



DEPARTMENT OF GEOGRAPHY

BIMALA PRASAD CHALIHA COLLEGE, NAGARBERA



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Date: 09-06-2023

COURSE PLAN

GEOGRAPHY (MAJOR COURSE)

<u>1st Year</u> Semester	Paper	Marks	Class	Credit
	per week			
1st	101 (Theory)	75	6	6
	102 (Theory)	75	6	6
	103 (Practical)	50	4	4
2nd	201 (Theory)	75	6	6
	202 (Theory)	75	6	6
	203 (Practical)	50	4	4
<u>2nd</u> <u>year</u>				
3rd	301 (Theory)	75	6	6
	302 (Practical)	75	6	6
	303 (Practical)	50	4	4
4th	401 (Theory)	75	6	6
	402 (Theory)	75	6	6
	403 (Practical)	50	4	4
<u>3rd</u> <u>year</u>				
5th	501 (Theory)	75	6	6
	502 (Theory)	75	6	6

	503 (Theory)	75	6	6
	504 (Theory)	75	6	6
	505 (Practical)	75	6	6
	506 (Practical)	75	6	6
6th	601 (Theory)	75	6	6
	602 (Theory)	75	6	6
	603 (Theory)	75	6	6
	604 (Theory)	75	6	6
	605 (Practical)	75	6	6
	606 (Practical)	75	6	6

FIRST SEMESTER

PAPER 101: UNDERSTANDING GEOGRAPHY

NAME OF TEACHER: PROF. BISHNU RAM TALUKDAR

TOTAL MARKS: 75

TOTAL CREDIT : 6 (TOTAL NUMBER OF CLASSES: 60)

TOTAL UNITS: 4

Unit 1 : Field of Geography (two questions) (24 classes)

Nature and scope of Geography: Geography as a spatial science, present day relevance of Geography, Geography as interdisciplinary and integrated discipline.

Unit 2 : Development Trend of Geography (one question) (12 classes)

Development of Geography through ages – ancient, medieval, modern and contemporary

Unit 3 : Physical versus Human Geography (one question) (12 classes)

Physical Geography and Human Geography: Nature, Contents and Interrelationship

Unit 4: Basic Concepts in Geography (one question)

Spatial context, spatial variation, spatio-temporal variation, spatial association, spatial interaction, spatial diffusion, spatial organization, human ecology, system concept.

FIRST SEMESTER

PAPER 102: BASIS OF GEOMORPHOLOGY

NAME OF TEACHER: PROF. ANITA KEOT

TOTAL MARKS : 75

TOTAL CREDIT : 6 (TOTAL NUMBER OF CLASSES: 60)

NO OF UNITS: 2

Unit 1 : Bases of Physical Geography (one question of 13 marks) (12 classes) **13**

- The nature and scope of Physical Geography
- Branches of Physical Geography, Relation of Physical Geography with other branches of earthsciences
- The place of Geomorphology in Physical Geography, Branches of Geomorphology – Structural, Fluvial, Glacial, Arid, Coastal and Tropical

Unit 2 : Concepts in Geomorphology (four questions of 13 marks each) (28 classes) **52**

- Structure and composition of earth's crust and interior
- Origin and development of major landforms – Views of Alfred Wegener, Lowthian Green
- Concept of Isostasy and Eustatism
- Earth Movements - Orogenic and Epeirogenic movements
- Mountain Building Theories of L. Kober and Arthur Holmes
- Concept and theory of Plate Tectonics
- Earthquakes and Volcanoes – their causes and geomorphic impact
- Development of landforms under Normal, Arid and Glacial conditions : Views of W.M. Davis, W. Penck and L.C. King
- Concept of relief and relief features – mountains, plateaus, hills, foothills, valleys, plains and floodplains.

FIRST SEMESTER

PAPER 103: GEOMORPHOLOGY PRACTICAL

NAME OF TEACHER: PROF. GANESH CHANDRA DAS

TOTAL MARKS : 50

UNITS: 4 (INCLUDING VIVA)

TOTAL CREDIT: 4 (TOTAL NUMBER OF CLASSES: 40)

Unit 1: Representation of Relief through Profiles (12 classes)

- Relief representation through serial profiles, superimposed profiles, composite profiles and projected profiles
- Demarcation of basin and representation of basin relief through profiles and their interpretation

Unit 2: Representation and Interpretation of Relief and Slope (20 classes)

- Expression of slope in gradient and percentage forms from contour differences identified on a Topographical Map
- Preparation of Relative Relief Map using Smith's Method from Topographical Maps
- Drawing and analysis of Average Slope Map by Wentworth's Method
- Drawing of Longitudinal Profiles of (i) Himalayan and (ii) Indian Peninsular Rivers from Topographical Maps and comparative interpretation of profiles in terms of their geomorphic characteristics
- Representation of interrelationship among the physical and cultural features from Topographical Maps and Interpretation
- Mapping of the major crustal plates of the earth

Unit 3: Identification of Common Rocks and Listing of their Characteristics (8 classes)

- Identification of sedimentary rocks and listing of their characteristics (sandstone, shale, limestone, coal, breccias and conglomerate)
- Identification of igneous rocks and listing of their characteristics (granite, gabbro, syenite, diorite, grabbro, periodolite)

SECOND SEMESTER

PAPER 201: OCEANOGRAPHY AND CLIMATOLOGY

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

TEACHER NAME: PROF. ANITA KEOT

Unit I: OCEANOGRAPHY

- Nature and scope of Oceanography
- Distributional pattern of land, sea and oceans
- Bottom Relief of Oceans – Atlantic Ocean, Indian Ocean, Pacific Ocean
- Waves and currents of Ocean water – Origin, type, characteristics and impact of ocean current and waves,
- Ocean deposits- their types distribution and characteristics
- Man and ocean: Ocean resources and their influences on man

Unit 2: Climatology (36 classes)

(Three questions of 13 marks each)

- Nature and scope of Climatology and its importance in Geography
- Structure, composition and characteristics of Earth's atmosphere
- Elements and factors of weather and climate
- Distribution of temperature over the earth's surface- Horizontal, vertical and seasonal variation
- Global Pressure belts and wind system : origin, type and characteristics of air mass; formation and characteristics of cyclones and anticyclones

SECOND SEMESTER

PAPER 202: WORLD REGIONAL GEOGRAPHY

TOTAL MARKS: 75

NAME OF TEACHER: PROF BISHNU RAM TALUKDAR

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: The World Geography in regional context

- (24 classes) (Two questions of 13 marks each) **26**
- World Regional Geography : An overview
 - Brief regional account of the continents: Physiography, Climate, Natural Vegetation, Population growth, Density and distribution, major population density zones.

Unit 2: Profile of developed and developing nations

- (12 classes) (One questions of 13 marks each) **13**
- Developed and developing nations: Demographic, Social and Economic Profile.

Unit 3: Regional Geography of Asia (24 classes) **26**

- (Two questions of 13 marks each)
- Regional Geography of Asia: Location, Physiography, Climate, Population growth and distribution, agriculture and industries.

SECOND SEMESTER

PAPER 203 (PRACTICAL ON OCEANOGRAPHY, CLIMATOLOGY AND WORLD REGIONAL GEOGRAPHY)

NAME OF TEACHER: GANESH CHANDRA DAS

TOTAL MARKS: 50

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 40)

Unit I: Practical on Oceanography (one question) (10 classes) **10**

- Drawing and interpretation of
- Hypsometric/ hypsographic curves of land surface and ocean bottom

- Bathymetric curves of Atlantic and Indian Oceans
- Ocean currents on a Mercator's Chart
- Major sea ports on a world map
- Bottom relief features of Indian and Atlantic ocean

Unit 2: Practicals on Climatology (two questions) (20 classes)

20

- Construction of a schematic diagram of the vertical layers of earth's atmosphere and tabulation of compositional characteristics
- Drawing and interpretation of rainfall-temperature-humidity graph of tropical, sub-tropical and temperate regions/stations
- Drawing of climograph and hythergraph and their interpretation
- Study of weather condition depicted by Indian Weather maps and prediction of weather conditions for next 48 hours
- Calculation of average annual rainfall and variability of annual rainfall, and mapping and interpretation thereof

Unit 3: Practical on World Regional Geography (one question) (10 classes)

10

- Showing trend of world population growth by line/bar graph
- Mapping and interpretation of world population density
- Demarcation of developed, developing and underdeveloped countries on a world map based on appropriate social and economic indicators
- Showing location of the megalopolis, and metropolitan and port cities of the world
- Mapping interrelationship of climatic and vegetation zones of Asia through superimposition by proportionate spheres
- Plotting locations of Million Cities of India circle and interpretation
- Showing the distribution of major rivers and lakes on a map of Asia

THIRD SEMESTER

PAPER 301: SOIL AND BIOGEOGRAPHY

NAME OF TEACHER: PROF. BISHNU RAM TALUKDAR

TOTAL MARKS: 75

TOTAL CREDIT: 6

Unit Soil Geography (Two questions each carrying 13 marks) (24 classes) **26**

1:

- Nature and scope of soil geography
- Soil as a basic component of environment, soil as life supporting system
- Soil profile (Soil horizon) – their characteristics and significance
- Physical properties of soil: Soil texture, classification of soil according to texture
- Chemical properties of soil: Soil colour, pH value
- Processes and factors of soil formation
- Soil types and their characteristics

Unit Biogeography (Three questions each carrying 13 marks) (36 classes) **39**

2:

- Definition and scope of biogeography
- Biosphere: its concept and components, vertical and horizontal limits of biosphere
- Ecology and ecosystem: concept and relevance in biogeography
- Global distribution and characteristics of major plants and animals
- Concept of biodiversity, its types and conservational issues
- Biogeographic regions of the world
- Nature and distribution of biodiversity in N.E. India and Assam
- Man as an agent of environmental/ecological change

THIRD SEMESTER

PAPER 302: ECONOMIC GEOGRAPHY

NAME OF TEACHER: PROF GANESH CHANDRA DAS

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: The Field of Economic Geography

(one question of 13 marks)(12 classes) **13**

- Meaning and scope
- Approaches in economic geography: regional, systematic and sectoral

Unit 2: Geography of Resource

(Two questions of 13 marks each) (24 classes) **26**

- Concept of resources and resource classification; natural and human resources, renewable and non-renewable resources, biotic and abiotic resources; conservation of resources
- Distribution and production of resources in global context: Forests, Coal, Iron ore, Water

Unit 3: Geography of Economic Activity

(Two questions of 13 marks each) (24 classes) **26**

- Classification of economic activity
- Agriculture: physical and socio-economic factors influencing agriculture; types of agriculture; major food crops and cash crops, their distribution and production: Rice & wheat, Sugar- cane, Tea, Cotton.
- Industry: Factors of industrial location, classification of industries, distribution and production of iron and steel, textile, petro-chemicals.

THIRD SEMESTER

PAPER-303: PRACTICAL ON BIOGEOGRAPHY & ECONOMIC GEOGRAPHY AND FIELD STUDY

NAME OF TEACHER: PROF. ANITA KEOT (UNIT I AND II) AND PROF GANESH
CHANDRA DAS (UNIT III)

TOTAL MARKS – 50

TOTAL CREDIT: 4 (TOTAL NUMBER OF CLASSES: 40)

Unit1: (2 questions carrying 10 marks each)(25 classes) **20**

- Construction and interpretation of soil profile with the data derived from the field (collegecampus/ river site/ foot hill, etc.)
- Drawing and interpretation of soil map of India/North East India
- Mapping of vegetation of India/north east India
- Representation of soil-vegetation relationship along selected cross-section of India and North-East India
- Mapping of the national parks and sanctuaries of India with the major species therein.

Unit 2: (One question carrying 10 marks)

(15 classes) **10**

- Cartographic representation of economic data of India/N.E. India in spatio-temporal contexts :pie-graph, line graph, bar graph and choropleth mapping
- Trend analysis of production, etc. of India/N.E. India using moving average method
- Transport network analysis using connectivity indices(alpha, beta & gamma).

Unit 3: Field study report & Viva-voce **5+5= 10**

Unit 4: Evaluation of Practical Note Book & viva-voce **3+2= 5**

FOURTH SEMESTER

PAPER 401: FORMS AND PROCESSES IN GEOMORPHOLOGY

NAME F TEACHER: PROF BISHNU RAM TALUKDAR

TOTAL MARKS – 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Geomorphic processes (2 questions)(24 classes) 26

- Geomorphic agents: concept, types and processes
- Endogenetic processes of folded and faulted landform development
- Exogenetic processes of landform development : their processes of weathering, mass-wasting and erosion
- Processes of landform development in hills and mountains areas, foothill and piedmont areas, alluvial plain and floodplain areas

Unit 2: Drainage basin processes and landforms (2 questions) (24 classes) 26

- Concept of drainage basin, catchment and watershed
- River as a fluvio-geomorphic agent; evolution of drainage network and basin; drainage pattern and its relationship with underlying rock structure; development of basin landform features, viz. natural levee, floodplain, alluvial fan and cone.
- Channel processes and landforms : channel pattern, channel changes with time, characteristics of channel long and cross profiles

Unit 3: Geomorphic hazards and landforms (1 question)(12 classes) 13

- Flood, river bank erosion and landslide as geomorphic hazards – their causes, processes and impact on land and people.
- Geomorphic Hazard Management and Planning

FOURTH SEMESTER PAPER 402: HUMAN GEOGRAPHY

NAME OF TEACHER : ANITA KEOT

TOTAL MARKS – 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit1: Nature of human geography and its development (one question) (12 classes) **13**

- Definition and contents; human versus physical geography; branches of Human Geography; Development of Human Geography; Contributions of German and French Geographers.

Unit 2: Approaches and schools in human geography

(one question) (12 classes) **13**

- Approaches: determinism, possibilism, human ecology and positivism; Schools: ecology, landscape, locational, welfare and humanistic.

Unit 3: Man-environment relationship (one question) (12 classes) **13**

- Elements of environment; physical and human environment; constraints and opportunities of the environment; impact of environment on man; impact of man on environment; environmental problems.

Unit 4: Human response to environment (one question) (12 classes) **13**

- Human adjustment, mode of living and emerging problems in different environments: cold desert, mountain, plain, hot desert, coastal and riverine lands.

Unit 5: Major races (one question) (12 classes) **13**

- Physical characteristics and distribution of the major racial groups (Caucasoid, Mongoloid and Negroid); Origin and diffusion of major racial groups in the world; Linguistic and religious regions in the world.

FOURTH SEMESTER

PAPER 403: PRACTICAL ON GEOMORPHIC PROCESSES

NAME OF TEACHER: BISHNU RAM TALUKDAR

TOTAL CREDIT : 4 (TOTAL NUMBER OF CLASSES: 40)

Unit 1: (Three questions carrying 15 marks each) (40 classes)

45

- Drawing of a representative part from topographical map and delineation of relief zones there from such as - Structural mountain zone, Hill zone, Plateau zone, Foot-hill zone, Piedmont zone, Alluvial plain zone and Floodplain and Active floodplain zone and description of their geomorphic characteristics
- Delineation of different floodplain zones, e.g. occasionally flood-affected, chronically flood- affected and active floodplain zones from topographical map; identification, demarcation and naming of floodplain features with analysis of their development and associated geomorphic processes.
- Delineation of a drainage basin from topographical map. Ordering of streams following Horton's and Strahler's methods and analysis thereon using Bifurcation Ratio.
- Preparation of stage-discharge hydrograph for the Brahmaputra or any of its tributaries for a year and also separately for monsoon months and non-monsoon months taking at least five years data and interpretation of the flow characteristics of the river concerned
- Analysis of stage-discharge relationships (taking mean monthly data) with the help of regression technique.
- Channel pattern analysis: Drawing of three representative sections of river channels of the Brahmaputra or its tributaries representing straight, meandering and braided channel patterns and their comparative analysis in terms of forms and associated processes of their development
- Analysis of geometry of meanders, calculation of sinuosity index and braiding index (Bricemethod, 1964) to analyse channel pattern.

Unit 2: Practical Note-Book and Vive-voce

5

Practical Note Book Evaluation & viva-voce (3+2=5)

FIFTH SEMESTER

PAPER 501: CONCEPT OF REGIONAL DEVELOPMENT PLANNING AND GEOGRAPHY OF DEVELOPMENT OF USA AND JAPAN

NAME OF TEACHER: GANESH CHANDRA DAS

TOTAL MARKS : 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Concept of Regional Planning and Development

(12 classes)

13

- Concept of Region, Regionalism and Regional Planning
- Concept of Development, Sectoral Development and Regional Development, and development indicators

Unit 2: Resource Base and Development of USA and Japan (two questions) (24 classes)**26**

- Resource base of Japan and USA: Natural and Human
- Development Policies of Japan and USA
- Sectoral Development Patterns in USA and Japan
- Regional Development Patterns in USA/Japan

Unit 3: Industrial Development Patterns of USA and Japan

(two questions) (24 classes)

26

- Industrial Location factors in Japan and USA
- Iron and Steel Industries in Japan and USA
- Ship-building Industries in Japan
- Automobile Industries in USA
- Problem Regions in Japan and USA and Strategies for management

FIFTH SEMESTER

PAPER 502: REGIONAL GEOGRAPHY OF INDIA AND SAARC NATIONS

NAME OF TEACHER: ANITA KEOT

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Regional Geography of India

(Four questions each carrying 13 marks) (48 classes) 52

- Locational significance, unity and diversity
- Physical Environment: Physiographic Characteristics – climate, soil and natural vegetation
- Population characteristics: Peopling growth, distribution, density, structure and composition
- Agriculture: Agricultural development and Indian economy, modernization of Indian agriculture, agro-climatic regions and special characteristics, agricultural trade.
- Industry: Industrial development and Indian economy, distribution production pattern of major Industries (Iron and steel, cotton textile, petrochemicals, sugar, paper and cement industries), Industrial policies and industrial trade.
- Transport: Roads and railways, air transport and pipe transport

Unit 2: Regional Geography of SAARC Nations

(one question carrying 13 marks)(12 classes) 13

- Locational significance, unity & diversity, conflict & co-operation, trade & commerce.

FIFTH SEMESTER

PAPER 503: CARTOGRAPHIC AND QUANTITATIVE METHODS

NAME OF TEACHER: BISHNU RAM TALUKDAR

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Fundamentals of Cartography

(1 question of 13 marks) (12 classes) **13**

- The nature and scope of cartography, development trend, traditional versus modern Geography
- Concept of base map and map types, map design and layout
- The Earth: shape, size, coordinate system, latitude and longitude, direction and distance; concept of scale and spatial resolution
- Thematic mapping types and techniques

Unit 2: Surveying

(1 question of 13 marks) (12 classes) **13**

- Principles of plane and geodetic surveying
- Principles of triangulation
- Principles and techniques of surveying by Plane Table, Prismatic Compass, Dumpy Level and Theodolite; Principles of traversing, contouring and leveling

Unit 3: Map Projection

(1 question of 13 marks) (12 classes) **13**

- Map projection – Definition, classification and history of map projections
- Basic principles of constructing Zenithal, cylindrical and conical projections
- Concept of orthomorphism, equal-area, equi-distance
- Choice of map projection for various regions of the world and India

Unit 4: Quantitative Methods

(2 questions of 13 marks each) (12 classes) **26**

- Quantification in Geography – rationale and limitation
- Sampling techniques and their utilities in geographical studies
- Measures of central tendency and dispersion and their application in geographical studies
- Time series analysis techniques: Moving average and least squares methods
- Concept of correlation; Application of linear bi-variate correlation and regression

analysis in geographical studies

FIFTH SEMESTER

PAPER 504: POPULATION AND SETTLEMENT GEOGRAPHY

NAME OF TEACHER : ANITA KEOT

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

UNITS : 5

Section A: Population Geography

Unit 1: Field of Population Geography (10 classes)

Meaning, development and scope of population geography; sources of population data; Malthus theory of population growth; and Demographic Transition Model

Unit 2: Population growth, distribution and Migration(14 classes)

Components of population growth; trend of world population growth; factors influencing distribution and density of population; major population density zones in the world; Definition, types, and causes and consequences of migration.

Unit 3: Population Characteristics and Population-Resource Relationship (12 classes)

Age-Sex composition; literacy and education; and work participation and occupational composition; concept of population-resource relationship with reference to optimum population, over population and under population.

Section B: Settlement Geography

Unit 4: Field of Settlement Geography (12 classes)

Meaning and scope of settlement geography; concept of hierarchy of settlements and Christaller's Central Place Theory; concept of dichotomy and continuum.

Unit 5: Origin, Growth and Morphology of Settlements (12 classes)

Factors influencing origin and growth of rural and urban settlements; Morphology and functional characteristics of rural and urban settlements.

FIFTH SEMESTER

PAPER 505: PRACTICAL ON CARTOGRAPHIC METHODS (SURVEYING & MAP WORKS)

NAME OF TEACHER: GANESH CHANDRA DAS

TOTAL MARKS : 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Surveying and Mapping

(One question of 20 marks) (24 classes) **20**

- Plane table surveying (Radiation & Intersection methods)(2 Exercises)
- Traverse Surveying with Prismatic Compass and Theodolite (Open and Closed Traverse); Computation of Reduced Bearing, Consecutive and Independent Co-ordinates. (3 Exercises)
- Profile leveling and contouring by Dumpy Level / Theodolite (2 Exercises)

Unit 2: Map Projection and mapping

(One question of 20 marks) (20 classes) **20**

- Construction of graticules based on Mathematical derivation and calculation ;
 - (a) Zenithal group (polar cases)- Gnomonic, Stereographic, Orthographic, Equal-area(4 Exercises)
 - (b) Cylindrical group : Cylindrical equal area and Gall's Stereographic projection (2 Exercises)
 - (c) Conical Group: Conical Projection with two standard parallels and Bonne's Projection(2 Exercises)
 - (d) Conventional Group : Sinusoidal (1 Exercise)

Unit 3: Mapping of socio-economic data

(One question of 15 marks) (16 classes) **15**

- Choropleth mapping by grouping the data following Natural Break, Equal interval and Standard Deviation method (Density of population/Land Use/Cropping pattern) (3 Exercises)
- Isopleth Mapping of distribution of rainfall and variability of rainfall of given data set for rain gauge stations or any other data of point locations (2 Exercises)

- Urban Population Distribution of Assam or North East Region or India by proportional sphere method (1 Exercise)
- Pie-graph for representation of land use, cropping pattern, rural-urban composition, etc. (2 Exercises)

Unit 4: Practical Note Book and Viva-Voce (5+5 marks)

10

FIFTH SEMESTER

PAPER 506: PRACTICAL ON CARTOGRAPHIC AND QUANTITATIVE METHODS

NAME OF TEACHERS: BISHNU RAM TALUKDAR

TOTAL MARKS : 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Cartographic Methods

(one question of 14 marks) (16 classes)

14

- Population data representation and interpretation - Trend of Growth, Calculation of Growth Rates and Population Projection of Assam and North East India or India (3 Exercises)
- Construction of Age-Sex Pyramid for developed and less developed countries and their interpretation (2 Exercises)
- Enlargement and Reduction of Maps by Graphical and Instrumental Methods (2 Exercises)

Unit 2: Map Reading and Analysis

(one question of 13 marks) (16 classes)

13

- Reading and Analysis of Topographical Maps of 1:50,000 scale for an area covering 5 minutes x 5 minutes of map extent including measurement of area and length of various geographic features taking two areas of different environmental conditions (2 Exercises)
- Preparation of Thematic Map/and Generation of Data from the topographical maps (land use map and area under different land-use categories) (2 Exercises)
- Construction of Transect Chart showing the relationship among Relief, Drainage, Vegetation, Settlements, Agriculture and Transport Network (1 Exercise)

- Weather Map Interpretation and Analysis, Study of Temperature, Pressure, Wind system, Rainfall, Cloud condition, Sea condition, etc. and weather prediction (2 Exercises)

Unit 3: Quantitative Methods

(Two questions of 14 marks each) (28classes)

28

- Computation of Measures of Central Tendency, Standard Deviation and Coefficient of Variation for a given sets of geographical data (3 Exercises)
- Preparation of Variability Map using Standard Deviation and Coefficient of Variation taking temporal data (Rainfall/Cropping Pattern or Land Use/Population Growth) for few years(3 Exercises)
- Determination of Spatial Mean and Median Centres of Settlements, Services and Population using Centographic Measures (3 Exercises)
- Computation and Interpretation of Correlation Coefficient by Spearman's and Karl Pearson's Method for a given geographic data set including t-test (2 Exercises)
- Linear Regression Analysis for bi-variate geographic data sets (1 Exercise)

Unit 4: Practical Note Book and Viva-Voce (5+5 marks)

10

SIXTH SEMESTER

PAPER 601: ENVIRONMENT AND DEVELOPMENT

NAME OF TEACHER: ANITA KEOT

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1 : Concept and Issues of Environment and Development (2 questions carrying 13 marks each)(24 classes) **26**

- Concept of Environment, Environmental Issues
- Concept of Development, Sustainable Development
- Concept of Environment and Development: Ethical, Ecological and Socio-Economic Issues

Unit 2: Major Environmental Problems

(2 questions carrying 13 marks each) (24 classes) **26**

- Defining Environmental Problem
- Types and geographical dimensions of environmental problems
- Major Environmental Problems: Climate Change, Desertification, Environmental Pollution (Air, Land and Water), Earthquake and Flood Hazards

Unit 3: Sustainable Management of

Environment and Development

(1 question carrying 13 marks) (12 classes) **13**

- Concept of Sustainable Management
- Management of Environment and Development: Role of Geography
- Management of Earthquake and Flood Hazard

SIX SEMESTER

PAPER 602 : SOCIAL AND POLITICAL GEOGRAPHY

NAME OF TEACHER: ANITA KEOT

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: Social Geography

(Three questions carrying 13 marks each) (36 classes) **39**

- Meaning, nature and scope of Social Geography
- Approaches to the study of Social Geography
- Concepts in Social Geography : Society and environment, type of society, Social Space, Social differentiation and integration
- Urbanization, westernization and social change

Unit 2: Political Geography

(Two questions carrying 13 marks each) (24 classes) **30**

- Nature, scope and subject matter of political geography
- Approaches to the study of political geography
- State, nation, nation-state and nation building
- Frontiers, boundaries and border zones; boundary problems with reference to India and NorthEast India
- Colonialism, decolonization and Neocolonialism, Lebensraum

SIXTH SEMESTER

**PAPER 603 : REGIONAL GEOGRAPHY OF NORTH EAST INDIA WITH
SPECIAL FOCUS ON ASSAM**

NAME OF TEACHER: PROF. BISHNU RAM TALUKDAR

Total Marks : 75

Total Credit: 6 (Total Number of Classes: 60)

**(5 questions carrying 13 marks each taking three from Unit 1 and two
from Unit 2) Unit 1: North-East India 39**

(Three questions carrying 13 marks each) (36 classes)

- Locational significance
- Physical characteristics : Physiography, drainage, climate, soil and natural vegetation
- Population characteristics : peopling ,growth, distribution and density, age sex composition,rural-urban composition and religious composition.
- Economic basis : Agriculture and Industries
- Transport and communication system
- Disparity in socio-economic development; socio-economic problems

Unit 2: Assam 26

(Two questions carrying 13 marks each) (24 classes)

- Locational Significance
- Regions of Assam and their population, agriculture and industrial characteristics (Brahmaputravally, the Barak Valley, Hill region)
- Tourism and its potentiality in Assam
- Biodiversity and its conservation issues

SIXTH SEMESTER

PAPER 604: PRINCIPLES AND APPLICATIONS OF REMOTE SENSING, GIS AND GPS

NAME OF TEACHER : GANESH CHANDRA DAS

TOTAL MARKS : 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

(Five questions carrying 13 marks each taking three from unit 1, one from unit 2 and one from unit 3)

Unit 1 : Remote Sensing

(3 questions carrying 13 marks each) (36 classes) 39

- Basic concept of Remote Sensing
- Components of Remote Sensing – Electromagnetic Radiation (EMR), Sensors and Sensor carrying platforms
- Types of Remote Sensing – Aerial Remote Sensing and Satellite Remote Sensing
- Concept of photogrammetry, Types of aerial photographs, Elements of vertical photographs
- History of Remote Sensing, Development of Aerial and Satellite Remote Sensing in India
- Applications of Remote Sensing in Geographical studies – Resource inventory and management with special reference to forest, water and land resources

Unit 2 : Geographical Information System

(1 question carrying 13 marks) (12 classes) 13

- Introduction to GIS – Definition and components of GIS
- Functional units of GIS
- Nature and types of Geographic data: spatial and non-spatial
- Spatial data structure – Raster and Vector data
- Applications of GIS in thematic representation and analysis of change and spatial interrelationship of various geographical phenomena (including physical and cultural resources)

Unit 3 : Global Positioning System

(1 question carrying 13 marks) (12 classes) 13

- Concept of GPS

- Functions and working principles of GPS
- Geographical data acquisition techniques
- Application of GPS in geographical surveying and mapping of geographical features

SIXTH SEMESTER

PAPER 605: PRACTICAL ON ADVANCED TECHNIQUES IN GEOGRAPHY

NAME OF TEACHER: GANESH CHANDRA DAS

TOTAL MARKS: 75

(INCLUDING 10 MARKS FOR INTERNAL ASSESSMENT) TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1 : Remote Sensing Techniques (30 classes)

27

(2 questions, 1 carrying 14 marks and another carrying 13 marks)

- Visual interpretation techniques/keys
- Visual interpretation of aerial photograph: Identification and mapping of physical/cultural features from the aerial photograph using stereoscope, determination of scale from aerial photographs
- Visual interpretation of satellite imagery: delineation and mapping of physiographic units from satellite images
- Identification and drawing of physical/cultural features from satellite imagery

Unit 2 : Computer application, GIS and GPS (30 classes)

28

(2 questions, each carrying 14 marks)

- Geographical (spatial and non-spatial) data entry, tabulation, and charting bar graph, pie graph)etc. using MS Excel or any Spreadsheet/Graphic programme
- Spatial Data input for GIS application : map and satellite image scanning and editing
- Georeferencing (geocoding) of maps and satellite image, digitization and data layer creation
- Data transformation: Raster to Vector and Vector to Raster model using appropriate software(ILWIS/Arc GIS)
- Mapping of various geographic features (point, line, area/polygon) from the image using Arc GIS/ERDAS imagine/ ILWIS

- Surveying and mapping of an area/plot of land with physical/cultural features using GPS, GPSacquired data and field records

Unit 3: Practical Note-Book and Viva-voce

10

- Practical Note-Book Evaluation & Viva-voce (5+5 marks)

SIXTH SEMESTER PAPER 606: PROJECT WORK

NAME OF TEACHER: BISHNU RAM TALUKDAR

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60) TIME : 3 HOURS

- A project work shall be assigned to each student by the respective teacher in the Department for preparation of a project report. It should be prepared scientifically with statement of the problem, significance of the problem for study, objectives and methodology including appropriate data collection, processing and analysis methods and chapter plan.
- Evaluation of the project report shall be done as follows:
Internal Assessment: 10 marks
Evaluation of the content and quality of the Report : 25 marks (Jointly by the external and internal)
Viva-voce on the Report : 15 marks (by external)
- Theory examination on Methodology: 25 marks (to be examined by the external)

Course content :

- (i) Problem selection for Project work and development of objectives
- (ii) Collection of data : Secondary and primary data and questionnaire preparation
- (iii) Developing Sample design
- (iv) Data Processing and Analysis Techniques
- (v) Data representation techniques in the form of graphs and maps

COURSE PLAN

THREE YEAR DEGREE COURSE

GEOGRAPHY SYLLABUS

(GENERAL COURSE) GAUHATI UNIVERSITY

1st Year				
Semster	Paper	Mark s	Class	Credit per week
1st	101 (Theory)	75	6	6
2nd	201 (Theory)	75	6	6
2nd year				
Semester	Paper	Mark s	Class	Credit per week
3rd	301 (Theory)	50	4	4
	302 (Practical)	50	4	4
4th	401 (Theory)	50	4	4
	402 (Practical)	50	4	4
3rd year				
Semester	Paper	Mark s	Class	Credit per week
5th	501	100	8	8

	(Theory)			
	502 (Practical)	100	8	8
6th	601 (Theory)	100	8	8
	602 (Practical)	100	8	8
		750	60	60

Total marks : 750 (Theory marks : 450 & Practical marks: 300)

Paper	Paper	Marks
101	Physical Geography I	75
201	Physical Geography II	75
301	Human Geography	50
302	Practical on Physical Geography	50
401	Cartographic and Quantitative Techniques in Geography	50
402	Practical on Human Geography	50
501	Regional Geography	100
502	Cartographic and Quantitative Techniques (Practical)	100
601	Economic, Political and Environmental Geography	100
602	Map Work and Interpretation (Practical)	100

FIRST SEMESTER

PAPER 101 : PHYSICAL GEOGRAPHY -I

NAME OF TEACHER: PROF. BISHNU RAM TALUKDAR

TOTAL MARKS: 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 60)

Unit 1 : The Field of Physical Geography (12 classes) 13

(1 question carrying 13 marks)

- Nature and scope of Physical Geography, Branches of Physical Geography and their interrelations

Unit 2 : Geomorphology (36 classes) 39

(3 questions carrying 13 marks each)

- Types of landform – First order, second order and third order
- Forces for landform development - endogenetic and exogenetic
- Landform development processes-weathering, erosion, transportation and deposition
- Landform development under different conditions – fluvial, arid and glacial
- Cycle concept in geomorphology

Unit 3 : Oceanography (12 classes) 13

(1 question carrying 13 marks)

- Relief features of the ocean bottom
- Marine resources and their economic importance
- Major ocean currents and their impact on climate and economy

SECOND SEMESTER

PAPER 201 : PHYSICAL GEOGRAPHY-II

NAME OF TEACHER: PROF GANESH CHANDRA DAS

TOTAL MARKS – 75

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES:60)

Unit 1 : Climatology (24 classes)

26

(2 questions carrying 13 marks each)

- Atmosphere – Composition and vertical structure
- Elements of weather – Temperature, pressure, wind, humidity and precipitation

- Heat zones and global wind system
- Factors of weather and climate
- Mechanism of monsoon with reference to Indian monsoon and its characteristics

Unit 2 : Biogeography (24 classes)

26

(2 questions carrying 13 marks each)

- Meaning and scope of biogeography
 - Ecosystem : Components and functioning
 - Factors influencing plant growth
 - Distribution of plants and animals in different ecosystems
 - Major Biomes of the world

Unit 3 : Soil Geography (12 classes)

13

(one question of 13 marks)

- Nature and scope of soil geography
- Soil profiles and their significance
- Process of soil formation and soil types

THIRD SEMESTER
PAPER 301 : HUMAN GEOGRAPHY

NAME OF TEACHER: ANITA KEOT

TOTAL MARKS: 50

Total Credit: 4 (Total number of classes: 40)

(4 questions taking one from Unit 1 carrying 10 marks, one from Unit 2 carrying 10 marks, one from Unit 3 carrying 15 marks and one from Unit 4 carrying 10 marks)

Unit 1: Field of Human Geography

(one question of 10 marks) (10 classes) **10**

- Meaning and scope; approaches in human geography with special reference to determinism and possibilism

Unit 2: Man-environment relationship

(one question of 10 marks) (10 classes) **10**

- Human adjustment in mountain, plain and hot desert environment
- Recent changes in man-environment relationship
- Impact of man on environment-environmental degradation

Unit 3 : Population

(one question of 15 marks) (10 classes) **15**

- Growth, distribution and density of population in the global context and factors associated with them
- Concept of over population, under population and optimum population
- Migration : Causes and consequences

Unit 4 : Settlement

(one question of 10 marks) (10 classes) **10**

- Origin and growth of rural and urban settlements
- Types and pattern of rural settlement
- Urban settlement : morphology and functional classification

THIRD SEMESTER

PAPER 302: PRACTICAL ON PHYSICAL GEOGRAPHY

NAME OF TEACHER: BISHNU RAM TALUKDAR

TOTAL MARKS: 50

TOTAL CREDIT: 4(TOTAL NUMBER OF CLASSES :40)

(4 questions carrying 10 marks each taking two from Unit 1, one from Unit 2 and one from Unit 3)

Unit 1: Relief and Topography

(2 questions of 10 marks each) (20 classes)

20

- Relief representation techniques: Hachuring, shading, contour and profile drawing of different physical features and their interpretation
- Drawing of conventional symbols used in topographic maps
- Identification and interpretation of physical and cultural features from topographical maps; interpretation of relationship of physical and cultural features

Unit 2: Weather data interpretation and instrument handling

(one question of 10 marks) (10 classes)

10

- **Drawing and interpretation of weather chart with special reference to monsoon and winter season**
- Drawing and interpretation of rainfall- temperature- humidity graphs
- Handling and use of weather instruments: Maximum and minimum thermometer, hygrometer, barometer, rain gauge and anemometer

Unit 3: Biogeography

(one question of 10 marks) (10 classes)

10

- Drawing and interpretation of distributional maps: Natural vegetation, national parks and sanctuaries, soil types and forest cover of Assam

Unit 4: Practical Note Book and Viva-voce

Unit 5 : Practical Note-Book & Viva-voce (3 + 2 marks)

FOURTH SEMESTER

PAPER 401: CARTOGRAPHIC AND QUANTITATIVE TECHNIQUES IN GEOGRAPHY

NAME OF TEACHER: GANESH CHANDRA DAS

TOTAL CREDIT: 6 (TOTAL NUMBER OF CLASSES: 40)

Unit 1: Cartographic Techniques

(2 questions of 15 marks each) (25 classes) 30

- Importance of cartography in geographical studies
- Map as a tool in geographical studies; types and characteristics of maps; scale factor in mapping; map projection
- Thematic mapping : Types and characteristics of thematic map, concept of isopleth and choropleth
- Spatial data : nature, types and sources
- Surveying : Geodetic surveying and plane surveying; Principles of plane surveying using prismatic compass
- Remote sensing, Global Positioning System and GIS and their importance in Geographical studies

Unit 2: Quantitative Techniques

(1 question of 15 marks) (15 classes) 15

- Need of quantification in geography
- Geographic attributes and their level of measurement
Measures of central tendency (Mean, Median and Mode) and Dispersion (Range, Mean Deviation and Standard Deviation) and their usefulness in geographical studies.
- Correlation co-efficient and its usefulness in geographical studies.

FOURTH SEMESTER

PAPER 402 : PRACTICAL ON HUMAN GEOGRAPHY

NAME OF TEACHER: PROF. GANESH CHANDRA DAS

(INCLUDING 5 MARKS FOR INTERNAL ASSESSMENT) TOTAL CREDIT: 6 TOTAL

NUMBER OF CLASSES: 40)

Unit 1: Population data representation and interpretation	20
(2 questions of 10 marks each) (20 classes)	
· Trend of population growth in Assam/NE India/India by line graph · Choropleth mapping of decennial growth of population in Assam/N.E. India · Population distribution map using simple and multiple dots · Choropleth mapping of population density in Assam/N.E. India/India · Territorial distribution of tribal communities in Assam/N.E. India · Composition of population/work-force in Assam/N.E. India (Pie-graph)	
Unit 2: Settlement data representation and interpretation	20
(Two questions of 10 marks each) (20 classes)	
· Drawing of different types and patterns of settlements (compact and dispersed; rectangular, linear, star like and circular) · Major house types of India/N.E. India in different physical and cultural contexts · Distribution of urban centers in Assam/N.E. India/India by spheres · Morphological drawing of rural and urban settlements	
Unit 3: Practical Note-Book and Viva-voce	5
· Practical note book evaluation & Viva-voce (3+2=5)	

FIFTH SEMESTER

PAPER 501 : REGIONAL GEOGRAPHY

NAME OF TEACHER: ANITA KEOT

TOTAL MARKS: 100

TOTAL CREDIT: 8 (TOTAL NUMBER OF CLASSES: 60)

Unit 1: World Regional Geography

(2 questions of 15 marks each) (24 classes) 30

- Regional profile of the world at continent level with respect to broad physical, population and economic characteristics
- Regional geography of Asia – Location, physiography, climate, population growth and distribution, agriculture and industries.

Unit 2: Regional Geography of India

(3 questions of 15 marks each) (36 classes) 45

- India in the context of South Asia
- Physiography, climate, forest cover, mineral resources, population growth and distribution, agriculture (distribution and production of major crops- rice, wheat, cotton and tea), industries (iron and steel, cotton textile and petro- chemical), urbanization
- Transport system
- Patterns of regional disparity in development

Unit 3: Regional Geography of Assam

(2 questions of 15 marks each) (24 classes) 15

- Location, physiography, climate, population growth and distribution, agriculture (distribution and production of major crops – rice and tea)

FIFTH SEMESTER

PAPER 502 : PRACTICAL ON CARTOGRAPHIC AND QUANTITATIVE METHODS

NAME OF TEACHER: BISHNU RAM TALUKDAR

TOTAL MARKS : 100

TOTAL CREDIT: 8 (TOTAL NUMBER OF CLASSES: 60)

(4 questions carrying 20 marks each taking three from Unit 1 and one from Unit 2)

Unit 1: Cartographic Methods

(Three questions of 20 marks each) (45 classes)

60

- Representation and interpretation of Socio-economic data (20 marks)
 - (a) Trend of agricultural and industrial production by moving average method
 - (b) Trend of industrial production/agricultural production/
export/import/energy utilization in N.E. India/India by compound bar graph/ Band graph
 - (c) Pattern of general land use/ agricultural land use/ crop production in Assam/N.E. India by piegraph
- Construction of map projection and their properties, uses, etc (20 marks)
 - (a) Zenithal polar gnomonic and stereographic projections
 - (b) Simple cylindrical and Gall's stereographic cylindrical projection
 - (c) Simple conical projection with one standard parallel Surveying and mapping (20 marks)
 - (a) Plane table surveying by radiation and intersection methods
 - (b) Traverse survey (Close and open) with prismatic compass

Unit 2: Quantitative Methods

(one question of 20 marks) (15 classes)

20

- Grouping of geographical data and preparation of histogram, frequency polygon, frequency curve and ogive
- Computation of mean, median, mode and standard deviation of geographical data

(both grouped and ungrouped data)

- Graphical representation of median and mode
- Determination of shape index of selected countries (India, Nepal, Bhutan) and Indian states

Unit 3: Practical Note-book and Viva-voce

10

- Practical note book & Viva-voce (5+5=10)

SIXTH SEMESTER

PAPER 601: ECONOMIC, POLITICAL AND ENVIRONMENTAL GEOGRAPHY

NAME OF TEACHER: ANITA KEOT

TOTAL MARKS: 100

TOTAL CREDIT: 8 (TOTAL NUMBER OF CLASSES: 60)

Part A: Economic Geography , 60 marks

Unit 1: The Field of Economic Geography

(one question of 10 marks) (10 classes) 10

- Meaning and scope, approaches in economic geography (regional and systematic approaches)

Unit 2: Geography of Resources (15 classes) 25

(Two questions, one carrying 15 marks and another carrying 10 marks)

- Concept of resources and classification – natural and human, renewable and non renewable, biotic and abiotic; conservation of resources
- Distribution and production potential of resources (Global context) : forest, coal, petroleum, iron ore and water

Unit 3: Geography of Economic Activity (15 classes) 25

(Two questions, one carrying 15 marks and another carrying 10 marks)

- Classification of economic activity-primary, secondary and tertiary activities
- Agriculture – physical and socio-economic factors influencing agriculture, types of agriculture, major food and cash crops, their distribution and production (global context)
- Industry – factors of industrial location, classification of industries, distribution and production of iron and steel, textile, petro-chemicals industries (global context)

Part B: Environmental Geography 15

Unit 4: Field of Environmental Geography and Environmental Problems 15

(one question carrying 15 marks) (10 classes)

- Nature and scope of Environmental Geography
- Environmental problems – Global warming and climate change, natural hazards (flood, drought, landslide and earthquake), loss of biodiversity with special reference to N.E.

India

Part C: Political Geography

15 marks

Unit 5: Field of Political Geography and Associated

Issues 15 (one question carrying 15 marks) (10 classes)

- Nature and scope of Political Geography
- State and nation
- Concept of frontier, boundary and buffer zone
- Boundary problems of India: International and inter-state

SIXTH SEMESTER

PAPER 602: PRACTICAL ON MAP WORK AND INTERPRETATION

NAME OF TEACHER: GANESH CHANDRA DAS

TOTAL MARKS : 100

TOTAL CREDIT : 6

(TOTAL NUMBER OF CLASSES: 60)

Unit 1: Map work

(Three questions of 20 marks each) (45 classes)

60

- Map reading and analysis of (20 marks)
 - (a) Topographical
 - (b) Thematic map
 - (c) Satellite imagery
- Weather map analysis (20 marks)

- (a) Analysis and interpretation of pressure and wind system, temperature distribution, precipitation and sky condition
- (b) Preparation of weather maps of India for different seasons of the year

- Map enlargement/reduction (20 marks)
(Mechanical and Graphical methods); Basin area/Administrative area measurement
(using planimeter and graphical method)

Unit 2: Field Study Report

20

- Evaluation of field report & Viva-voce
(15+5=20) Unit 3: Practical Note-Book and Viva-voce 10
- Practical Note-Book & Viva-voce (5+5=10)

Prof. Bishnu Ram Talukdar
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