**North Lakhimpur College (Autonomous)**

**BA/BSc Geography Syllabus**

**Honors Course**

**(Under CBCS System)**

**Semester wise Course Code under CBCS-Geography**

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| --- | --- | --- | --- | --- |
| **Sem** | **Course** | **Course Code** | **Credit** | **Title**  |
| **I** | **Core Course Theory** | **GEO-CC-T4-101** | **4** | **Geomorphology** |
| **Core Course Practical** | **GEO-CC-P2-101** | **2** | **Morphometric Analysis** |
| **Core Course Theory** | **GEO-CC-T4-102** | **4** | **Human and Biogeography** |
| **Core Course Practical** | **GEO-CC-P2-102** | **2** | **Toposheet Interpretation** |
| **Generic Elective Theory** | **GEO-GE-T4-101** | **4** | **Disaster Management** |
| **Generic Elective Practical** | **GEO-GE-P2-101** | **2** | **Project Work on Disaster Management** |

 **Semester I**

**Geomorphology**

**Course Code: GEO-CC-T4-101**

Total Marks- 70

1. Geomorphology: Nature and Scope.

2. Earth: Interior Structure and Isostasy.

3. Earth Movements: Continental Drift, Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes.

4. Mountain Building Theories of Kober and Holmes.

5. Geomorphic Processes: Weathering, Erosion and Mass Wasting, Cycle of Erosion (Davis and Penck).

6. River Basin: Characteristics (Drainage types and Patterns, Stream ordering, Bifurcation ratio, Stream frequency and Drainage density), basin surface run-off, measurement of discharge.

7. Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Coastal and

 Glacial.

 **Reading List**

1. Strahler, A.N. (1969): Physical Geography, 3rd Edition, Wiley International.
2. Dayal, P.A.: Text Book of Geomorphology,Shukla Book Depot, Patna
3. Thornbury, W.D. (1969): Principles of Geomorphology, Wiley International.
4. Hartshorne,R. (1959): Perspective on Nature of Geography.
5. Steers, J.A. (1964): The Unstable Earth, Kalyani Publishers, New Delhi.
6. Wooldrige, S.W. and Morgan, R.S. (1959): The Phsical Basis of Geography, Green & Co.
7. Bloom, A.L.: Geomorphology, A systematic analysis of late Cenozoic Landforms, Prentice Hall of India Publshers, New Delhi.
8. Chorley,R.J.: Water, Earth and Man, Methun and Co., London.
9. Chorley,R.J. (ed), 1968: Models in Geography, Methun and Co.
10. Leopold, L.B., Wolman, M.G., Milier,J.P.,(1964): Fluvial Processes in Geomorphology, Freeman, San Fransisco.
11. Khullar, D.R. Physical Geography, Kalyani Publishers, 2012.

**Morphometric Analysis**

**Course Code: GEO-CC-P2-101**

Total Marks- 30

1. Scales – Concept and Application; Graphical Construction of Plain, Comparative and Diagonal Scale.

2. Morphometric Analysis - Demarcation of Drainage Basin, Drainage ordering by Horton’s and Strahler’s method, Drawing of Long and Cross profile of a river, Preparation of Drainage frequency and Drainage density map and calculate the bifurcation ratio.

 3. Drawing of Hypsometric and Bathymetric curve.

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**Human Geography and Biogeography**

**Course Code: GEO-CC-T4-101**

Total Marks- 70

1. Introduction: Defining Human Geography, Nature and Scope, Major Themes; Contemporary Relevance

2. Space and Society: Human adjustment to different geographical environments, Cultural Regions; Major Human Races: Types and Distribution.

3. Settlements: Types of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization

4. Factors affecting the distribution of Plants and animals, Zoogeographical and

 Phytogeographical regions of the world, conservation of biotic resources.

5. Soil- soil forming processes, classification and distribution of soil, soil erosion and conservation.

**Reading List**

1. Hussain,M.: Human Geography, DVS Publication, Ghy.
2. Chandna,R.C.: Population Geography, Kalyani Publishers,2006.
3. Negi,B.S.: Human Geography. Fundamentals of Human Geography.
4. Hassan,Md. Izhar.: Population Geography, Rawat Publication, New Delhi.
5. Gautam,A.: Human Geography.
6. Khan,N.: Introducing Human Geography, DVS Publication, Ghy.
7. Austin,M.: Hman Geography, , DVS Publication, Ghy.
8. Hussain, H(ed), 1994: Biogeography (Part I & Part II) Anmol Publication, New Delhi.
9. Robinson, H., 1982: Biogeography, ELBS, Mc Donald & Evans, London.
10. Simmons, I.G., 1974: Biogeography: Natural and Cultural, London.

**Analysis of Toposheet**

**Course Code: GEO-CC-P2-102**

Total Marks- 30

1. Interpretation of Survey of India Toposheets:

a) Drawing of a representative part from topographical map and Interprete it in respect of: i. Relief ii. Drainage iii. Settlement iv. Vegetation and v. Communication pattern.

b) Preparation of Transact Chart and its interpretation.

 c) Drawing of Profiles- Serial, Super-imposed, Projected and Composite

 profile.

 2. Analysis of slope: Wentworth’s and Smith’s methods.

 3. Block Diagrams: one and two point perspective.

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**Semester II**

**3. Climatology**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Atmospheric Composition and Structure – Variation with Altitude.

2. Insolation and Temperature – Variation in Latitude and Season, Factors and Distribution, Heat Budget and Temperature Inversion.

3. Atmospheric Pressure and Winds – Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams.

4. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability; Climatic Regions (Koppen)

5. Airmass and Fronts; Cyclones – Tropical Cyclones, Extra Tropical Cyclones; Monsoon - Origin and Mechanism.

 **Practical Credit: 2**

1. Study of Weather symbols.

2. Drawing and interpretation of Indian daily weather map with special reference to summer and winter season.

3. Preparation of Climograph, Hythergraph and Ergograph and their interpretation.

4. Preparation of rainfall variability map.

5. Use of weather instruments.

 **Reading List**

 1. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi

 2. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill.

 3. Gupta L S(2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi

 4. Lal, D S (2006): Cliamatology, Prayag Pustak Bhavan, Allahabad

 5. Singh, S (2009): Cliamatology, Prayag Pustak Bhawan, Allahabad

 6. Bhutani, S.: Our Atmosphere, Kalyani Publishers, 2000.

 7. Khullar, D.R.: Physical Geography, Kalyani Publishers, New Delhi.

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**4. North East India**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

**Theory Credit:4**

1. Physical Geography of NE India: Geology and Physiography, Drainage System and

 Climate, Soil and Vegetation – Types and spatial distribution.

2. People of NE India: Different Ethnic groups, Distribution of Population

3. Economy of NE India: Resource base: Forest, Water and Minerals; Agriculture:

 Major crops – Rice, Jute, Sugarcane and Tea, Industries: Agro-based, Forest-based,

 Tourism, Transport: Road, Railway, Water ways, Air ways – their role in regional

 development.

4. Problems and Prospects: Strategic location and Economic development, Natural

 hazards i.e. Flood, Earthquake, Landslide, Man induced i.e. Deforestation, Ethnic-

 Movement, Insurgency and Geo-political problems of North-East India.

**Practical Credit: 2**

1. Local area Study:
2. Preparation of Stage – Discharge Hydrographs of any local river.
3. Preparation of Flood – plain zoning map of Lakhimpur District.
4. Collection and interpretation of local climatic data
5. Thematic Maps: Preparation of maps showing Geographical themes of North-east India: Minerals, Forest, Soil, Agriculture, Population (Multiple dot method & shed method), Urban centre (Sphere method), Production of rice (Block piling method).

 **Reading List**

1. Taher & Ahmed : Assam; A Geographical Profile.
2. Taher, Md. And Ahmed : North East India.
3. Bhattacharya, N.N. : North East India: A systematic Geography.
4. Hazarika, Joysankar (1966): Geopolitics of North East India- A Strategical Study, Gyan Publishing House, New Delhi.
5. Bhagawati, A.K. et al: Geography of Assam, 2000 Publication of NEIGS.
6. Various issues of the North East Geographer: The journal of North East India Geographical Society.

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**Semester III**

**5. Environmental Geography and Ocenography**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Environmental Geography – Concept and Scope.

2. Ecosystem – Concept, Structure and Functions.

3. Environmental Problems: Environmental degradation, Deforestation, Desertification and Pollution.

4. Environmental Education and Sustainable Management of Environment.

5. Environmental Programmes and Policies – Global (Tropical, Temperate and Polar Ecosystems), National and Local levels.

6. Ocean Floor Topography and Oceanic Movements – Waves, Currents and Tides.

7. Ocean Salinity and Temperature – Distribution and Determinants.

8. Coral Reefs (Types) and Marine Deposits and Ocean Resources (Biotic and Mineral).

**Project Report Credit: 2**

Students have to prepare a Project Report on the basis of a case study of an ecosystem or on Biodiversity Study (EIA) and they have to present that in the departmental seminar.

**Reading List**

1. Singh, S.,: Environmental Geography, Prayag Pustak Bhawan, Allahabad.
2. Gautam, A.: Environmental Geography, DVS Publication, Ghy.
3. Chandna, R.C.: Environmental Geography Kalyani Publishers, New Delhi.
4. Park, C.: The Environment, Routledge, London.
5. Saxena, K.K.: Environmental Studies, , DVS Publication, Ghy.
6. Jackson, A.: Environmental Science.
7. Biswas, B.C.: Environmental Geography, Eastern Book House, Ghy.

 8. Sharma, R.C. et al (1970): Oceanography for Geographers , Chaitanya Publication. House, Allahabad.

 9. King, CAM (1972): Oceanography for Geographers, E. Arnold, London.

**6. Regional Planning and Development**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Definition of Region, Evolution and Types of Regional planning: Formal, Functional, and Planning Regions and Regional Planning; Need for Regional Planning; Types of regional Planning.

2. Choice of a Region for Planning: Characteristics of an Ideal Planning Region; Delineation of Planning Region.

3. Theories and Models for Regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian Context; Myrdal, Hirschman, Rostow and Friedmann; Village Cluster

4. Changing Concept of Development, Concept of underdevelopment; Efficiency-Equity Debate

5. Measuring development: Indicators (Economic, Social and Environmental); Human development

**Practical** **Credit: 2**

1. Spatial pattern of level of development ( Z-score, Composite Index)
2. Identification of functional regions (Preparation of gravity potential map using gravity model)
3. Mean centre of Population based on temporal data.
4. Human development index of some major centre.

**Reading List**

1. Sundaram, K.V. (ed): Geography and Planning, Concept Publisher.
2. Raza, M. (1988): Regional Development, Heritage Publishers.
3. Mitra, A. (1965): Levels of Regional Development, Census of India, Vol- I, Pt I &II, New Delhi.

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**7. Cartographic Techniques**

 **(Credit-6: Theory- 4, Practical-2)**

**Total Marks- 100**

**(Theory Marks-70, Practical Marks- 30)**

 **Theory Credit: 4**

1. Cartography – Nature and Scope, Cartographic Overlays: Point, Line and Areal Data.
2. Maps – Classification and Types; Principles of Map Design.

3. Map Projections – Classification, Properties and Uses; Graphical Construction of Polar Zenithal Stereographic, Bonne’s and Mercator’s Projections, and reference to Universal Transverse Mercator(UTM) Projection.

4. Thematic Mapping Techniques – Properties, Uses and Limitations; Areal Data -- Choropleth, Dot, Proportional Circles; Point Data – Isopleths.

5. Thematic Maps – Preparation and Interpretation.

**Practical Credit: 2**

1. Drawing and Analysis of Map Projections –

1. Zenithal Projection (Polar and Equatorial case) Gnomonic, Stereographic, Orthographic, Equal-area and Equidistant projections.
2. Cylindrical Projection: Simple, Equal area, Gall’s and Mercator’s Projections.
3. Conical Projection with one and two standard parallel.
4. Bonne’s and Projection, Polyconic Projection, Sinusoidal and Molloweide Projection.

**Reading List**

1. Mishra, R.P. and Ramesh: Fundamentals of Cartography.
2. Singh, R.L.: Fundamentals of Practical Geography, DVS Publication, Ghy.
3. Singh, G.: Map Work and Practical Geography, DVS Publication, Ghy.
4. Robinson : Elements of Cartography, DVS Publication, Ghy.
5. Steer, J.A.: Map Projection.

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**Semester IV**

**8. Geography of India**

**(Credit-6: Theory- 4, Practical-2)**

**Total Marks- 100**

**(Theory Marks-70, Practical Marks- 30)**

 **Theory Credit: 4**

1. Physical: Geological Settings, Physiographic Divisions, Climate, Drainage, soil and vegetation.

2. Population: Distribution, growth and Structure

3. Economic: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; Agricultural production and distribution of rice and wheat; Industrial development : automobile and Information technology

4. Social: Distribution of population by race, caste, religion, language, tribes and their correlates

5. Regionalisation of India: Physiographic (R. L. Singh), Socio – cultural (Sopher), Economic (Sengupta)

**Practical Credit: 2**

1. Interpretation of Geological Maps:

a). Concept of Bedding plain, Dip, Strike, Outcrop, Conformity and Unconformity.

 b). Drawing and interpretation of Geological cross-section. Geological maps no. 1-4.

2. Preparation of maps showing Geographical themes of India- Agriculture, Minerals, forest and soil (Data representation through Colours, shading, tint methods).

**Reading List**

1. Singh, R.L. (ed): Regional Geography of India,1967.
2. Tiwari, R.C.: Geography of India, Pprayag Pushhtak Bhawwan.
3. Khullar: India, A Comprehensive Geography, Kalyani Publishers.
4. Spate, O.H.K. & Learmonth,: A.T.A. India and Pakistan.
5. Sutta, A.K. India: Resources, Potentialities and Planning, 1973.
6. Guha & Chattaraj: A New approach to Economic Geography, The World Press Private Ltd.2005.

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 **9. Economic Geography**

**(Credit-6: Theory- 4, Practical-2)**

**Total Marks- 100**

**(Theory Marks-70, Practical Marks- 30)**

 **Theory Credit: 4**

1. Concept of Resource- Classification and conservation of resource.

2. Introduction: Concept and classification of economic activity

3. Primary Activities: Subsistence and Commercial agriculture, forestry, fishing and mining.

4. Secondary Activities: Manufacturing Regions, Manufacturing (Cotton Textile, Iron and Steel), Industrial Locational theory- Weber, Special Economic Zones and Technology Parks.

5. Tertiary Activities: Transport, Trade and Services.

**Practical Credit: 2**

1. Exercises on Flow-line:

a) Traffic flow Cartogram.

b) Iso-chronic Cartogram.

c) Transport network analysis (Beta and Gama Index).

 2. Time Series analtysis.

a) Semi – average method.

b) Moving - average method.

**Reading List**

1. Guha,J.L& Chattoraj,P.R 1999,(new edition):A new approach to Economic Geography.
2. Gautam,A.: Advanced Economic Geography.
3. Mitchell,B.: Geography: An Resource Analysis.
4. Thomes,R.S.& Corbin,P.B. 1974.: Geography of Economic Activity, Mc Graw Hill.

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**10. Statistical Methods in Geography**

**(Credit-6: Theory- 4, Practical-2)**

**Total Marks- 100**

**(Theory Marks-70, Practical Marks- 30)**

 **Theory Credit: 4**

1. Use of Data in Geography: Geographical Data Matrix, Significance of Statistical Methods in Geography; Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval, Ratio).

2. Tabulation and Descriptive Statistics: Frequencies (Deciles, Quartiles), Cross Tabulation, Central Tendency (Mean, Median and Mode, Centro-graphic Techniques, Dispersion (Standard Deviation, Variance and Coefficient of Variation).

3. Sampling: Purposive, Random, Systematic and Stratified.

4. Association and Correlation: Rank Correlation, Product Moment Correlation, and Simple Regression, Residuals from regression

5. Theoretical Distribution: Probability and Normal Distribution.

 **Practical Credit: 2**

1. Application of Measures of central tendencies in Geographical analysis.
2. Application of Measures of dispersion (Range, Mean Deviation and Standard Deviation in Geographical Analysis.
3. Correlation and Regression meythod and their application in Geographical analysis.
4. Map showing Co-efficient of variations.
5. Probability and Normal Curve.

**Reading List**

1. Mahmood, A : Statistical Method in Geography.
2. Elhance, D.N, Veena Elhance and B.M. Agarwal : Fundamentals of Statistics.
3. Alvi, J : Statistical Geography.
4. Gregory, S (1978) : Statistical Methods in Geography, Longman, London.
5. Hammond, R., McCullagh, P.S (1974) : Quantitative Techniques in Geography: An Introduction, Clarendan Press, Oxford.
6. Maurce, Y (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.
7. Lawrence, G.R.P (1968): Cartographic Methods, Methun, London.

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**Semester V**

**11. Remote Sensing and GIS**

**(Credit-6: Theory- 4, Practical-2)**

**Total Marks- 100**

**(Theory Marks-70, Practical Marks- 30)**

 **Theory Credit: 4**

1. Principles of Remote Sensing and GIS: Definition, Components (EMR, Sensor and platforms) and Development.

2. Aerial Photography and Satellite Remote Sensing: Types and Geometry of Aerial Photograph; EMR characteristics and Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.

3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure

4. Image Processing and Data Analysis/Mapoutput: Geo-Referencing; Digitization/Editing and Output and Overlays

5. Interpretation and Application of Remote Sensing and GIS: Land use/ Land Cover, Urban Sprawl Analysis; Forests Monitoring

**Practical Credit: 2**

1. Application of Remote Sensing Techniques:

 a. Drawing and interpretation of Aerial photograph.

 b. Drawing and interpretation of Sattelite imagery.

 c. Use of GPS in preparation of maps.

2. Selection of Training Site (TOPOSHEET). (Grid)

3. Geo-referencing and Digitization/Editing. (Contour) Delineation of micro-watershed

4. Data storage with separate entities and attributes

5. Layer overlay an open source sattelite image

6. Sattelite image interpretation and Land-use, Land cover (LULC ) data retrieve.

7. Map output.

**Reading List**

1. Singh and Patel: Principles of Remote Sensing.
2. Panda, B.C.: Remote Sensing – Principles and Applications.

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**12. Regional Geography of the World**

**(Credit-6: Theory- 4, Practical-2)**

**Total Marks- 100**

**(Theory Marks-70, Practical Marks- 30)**

**Theory Credit: 4**

 1. Physiography, climate, soil and vegetation of Asia, Africa, Europe, North America, South America and Australia.

 2. Mineral resources and Industrial development of the developed, developing and the underdeveloped countries of the World.

 3. Population distribution of the World.

 4. Regional studies of Middle East, South East Asia and the Mediterranean Region.

**Practical Credit: 2**

 1. Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report. (Preparation of a Research paper of their own locality individually).

**Reading List**

1. Manku, D.S.: A Regional Geography of World, Kalyani Publishers.
2. Gautam, A.: World Geography, Sarda Pushtak Bhawan, Allahabad.
3. Bradshaw, M.: World Regional Geography.
4. Gourou, P. (1980): The Tropical World, Longman, London.
5. Cole, J. (1996): A Geography of World’s Major Regions, Routledge, London.
6. Jackson, R.H. et al (1991): World Regional Geography – Issues for Today.

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**Semester VI**

**13. Evolution of Geographical Thought**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

**Theory Credit: 4**

1. Pre-Modern – Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies.

2. Modern – Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America.

3. Paradigms in Geography

4. Debates – Environmental Determinism and Possibilism, Systematic and Regional, Ideographic and Nomeothetic.

5. Trends – Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Feminism; Towards Post Modernism – Changing Concept of Space in Geography, Future of Geography.

**Practical Credit: 2**

1. Surveying and Levelling:

 a. Preparation of Maps by using Prismatic Compass.

 b. Plane table (Radiation and Intersection methods).

 c. Determination of height by using Theodolite (Accessible and inaccessible cases),

 Closed traverse by using Theodolite.

 d. Estimation of Relief by using Dumpy Level.

**Reading List**

1. Hussain, M (1984): Evolution of Geographical Thoughts.

2. Adhikari, S : Geographical Thoughts.

3. Adhikari, S.: Geographhical Thought, Chaitanya Publishers, Allahabad.

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**14. Disaster Management**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Disasters: Definition and Concepts, Classification of Hazards, Disasters; Risk and Vulnerability,

2. Natural Disasters : a) Flood b) Earthquake and Tsunami c) Landslide d) Drought e) Cyclone.

3. Manmade disasters a) Deforestation b) Dam construction c) Chemical Hazard d)

 Global Warming and Climate Change.

4. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM

5. Indigenous Knowledge and Community-Based Disaster Management; Do’s and Don’ts During and Post Disasters

 **Project Work Credit: 2**

The Project Report based on any two field based case studies among following disasters and one disaster preparedness plan of respective college or locality:

1. Flood, 2. Earthquake, 3. Landslides, 4. Cyclone and Hailstorms, 5. Drought, 6. Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

**Reading List**

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.

2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.

3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.

4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3

5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.

6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.

7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.

8. Singh Jagbir (2007) “Disaster Management Future Challenges and Oppurtunities”, 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

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DISCIPLINE SPECIFIC ELECTIVE (DSE)

 **1. Social Geography**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Social Geography: Concept, Origin, Nature and Scope.

2. Concept of Space in Social Geography

3. Social Change and Transformation: Technology and Occupational Change.

4. Social Categories: Caste, Class, Religion Language and Race and their Spatial

 Distribution

5. Geographies of Welfare and Well being: Concept and Components – Healthcare, Housing,

 Education and Social Security

6. Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts

 and Crime.

**Practical Credit: 2**

1. Study of different settlement pattern from Toposheets: Random, Clustered and Systematic.

2. Pattern Analysis

a) Nearest Neighbour Analysis

b) Location Quotient Analysis

c) Preparation of Lorenz Curve.

**Reading List**

1. Ahmed A., 1999: Social Geography, Rawat Publications.

2. Casino V. J. D., Jr., 2009) Social Geography: A Critical Introduction, Wiley Blackwell.

3. Cater J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.

4. Panelli R., 2004: Social Geographies: From Difference to Action, Sage.

5. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: Introducing Social Geographies, Oxford University Press.

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**2. Agricultural Geography**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Defining the Field: Nature and Scope; Land use, land cover definition and classification.

2. Determinants of Agriculture: Physical, Technological and Institutional

3. Agricultural Regions of the World.

4. Agricultural Systems of the World (Whittlesey’s classification) and Agricultural Land use model (Von Thuenen, modification and relevance).

5. Agricultural Modernisation and Revolutions in India: Green, White, Blue, Pink

**Practical Credit: 2**

1. Preparation of Ergograph and their interpretation.
2. Rainfall, Soil and Crop distribution Maps.
3. Determination and mapping of Crop diversification, combination and crop intensity.

**Reading List**

1. Hussain,M.: Agricultural Geography, Rawat Publication,2004.

2. Singh & Dhillon.: Agricultural Geography.

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**3. Population Geography**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Defining the Field – Nature and Scope; Sources of Data with special reference to India (Census, Vital Statistics and NSS).

2. Population Size, Distribution and Growth – Determinants and Patterns; Theories of Growth – Malthusian Theory and Demographic Transition Theory.

3. Population Dynamics: Fertility, Mortality and Migration, Determinants and Implications.

4. Population Composition and Characteristics – Age-Sex Composition; Rural and Urban Composition; Literacy, Working and Non-working population composition.

5. Population-Resource Relationship: Over, Optimum and Under Population.

6. Contemporary Issues – Ageing of Population; Declining Population; HIV/AIDS, Drugs addiction.

 **Practical Credit: 2**

1. Preparation of population distribution and density maps of Assam and India (Dot. Multiple dot, Circle and Shade method).
2. Preparation of population growth curve- Assam and India.
3. Age-sex pyramid for developed and developing countries.
4. Population projection by different methods- arithmetic and geometric.
5. Familiarization with MS office and Excel application of SPSS for Geographical data analysis.

**Reading list**

1. Chandna,R.C.: Population Geography, Kalyani Publishers,2006.

 2. Hassan,Md. Izhar.: Population Geography, Rawat Publication, New Delhi.

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**4. Political Geography**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit: 4**

1. Introduction: Concepts, Nature and Scope.

2. State, Buffer state, Nation and Nation State – Concept of Nation and State, Attributes of State – Frontiers, Boundaries, Shape, Size, Territory and Sovereignty, Concept of Nation State; Geopolitics; Theories (Heartland and Rimland)

3. Electoral Geography – Geography of Voting, Geographic Influences on Voting pattern, Geography of Representation, Gerrymandering.

4. Political Geography of Resource Conflicts – Water Sharing Disputes, Boundary disputes, Disputes and Conflicts Related to Forest Rights and Minerals.

5. Politics of Displacement: Issues of relief, compensation and rehabilitation: with reference to Dams and Special Economic Zones

 **Practical Credit: 2**

1. Exercises on Shape Index of Chile, France, India and Assam.

2. Maps on changing nature of political units of North-east India.

3. Maps of dispute areas- showing boundary disputes.

**Reading list**

1. Dikdhit, R.D. (1999): Political Geography, A Contemporary Perspective, Tata McGraw Hill, New Delhi.
2. Sukhwal, B.L. (1968): Modern Political Geography of India, Sterling Publishers, New Delhi.
3. Adhikari, Sudipta: Political Geography, Rawat Publication, New Delhi.
4. Adhikari, Sudipta: Political Geography of India, Sarda Pushtak Bhawan.
5. John, R.S. (1982): An Introduction to Political Geography, Routledge, London.
6. Taylor, Peter (1985): Political Geography, Longman, London.
7. Prescott, JR.V (1972): Political Geography, London, Methuen & Co.
8. Muir, R.(1976): Modern Political Geography, London, Mcmillan.
9. Hazarika, Joysankar (1966): Geopolitics of North East India- A Strategical Study, Gyan Publishing House, New Delhi.

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**GENERIC ELECTIVE (GE)**

**1. DISASTER MANAGEMENT**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Credit- 4**

1. Disasters: Definition and Concepts, Classification of Hazards, Disasters; Risk and

 Vulnerability,

2. Natural Disasters in India: a) Flood b) Earthquake and Tsunami c) Landslide d) Drought e) Cyclone.

3. Manmade disasters a) Deforestation b) Dam construction c) Chemical Hazard d)

 Global Warming and Climate Change.

4. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM

5. Indigenous Knowledge and Community-Based Disaster Management; Do’s and Don’ts During and Post Disasters

**Project Work on Disaster Management**

 **GEO-GE-P2-101**

**Credit- 2**

The Project Report based on any two field based case studies among following disasters and one disaster preparedness plan of respective college or locality:

1. Flood
2. Earthquake

3. Landslides

4. Cyclone and Hailstorms

5. Drought

6. Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

**2. Geography of Tourism**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit- 4**

1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism

2. Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism and Pilgrimage

3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings Incentives Conventions and Exhibitions (MICE)

4. Impact of Tourism: Economy, Environment and Society

5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal Areas; National Tourism Policy

**Practical Credit- 2**

Preparation of Field study report based on any tourist spot of Assam and India.

**3. Geography of India**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory Credit- 4**

1. Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)

2. Population: Distribution and growth, Structure

3. Economic: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; agricultural production and distribution of rice and wheat, industrial development : automobile and Information technology

4. Social: Distribution of population by race, caste, religion, language, tribes and their correlates

5. Regionalisation of India: Physiographic (R. L. Singh), Socio – cultural (Sopher), Economic (Sengupta)

**Practical Credit- 2**

1. Preparation of maps showing Geographical themes of India- Agriculture, Minerals, forest and soil (Data representation through Colours, shading, tint methods).
2. Exercises on Shape Index of Pre and Post independent India.

**Reading List**

1. Singh, R.L. (ed): Regional Geography of India,1967.
2. Tiwari, R.C.: Geography of India, Pprayag Pushhtak Bhawwan.
3. Khullar: India, A Comprehensive Geography, Kalyani Publishers.
4. Spate, O.H.K. & Learmonth,: A.T.A. India and Pakistan.
5. Sutta, A.K. India: Resources, Potentialities and Planning, 1973.
6. Guha & Chattaraj: A New approach to Economic Geography, The World Press Private Ltd.2005.

**4. Climate Change: Vulnerability and Adaptation**

(Credit-6: Theory- 4, Practical-2)

Total Marks- 100

(Theory Marks-70, Practical Marks- 30)

 **Theory**   **Credit- 4**

1. Science of Climate Change: Understanding Climate Change, Green House Gases and Global Warming, Global Climatic Assessment- IPCC

2. Climate Change and Vulnerability: Physical Vulnerability, Economic Vulnerability, Social Vulnerability

3. Impact of Climate Change: Agriculture and Water, Flora and Fauna, Human Health

4. Adaptation and Mitigation: Global Initiatives with Particular Reference to India.

5. National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats, Role of Individual)

**Practical Credit- 2**

1. Collection and interpretation of local climatic data.
2. Study of Weather symbols.
3. Drawing and interpretation of Indian daily weather map with special reference to summer and winter season.
4. Trend of climate change with graphical representation.

SKILL ENHANCEMENT COURSE (SEC)

**1. Remote Sensing (Practical) Credit- 2**

1. Remote Sensing: Definition and Development; Platforms and Types; Photogrammetry.

2. Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and EarthSurface; Satellites (Landsat and IRS); Sensors

3. Image Processing (Digital and Manual): Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering); Classification (Supervised and Un-supervised)

4. Satellite Image Interpretation.

5. Application of Remote Sensing: Land Use Land Cover.

**Reading list**

1. Singh and Patel: Principles of Remote Sensing, Scientific Publishers, 2004.
2. Panda, B.C.: Remote Sensing – Principles and Applications.
3. Current, P.J.: Principles of Remote Sensing.

**2. Geographical Information System (Practical) Credit- 2**

1. Geographical Information System (GIS): Definition and Components.

2. Global Positioning System (GPS) – Principles and Uses; DGPS.

3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.

4. GIS Data Analysis: Input; Geo-Referencing; Editing, Output and Query; Overlays.

5. Application of GIS**:** Land Use Mapping; Urban Sprawl Analysis; Forests Monitoring.

**Reading list**

1. Arnoff, S. (1989): Geographic Information System: A Management Perspective, DDL Publication, Ottawa.
2. Star, J. and Estes (1994): Geographic Information System. An Introduction, Prentice Hall, Englewood Cliff, New Jersey.

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