept of equity in resource use; Green technology.	Nizam Uddin Ahmed	Lecture, notes
		Practical	1. Determination of levels of development in India/North-East India/Assam based on few development indicators using simple composite index and ranking method.	Manash Jyoti Bhuyan	Lecture, notes
			2. Mapping of physiological density of population in Assam at district	Dr. Dibya Jyoti Saikia	Lecture, notes, assignment

			level or North- East India at state level.		
			3. Mapping of spatial variation of category-wise forest cover (very dense, moderate dense and open forest) in Assam/ North-East India using Pie diagram for two points of time based on data from the recent Forest Survey of India's report	Dr. Dibya Jyoti Saikia	Lecture, notes
			4. Identification of important natural resources/resource sites (e.g. Reserve Forests/Wildlife sanctuaries/national parks, mineral resources, Rivers, Grasslands, Wetlands, etc.) within 100km radius around the state capitals of North-East India using Google Earth Platform.	Dr. Nilotpal Kalita	Lecture, notes
			5. Preparation of resource potential map of North-East India at state level showing spatial variation in production of selected commodities (rice, maize, coal, petroleum, hydro power, tea, etc.) using simple composite index.	Dr. Nilotpal Kalita	Lecture, notes
			6. Correlation and regression analysis of irrigation and intensity of cropping in Assam/North-East India.	Nizam Uddin Ahmed	Lecture, notes
			7. Time series analysis of the trend of Coal/Crude oil/Natural gas	Dr. Nazneen Akhter	Lecture, notes, test

			production in India using moving average method and least squares method.		
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