NORTH LAKHIMPUR COLLEGE (AUTONOMOUS)
KHELMATI, NORTH LAKHIMPUR

CORE SYLLABUS
Subject: GEOGRAPHY

Semester	Course Code	Title of the paper	Credit	Lectures in hrs.
I	CT-5-GEO-101	INTRODUCTION TO GEOGRAPHY	5	80
II	CT-5-GEO-202	PHYSICAL GEOGRAPHY	5	80
III	CT-5-GEO-303	CLIMATOLOGY & ENVIRONMENTAL GEOGRAPHY	5	80
	CP-3-GEO-304	TOPOSHEET, WEATHER MAP AND GEOLOGICAL MAPS	3	96
IV	CT-3-GEO-405	HUMAN & POPULATION GEOGRAPHY	3	48
	CT-3-GEO-406	NORTH EAST INDIA WITH SPECIAL REFERENCE TO ASSAM.	3	48
	CP-2-GEO-407	SURVEYING AND FLOW – LINE	2	64
	CP-2-GEO-408	MORPHOMETRIC ANALYSIS AND THEMATIC MAPPING	2	64
V	CT-5-GEO-509	REGIONAL GEOGRAPHY OF INDIA	5	80
	CT-5-GEO-510	SOCIAL AND POLITICAL GEOGRAPHY	5	80
	CT-5-GEO-511	ECONOMIC GEOGRAPHY REGIONAL PLANNING	5	80
	CP-2-GEO-512	REMOTE SENSING TECHNIQUES – GIS, GPS AND SHAPE INDEX	2	64
	CP-2-GEO-513	REPRESENTATION OF RELIEF AND POPULATION STUDY	2	64
	PR-2-GEO-514	PROJECT REPORT	2	64
VI	CT-5-GEO-615	REGIONAL GEOGRAPHY OF THE WORLD	5	80
	CT-5-GEO-616	QUANTITATIVE METHODS & MAP PROJECTIONS	5	80
	CT-5-GEO-617	FUNDAMENTAL OF REMOTE SENSING – GIS, GPS AND SURVEYING	5	80
	CP-2-GEO-618	MAP PROJECTIONS & LOCAL AREA STUDY	2	64
	CP-2-GEO-619	QUANTITATIVE METHODS & PATTERN ANALYSIS	2	64
	PR-2-GEO-620	PROJECT REPORT	2	64

Syllabus for BA/B.Sc
Subject: Geography (Core Course)
SEMESTER – I

Paper: CT-5-GEO-101: INTRODUCING GEOGRAPHY AS A DISCIPLINE

L-4, T-1, P-0

Objective

This introductory paper is intended to acquaint the students with the general characteristic of Geography as a field of learning covering relevant field of Social as well as Natural Science.

Course Contents:

Unit – I: Introduction **Lecture Hours- 20**

1. Definition, nature and scope of Geography; its relevance in present day context.
2. Branches of Geography and their relation with other branches of Physical and Social Sciences.
3. Major schools of Geographical Thought (British, American, French, German).

Unit – II: Developments in Geography **Lecture Hours- 18**

1. History of development of Geography in Classical, Medieval and Modern periods.
2. Recent development in Geography (Quantitative Revolution, Behavioural & Applied Geography)

Unit – III: Geography- Human- Environment Relationship **Lecture Hours- 12**

1. Man-environment relationship- Determinism and Possibilism, Neo-determinism
2. Human impact on environment: spatial and temporal dimensions
3. Sustainable human- environment relation

Unit – IV: Introduction to Physical Geography **Lecture Hours - 30**

1. Nature and significance of Physical Geography
2. Geological Time Scale
3. Origin and types of Landforms: mountain, plateau and plain.
4. Major relief features of the earth; Origin of continents and Ocean basins- Continental Drift and Plate tectonics.

RECOMMENDED TEXT AND REFERENCE BOOKS:

1. Ahmed, E. (1985): Geomorphology, Kalyani Publisher, New Delhi.
2. Strahler, A.N. (1969): Physical Geography, 3rd Edition, Wiley International.
3. Dayal, P.A.: Text Book of Geomorphology,Shukla Book Depot, Patna

4. Thornbury, W.D. (1969): Principles of Geomorphology, Wiley International.
5. Hartshorne,R. (1959): Perspective on Nature of Geography.
6. Steers, J.A. (1964): The Unstable Earth, Kalyani Publishers, New Delhi.
7. Wooldrige, S.W. and Morgan, R.S. (1959): The Phsical Basis of Geography, Green & Co.
8. Adhikari, S.: Geographhical Thought, Chaitanya Publishers, Allahabad.
9. Bloom, A.L.: Geomorphology, A systematic analysis of late Cenozoic Landforms, Prentice Hall of India Publshers, New Delhi.
10. Chorley,R.J.: Water, Earth and Man, Methun and Co., London.
11. Chorley,R.J. (ed), 1968: Models in Geography, Methun and Co.
12. Gregory,K.J. (1985): The Nature of Physical Geography, Edward Arnold, London.
13. Leopold, L.B., Wolman, M.G., Milier,J.P.,(1964): Fluvial Processes in Geomorphology, Freeman, San Fransisco,
14. Penck,W.,(1924): Morphological Analysis of Landforms, Mc Millan, London.
15. Sharma, H.S.(ed)1982: Perspectives in Geomorphology-Earth Surface Process and Forms,Tata Mc Graw Hill, New Delhi.

SEMESTER – II

Paper: CT-5-GEO-202: PHYSICAL GEOGRAPHY

L-4, T-1, P-0

Objective

The basic objective of this course is to introduce the concepts in Physical Geography; especially Geomorphology, Oceanography, Biogeography to acquaint the students about the Earth's environment.

Course Contents:

Unit – I: Geomorphology: Concepts and Processes **Lecture Hours - 40**

1. Basic concepts of Geomorphology.
2. Earth's movement- Earthquake and Volcanoes and resulting Landforms(Folds, Faults and Joints).
3. Mountain building theories of Kober and Holmes, Isostacy
4. Geomorphic processes- Weathering, Erosion and Mass wasting.
5. Normal cycle of erosion, views of Davis and Penck.
6. Evolution of landforms under Glacial, Aeolian, and Coastal environment
7. Drainage basin as a Geomorphic unit- Drainage types and patterns, Streams order, Bifurcation ratio, Stream frequency, Drainage density.

Unit – II: Oceanography **Lecture Hours - 20**

1. Introduction to Oceanography.
2. Bottom configuration of the Indian, Atlantic and Pacific Ocean.
3. Ocean salinity and temperature- distribution and determinants.
4. Marine deposits and resources- biotic, mineral and energy.
5. Coral reefs- types and ecological significance
6. Ocean currents- Pacific, Atlantic and Indian Ocean

Unit – III: Biogeography **Lecture Hours - 20**

1. Scope and significance of Biogeography.
2. Factors affecting the distribution of plants and animals. Zoogeographical and Phytogeographical regions of the world.
3. Soil- soil forming process, classification and distribution of soil, soil erosion and conservation.
4. Biomes- forest, grassland, desert and mountain.
5. Conservation of biotic resources

RECOMMENDED TEXT AND REFERENCE BOOKS :

1. Wooldrige, S.W.and Morgan, R.S.(1959): The Physical Basis of Geography, Green Co.
2. Dayal, P.A.: Text Book of Geomorphology, Shukla Book Depot, Patna.
3. Chorley, Water, Earth and Man, Methun and Co., London.
4. Leopold, L.B Wolman, M.G., Miller J.P., 1964: Fluvial Processes in Geomorphology, Freeman, San Fransisco.
5. Penck, W., 1924: Morphological Analysis of Landforms, Mc Millan, London.
6. Steers, J.A. : Unstable Earth, Kalyani Publishers,1988.
7. Khullar, D.R. Physical Geography, Kalyani Publishers, 2012.
8. Ahmed, E, 1985: Geomorphology, Kalyani Publishers, New Delhi.
9. Lal, D.S.: Oceanography and Climatology, Sharda Pushtak Bhawan, Allahabad, 2005.
10. Hussain, H(ed), 1994: Biogeography (Part I & Part II) Anmol Publication, New Delhi.
11. Robinson, H., 1982: Biogeography, ELBS, Mc Donald & Evans, London.
12. Simmons, I.G., 1974: Biogeography: Natural and Cultural, London.
13. Sharma, R.C. et al (1970): Oceanography for Geographers , Chaitanya Publication. House, Allahabad.
14. King, CAM (1972): Oceanography for Geographers, E. Arnold, London.

SEMESTER III

Paper: CT-5-GEO-303: CLIMATOLOGY & ENVIRONMENTAL GEOGRAPHY

L-4, T-1, P-0

Objective

This paper is structured to acquaint the students with various aspects of climate and environmental problems and hazards and their mitigation from sustainable development perspectives.

Course Contents:

Unit – I: Climatology **Lecture Hours - 40**

1. Introduction to Climatology and climatic elements
2. Insolation and Heat Budget, Vertical and Horizontal distribution of temperature.
3. Atmospheric pressure and wind systems: Planetary, Periodic and Local winds, Jet streams.
4. Air mass and Fronts- concept, classification and properties.
5. Cyclone and Anticyclone, Tropical and Extra-tropical cyclone.
6. Classification of climate: Koppen's and Thornwaite's classification
7. Climate change: causes and consequences
8. Global Warming and its impact
9. Concept of applied climatology: Relationship of climate with agriculture, housing and health

Unit –I I: Environmental Geography **Lecture Hours - 40**

1. Meaning and Scope of Environmental Geography
2. Development of Environmental Geography as a branch of Geography, its relation with environmental science
3. Ecosystem and its functioning as basic concepts in Environmental Geography
4. Impact of Human on Environment: Environmental degradation- Deforestation, Desertification and Environmental Pollution.
5. Environmental hazards : Earthquake, Flood, Drought, Landslide, Soil Erosion and Cyclone
6. The concept of Environmental Management
7. Environmental Programmes and policies- Global, National and Local level
8. Environmental Education and Sustainable Management of Environment

RECOMMENDED TEXT BOOKS & REFERENCE BOOKS :

1. Lal, D.S., 1998: Climatology, Sharda Pustak Bhawan, Allahabad.

2. Bhutani, S.: Our Atmosphere, Kalyani Publishers, 2000.
3. Singh, S.: Cliamatology, Prayag Pushtak Bhawan. Strahler, A.N. (1969): Physical Geography, 3rd Edition, Wiley International.
4. Khullar, D.R.: Physical Geography, Kalyani Publishers, New Delhi.
5. Barry, R.G. & Chorley, R.J. 1971: Atmosphere, Weather & Climate, Mathew Co., London.
6. Lockwood,J.G., 1976: World Climatology-Environmental Approach, Ed. Arnold Ltd.
7. Trewartha, G.T. & Horn,L.A., 1980: An Introduction to Climate, International Studies, Biogeography.
8. Singh, S.,: Environmental Geography, Prayag Pustak Bhawan, Allahabad.
9. Gautam, A.: Environmental Geography, DVS Publication, Ghy.
10. Chandna, R.C.: Environmental Geography Kalyani Publishers, New Delhi.
11. Park, C.: The Environment, Routledge, London.
12. Saxena, K.K.: Environmental Studies, , DVS Publication, Ghy.
13. Jackson, A.: Environmental Science.
14. Biswas, B.C.: Environmental Geography, Eastern Book House, Ghy.

Paper : CP-3-GEO-304 : TOPOSHEET, WEATHER MAP AND GEOLOGICAL MAPS

L-0,T-0,P-3

Objective

This paper is designed to acquaint the students with the topographic study, representation of climatic data and to analyze the Geological maps.

Course Contents:

Unit – I: Toposheet study and profile drawing **Lecture Hours- 40**

1. Interpretation of survey of India Toposheets:
   a) Drawing of a representative part from topographical map and Interpretation 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.

Unit – II: Climatic data study **Lecture Hours- 20**

1. Study of the 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.

Unit – III: Interpretation of Geological Maps. **Lecture Hours - 36**

1. Concept of Bedding plain, Dip, Strike, Out crop, Conformity and Unconformity.
2. Drawing and interpretation of Geological cross-section (Geological maps no. 1- 4).

RECOMMENDED TEXT BOOKS:

1. Mishra, R. P. : Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2002.
2. Singh, R.L. : Fundamentals of Practical Geography, DVS Publication, Ghy.
3. Singh, G. : Map work and Practical Geography, DVS Publication, Ghy.
4. Singh, R.L. : Elemants of Practical Geography, DVS Publication, Ghy.
5. Monkhouse, : Maps and Diagrams, Platinum Publishers, 2009.

SEMESTER IV

Paper: CT-3-GEO-405: HUMAN & POPULATION GEOGRAPHY

L-2,T-1,P-0

Objective

This introductory paper is intended to acquaint the students with distinctiveness of Geography as a field of learning in Human Geography and Population Studies.

Course Contents:

Unit – I: Human Geography **Lecture Hours - 24**

1. Nature and scope of Human Geography, Branches of Human Geography.
2. Development of Human Geography in France, Germany and USA.
3. Major human races of the World- their origin, classification.
4. Human adaptation in the flood plain regions with special reference to the Brahmaputra and the Ganga Plain.
5. Origin and growth of Rural and Urban Settlement, pattern of Rural Settlement, Functional classification of towns.

Unit – II: Population Growth and Distribution, Population Regions and Policies

Lecture Hours -24

1. Meaning and scope of Population Geography, and its relationship with other discipline.
2. Population composition in respect of age-sex, language, literacy and rural-urban.
3. Factors affecting the growth and distribution of population.
4. Population theory: Malthus and Demographic transition
5. Determinant of population changes- Fertility, Mortality and Mobility
6. Population resources: Over population, Under population and Optimum population and their remedial measures

RECOMMENDED TEXT BOOKS AND REFERENCE BOOKS:

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.

Paper: CT-3-GEO-406: REGIONAL GEOGRAPHY OF N.E. INDIA WITH SPECIAL REFERENCE TO ASSAM

L-2,T-1,P-0

Objective

This paper is aimed at presenting a comprehensive integrated and empirically based profile of North East India. It gives an overview of the land, people and economy of this region so that the students are aware of its diverse Geographical processes the region and its impact on economy, society and demography.

Unit – I: Physical Geography of NE India **Lecture Hours- 10**

1. North East India –Geology and Physiography.
2. Drainage System and Climate.
3. Soil and Vegetation – Types and spatial distribution.

Unit – II: People of NE India **Lecture Hours- 10**

1. Different Ethnic groups
2. Distribution of Population

Unit – III: Economy of NE India **Lecture Hours-18**

1. Resource base: Forest, Water and Minerals
2. Agriculture: Major crops – Rice, Jute, Sugarcane and Tea
3. Industries: Agro-based, Forest-based, Tourism
4. Transport: Road, Railway, Water ways, Air ways – their role in regional development.

Unit – IV: Problems and Prospects **Lecture Hours- 10**

1. Strategic location and Economic development.
2. Natural hazards i.e. Flood, Earthquake, Landslide
3. Man induced i.e. Deforestation, Ethnic-Movement, Insurgency

RECOMMENDED TEXT AND REFERENCE BOOKS:

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.

Paper: CP-2-GEO-407: REPRESENTATION OF RELIEF AND FLOW – LINE

L-0,T-0,P-2

Objective

This paper is designed to acquaint the students about the knowledge of Relief Study and Flow-line

Course Cotents:

Unit – I: Representation of Relief **Lecture Hours-40**

1. Analysis of slope by Wentworth's and Smith's methods.
2. Block diagrams – one and two point perspective.
3. Drawing of Hypsometric and Bathymetric curve.

Unit – II: Exercises on Flow Line. **Lecture Hours- 24**

1. Traffic flow cartogram.
2. Iso - Chronic cartogram.
3. Transport network analysis (Alpha, Beta & Gama Index).

RECOMMENDED TEXT BOOKS:

1. Mishra, R. P. : Fundamentals of Cartography, Concept Publishing Co., 2002.
2. Singh, R.L. : Fundamentals of Practical Geography, DVS Publication, Ghy.
3. Singh, G. : Map work and Practical Geography, DVS Publication, Ghy.
4. Singh, R.L. : Elemants of Practical Geography, DVS Publication, Ghy.
5. Monkhouse, : Maps and Diagrams, Platinum Publishers,2009.

Paper : CP-2-GEO-408: MORPHOMETRIC ANALYSIS AND THEMATIC MAPPING

L-0,T-0,P-2

Objective

The objective of this course is to develop skills among the students regarding the use of Morphometric analysis and Thematic mapping.

Course Contents:

Unit – I: Morphometric Analysis **Lecture Hours - 32**

1. Delineation of Drainage basin.
2. Drainage ordering by Horton's and Strahler's method.
3. Preparation of drainage density and drainage frequency map and calculate the bifurcation ratio.

Unit – II: Thematic Mapping of India and North-East India. **Lecture Hours - 32**

1. Preparation of Maps showing Geographical themes of India – Minerals, Forest, soil, Agriculture.
2. Preparation of Maps showing Geographical themes of North-East India and Assam – distribution of urban centers (Sphere method), production of rice (Block piling method).

RECOMMENDED TEXT BOOKS:

1. Mishra, R. P. : Fundamentals of Cartography, Concept Publishing Co., New Delhi, 2002.
1. Singh, R.L. : Fundamentals of Practical Geography, DVS Publication, Ghy.
2. Singh, G. : Map work and Practical Geography, DVS Publication, Ghy.
3. Singh, R.L. : Elemants of Practical Geography, DVS Publication, Ghy.
4. Monkhouse, : Maps and Diagrams, Platinum Publishers, 2009.

SEMESTER V

Paper : CT-5-GEO-509 : REGIONAL GEOGRAPHY OF INDIA

L-4,T-1,P-0

Objective

The basic objective of this course is to give a comprehensive idea about the various Geographical aspects of India including Geology, Physiography, Climate, Soil, Agriculture, Socio-Cultural structure, Vegetation, Transport and Mineral and Power resources.

Course Contents:

Unit – I: Physical Geography of India **Lecture Hours -16**

1. India – Geological structure and Physiographic framework.
2. Drainage system and Climate.
3. Soil and Vegetation – types and spatial distribution.

Unit – II: Agriculture, Industries and Transport **Lecture Hours-16**

1. Agriculture: Salient features of Indian Agriculture; Irrigation; sources- multipurpose river valley projects; Major crops – Rice, Wheat, Sugarcane, Cotton, Jute, Tea and Coffee – production and spatial distribution.
2. Growth of agriculture during the Plan periods – Green revolution, White revolution and Blue revolution.
3. Industries: Iron & Steel, Textiles and Chemicals – their growth and development; Industrial Regions of India.
4. Problems and prospects of Tourism industry in India.
5. Transport: Road, Railway, Water ways, Air ways – their role in regional development.

Unit – III: Mineral and Power Resources **Lecture Hours-16**

1. Mineral resources : Iron, Aluminum, Limestone and Mica production and spatial distribution.
2. Power resources : Coal, Petroleum, Natural gas and Water power, Nuclear energy production and spatial distribution – Non- conventional energy sources.

Unit – IV: Socio – Cultural Structure **Lecture Hours-16**

1. Population growth and distribution, composition of population – Racial, Religious, Linguistic, Literacy, Sex and Economic, Scheduled caste and Scheduled tribes;

RECOMMENDED TEXT AND REFERENCE BOOKS:

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.

Paper : CT-5-GEO-510 : SOCIAL AND POLITICAL GEOGRAPHY

L-4,T-1,P-0

Objective

The objective of this course is to give a comprehensive idea about the Social, Political Geography and important Geopolitical issues. This will enhance the awareness of the students on the Geopolitical aspects of the world in general and the India and NE India in particular.

Course Contents:

Unit – I: Concept of Social Geography **Lecture Hours -30**

1. Meaning and scope of Social Geography; its development through time.
2. Concept of space in Social Geography.
3. Society and Environment.
4. Understanding Society and Culture, Cultural Hearth and Cultural regions of the world.
5. Concept of Modernization and Socio-cultural changes.
6. Concept of Central Place theory.

Unit -I: Political Geography **Lecture Hours- 25**

1. Definition, Nature, Scope of Political Geography.
2. States – Formation, Location, Shape and Size.
3. Nation – State, Core areas, Capitals.
4. Boundaries and Frontiers: Functions and classification of International Boundaries; difference between Boundaries and Frontiers, Marine Zones, Buffer states, Landlocked states and Shatter belts

Unit – II: Geopolitical Issues **Lecture Hours- 25**

1. Geopolitics and its development.
2. Global strategic views – Mackinder, Spykman and Mahan.
3. Geopolitical settings of India : International boundaries of India and related issues; Geopolitics of Indian Ocean.
4. SAARC and ASEAN in the New International Order.
5. Geopolitical situations of North East India.

RECOMMENDED TEXT AND REFERENCE BOOKS:

7. Dikdhit, R.D. (1999): Political Geography, A Contemporary Perspective, Tata McGraw Hill, New Delhi.

8. Dikshit, R.D. (1999): Political Geography, A Century of Progress, Sage, New Delhi.
9. Sukhwal, B.L. (1968): Modern Political Geography of India, Sterling Publishers, New Delhi.
10. Adhikari, Sudipta: Political Geography, Rawat Publication, New Delhi.
11. Adhikari, Sudipta: Political Geography of India, Sarda Pushtak Bhawan.
12. Alexander, L.M (1963): World Political Patterns, Ran MeNally, Chicago.
13. John, R.S. (1982): An Introduction to Political Geography, Routledge, London.
14. Taylor, Peter (1985): Political Geography, Longman, London.
15. Prescott, JR.V (1972): Political Geography, London, Methuen & Co.
16. Muir, R.(1976): Modern Political Geography, London, Mcmillan.
17. Hazarika, Joysankar (1966): Geopolitics of North East India- A Strategical Study, Gyan Publishing House, New Delhi.
18. Taher, Md. And Hmed : North East India.
19. Bhattacharya, N.N. : North East India: A systematic Geography.
20. Taher & Ahmed : Assam; A Geographical Profile.
21. Bhagawati, A.K. et al: Geography of Assam, 2000 Publication of NEIGS.

Paper: CT-5-GEO-511: ECONOMIC GEOGRAPHY & REGIONAL PLANNING

L-4,T-1,P-0

Objective

This course is aimed to familiarize the students with the Geographical factors which have a bearing on the social and regional organizations of space along with industries, agricultural and transport geography. This will enhance awareness among the students regarding the multi-dimensional nature of regional space and the resultant spatial structure.

Course Contents:

Unit-I:Concept of Economic Geography & Geography of Resources Lecture Hours -16

1. Definition,nnature and scope of Economic Geography.
2. Concept and classification of economic activities- Primary, Secondary and Tertiary.
3. Resource meaning and classification.
4. Distribution, utilization, Problems and conservation of natural resources.
5. Role of Technology in resource utilization.

Unit – II: Industrial Geography Lecture Hours-16

1. Definition, Nature and Scope of Industrial Geography.
2. Geographic factors of Location of Industry.
3. Major Industries of the World- Iron and steel, Cotton textiles, Chemical and Tourism.
4. Industrial Regions of the World- USA, Japan and India.
5. Location of major food-processing industries.
6. Industrial Location theories- Weber and Losch.

Unit – II: Agricultural Geography Lecture Hours-16

1. Introduction, Nature and Scope of Agricultural Geography.
2. Physical and Socio-economic factors affecting of Agriculture.
3. World distribution of Major crops.
4. World Agricultural types and Whittlessey's classification of Agricultural regions of the world.
5. Von-Thunen theory of Agricultural land uses and its modification and relevance.

Unit – III: Transport Geography Lecture Hours-16

1. Impact of Geographical factors on development of Transport & Communication.
2. Transport as a factor of Resource Utilization-Environment

3. Means of Transport- Land, Water and Air.
4. Transport Network Analysis.
5. Major Trade route of the World- Internal and International Trade.

Unit – IV: Regional Concept and Planning **Lecture Hours-16**

1. Concept of Region, Types of region and Methods of regionalization.
2. Concept of Regional Planning – Its relevance in development and problems.
3. Regional Planning in India, Regional approach to planning in India's Five year plans.

Unit – V: Regional Planning Strategy **Lecture Hours-16**

1. Resource base and development strategies for different regions – Punjab Plain, Chotanagpur Plateau and NE India.
2. Geographical aspects of development in Japan – Agriculture, Industry and Planning
3. Concept of Land Use Planning and its necessity in Indian context

RECOMMENDED TEXT AND REFERENCE BOOKS:

1. Guha,J.L& Chattoraj,P.R 1999,(new edition):A new approach to Economic Geography.
2. Gautam,A.: Advanced Economic Geography.
3. Hussain,M.: Agricultural Geography, Rawat Publication,2004.
4. Singh & Dhillon.: Agricultural Geography.
5. Raza, M & Agarwal,Y.: Transport Geography of India.
6. Mitchell,B.: Geography: An Resource Analysis.
7. Hartshorne,T.N. & Alexander,J.W.: Economic Geography, Prentice Hall, New Delhi.
8. Thomes,R.S.& Corbin,P.B. 1974.: Geography of Economic Activity, Mc Graw Hill.
9. Wheeler,J.O & Muller,P.O.1981.: Economic Geography, Wiley & Sons.
10. Sundaram, K.V. (ed): Geography and Planning, Concept Publisher.
11. Raza, M. (1988): Regional Development, Heritage Publishers.
12. Mitra, A. (1965): Levels of Regional Development, Census of India, Vol- I, Pt I &II, New Delhi.
13. Jones, Emyrs, (1975): Reading in Social Geography, London.
14. Singh Yogendra : Modernisation and Social change: Orient Longman.

Paper : CP-2-GEO-512 : REMOTE SENSING TECHNIQUES AND SHAPE INDEX

L-0, T-0, P-2

Objective

The objective of this course is to develop skills among the students regarding the use of Modern Techniques like Aerial Photograph, Satellite imagery and Shape index.

Course Contents:

Unit – I: Application of Remote Sensing Techniques. **Lecture Hours-40**

1. Air photo interpretation.
2. Sattelite imagery interpretation.
3. Use of GPS in preparation of maps.

Unit – II: Shape Index. **Lecture Hours-24**

1. Exercises on Shape Index of Pre and Post Independent India.

RECOMMENDED TEXT BOOKS REFERENCE BOOKS:

1. Mishra, R.P. and Ramesh: Fundamentals of Cartography.
2. Singh and Patel: Principles of Remote Sensing, Scientific Publishers, 2004.
3. Panda, B.C.: Remote Sensing – Principles and Applications.
4. Singh, R.L.: Fundamentals of Practical Geography, DVS Publication, Ghy.
5. Singh, G.: Map Work and Practical Geography, DVS Publication, Ghy.
6. Current, P.J.: Principles of Remote Sensing.
7. Robinson : Elements of Cartography, DVS Publication, Ghy.
8. Arnoff, S. (1989): Geographic Information System: A Management Perspective, DDL Publication, Ottawa.
9. Star, J. and Estes (1994): Geographic Information System. An Introduction, Prentice Hall, Englewood Cliff, New Jersey.

Paper : CP-2-GEO-513: POPULATION DATA AND LOCAL AREA STUDY

L-0,T-0,P-2

Objective

This paper is designed to acquaint the students with the use of different Cartographic Methods to represent population data and analysis the local problems .

Course Contents:

Unit – I: Population Data Study **Lecture Hours-30**

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

Unit – II: Local area study **Lecture Hours- 34**

1. Preparation of Stage-discharge Hydrographs of any local river.
2. Preparation of Flood plain zoning map of Lakhimpur District.
3. Channel Pattern analysis.
4. Collection and interpretation of Local Climatic data.

RECOMMENDED TEXT BOOKS:

1. Mishra, R. P. : 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. Singh, R.L. : Elemants of Practical Geography, DVS Publication, Ghy
5. Monkhouse, : Maps and Diagrams

Paper : PR-2-GEO-514 : PROJECT REPORT

Objective **L-0, T-0, P-2**

The objective of this course is to develop skills among the students to prepare Field report on the basis of practical field studies.

Course Contents:

Unit – I: Project Report **Lecture Hours- 64**

Conduct a Field study & identify landform, settlements, land use pattern and socio-economic condition of the study area and prepare a report on that.

SEMESTER VI

Paper : CT-5-GEO-615 : REGIONAL GEOGRAPHY OF THE WORLD

L-4,T-1,P-0

Objective

The basic objective of this course is to acquaint the students with the Geographical aspects of the continents i.e. Asia, North America, South America, Africa, Australia and New Zealand and Europe.

Course Contents:

Unit – I: Asia **Lecture Hours- 15**

1. Physiography, Climate, Soil and Vegetation.
2. Mineral resources and Industrial development.
3. Distribution of population.

Unit – II: North America **Lecture Hours-15**

1. Physiography, Climate, Soil and Vegetation.
2. Mineral resources and Industrial growth.
3. Distribution of population.

Unit – III: South America **Lecture Hours- 15**

1. Physiography, Climate, Soil and Vegetation.
2. Agricultural and Mineral resources – Spatial distribution.
3. Distribution of population.

Unit - IV: Africa **Lecture Hours- 10**

1. Physiography, Climate, Soil, Vegetation.
2. Natural resources of the Continent.
3. Spatial distribution of population.

Unit – V: Australia and New Zealand **Lecture Hours- 10**

1. Physiography, Climate, Soil, Vegetation.
2. Natural resources and Industrial growth.
3. Population distribution.

Unit – VI: Europe **Lecture Hours- 15**

1. Physiography, Climate, Soil, Vegetation.
2. Natural resources, Mineral resources and Industrial development.
3. Distribution of population.

RECOMMENDED TEXT AND REFERECE BOOKS:

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.

Paper : CT-5-GEO-616 : QUANTITATIVE METHODS AND MAP PROJECTIONS

L-4,T-1,P-0

Objective

The objective of this course is to acquaint the students with the contemporary quantitative methods and techniques used in Geography in today's context.

Course Contents:

Unit – I: Quantitative Methods **Lecture Hours-60**

1. Quantitative methods and its Application in Geography.
2. Measures of Central tendencies – Mean, Median and Mode and their application in data analysis.
3. Measures of dispersion – Mean Deviation, Standard Deviation and Quartile Deviation and their utility in the study of Geographical phenomena.
4. Concept of Correlation and Regression, techniques of measuring correlation and regression and their application in Geographical studies.
5. Sampling and its application in Geographical studies.
6. Concept of Index number – Types, methods and application.
7. Theory of probability.
8. Measures of inequality – Location Quotient and Lorenz Curve.
9. Spatial distributions and interactions – Nearest Neighbor Analysis, Rank size rule, Gravity and Potential models.

Unit – II: Map Projections **Lecture Hours- 20**

1. History and development of Map Projection, classification and use of different types of map projection.
2. Choice of Map Projection.

RECOMMENDED TEXT AND REFERENCE BOOKS:

1. Hussain, M (1984): Evolution of Geographical Thoughts.
2. Adhikari, S : Geographical Thoughts.
3. Mahmood, A : Statistical Method in Geography.
4. Elhance, D.N, Veena Elhance and B.M. Agarwal : Fundamentals of Statistics.
5. Ali, S.M (1966): The Geography of Puranas, Peoples Publishing House, New Delhi.
6. Alvi, J : Statistical Geography.
7. Gregory, S (1978) : Statistical Methods in Geography, Longman, London.

8. Hammond, R., McCullagh, P.S (1974) : Quantitative Techniques in Geography: An Introduction, Clarendan Press, Oxford.
9. Maurce, Y (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.
10. Lawrence, G.R.P (1968): Cartographic Methods, Methun, London.

Paper : CT-5-GEO-617: MODERN CARTOGRAPHIC METHODS

L-4, T-1, P-0

Objective

This course is aimed to familiarize the students with the history of Map Projections and methods including its development and change through time. Besides this the course is also aimed to acquaint the students with the basic knowledge of surveying and leveling and modern Cartographic methods. These will help the students in their practical studies.

Course Contents:

Unit – I: Cartographic Methods **Lecture Hours-40**

1. Thematic Mapping- History of development, Principles, Types and Problems
2. Basic principles of Surveying and their necessity in Geography; Vertical and horizontal controls.
3. Surveying and Levelling;
   i) Plane table surveying – different methods.
   ii) Prismatic Compass Surveying – Closed and Open traverse, calculation of included angles, correction of bearing, omitted measurement.
   iii) Levelling – different types.
   iv) Theodolite Traversing – measurement of heights.

Unit – II: Modern Cartographic Methods **Lecture Hours-40**

1. Introduction to modern techniques – Air photographs and Satellite Imagery and their basic properties, concept of GIS and GPS and their components.
2. Remote Sensing principles, components as a tool for data generation and mapping.
3. Remote Sensing platforms and sensors, Geo-stationery and Polar Orbiting Satellite Photography, Multi-spectral Radar and Passive Microwave detector; Computer Cartography.

RECOMMENDED TEXT AND REFERENCE BOOKS:

1. Kanetkar, T.P. and Kulkarni: Surveying and Leveling Part – I & II.
2. Zamir, A : A Text book of surveying.
3. Steer, J.A.: Map Projection.
4. Mishra, R.P. and Ramesh: Fundamentals of Cartography.
5. Singh and Patel: Principles of Remote Sensing.
6. Panda, B.C.: Remote Sensing – Principles and Applications.
7. Singh, R.L.: Fundamentals of Practical Geography, DVS Publication, Ghy.

8. Singh, G.: Map Work and Practical Geography, DVS Publication, Ghy.
9. Current, P.J.: Principles of Remote Sensing.
10. Robinson : Elements of Cartography, DVS Publication, Ghy.
11. Arnoff, S. (1989): Geographic Information System: A Management Perspective, DDL Publication, Ottawa.
12. Star, J. and Estes (1994): Geographic Information System. An Introduction, Prentice Hall, Englewood Cliff, New Jersey.

Paper : CP-2-GEO-618 : MAP PROJECTIONS AND SURVEYING

L-0,T-0,P-2

Objective

This paper is designed to acquaint the students with the use of different cartographic methods to represent different maps projection and Surveying methods.

Course Contents:

Unit – I: Drawing and Analysis of Maps projection. Lecture Hours- 34

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 Projection, Polyconic Projection, Sinusoidal and Molloweide Projection

Unit – II: Surveying and Leveling . Lecture Hours -30

1. Preparation of Maps by using Prismatic compass.
2. Plane table (Radiation and Intersection methods).
3. Determination of height by using Theodolite (Accessible and Inaccessible Cases).
4. Estimation of Relief by using Dumpy level.

RECOMMENDED TEXT BOOKS:

1. Mishra, R. P. : 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. Singh, R.L. : Elemants of Practical Geography, DVS Publication, Ghy.
5. Monkhouse, : Maps and Diagrams.

Paper : CP-2-GEO-619 : QUANTITATIVE METHODS, PATTERN ANALYSIS

L-0,T-0,P-2

Objective

This paper is designed to acquaint the students with the use of different Quantitative method to analysis different Geographical problems, along with pattern analysis.

Course Contents:

Unit – I: Exercises on Quantitative method **Lecture Hours- 40**

1. Application of Measures of Central tendencies in Geographical analysis.
2. Application of Measures of dispersion (Range, Mean Deviation & Standard Deviation) in Geographical analysis.
3. Map of mean centre of gravity.
4. Correlation & Regression method & their application in Geographical analysis.
5. Map showing Co- efficient of variations.
6. Time series analysis.

Unit – II: Pattern Analysis **Lecture Hours- 24**

1. Nearest Neighbour Analysis.
2. Location Quotient Analysis.
3. Preparation of Lorenz Curve.

RECOMMENDED TEXT BOOKS:

1. Mishra, R. P. : 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. Singh, R.L. : Elemants of Practical Geography, DVS Publication, Ghy

Paper : PR-2-GEO-620 : PROJECT REPORT

L-0,T-0,P-2

Objective

The objective of this course is to develop skills among the students to prepare research papers for their further research works.

Course Contents:

Unit – I: Project Report /Dissertation. **Lecture Hours- 64**

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