

COURSE OUTCOME

B.A/B.SC CBCS (HONOURS) GEOGRAPHY

SL NO	SEMESTER	COURSE NAME & CODE	COURSE OUTCOME	UNIT/CHAPTER	BLOOM TAXONOMY LEVEL
1.	First	Geomorphology GGY -HC-1016	Understanding of principles and concepts in Geomorphology. Enrichment of Knowledge of Glacial, Aeolian & Fluvial processes. Besides application of geomorphic concept in the field & practical utility while carrying out geomorphic research.	Nature, Scope and Significance	Understand, Remember
				Structure and characteristics of the earth's crust and interior	Understand, Remember
				Forces of landform development: Endogenetic forces (folding, faulting earthquakes and volcanoes) and exogenetic forces (weathering, erosion and mass wasting).	Understand, Remember
				Earth Movements: Continental Drift Theory, Isostasy, Mountain building: views of Holmes and Kober, Plate-tectonics.	Understand, Remember
				Concept of Cycle of Erosion: Davis and Penck, Landform development under Fluvial, Aeolian and Glacial conditions	Understand, Remember
				Study of Topographical Maps: Topographical map content and numbering system, the general interpretation of toposheets in respect of physical characteristics.	Understand, Remember, Apply
				Profile Drawing (serial, superimposed, projected and composite	Understand, Remember, Apply
				Preparation of Slope Map / Relative Relief Map: Wentworth's method and Smith's method.	Understand, Remember, Apply
				Delineation of drainage basin and drainage network, construction of cross and long profiles, stream ordering by Horton and Strahler's method	Understand, Remember, Apply
				Interpretation of Geological map and Construction of cross –section (Two geological maps including one with interruptions) showing different sedimentary beds.	Understand, Remember, Apply

2.	First	Cartographic Techniques, GGY-HC-1026	Understanding the principle of mapping and techniques as well as different utilities in specialized needs. Knowledge of both quantitative & qualitative data presentation. Understand the principles & methods of mapping.	Cartography – Meaning, Development (Traditional and Modern Cartography) and Importance of Cartography in Geography.	Understand, Apply
				Shape and size of the earth, Coordinate system(latitude and longitude)	Understand, Apply
				Maps: Types, scale and content, representation of point, line and area in maps	Understand, Apply
				Map Projections: Concept of Map Projection, Classification of Map Projections; Choice of map projection	Understand, Apply
				Thematic mapping: Concept and types	Understand, Remember
				Construction of graphical scale (linear, diagonal and comparative); conversion of map scale	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				Preparation of thematic maps (choropleth, Isopleth and pie diagram) for representing various physical geographic data.	Understand, Remember, Apply

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3.	Second	Human Geography GGY-HC–2016	To enhance the students ability to understand the human society, human behavior in geographical	Defining the field of human geography: Meaning and Scope; Nature of human geography and its relation with other social sciences.	Understand, Remember
				Schools of human geography: Human Ecology, Landscape and Locational	Understand, Remember

			perspectives.	Paradigms of man-environment relationship study: Determinism, Possibilism, Neo-determinism, and Cultural Determinism	Understand, Remember
			Understand the natural environment and human interaction.	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.	Understand, Remember
				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.	Understand, Remember
				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 scenario.	Understand, Remember
				Traditional house types of selected ethnic groups of N.E. India and India	Understand, Remember, Apply
				Trend of population growth in the world in relation to five most populous countries of the world using line graph.	Understand, Remember, Apply
				Religious and Linguistic composition of population in the world and five most populous countries of the world using pie-graph.	Understand, Remember, Apply
				Spatial patterns of scheduled tribes population and urban population in India at state level Through choropleth map (based on percentage and LQ).	Understand, Remember, Apply
				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 and Hoyt.	Understand, Remember, Apply
				Mapping of distribution of major racial and linguistic groups of population in the world.	Understand, Remember, Apply

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4.	Second	Climatology and Biogeography GGY-HC-2026	Knowledge about different phenomena of Weather & Climate. Variation of monsoon & techniques of weather forecasting. Understanding of plant & animal association in varying habitats & environment.	Meaning of climatology and its significance in geographical studies	Understand, Remember
				Atmospheric Composition and Structure; and their variation with altitude, latitude and season	Understand, Remember
				Insolation and Temperature; Factors and Distribution and Heat Budget	Understand, Remember, Analyse
				Atmospheric Pressure and Wind system; Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams	Understand, Remember, Analyse
				Atmospheric Moisture – Evaporation, Humidity, Fog, Condensation, Precipitation Types, Stability and Instability.	Understand, Remember, Analyse
				Climatic classification of Koppen and Trewartha; Monsoon - Origin and Mechanism.	Understand, Remember
				Cyclones and anticyclones; Tropical Cyclones, Extra-Tropical Cyclone	Understand, Remember
				Meaning, Scope and Significance of biogeography	Understand, Remember
				Ecology and Ecosystem, Structure and functioning of ecosystem	Understand, Remember
				Global distribution of major plants and animals	Understand, Remember
				Biomes and Biodiversity hotspots of the world	Understand, Remember
				Soil as a component of environment , soil formation process and factors , soil composition and horizon, Soil types and their distribution in India	Understand, Remember
Interpretation of Indian Weather map for Monsoon and non-monsoon seasons/months	Understand, Remember,				

				Based on various weather symbols depicted on maps.	Apply
				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).	Understand, Remember, Apply
				Preparation of rainfall-temperature graphs; hythergraph, climograph and ergograph taking data from India/N.E. India/Assam	Understand, Remember, Apply
				Calculation of average annual rainfall and variability of annual rainfall and preparation Of rainfall distribution and variability maps (using isopleths)	Understand, Remember, Apply
				Mapping of protected areas (National park, biosphere reserve and wildlife sanctuary) of Assam/ N.E. India/India.	Understand, Remember, Apply
				Mapping of phyto-geographic and zoogeographic regions of the world.	Understand, Remember, Apply
				Mapping of Biodiversity hotspots of the world.	Understand, Remember, Apply
				Mapping of Soil types of Assam/N.E. India and Soil horizons.	Understand, Remember, Apply

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5.	Third	Economic Geography GGY-HC-3016	Knowledge about location, distribution & organization of economic activities in different spatial scale, as well as understanding man's activities, productivity in different geographic situations.	Meaning, scope and approaches of Economic Geography	Understand, Remember
				Economic activity: meaning and classification; Production system: Role of land, labour And capital.	Understand, Remember
				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.	Understand, Remember
				Manufacturing: Factors influencing industrial location; Classification	Understand,

			Understanding different farming techniques & modernization of agriculture, along with the practical utility.	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	Remember, Analyse
				Transport system: Modes of transport, factors influencing transport development and role of transport in resource mobilization and economic development.	Understand, Remember
				Trade: Factors influencing trade in different countries of the world; Trade relations of India with the countries like USA, Russia and Japan	Understand, Remember
				Trend of rice, wheat and iron & steel production in the world /USA /India since 1960 using moving average and least squares methods.	Understand, Remember, Apply
				Trend of production of wheat, rice, maize and barley in the world/USA since 1960 using Band-graph.	Understand, Remember, Apply
				Trend of balance of trade relations (export and import value) of India with USA, China and Japan in respect of major commodities since 1990 using Bar-graph.	Understand, Remember, Apply
				Regional variation in fertilizer consumption and agricultural productivity in rice, wheat and Barley in selected countries of the world using Bar-graph.	Understand, Remember, Apply
				Inter-state/Inter-nation volume of movement of selected commodities and Inter-city Movement of traffic/bus in N.E. India through flow cartogram.	Understand, Remember, Apply

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6.	Third	Geography of India with Special Reference to N.E. India GGY-HC-3026	Development of a better spatial perspective of physical & socio cultural aspects of India & NE India. These have both utilitarian & applied aspects in broader contexts.	India's location and its significance; administrative divisions	Understand, Remember
				Physical setting: Physiographic divisions and their characteristics; Climate and its seasonal and regional characteristics; vegetation; soil types and its distribution	Understand, Remember
				Population: Trend of growth, spatial variation in growth and distribution; Age and sex composition; Linguistic and religious composition	Understand, Remember
				Agriculture: Regional distribution and production patterns of rice,	Understand,

			wheat and millet	Remember
			Industry: Distribution and production patterns of iron and steel, cotton textile and fertilizers; Role of transport system in industrial development	Understand, Remember
			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	Understand, Remember
			Trend of population growth and growth rates in India and N.E. India since 1901 using Census data (Source: census india.gov.in).	Understand, Remember, Apply
			Choropleth mapping to show spatial variation in decennial population growth rate in India.	Understand, Remember, Apply
			Spatial variation in the patterns of religious composition of population in India and Social Composition of population (SC, ST and General) in N.E. India using pie-graph.	Understand, Remember, Apply
			Trend of food grains production (rice, wheat, maize, barley, jowar and bajra) in India since 1950-51 using bandgraph.	Understand, Remember, Apply
			Map showing distribution of major tribal groups in North-East India.	Understand, Remember, Apply
			Field Report: 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(s).	Understand, Remember, Apply Preparation of observational Field study report

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7.	Third	Quantitative Methods in Geography GGY-HC-3036	Having detailed understanding of different statistical method used for analyzing different geographical data.	Quantification and its significance in geographical study; advantages and limitations of quantitative methods in geography	Understand, Remember
				Geographical Data: Nature, types and sources; scale of measurement (nominal, ordinal, Interval and ratio)	Understand, Remember
				Measures of central tendency (mean, median and mode) and dispersion (range, quartile deviation, mean deviation, standard deviation and coefficient of variation) and their applications in geographical data analysis	Understand, Remember, Apply, Analyse
				Sampling techniques: meaning of sampling and its need; types of sampling (simple random And stratified random)	Understand, Remember, Apply, Analyse
				Time series analysis and its applications in geographical studies; Basic techniques of time series data analysis (semi-average, moving average and least squares)	Understand, Remember, Apply, Analyse
				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	Understand, Remember, Apply, Analyse
				Tabulation/Grouping of geographical data for making frequency distribution table; Preparation of Histogram, Frequency Polygon and Frequency Curve	Understand, Remember, Apply
				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 centrophraphic measure).	Understand, Remember, Apply
				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 patterns.	Understand, Remember, Apply
				Analysis of time series data of some geographical phenomena (rainfall, production, export value, import value, etc) using moving average and least squares methods.	Understand, Remember, Apply

				Computation of coefficient of correlation between two logically associated 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.	Understand, Remember, Apply
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8.	Third	Thematic Cartography GGY-SE-3024	Develop the Skills of mapping techniques as well as different utilities in specialized needs. Understanding the principles of Aerial photography & Satellite imageries. Knowledge of both quantitative & qualitative data presentation.	Thematic cartography: meaning and importance	Understand, Remember
				Thematic Mapping: Principles and techniques of representation of physical and human geographic data (point, line, polygon)	Understand, Remember
				Concepts and principles of cartographic overlay and mapping	Understand, Remember
				Concept of base map; Types of thematic map; map reading; map design, layout and typography	Understand, Remember
				Techniques of interpretation of Topographical maps, satellite imageries and aerial photographs for thematic mapping	Understand, Remember
				Preparation of an administrative/physical map of India containing necessary map elements using appropriate typography.	Understand, Remember, Apply
				Preparation of thematic maps for representing human geographic data using choropleth, isopleth, dot, sphere and proportionate circle techniques.	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				Locational accessibility mapping based on travel time through isochronic cartogram.	Understand, Remember, Apply
				Preparation of landuse / landcover map through visual interpretation of satellite imagery using appropriate classification scheme.	Understand, Remember, Apply

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9.	Fourth	Environmental Geography and Disaster Management GGY-HC-4016	Better understanding of the surrounding environment. Knowledge of different environmental issues from local to global perspectives. Increasing awareness along with knowledge of ways to cope up to adversities and paving the ways to sustainable development.	Environmental Geography: Nature, Scope and Significance	Understand, Remember
				Human-Environment Relationships – Historical progression, Adaptation in different Biomes	Understand, Remember
				Major Global Environmental Problems: Pollution, Deforestation, Desertification, Global Warming, and Bio-Depletion	Understand, Remember, Evaluate
				Meaning of Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster (Natural and Manmade)	Understand, Remember, Evaluate
				Disaster Management Cycle and Phases: Prevention, Preparedness, Response, Rehabilitation, Reconstruction and Mitigation	Understand, Analysis
				Major Hazards and Disasters, and their Management: Flood, Earthquake, Wildfire, and Chemical and Nuclear explosions	Understand, Remember, Evaluate
				National Environmental Policy and National Disaster Management Plan: Environmental Protection Act 1986 and Disaster Management Act 2005	Understand, Remember
				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 there from. (Goalpara, Palashbari, Nimatighat, etc.) Satellite images: https://earthexplorer.usgs.gov/ Survey of India toposheets: https://soinakshe.uk.gov.in/mtr/	Understand, Remember, Apply
				Mapping of major wetlands in a district and computation of shape and size (area) based distribution.	Understand, Remember, Apply
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).	Understand, Remember, Apply				

				Preparation of a long-term precipitation time series curve for any selected station of N.E. India using moving average method by 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/ . Students can also explore the web portal https://mausam.imd.gov.in/ to get an idea of different types of weather data in Understand, Remember, Apply India and their historical and present distribution.	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				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.	Understand, Remember, Apply

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10.	Fourth	Population and Settlement Geography GGY-HC-4026	The course will enable the students to develop an understanding of the influence of population trends on the various aspects of human life – social, cultural, political and economic.	Defining the field of population geography: nature and scope; Its relation with demography	Understand, Remember
				Sources, characteristics and problems of population data; Perspectives on Census of India publications – Primary Census Abstract, District Census Hand-Book, Sample Registration System, etc	Understand, Remember
				Distribution and density of population: Factors influencing population distribution and density; global pattern of population distribution; population density regions in the world	Understand, Remember
				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	Understand, Remember

		Understanding settlement both rural & urban contexts, to prepare sustainable environment	Theories of population growth: Malthusian Theory and Demographic Transition Theory	Understand, Remember
			Population composition and associated characteristic patterns in global contexts: Age-Sex Composition; Rural-Urban Composition; Contemporary population issues – population ageing, declining sex ratio, pandemics	Understand, Remember
			Defining the field of settlement of geography: Nature and scope	Understand, Remember
			Rural and urban settlements: Factors influencing distribution pattern of settlements; Types of rural settlements; Characteristics of rural and urban settlements.	Understand, Remember
			Morphology of rural and urban settlements; Burgess theory of internal structure of a town	Understand, Remember
			Concept of settlement hierarchy, primate city and urban fringe; Christaller's Central Place Theory	Understand, Remember
			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.	Understand, Remember, Apply
			Choropleth map to show spatial pattern of decadal variation in population growth in Assam/N.E. India/India.	Understand, Remember, Apply
			Choropleth map showing spatial pattern of population density in Assam/India.	Understand, Remember, Apply
			Calculation of distribution pattern of settlements in an area using Nearest Neighbour Analysis.	Understand, Remember, Apply
			Map showing spatial variation in social/religious/rural-urban composition of population in Assam/N.E. India using pie-graph.	Understand, Remember, Apply
			Choropleth map showing spatial pattern of level of urbanization in Assam/N.E. India.	Understand, Remember, Apply
		Map showing distribution of towns and their varied population size with spheres in Assam/N.E. India.	Understand, Remember,	

					Apply
				Flow cartogram showing direction and volume of migration into Assam/N.E. India from different parts of India.	Understand, Remember, Apply

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11.	Fourth	Remote Sensing, GIS and GPS GGY-HC-4036	Knowledge about the remote sensing process, the scientific and technical base. Understanding how GIS / GPS works, compose, application in spatial analysis from theoretical perspectives.	Remote Sensing: Definition and History of Development	Understand, Remember
				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	Understand, Remember, Analyse
				Remote Sensing data products, sources and characteristics; Elements of Image Interpretation (Visual & Digital); Digital Image Processing: Image Enhancement and Classification (Supervised and Un-supervised)	Understand, Remember
				Application of Remote Sensing: Land, Vegetation and Water	Understand, Remember
				Geographical Information System (GIS): Definition, Development, Components, and Functions; Open source GIS	Understand, Remember
				GIS Data Types & Structures: Spatial and Non-Spatial Data; Raster and Vector Data Structure, Database Management System (DBMS)	Understand, Remember
				Data Layer Extraction and Spatial Analysis: Buffer, proximity and overlay analysis	Understand, Remember
				Application of GIS in geographical studies (Land Suitability analysis, Network analysis, Flood damage estimation)	Understand, Remember
				Global Positioning System (GPS): Types, basic principles and functions; Different Navigational Systems	Understand, Remember
				Application of GPS in surveying and mapping	Understand, Remember
				Visual Interpretation of Aerial photograph and Satellite Imagery and preparation of thematic maps based on appropriate classification	Understand, Remember,

				scheme.	Apply
				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.	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				GPS data collection, plotting and mapping of various features within college campus.	Understand, Remember, Apply
				Basic Remote Sensing and GIS Software's for practical works: Arc GIS/Erdas Professional /Q-GIS/SAGA GIS.	Understand, Remember, Apply

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12.	Fourth	Advanced Statistical Techniques for Spatial Analysis GGY-SE-4014	Having detailed understanding of advanced statistical method and used for analyzing different geographical data.	Statistics and Geography: Role of statistics in geographical studies; Nature of geographical data and selection of statistical techniques for spatial analysis (Basic understanding)	Understand, Remember
				Application of the measures of central tendency (mean, median, mode and weighted mean) and dispersion (standard deviation, coefficient of variation, coefficient of skewnes and standard distance) in geographical data analysis and spatial distribution pattern analysis.	Understand, Remember, Apply
				Application of probability distributions (Normal, poisson and binomial) in understanding various geographical phenomena; Characteristics / Properties of normal distribution	Understand, Remember
				Meaning and importance of sampling in geographical studies; Types of sampling (probability and non-probability sampling) and their relative merits and demerits; Concept of large and small samples	Understand, Remember
				Correlation and regression analysis in geography: Rank correlation and product-moment correlation coefficient; Linear regression and regression residuals; Concept of multiple correlation and regression.	Understand, Remember

				Introduction to the concept and application of Location quotient; Disparity or Differential index; Nearest Neighbour Analysis; Data standardization through ranking method for computation of composite score.	Understand, Remember, Apply
				Setting of hypothetical data of a geographical phenomenon for normal, positively skewed and negatively skewed distributions, calculation of mean, median, mode and coefficient of skewness, and representation of the positions of mean, median and mode in the respective frequency distribution curves.	Understand, Remember, Apply
				Graphical representation of median and mode for a given set of grouped data of a geographical attribute.	Understand, Remember, Apply
				Determination of the spatial mean centre(s) of population /urban population in Assam/ N.E. India.	Understand, Remember, Apply
				Computation of correlation coefficient (both rank and product-moment), fitting of regression line of Y on X and preparation of regression residual map for a set of meaningful bi-variate geographical data of Assam/N.E. India/India.	Understand, Remember, Apply
				Analysis of appropriate geographical data for computation/representation of LQ, gender disparity in literacy or work participation, and composite scores of socio-economic development (ranking technique). Statistical Software Package (SPSS, MS Excel, R, etc.) may also be used for practice.	Understand, Remember, Apply

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13.	Fifth	Social and Political Geography GGY-HC-5016	Understanding different social & political components of a man-made environment. Knowledge about social	Social Geography: Meaning and scope; its approaches of study; and contemporary trend of its development	Understand, Remember
				Concept and types of social space and social groups	Understand, Remember
				Social Well-being: Concept and Component: Housing, Health and Education; Concept of Human development and its measurements	Understand, Remember

			components like language, religion, ethnicity & political components like boundaries, frontiers.	Contribution of race, religion, language and ethnicity in promoting diversity in India	Understand, Remember
				Social Geographies of inclusion and exclusion: Caste system, slums, gated communities, communal conflicts and crime; Gender identity	Understand, Remember
				Political Geography: Nature, scope and recent trends; Approaches to its study	Understand, Remember
				Concept of state, nation, and nation-state; Attributes of State	Understand, Remember
				Concept of Geopolitics, Heartland and Rimland; Mackinder's Heartland Theory	Understand, Remember
				Concept of colonialism, neo colonialism and lebensraum	Understand, Remember
				Mapping the spatial patterns of human development in India and Assam using HDI.	Understand, Remember, Apply
				Construction of Ternary Diagram representing social composition of population in India/North East India.	Understand, Remember, Apply
				Level of Social well-being with the help of composite Z-score in India /North-East India.	Understand, Remember, Apply
				Sex disparity in literacy in India/North-East India using Sopher's Disparity Index.	Understand, Remember, Apply
				Computation of Shape Index for selected states of India and countries.	Understand, Remember, Apply
				Construction of a map of India/North-East India highlighting the major inter-state boundary conflict zones.	Understand, Remember, Apply
				Reorganization of the states of North-East India during Pre and Post Independence periods (up to the present).	Understand, Remember, Apply

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14.	Fifth	Field Techniques in Geography GGY-HC-5026	To enhance students basic research ability & different techniques used for field survey.	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	Understand, Remember
				Concept of Case Study and Its identification in the varying geographical contexts (Physical/Human/Rural/Urban/Environmental)	Understand, Remember
				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 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.	Understand, Remember, Evaluate, Create
				Surveying: Concept of ground surveying and mapping; Conduct of traverse surveying with Prismatic Compass; Profile levelling and contouring with Dumpy Level; Point distribution survey with GPS; Field mapping of Village, River bank, Wetland, Landslides, Market, etc through Transect, Quadrant and sketch map.	Understand, Remember
				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	Understand, Remember, Apply
				Field Book Preparation and Evaluation	Understand, Remember
				Field observations of a near-by area and preparation of a brief report , about the prevailing physical and human landscape of the area along with its spot photograph	Understand, Remember, Apply
				Preparation of two field survey questionnaire /schedule 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	Understand, Remember, Apply
				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	Understand, Remember, Apply

			any	
			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.	Understand, Remember, Apply
			Collection of point data from an area with handheld GPS and preparation of a GPS data table and distribution map with downloaded data	Understand, Remember, Apply
			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	Understand, Remember, Apply
			Field Book Preparation: Field observations of a near-by area and preparation of a brief report about the prevailing physical and human landscape of the area along with its spot photograph.	Understand, Remember, Apply
			Preparation of two field survey questionnaire/schedule 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.	Understand, Remember, Apply
			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.	Understand, Remember, Apply
			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.	Understand, Remember, Apply
			Collection of point data from an area with handheld GPS and preparation of a GPS data table and distribution map with downloaded data.	Understand, Remember, Apply
			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.	Understand, Remember, Apply

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15.	Fifth	Regional Development and Planning GGY-HE-5026	Understanding different regional components, regional development, approaches & technique induced. Knowledge about need of conservation & management of resources for regional development.	Region: Concept, types and delineation techniques of a region.	Understand, Remember
				Regional planning: Evolution and types; Objectives and principles of Regional Planning.	Understand, Remember
				Regional Planning in India: Macro, meso and micro level planning; Local level planning and Panchayati Raj (GPDP); Participatory approach in planning; NITI Aayog.	Understand, Remember
				Planning regions of India with special reference to North-East India.	Understand, Remember
				Concept of Development: Growth versus development; Concept of sustainable development and balanced development.	Understand, Remember
				Regional Development theories and models: Concept and basic ideas of Growth Pole Model of Perroux; Cumulative Causation Theory of Myrdaland Stages of Economic Growth model of Rostow.	Understand, Remember
				Human development: Meaning and concept of Human Development Index; Concept of Happiness Index.	Understand, Remember, Apply
				Disparity of Regional Development in India: Development indicators; Measuring level of development; Pattern of regional development in India with special reference to North-East India; Role of NEC and DoNER Ministry towards development of the NE Region.	Understand, Remember
				Delineation of agricultural productivity regions in Assam/NE India by using weighted index number and Bhatia's method.	Understand, Remember, Apply
				Delineation of influence zones of selected urban centres of Assam/ NE India by using Reilly's Breaking Point formula.	Understand, Remember, Apply
Preparation of land use maps of any suitable area for two different points of time for identifying the changes in settlement, agriculture land, forest cover, water bodies, etc. during the period; and representation of data generated from there in a graph.	Understand, Remember, Apply				

				Preparation of a choropleth map to show regional disparity in development in India And N. E. India based on selected indicators using Ranking Method and Composite Z-Score method.	Understand, Remember, Apply
				Preparation of flow cartogram to show volume of inter-state movement of different commodities in India/NE India.	Understand, Remember, Apply

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16.	Fifth	Agricultural Geography GGY-HE-5046	Understand the basic agricultural pattern in local, regional & global contexts. The students will be able to know the problems & prospects of agriculture at different geographical scale.	Agricultural Geography: Meaning and Scope, Significance; Its approaches of study	Understand, Remember
				Factors influencing agriculture: Physical, Socio-economic, Infra-structural and Institutional.	Understand, Remember
				Agricultural Systems and Types: Global Agricultural Systems; Agricultural types: Intensive and Extensive, Subsistence and Commercial, Plantation Farming, Mixed Farming, Horticulture and Market Gardening	Understand, Remember
				Von Thunen's Model of Agricultural Location; Concept of Land Rent and Market forces	Understand, Remember
				Concept of cropping patterns: Crop Combination (Nelson's Method), Crop concentration, Intensity of cropping and Crop rotation	Understand, Remember
				Agricultural Modernization and Development: Concept of agricultural modernization; Inputs of agricultural modernization (mechanization, Irrigation, HYV seeds, fertilizers etc.); Concept of crop productivity and agricultural development	Understand, Remember
				Factors, distribution and production patterns of rice, wheat and sugarcane in the world	Understand, Remember
				India's agriculture: Major characteristics and problems; Green revolution; agro climatic regions	Understand, Remember
				Trend of production of major food grains (rice, wheat, maize etc.) in India/ selected States using moving average method.	Understand, Remember, Apply

				Preparation of the crop- combination Map of Assam/ North East India based on Nelson's method.	Understand, Remember, Apply
				Agricultural productivity pattern in Brahmaputra Valley/Assam/ N E India based on Kendall's Ranking Method.	Understand, Remember, Apply
				Mapping of spatial pattern of Intensity of Cropping in Assam/ North East India	Understand, Remember, Apply
				Spatial variation in land use pattern in Brahmaputra valley/ North East India with Pie diagram.	Understand, Remember, Apply
				Spatial pattern of crop concentration in North East India/ Assam using Location Quotient Method.	Understand, Remember, Apply
				Spatial pattern of level of agricultural development in Assam/ N E India using Composite Z-Score.	Understand, Remember, Apply
				Correlation and regression analysis between irrigation and cropping intensity in Assam/N.E. India.	Understand, Remember, Apply

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17.	Sixth	Geographical Thought GGY-HC-6016	Develop a comprehensive understanding of the subject. Apply the contemporary & historical perspective to explain the approach into the real world geographic problem.	Early development of Geography: Ancient, dark age, medieval, and age of exploration and discoveries	Understand, Remember
				Foundation of modern geography: Contribution of the German, French, British and American geographers	Understand, Remember
				Evolution of geographical thought: Determinism, possibilism, neo-determinism, human ecology, cultural landscape and areal differentiation	Understand, Remember
				Recent trends in geography: Quantitative revolution and its impact, logical positivism, locational school of thought, behaviouralism,	Understand, Remember

			humanistic geography and post-modernism.	
			Geographical debates: Regional and systematic; ideographic and nomothetic	Understand, Remember
			Models in geography: Meaning, types and significance; basic concepts of Gravity Model, Spatial Diffusion Model and Distance Decay Model	Understand, Remember
			Mapping of routes of exploration and discoveries (Marco Polo, Christopher Columbus, Vasco-da-gama, and James Cook)	Understand, Remember, Apply
			Intensity of spatial interaction of Guwahati city with neighbouring urban centres.	Understand, Remember, Apply
			Mapping of population potential surfaces in Assam using the gravity model.	Understand, Remember, Apply
			Demarcation of urban influence zone by using Reily's breaking point formula.	Understand, Remember, Apply
			Population Density gradient analysis of Guwahati or any other city.	Understand, Remember, Apply
			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.	Understand, Remember, Apply
			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.	Understand, Remember, Apply
			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.	Understand, Remember, Apply

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18.	Sixth	Research Methods in Geography and Project Work GGY-HC-6026	This course will help students how to proceed with research problem & the steps one should adopt & the tools and craft a geographer usually applies.	Meaning and significance of research; types of research; Basics of research methodology; Review of literature and its need; Ethics of research	Understand, Remember
				Geographic Research: Meaning and Characteristics; Formulation of research problem	Understand, Remember
				Research Design: Statement of the problem, Review of research works, Objectives, Research questions, Hypotheses, Database and methodology, Significance, Organization of the Work and Referencing	Understand, Remember
				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 computerised)	Understand, Remember, Apply, Evaluation
				Statistical Analysis of Data: Qualitative data analysis; Quantitative data analysis; Data representation (Manual and computerised)	Understand, Remember
				Structure of a Research Report: Preliminaries; Text; Tables, Figures and Appendices; Citations, References and Bibliography; Research/Project Report Writing; Executive Summary	Understand, Remember
				Project Report Preparation and Evaluation: 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.	Understand, Remember & Preparation of field study report

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19.	Sixth	Geography of Health GGY-HE-6016	It provides the scope to develop a better understanding of different aspects of health. Increasing awareness towards diseases & healthcare facilities required	Geography of Health: Definition and significance; approaches of study: ecological, social and spatial; dualism between medical geography and geography of health.	Understand, Remember
				Disease ecology: ecology and human health; geographical factors affecting human health; factors influencing disease transmission (pathological, physical, environmental, social, cultural and economic); Diffusion of diseases and their causes in varied biotic, physical and cultural environments.	Understand, Remember

			for better HDI.	Classification of diseases: genetic, zoonotic, communicable, non-communicable, occupational, deficiency diseases and malnutrition.	Understand, Remember
				Disease occurrence: emergence, re-emergence and persistence; modes of transmission of major diseases (Malaria, Japanese encephalitis, tuberculosis, hepatitis, AIDS and COVID-19) and their broad global distribution.	Understand, Remember, Evaluate
				Healthcare systems: Meaning and components; Universal government-funded health system; Role of WHO and UNICEF in global health care; SDG3 for good health and Well-being; Healthcare services in India: family welfare, immunization, National Health Mission and its programmes, health for all programmes, challenges to health care system during pandemic situation like COVID-19.	Understand, Remember
				Environment, human habit and health: Basic concept and ideas relating to food habit and health, occupation and health, environmental degradation and health, lifestyle and human health.	Understand, Remember
				Mapping of health status indicators (hospital beds, primary health centres, doctors, para-medics, etc.) in Assam/N.E. India using Z-score method.	Understand, Remember, Apply
				Trend of infant mortality and maternal mortality rates in India in relation to selected developed and developing countries using line graph.	Understand, Remember, Apply
				Choropleth mapping of infant mortality in India at state level.	Understand, Remember, Apply
				Correlation analysis between any physical determinants (monthly rainfall/monthly average temperature) and epidemiological incidence of a disease (monthly malaria cases) in any district of Assam.	Understand, Remember, Apply
				Map showing spatial variation of disease incidence rate in India/N.E. India at state level.	Understand, Remember, Apply
				Mapping of seasonal variation in the occurrence of Covid-19 cases in Assam at district level using pie graph.	Understand, Remember, Apply
				Preparation of questionnaire for healthcare and health status survey.	Understand, Remember,

					Apply
				Computation of distribution pattern of hospitals, health centres, etc. using nearest neighbour analysis.	Understand, Remember, Apply

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20.	Sixth	Geography of Tourism GGY-HE-6036	To understand the importance of tourism for development. Development of better spatial perspective of tourism industry at different geographical scale.	Geography of Tourism: Nature and scope; Concepts and Issues of tourism; Recreation and leisure inter-relations; Robinson's geographical parameters of tourism.	Understand, Remember
				Factors and types of tourism: Nature tourism, Cultural tourism, Medical tourism, Agri-tourism, Adventure tourism, Pilgrimage, etc.	Understand, Remember
				Recent trends in tourism: International and Domestic (India); Eco-Tourism; Sustainable tourism; Meetings, Incentives, Conventions and Exhibitions (MICE)	Understand, Remember
				Impact of tourism on economy, environment and society.	Understand, Remember
				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.	Understand, Remember
				Trend of growth of tourist arrivals in the World/India/Assam since 1960 using Moving average method and least squares method.	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				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.	Understand, Remember, Apply
				Spatial Patterns of Seasonal variation (Spring, Summer, Autumn and Winter) in tourist arrival in capital cities of North-East Indian states using Pie diagram and Bar Diagram.	Understand, Remember, Apply

				Preparation of a transport connectivity (road, railway and air) map of Assam/North-East India for major tourist destinations.	Understand, Remember, Apply
				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)	Understand, Remember, Apply
				Preparation of a tourist guide map of North-East India showing location of major tourist destinations and road connectivity routes from Guwahati city.	Understand, Remember, Apply
				Mapping of trekking route in a hilly area suitable for adventure tourism using GPS (Field based).	Understand, Remember, Apply