Syllabus for

Four-year Undergraduate Programme

Geography

Syllabus as per NEP 2020

Course effective from academic year 2023-24

GAUHATI UNIVERSITY

Guwahati-781014

Contents

Department of Geography
Gauhati University

Syllabus as per NEP 2020

Approved as per UGCCS in Geography held on 22-03-2023

Four-year Undergraduate Programme

Subject: Geography
Semester: I

Course Name: Introduction to Physical Geography
(Compulsory)

Course Level: Foundation & Introductory

100 Marks (Theory =80 Marks, Internal Assessment = 20 Marks)

Theory (4 Credits, 80 marks, 60 classes of one-hour duration)

Unit I: Evolution and growth of Physical geography
Growth of nature-centric geography; evolution and trend of Physical Geography as a study of earth process systems; meaning, scope and nature of Physical Geography; branches of Physical Geography; Physical geography and its interdisciplinary nature.

Unit II: Geomorphology
Meaning, scope and significance of geomorphological studies. fundamental concepts in geomorphology: catastrophism, uniformitarianism, and Davisian concept of landform development.

Unit III: Climatology
Meaning, scope and significance of climatological studies. fundamental concepts in Climatology: insolation and heat budget, temperature, pressure and precipitation relationship; pressure and windsystems.

Unit IV: Oceanography
Meaning, scope and significance of oceanographic studies; fundamental concepts in oceanography: origin of ocean basins, the origin of ocean currents, temperature and salinity relationship.

Unit V: Biogeography
Meaning, Scope and Significance of biogeographic studies; fundamental concepts in Biogeography:biosphere, ecology, Ecosystem, biodiversity

Reading List

1. Strahler, A., and Strahler, A. (2007). Physical geography. John Wiley & Sons.
2. Bloom, A. L., and Bloom, A. L. (1998). Geomorphology: a systematic analysis of late Cenozoic landforms (No. 551.41 B5.). Upper Saddle River: Prentice Hall.
3. Waugh, D. (2000). Geography: An integrated approach. Nelson Thornes.
4. Kale, V.S. and Gupta, A. (2001) Introduction to Geomorphology. Orient Longman, NewDelhi.
5. Selby, M.J. (2005) Earth's Changing Surface: An Introduction to Geomorphology. ClarendonPress
6. Thornbury, W. (1968). Principles of Geomorphology.- John Wiley and Sons, 394 p. NewYork.
7. Siddhartha, K. (2018): Oceanography, A brief Introduction, Kitab Mahal
8. Howard, J. Critchfield: General Climatology, 2008, Pearson
9. Lal, D.S.(2022) Climatology, Sarda Pustak Bhaban
10. C.Barry Cox, Peter D. Moore, (2000), Biogeography, John Wiley and Sons Ltd

Course Objective:

- Explain the basic concepts and principles of physical geography.
- Identify the major processes that shape the Earth's physical environment.
- Analyze how physical geography processes impact human activities and development
- Apply critical thinking skills to analyze and solve problems related to physical geography

L**earning outcome:**

- To introduce students to the principles of physical geography and their applications.
- To enable students to develop a deep understanding of the processes that drive physicalgeography.
- To enable students to apply the principles of physical geography to practical real-world situations.

Theory Credit : Four (4)
Practical Credit : Zero (0)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in)

Four-year Undergraduate Programme

Subject: Geography

Semester: II

Course Name: Introduction to Human Geography

(Compulsory)

Course Level: Foundation & Introductory

100 Marks (Theory =80 Marks, Internal Assessment = 20 Marks)

Theory (4 Credits, 80 marks, 60 classes of one-hour duration)

Unit I:

Defining the field of human geography and its development: Meaning and scope; Place of man in the study of geography; Nature of human geography and its relation with other social sciences; Changing definitions and trend of development of human geography.

Unit II:

Concept of man-environment relationship in human geography: Determinism, Possibilism, Neo- determinism and Cultural Determinism.

Unit III:

Schools of human geography: Human Ecology, Landscape and Locational Analysis.

Unit IV:

Man and environment relationship: Changing man-environment relationship through ages; Impact of environment on man in different geographical conditions; Impact of man and its activities on environment in different parts of the world; Urbanization and environment in different global contexts.

Unit V:

Man and culture: Concept of ethnicity and race; Global patterns of the racial composition of the population and associated characteristics of major racial groups; Rural and urban environments and associated socio-economic practices.

Reading List

1. Johnston, R. et. al. (2008). The Dictionary of Human Geography, Blackwell Publication.
2. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
3. Hussain, Majid (2012). Human Geography. Rawat Publications, Jaipur.
4. Gregory, D. 1978. Ideology, Science and Human Geography, London, Hutchinson.
5. James, M.R. and Bacon, R.S. 1990. The Cultural Landscape: An Introduction

to Human Geography, Prentice Hall.
6. Leong, G.C. and Morgan, G.C. 1992. Human and Economic Geography, Oxford University Press.
7. Fellmann, J.D., Getis, A. and Getis, J. 1999. Human Geography: Landscapes of Human Activities, WCB McGraw-Hill.
8. Jones, E. 1972. Human Geography, Chatto and Windus, London.
9. Broek, J.O.M. and Webb, J.W., 1969. A Geography of Mankind, Taylor and Francis.

Course Objective:

- Students will be able to identify and describe the fundamental concepts, theories, and approaches of human geography.
- Students will be able to apply the skills of analysis and interpretation to a range of geographical phenomena.
- Students will be able to recognize the significance of human geography in addressing contemporary world issues and challenges.

Learning outcome:

- To understand the basic concepts, theories, and approaches of human geography.
- To develop the skills required to analyze and interpret geographical phenomena
- To appreciate the importance of human geography in understanding contemporary world issues and challenges.

Theory Credit : Four (4)
Practical Credit : Zero (0)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: III

Course Name: Geography as a Spatial Science

(Compulsory)

Course Level: Intermediate

100 Marks (Theory =80 Marks, Internal Assessment = 20 Marks)

Theory (4 Credits, 80 marks, 60 classes of one-hour duration)

Unit I:

Defining the field of Geography: Study of the earth as the home of man; Place of geography in relation to natural and social sciences; the changing definitions of geography and its multi- disciplinary nature.

Unit II:

Geography as a spatial science and spatial concepts in geography: Concept of space, place, territory, and region; Geographic space (Absolute Space and Relative Space); Spatial Processes and Patterns (only basic concept) – Spatial distribution, Spatial concentration, Spatial organization, Spatial relationship.

Unit III:

Basic Approaches in Geography: Systematic and Regional; Ideographic and Nomothetic; Pure and Applied.

Unit IV:

Spatial Analysis in Geography: Concept of location; Concept of point, line, and area patterns.

Unit V:

Scientific Approaches in Geography: Inductive and Deductive methods; Harvey's modes of explanations in Geography (only basic concept): Cognitive, Morphometric, Cause and effect, Temporal, Functional and System analysis.

Reading List

1. Abler, R.., Adams, J. and Gould, P.P., 1971: Spatial Organization: The Geographers' Viewof the World, Prentice-Hall, Englewood Cliff.
2. Ackerman, E.A., et al, 1965: The Science of Geography, Washington D.C., National Academyof Science/ National Research Council Pub. No. 1277.
3. Adhikari, Sudeepta, 2015: Fundamentals of Geographical Thought, Orient

Blackswan Pvt.Ltd., New Delhi.
4. Chorley, Richard, J. and Haggett, Peter (eds), 1967: Models in Geography, Methuen, London.
5. Chorley, Richard, J., 1973: Directions in Geography, Methuen, London.
6. Dikshit, R.D., 1994: The Art and Science of Geography, Prentice Hall of India, New Delhi.
7. Haggett, P., 2001: Geography: A Global Synthesis, Pearson Education, Essex, UK.
8. Hartshorne, R.,1939: The Nature of Geography, Association of American Geographers, Lan-caster, Penn.
9. Hartshorne, R.,1959: Perspective on the Nature of Geography, Rand Mckully, Chicago.
10. Harvey, D., 1969: Explanation in Geography, St. Martin's Press, New York, 1969.
11. Johnston, R.J. et al.(eds), 1986: The Dictionary of Human Geography, Oxford, Basil Black-well.

Course Objective:

- To introduce students to the fundamental concepts of geography as a spatial science.
- To provide students with a strong foundation in spatial data analysis and visualisation.
- To enable students to understand and critically analyse the spatial dimensions of a range ofgeographic processes.
- To equip students with the skills to develop and apply spatial models and technologies tosolve geographic problems.

Learning outcome:

- Understanding of the basic concepts of geography as a spatial science.
- Understanding of the methods of spatial analysis and their application in analysing geographicprocesses.
- Ability to critically analyse the spatial dimensions of a range of geographic processes.

Theory Credit : Four (4)
Practical Credit : Zero (0)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: IV

Course Name: Geomorphology

(Compulsory)

Course Level: Intermediate

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

History and Development of Geomorphic Ideas, Recent Trends in Geomorphology, Post-modern Geomorphology

Unit II:

Branches of Geomorphology and their Significance: Theoretical and Applied Geomorphology, Major branches- Structural, Fluvial, Glacial, Arid, Environmental and Paleogeomorphology.

Unit III:

Structure and Composition of the Earth: Earth Crust and Interior, Rocks and Minerals

Unit IV:

Fundamental Concepts and Theories of Geomorphology: System Concept- Steady State, Dynamic Equilibrium, Mountain Building Theories of Kober and Holmes, Continental Drift, Plate tectonicsand Isostasy.

Unit V:

Geomorphic Processes and Resultant Landforms: Endogenetic and Exogenetic Processes, Ideas of Penck and L C King, Fluvial, Glacial and Aeolian Processes and Resultant Landforms, Slope Forming Processes.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical works (16 marks)two questions of 8 marks each

1. Study of Topographical Maps: Topographical map content and numbering system, the General interpretation of toposheets in respect of physical characteristics. (3 Assignments)
2. Profile Drawing (serial, superimposed, projected and composite (3 Assignments)
3. Preparation of Slope Map / Relative Relief Map: Wentworth's method and Smith's method. (3 Assignments)

4. Delineation of drainage basin and drainage network, construction of cross and long profiles, stream ordering by Horton and Strahler's method (6 Assignments)

5. Interpretation of Geological map and Construction of cross –section (Two geological maps including one with interruptions) showing different sedimentary beds. (2 Assignments)

Unit II: Practical Note Book and viva-Voce (4 marks)

1. Evaluation of Practical Notebook (2 marks)
2. Viva-Voce (2 marks)

Reading List

1. Bloom, Arther L. (1978): Geomorphology- A Systematic Analysis of Late Cenozoic Land-forms, Prentice Hall, Englewood Cliffs, N.J.
2. Charlton, R. (2008) : Fundamentals of Fluvial Geomorphology, Routledge, USA and Canada.
3. Chorley, Richard J (1972): Spatial Analysis in Geomorphology, Harper and Row Publishers,New York, London.
4. Chorley, Richard J (ed) (1969): Water, Earth and Man, Methuen & Co.London.
5. Cooke, R.U and Warren, A. (1973): Geomorphology in Deserts, Bats ford, London
6. Crickmay, C.H. (1974): Works of River, The McMillan Press Ltd, London.
7. Davidson-Arnott , R., Bauer, B. and Houser, C. (2019): Introduction to Coastal Processesand Geomorphology, Cambridge University Press.
8. Derbishire, E. (ed) (1976): Geomorphology and Climate, Wiley, London
9. Dury, G.H. (1959): The Face of the Earth, Penguin Books.
10. Embelton, C. and Thorns, J. (1979): Processes in Geomorphology, Arnold Heinemann.
11. . Gabler, R.E., Pettersen, J.F. and Trapasso, L.M. (2007): Essentials of Physical Geography,Thomson Brooks, USA.
12. Gregory, K.J. (1985): The Nature of Physical Geography, Edward Arnold, London.
13. Gutierrez, M. (2018): Geomorphology, CRC Press.
14. Heckmann, T. and Morche, D. (ed) (2019): Geomorphology of Proglacial Systems, Springer.
15. Huggett, R.J. (2018): Fundamentals of Geomorphology, 4th Edition, T F India and Rout-ledge.
16. Hails, J.R. (ed) (1978): Applied Geomorphology, Elsevier Scientific Publishing Co., Oxford,New York.
17. Kale, V.S. (2023): Processes, Products and Cycles of Tectonic Geomorphology, Elsevier.
18. Leopold, L.B., Wolman M.G. and Miller, J.P. (1964): Fluvial Processes in Geomorphology,Freeman, San Francisco.
19. Morisawa, M.M. (ed) (1981): Fluvial Geomorphology, George Allen & Unwin, London.
20. Morisawa, M.M. (1985): River Forms and Process, Longman, London and New York.
21. Pitty, A.F. (1971): Introduction to Geomorphology, Barnes and Nobel, New York.

22. Richards, K. (1982: Rivers: Forms and Process in Alluvial Channels, The Blackburn Press,USA.
23. Sharma, H.S. (1982): Perspectives in Geomorphology, Vols I to IV, Concept, New Delhi.
24. Strahler, A.N. (2013): Introducing Physical Geography, 6th Edition, Wiley India Pvt. Ltd,New Delhi.
25. Thornbury, W.D. (1969): Principles of Geomorphology, Wiley International Edition.
26. Thomas, David S.G. and Goudie, A. (2000): The Dictionary of Physical Geography, Blackwellpublishing.
27. Wohl, E. (2020): Rivers in the Landscape, Wiley Blackwell.

Course Objective:

- To provide a general idea about the topographic and surficial characteristics of the earth'ssurface to the students.
- To make students aware of the forms and patterns of diverse landforms in different physicalsettings of the earth.
- To make students skilled for applying geomorphic knowledge and techniques for investigatinggeomorphic processes and the resultant landforms.

Learning outcome:

- This course will help students to understand the evolution and development of various land- forms and the associated geomorphic processes in different geo-environmental settings.
- It enables students to apply geomorphic knowledge and techniques to investigate differentland features and the causes of their changes in spatiotemporal contexts.
- it will help students to get exposure to the theories and concepts related to the developmentof the earth and its relief features.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: IV

Course Name: Population and Settlement Geography

(Optional)

Course Level: Intermediate

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I: Population Geography

1. Defining the field of population geography and Population data: Meaning, emergence as a systematic branch of geography and significance; its relation with demography; Sources of population data and perspectives on Census of India publications (5 Classes)
2. Distribution and density of population: Factors influencing population distribution and density; global pattern of population distribution. (4 Classes)
3. Population Growth: Trend of global population growth; components of population growth–fertility, mortality and migration; push and pull factors of migration; spatial variations in population growth in the world. (8 Classes)
4. Theories of population growth: Malthusian Theory and Demographic Transition Theory. (3Classes)
5. Population composition and associated characteristic patterns in global contexts: Age-SexComposition; Rural-Urban Composition; Population ageing. (6 Classes)

Unit II: Settlement Geography

1. Defining the field of settlement of geography: Meaning and scope.
2. Rural and urban settlements: Factors influencing distribution pattern of settlements; Types of rural settlements; Morphology and Characteristics of rural and urban settlements. (7 Classes)
3. Concept of settlement hierarchy and urban fringe; Christaller's Central Place Theory. 4Classes)

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit 1: Practical Works (16 marks)(Two questions of 8 marks each)

1. Trend of population growth in Assam/N.E. India through line graph; Calculation and graphical representation of trend of decadal growth rates of population in Assam/N.E. India/India. (2 Exercises)
2. Choropleth map to show spatial pattern of decadal variation in population growth in Assam/N.E. India/India. (1 Exercise)

3. Choropleth map showing spatial pattern of population density in Assam/India. (1 Exercise)
4. Map showing spatial variation in social/religious/rural-urban composition of population in Assam/N.E. India using pie-graph. (1 Exercise)
5. Choropleth map showing spatial pattern of level of urbanization in Assam/N.E. India. (1 Exercise)
6. Flow cartogram showing direction and volume of migration into Assam/N.E. India from different parts of India. (1 Exercise)
7. Map showing distribution of towns and their varied population size with spheres in Assam/N.E.India. (1 Exercise)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Barrett H. R., 1995: Population Geography, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
4. Chandna R. C., 2014, Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers.
5. Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
6. Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
7. Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth inthe 21st Century, Earthscan.
8. Newbold, K. B., 2009: Population Geography: Tools and Issues, Rowman and LittlefieldPublishers.
9. Pacione, M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
10. Wilson, M. G. A., 1968: Population Geography, Nelson.
11. Panda, B. P. (1988): Janasankya Bhugol, M P Hindi Granth Academy,Bhopal.
12. Maurya, S. D. (2009) Jansankya Bhugol, ShardaPustakBhawan, Allahabad.
13. Chandna, R. C. (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi.
14. Roy, D. (2015), Population Geography, Books and Allied (P) Ltd., Kolkata.
15. Ahmad, A., Noin, D. and Sharma, H.N. (eds), 1997, Demographic Transition: The ThirdWorld Scenario, Rawat Publications, Jaipur and New Delhi, 1997.
16. Money, D.C., 1972: Patterns of Settlement, Evan Brothers, London.
17. Peters, G.L. and Larkin, R.P., 1979: Population Geography: Problems, Concepts and-Prospects, Kendall/ Hunt Iowa.
18. Singh, R.L. and Singh, K.N., (eds), 1975: Readings in Rural Settlement Geography, BHU,Varanasi.
19. Singh, R.Y., 1994: Geography of Settlements, Rawat Publications, Jaipur and New Delhi.
20. Maurya, S. D., 2014: Settlement Geography, Sharda Pustak Bhawan, Allahabad.

Course Objective:

- This paper is a generic paper that intends to introduce students to the basic concepts of population and settlement geography and how the differential characteristics of population and settlement influence the overall development process of an area.
- It seeks to develop an understanding among students about the significance of population geography and settlement geography and their inter-relationship.

Learning outcome:

- The paper will be useful for students in developing ideas about spatio-temporal changes in the characteristics of population and settlement and the factors associated with them.
- The paper will be useful for students preparing for various competitive exams including civil services.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: IV

Course Name: Geography of India

(Optional)

Course Level: Intermediate

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

India's location, areal extent and their significance; geopolitical and strategic importance, administrative divisions.

Unit II:

Physical setting: Physiographic divisions and their characteristics; River and water bodies, Climate and its seasonal and regional characteristics; soil types and their distribution; vegetation and its distribution.

Unit III:

Population: Trend of growth, spatial variation in growth and distribution; Age and sex composition; Linguistic and religious composition.

Unit IV:

Trend of Socio-economic development: literacy and education; health status and health care facilities; transport and communication systems; trade relations (export and import; development policies)

Unit V:

Agricultural and Industrial sector: Regional distribution and production patterns of rice, wheat, and millet. Distribution and production patterns of iron and steel, cotton textiles and fertilizers; overall Industrial development scenario in the country: distribution and production scenerio of Coal, Petroleum, Gas, hydro-power, potentiality of solar, wind, and nuclear power generation.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (10 marks)(Two questions of 5 marks each)

1. Trend of population growth and growth rates in India since 1901 using Census data (Source: censusindia.gov.in). (2 assignments)
2. Choropleth mapping to show spatial variation in decennial population growth rate and literacyrate in India. (2 assignment)

3. Spatial variation in the patterns of the religious composition of the population in India and Social composition of the population (SC, ST, and General) using pie-graph. (2 assignments)
4. Trend of food grains production (Rice, Wheat, Maize, Barley, Jowar, and Bajra) in India since 1950-51 using band-graph. (1 assignment)
5. Mapping of the population distribution of India and analysis of its relationship with relief.(1 assignment)
6. Flow pattern of selected commodities in India using standard carto-statistical techniques. (1 assignment)

Unit II: Field Report (4 Marks)

1. Preparation of field report based on a field study of observational knowledge about the geographical perspective of any part of the country or from the parts of NE India under the guidance of teacher(s).

Unit III: Practical Note-Book, Field report and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Evaluation of field report (4 marks)
3. Viva-voce (2+2= 4 marks)

Reading List

1. Deshpande C. D., 1992: India: A Regional Interpretation, ICSSR, NewDelhi.
2. Johnson,B.L.C.,ed.2001.GeographicalDictionaryofIndia.VisionBooks,NewDelhi.
3. Mandal R. B. (ed.), 1990: Patterns of Regional Geography – An International Perspective.Vol. 3 –Indian perspective.
4. Sdyasuk Galina and P Sengupta (1967): Economic Regionalisation of India, Census of India
5. Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.
6. Singh R. L., 1971: India: A Regional Geography, National Geographical Society of India.
7. Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan,Gorakhpur.
8. Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and RegionalGeography, Methuen.
9. Tirtha, Ranjit 2002: Geography of India, Rawat Publs., Jaipur & New Delhi.
10. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. RegionalScience Assoc.,Kolkata.
11. Tiwari, R.C. (2007) Geography of India. Prayag Pustak Bhawan,Allahabad.
12. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur

Course Objective: This is a core paper that intends to introduce students to India as a geographical entity. It seeks to develop new insights among students on the geographical dimensions of the country. A field study is incorporated to make the students understand the regional diversity of India with respect to its land, people, and economy.

Learning outcome:

- The paper will be useful for students in developing an understanding of Indian geographyand its various dimensions.
- It will also be useful for students preparing for various competitive examinations includingcivil services.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: IV

Course Name: Cartographic Techniques

(Optional)

Course Level: Intermediate

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:
Cartography – Meaning, Development (Traditional and Modern Cartography) and Importance of Cartography in Geography.

Unit II:
Shape and size of the earth; coordinate system (latitude, (parallel) and longitude (meridian)).

Unit III:
Map: Characteristics, types, scale and content; Representation of point, line and area data in maps.

Unit IV:
Map Projections: Concept of Map Projection, Classification of Map Projection; principles of Constructing zenithal, conical and Cylindrical projections (basic idea), Choice of Map projection. with reference to an areal extent (whole world or any specific part) uses and limitations.

Unit V:
Thematic mapping: Concept and types; Isopleth and Choropleth mapping.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Construction of graphical scale (linear, diagonal and comparative); conversion of map scale 6 Assignments
2. Construction of graticules of Zenithal Polar Gnomonic and Stereographic, Simple Conical with one standard parallel, Bonne's conical, and Gall's Stereographic Cylindrical projection along with their properties, uses and limitations. 5 Assignments
3. Preparation of thematic maps (choropleth, isopleths, band graph, pie diagram) for representing various physical and human geographic geographic data. 4 Assignments

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Anson, R. and Ormelling, F. J., 1994: International Cartographic Association: Basic Carto- graphic Vol., Pergaman Press.
2. Gupta, K.K. and Tyagi, V.C.,1992: Working with Map, Survey of India, DST, NewDelhi.
3. Misra, R.P. and Ramesh, A.,1989: Fundamentals of Cartography, Concept, New Delhi.
4. MonkhouseF.J.andWilkinsonH.R.,1973:MapsandDiagrams,Methuen,London.
5. Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
6. Robinson, A.H., 2009: Elements of Cartography,John Wiley and Sons, NewYork.
7. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
8. Sarkar, A. (2015): Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi.
9. Singh, L.R., 2013: Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
10. Talukder, S., 2008: Introduction to Map Projections, EBH Publishers (India),Guwahati.

Course Objective: This course on Cartographic Techniques provides a general understanding of the field of cartography including its modern developments and importance in geographic study. It more particularly focuses on various types of map scale and their construction; principles of map projection and construction of selected few; and preparation of thematic maps through the representation of various geographical data using different cartographic techniques.

Learning outcome:

- Understanding the importance of various cartographic techniques in geographical study
- General understanding of map type, map scale and map content.
- An acquaintance of different cartographic techniques for the representation of various facets of physical and human geographic data of any area.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: IV

Course Name: Disaster Management

(Optional)

Course Level: Intermediate

100 Marks (Theory =80 Marks, Internal Assessment = 20 Marks)

Theory (4 Credits, 80 marks, 60 classes of one-hour duration)

Unit I:

Disaster Management - Meaning and Definition; Definitions of Disaster and Hazards- Risks, Vulnerability, Resilience and their inter-relationship; Classification of Disasters –Natural and Human- induced; Geophysical, hydro-meteorological & manmade hazard and disasters, Causes and impacts of Disasters. Factors affecting Vulnerability – Economic – Political - Environmental and SocialContexts.

Unit II:

Disaster Management Cycle; Disaster Management Phases - Prevention and Preparedness – Mitigation - Response and Recovery; Community-Based Disaster Management - Roles and Responsibilitiesof Communities.

Unit III:

Hazard and Vulnerability Profile of India; Disaster-prone and vulnerable areas in India with emphasis on Cyclones, Earthquakes and Floods; Structural and Non-structural measures for Disaster Risk Reduction in Earthquake and flood Prone Areas.

Unit IV:

Disasters and Development - Impact of Development Projects - Dams, Embankments, Land-use changes on disaster genesis, Understanding differential Impacts of disasters on people of various tribes, Classes, Gender, Age, Location and Disability. Indigenous Knowledge and Disaster Management and Prevention with Reference to flood problem of Brahmaputra Valley.

Unit V:

Disaster management policies: Disaster management plans – components, National Disaster management policy and plan of India.

Reading List

1. Coppola, Damon (2011), Introduction to International Disaster Management, Elsevier ISBN:978-0-12-382174-4
2. Abbott, Patrick Leon (2008), Natural Disasters, McGraw-Hill, ISBN-13: 978-0072428650

3. Carresi A L, et al (2013) Disaster Management: International Lessons in Risk Reduction,Response and Recovery, Rutledge, U.K.
4. Carresi A L, et al (2013) Disaster Management: International Lessons in Risk Reduction,Response and Recovery, Routledge U.K.
5. Kurowa, Julio, Disaster Reduction: Living in harmony with nature Quebec or World, Peru,
6. Emdad Hague C, Mitigation of natural hazards and disasters: International perspectives,Springer, 2005.
7. Shaw Rajib and Krishnamurthy R R (2009) Disaster Management: Global Challenges andLocal Solutions, Universities Press.
8. Kapoor Mukesh, (2009) Disaster Management, Universities Press.
9. Diwan Parang, (2010) A Manual on Disaster Management, Pentagon Press.

Course Objective:

- To understand the concepts of disasters and their management.
- To identify the different types of disasters.
- To evaluate the impact of disasters on society and the environment.
- To learn the various mitigation measures and techniques of disaster management.

Learning outcome:

- Students will be able to define different types of disasters and their impact on society andthe environment.
- Students will be able to analyze the causes of disaster and their consequences.
- Students will be able to evaluate the role of different stakeholders in disaster managementand response.
- Students will be able to develop mitigation plans for disaster-prone areas.

Theory Credit : Four (4)
Practical Credit : Zero (0)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: V

Course Name: Climatology, Biogeography and Oceanography

(Compulsory)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I: Climatology

1. Atmospheric Composition and Structure; and their variation with altitude, latitude and season.
2. Atmospheric temperature; horizontal and vertical distribution of temperature.
3. General Circulation, Jet Streams
4. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog, Precipitation,
5. Climatic classification of Koppen and Trewartha; Monsoon - Mechanism of development, Distribution of monsoons, Trajectories and Irregularities, Effects of El-Nino, Walker oscillation.
6. Cyclones and anticyclones; Tropical Cyclones, anticyclones and Extra-Tropical Cyclones.
7. Air masses and Fronts: Characteristics, types, Origin and modification of air masses.
8. Techniques of weather forecasting: conventional and modern

Unit II: Biogeography

1. Role of physical and biological factors and distribution of plants and animals, Biomes and Biodiversity hotspots of the world.
2. Bio-energy cycles and food-chain
3. Concept of Bio-diversity; Conservation of forest and wildlife
4. Ecology and Ecosystem, Structure and functioning of the ecosystem
5. Soil as a component of the environment, soil formation process and factors, soil composition and horizon, Soil types and their distribution in India

Unit III: Oceanography

1. Submarine topography and configuration of Pacific, Atlantic and Indian Ocean floors.
2. Ocean temperature and salinity. Currents, tides, tsunamis. Ocean deposits. Coral reefs.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Interpretation of Indian Weather map for Monsoon and non–monsoon seasons/months based on various weather symbols depicted on maps. (2Assignments)
2. Preparation of weather reports of Indian subcontinent by analyzing the weather satellite images of at least three consecutive days (e.g. INSAT 3D, NOAA satellite). (3 Assignments)
3. Preparation of rainfall-temperature graphs; hythergraph, climograph and ergograph taking data from India/N.E. India/Assam (3 Assignments)
4. Calculation of average annual rainfall and variability of annual rainfall and preparation of rainfall distribution and variability maps(using isopleths).(2 Assignments)
5. Mapping of protected areas (National park, biosphere reserve and wildlife sanctuary) of Assam/N.E.India/India. (3Assignments)
6. Mapping of phytogeographic and zoogeographic regions of the world.(2 Assignments)
7. Mapping of Biodiversity hotspots of the world. (1 Assignment)
8. Mapping of Soil types of Assam/N.E. India and Soil horizons. (2 Assignments)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Barry R. G. and Carleton A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
2. Barry R. G. and Corley R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
3. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India,New Delhi
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. E. and Hidore J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, NewDelhi.
6. TrewarthaG.T.andHorneL.H.,1980:An Introduction to Climate,McGraw-Hill.
7. Gupta L S(2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi VishwaVidhyalaya,Delhi
8. Lal, D S (2006): Jalvayu Vigyan, Prayag Pustak Bhavan, Allahabad
9. Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad
10. Singh, S (2009): JalvayuVigyan, PrayagPustakBhawan,Allahabad
11. Raj, Manideep Soil and Biogeography, Kalyani Publishers.,
12. Cox, C.B., Moore, P.D. and Ladle, R., 2016. Biogeography: an ecological and evolutionary approach. John Wiley &Sons.

Course Objective: The main objective of the course is to sensitise the students towards global climatological, biogeographical and marine issues

Learning outcome: Students will acquaint themselves with the primary concepts of Climatological, biogeographical and oceanographic factors.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: V

Course Name: Quantitative methods in Geography

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:
Quantification and its significance in geographical study; advantages and limitations of quantitative methods in geography. (4classes)

Unit II:
Geographical Data: Nature, types and sources; scale of measurement (nominal, ordinal, interval and ratio). (4classes)

Unit III:
Measures of central tendency (mean, median and mode) and dispersion (range, quartile deviation, mean deviation, standard deviation and coefficient of variation) and their applications in geographical data analysis. (8classes)

Unit IV:
Sampling techniques: meaning of sampling and its need; types of sampling (simple random and stratified random). (6classes)

Unit V:
Time series analysis and its applications in geographical studies; Basic techniques of time series data analysis (semi-average, moving average and 1eastsquares).(6classes)

Unit VI:
Correlation and Regression Analysis: Meaning of correlation; Bi-variate coefficient of correlation (Spearman's rank correlation and Pearson's product-moment correlation); linear regression analysis;and their applications in geographical data ana1ysis.(12 classes)

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Tabulation/Grouping of geographical data for making frequency distribution table; Preparation of Histogram, Frequency Polygon and Frequency Curve. (1+1assignments)

2. Computation of mean, median and mode for ungrouped and grouped data relating to geo- graphical phenomena; Determination of median and mode using graphical methods; Determination of the 1ocation of spatia1 mean centre of sett1ements (using centrographic measure). (2+1+1 assignments)

3. Computation of the values of standard deviation and coefficient of variation of ungrouped and grouped data relating to some geographical phenomena (rainfall, landholding, income, production, etc) for comparison of distribution patterns. (1+1assignments)

4. Analysis of time series data of some geographical phenomena (rainfall, production, export value, import value, etc) using moving average and least squares methods. (2 assignments)

5. Computation of coefficient of correlation between two logically associated geographical phenomena using Spearman's rank correlation and Pearson's product-moment correlation formulae; Preparation of scatter diagram and fitting the line of linear regression of Y on X for any set of bi-variate data relating to meaningful geographical phenomena.

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Hammond P. and McCullagh P. S., 1978: Quantitative Techniques in Geography: An Intro- duction, Oxford University Press.
2. Sarkar, A. (2013) Quantitative Geography. techniques and presentations. Orient Black SwanPrivate Ltd., New Delhi.
3. Yeates M., 1974: An Introduction to Quantitative Analysis in Human Geography, McGrawHill, New York.
4. Mathews, J.A., 1987: Quantitative and Statistical Approaches to Geography: A PracticalManual Pergamon,Oxford.
5. Mahmood, A., 1999: Statistical Methods in Geographical Studies, Rajesh Publications,New Delhi.
6. Elhance, D.N., 1972: Fundamentals of statistics, KitabMaha1,A11ahabad
7. Monkhouse, F.J. Wilkinson, H.R., 1989: Maps Diagrams, B.I. Publications, New Delhi
8. Gregory, S., 1963: Statistical Methods and Geographers, Longman, London.

Course Objective: The paper Quantitative Methods in Geography throws light on the importance of data in geography.It deals with the methods and techniques of data collection, data tabulation, data interpretation and analysis through the application of some basic statistical measures. This paper provides an understanding of the pure and applied nature of geography along with the key elements in the discipline.

Learning outcome:

- Thorough understanding of the statistical methods and techniques used in geographical studies
- Understanding of tabulation, analysis and interpretation of geographical data.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: V

Course Name: Social, Cultural and PoliticalGeography

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I: Social Geography

1. Social Geography: Meaning and scope; its approaches; and contemporary trend of its development.
2. Concept and types of social space and social groups.
3. Social Well-being: Concept and Component: Housing, Health and Education; Concept ofHuman development and its measurements.
4. Contribution of race, religion, language and ethnicity in promoting diversity in India.
5. Social Geographies of inclusion and exclusion: Caste, class, gender and ethnicity.

Unit II: Cultural Geography

1. Meaning and scope of Cultural Geography and contemporary trend of its development
2. Types of culture: material and non-material
3. Concepts in cultural geography: Cultural diffusion, Cultural lag, cultural landscape, andcultural region.
4. Cultural ecology and folk geography; folk culture and rituals with special reference to Assam

Unit III: Political Geography

1. Political Geography: Nature, scope and recent trends; Approaches to its study.
2. Concept of state, nation, and nation-state; Attributes of State, frontiers and boundaries,buffer zones.
3. Concept of Geopolitics, Heartland and Rimland; Mackinder's Heartland Theory.
4. Concept of colonialism, neo-colonialism and lebensraum.
5. Geography and conflict: India-Pakistan; India-China, Russia-Ukraine.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Level of Social well-being with the help of composite Z-score in India /North-East India. (1 Exercise)
2. Construction of Ternary Diagram representing the social composition of the population in India/North East India. (1 Exercise)
3. Sex disparity in literacy in India/North-East India using Sopher's Disparity Index. (1 Exercise)
4. Construction of a map of India highlighting the major conflict zones (2 Exercises), the states of North-East India during Pre and Post-Independence periods (up to the present). (3 Exercises) along the border with China and Interstate boundary disputes in NE India.
5. Sketch of traditional house types of some selected tribes of North-East Indian states.
6. Preparation of a short video documentary on a folk ritual of a selected community of Assam.

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

Social Geography

1. Ahmad, A., 1999: Social Geography, Rawat Publications, Jaipur and New Delhi.
2. Ahmad, A., (ed), 1993: Social Structure and Regional development: A Social Geography Perspective, Rawat Publications, Jaipur.
3. Carter, John and Trevor, Jones. 1989: Social Geography: An Introduction to Contemporary Issues, Edward Arnold, London.
4. Eyles, J.: 'Social Geography', in Johnston, R.J., et al, The Dictionary of Human Geography.
5. Jones, E. and Eyles, J., 1977: An Introduction to Social Geography, Oxford University Press, Oxford and New York.
6. Jones, E,(ed), 1975: Readings in Social Geography, Oxford University Press, Oxford.
7. Sharma, H.N., 2000: 'Social Geography' in Singh, J. (ed.) Progress in Indian Geography(1996- 2000), INSA, New Delhi.
8. Smith, D.M., 1977: Human Geography: A Welfare Approach, Edward Arnold, London.
9. Sopher, D.E. (ed), 1980: An Exploration of India: Geographical Perspectives on Society and Culture, Longman, London.
10. Srinivas, M.N., 1986: India: Social Structure, Hindustan Publishing Corporation, Delhi.
11. Taher, M., 1994: An Introduction to Social Geography: Concept and Theories, NEIGS, Guwahati. 37

Cultural Geography

12. Crans, Mike, 1998: Cultural Geography, Routledge, London.
13. Dancan, J. and Ley, D. (eds), 1992: Place/Culture/Representation, Routledge, London.
14. Gritzer, Charion, F., 1984: 'The Scope of Cultural Geography', Journal of Geography, Volume65, pp.4-11.
15. Jackson, Richard.H.and Hudman, Lloyel. E., 1990: Cultural Geography, West PublishingCompany,New York.
16. Johnston, R.J., Gregory, Derek and Smith, David M. (eds), 1994: The Dictionary of HumanGeography, Blackwell, Oxford.
17. Jordan, T.G. and Rowntree, L.: The Human Mosaic: A Thematic Interpretation in CulturalGeography.
18. Noble, A.G. and Dutt, A.K. (eds), 1982: India: Cultural Pattern and Processes, West ViewPress /Boulder, Colorado.

Political Geography

19. Agnew, John A., Mamadouh, V.; Secor,A. and Sharp, J. 2015. The Wiley Blackwell Com-panion to Political Geography. Wiley-Blackwell.
20. Smith, Sara. 2020.Political Geography: A Critical Introduction, Wiley-Blackwell.
21. Dikshit, R.D. 2020. Political Geography: Politics of Place and Spatiality of Politics. Macmil-lan India.
22. Dwivedi, R L Misra,H N. 2019. Fundamentals of Political Geography. Surjeet Publications.

Course Objective: To appreciate the social and political dimensions of geographic phenomena. Understand how geography influences political issues and their spatial dimensions.

Learning outcome:

- This course will help equip the students to comprehend various social and political aspectsof phenomena and their interface within the realm of geography.
- The paper will be very useful for students preparing for various competitive examinationsincluding civil services.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: V

Course Name: Economic and Resource Geography

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:
Meaning, scope and Approaches of Economic Geography and Resources

Unit II:
Economic activity: meaning and classification; Production system: Role of land, labour and capital.

Unit III:
Agriculture sector: Factors influencing agriculture; types of agriculture; Von Thunen's model of agricultural location; Factors influencing cultivation of wheat, rice, coffee and tea, and their distribution and production in different parts of the world.

Unit IV:
Manufacturing sector: Factors influencing industrial location; Weber's theory of industrial location; Classification of industry; Factors, distribution and production of iron and steel, cotton textile and IT industries in the world; Special economic zones and technology parks

Unit V:
Transport system: Modes of transport, factors influencing transport development and role of trans-port in resource mobilization and economic development.

Unit VI:
Trade: Factors influencing trade in different countries of the world; Trade relations of India with USA, Russia and Japan.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Trend of rice, wheat and iron & steel production in the world/USA/India using moving average and least squares methods. (4assignments)
2. Trend of production of wheat, rice, maize and barley in the world/USA using Band-graph.(2assignments)
3. Trend of balance of trade relations (export and import value) of India with USA, China andJapan in respect of major commodities using Bar-graph. (2 assignments)
4. Regional variation in fertilizer consumption and agricultural productivity in rice,

wheat andbarley in selected countries of the world using Bar-graph. (1assignment)

5. Inter-state/Inter-nation volume of movement of selected commodities and Inter-city movement of traffic/bus in N.E. India through flow cartogram.(2assignments)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Hartshorn, T.A. and Alexander J. W., 2004: Economic Geography, Prentice-Hall Inc., NewDelhi
2. Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A ContemporaryIntroduction, Wiley-Blackwell.
3. Hodder B.W. and Lee Roger,1974:Economic Geography, Taylor and Francis.
4. Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration ofRegions and Nations, Princeton University Press.
5. Wheeler J. O., 1998: Economic Geography, Wiley..
6. Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylorand Francis.
7. Willington D. E., 2008: Economic Geography, Husband Press.
8. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford
9. Saxena, H.M., 2013: Economic Geography, Rawat Publications, Jaipur.

Course Objective: This paper intends to introduce students to the principles of economic geography and associated patterns and processes of major economic activities in the world. It seeks to develop new in- sights among students on the relevance of economic geography and associated economic issues in contemporary times.

Learning outcome:

- The paper will be useful for students in developing ideas on how geographical aspects organizethe economic space and will offer perspectives to students if they wish to pursue a research programme associated with economic perspectives.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: V

Course Name: Geography of Tourism

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

Nature and Scope: Concept of tourism and its relationship with Geography; Role of Intermediaries and suppliers; Geographical parameters of tourism as postulated by Robinson.

Unit II:

Types and forms of tourism: Nature Tourism (Eco-Tourism), Cultural Tourism, Adventure tourism, Medical Tourism, Pilgrimage; Sustainable Tourism; Meetings, Incentives, Conventions and Exhibitions (MICE)Tourism

Unit III:

Tourism attraction (resources), infrastructure and services: In the context of India and northeast India

Unit IV:

Recent Trends of Tourist flow: International and Domestic (India); Case studies of tourism development in different geographical contexts in India: Himalayas, Desert, North-East India and Coastal Areas.

Unit V:

Impact of Tourism on Economy, Environment and Society; National Tourism Policy, Tourism policy of northeastern states

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Trend of growth of tourist arrivals (International and domestic) in India/ Assam using moving average method (2 Assignments)

2. Trend of tourist arrivals in the northeastern states of India in comparison to a top ranking tourist arriving state of India using Band-graph. (2 Assignments)
3. Representation of the relationship among the rainfall, temperature and tourist arrival for any year or a specific period for any state of NE India by using the appropriate carto-statistical technique. (2 Assignments)
4. Preparation of a map of Assam to show important tourist destinations along with their road, railway and air connectivity. (2 Assignments)
5. Preparation of a tourist map of N.E. India showing the inflow of tourists (domestic and international) to major national parks and wildlife sanctuaries/ prepare a tracking map of an area of tourism interest using GPS (2 Assignments)
6. Preparation of a map of NE India showing the inflow of tourist destinations (viz. Pilgrimage, nature, historical, adventure, wildlife, ethno-cultural destinations) and describe their significance. (2 destinations)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Bhattacharya, P. (2011): Tourism in Assam: Trend and Potentialities, Banimandia, Guwahati
2. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, NewDelhi.
3. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
4. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
5. Page, S. J. (2011) Tourism Management: An Introduction, Butterworth-Heinemann- USA. Chapter2.
6. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge,USA,www.cabi.org.
7. Tourism Recreation and Research Journal, Center for Tourism Research and Development,Lucknow
8. Singh Jagbir (2014) “Eco-Tourism” Published by - I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
9. Market Research Division, Dept. of Tourism, Govt. of India, India Tourist Statistics (avail-able in PDF form), New Delhi
10. UNWTO: Tourism Barometer (available in their web portal to have a fresh glimpse of globaltourism statistics/ other relevant sites may also be consulted).

Course Objective: This paper introduces the students to the field of tourism from a spatial perspective. It seeks to develop new insights among students on how tourism and allied activities are shaped by the geography of an area and also how such activities are responsible for shaping economic, social and environmental context from global to local levels.

Learning outcome: The paper will be useful for students in developing ideas on the sphere of tourism along with knowing how geographical factors determine tourism activities and how geographers seek to address issues of development and carrying capacities in various environmental contexts. It will also build skills among students to engage them to work with tourism at both managerial and planning levels of the sector.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: VI

Course Name: Geography of Environment and Development

(Compulsory)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

Environmental Geography: Nature, Scope and Significance; man-Environment Relationships, Historical progression, Adaptation in different Biomes

Unit II:

Major Environmental Problems: Pollution, Deforestation, Desertification, Global Warming, and Bio-Depletion; Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster (Natural and Man made).

Unit III:

Ecosystem: concept and types of ecosystem; functioning of ecosystem; Energy flow in ecosystem;bio-geochemical cycles; biosphere as an ecosystem.

Unit IV:

Environment and Development: ecology and equity, concept of environment and development; development processes: Nature and trend of development, sustainable development.

Unit V:

Thematic Issues in Environment Geography: The Population–Consumption–Technology Nexus Bio- diversity, Conservation, and Protected Areas, Water Resources and Fishing Livelihoods, Corporate ecological responsibility

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Exploring satellite imageries and topographic sheets to observe bank line change of Brahmaputra river from any selected stretch in three different time periods and preparation of map there from. (1 exercise) (Satellite images can be downloaded from https://earthexplorer.usgs.gov/

   Survey of India topographic sheets can be downloaded freely from

https://soinakshe.uk.gov.in/mtr/

2. Mapping of major wetlands in a district and computation of shape and size (area) based distribution. (1 exercise)
3. Preparation of a map of a nearby wetland and identify the changes in dimension, water level and encroachment it faced during the last one decade. Present your data in tabular form along with the map (field-based). (1 exercise)
4. Preparation of a long-term precipitation time series curve for any selected station of N.E. India using moving average method by downloading the annual rainfall data for any district/stationof Assam for at least 30 years (1 exercise)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Chandna R. C., 2002: Environmental Geography, Kalyani, Ludhiana.
2. Cunninghum W. P. and Cunninghum M. A., 2004: Principals of Environmental Science: Inquiry and Applications, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: The Nature of the Environment, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity. Rawat Publication, Jaipur
5. Miller G. T., 2004: Environmental Science: Working with the Earth, Thomson Brooks Cole, Singapore.
6. MoEF, 2006: National Environmental Policy-2006, Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer
8. Odum, E. P. et al, 2005: Fundamentals of Ecology, Ceneage Learning India. 9. Singh S., 1997: Environmental Geography, Prayag Pustak Bhawan. Allahabad.
9. UNEP, 2007: Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme.
10. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies, Springer
11. Singh, R.B. (1998) Ecological Techniques and Approaches to Vulnerable Environment, NewDelhi, Oxford & IBH Pub..
12. Alcántara-Ayala, I. (2002). Geomorphology, natural hazards, vulnerability and prevention of natural disasters in developing countries. Geomorphology, 47(2-4), 107-124.
13. Goudie, A., Ayala, I. A. (2010). Geomorphological hazards and disaster prevention. Cam- bridge University Press.
14. https://www.undrr.org/publications
15. http://sdmassam.nic.in/dmp.htmlddmp 17.
16. https://ndma.gov.in/sites/default/files/PDF/DM$_a$ct2005.pdf http :

//sdmassam.nic.in/pdf/publication/un

Course Objective: This paper intends to introduce students to geography and environment interface. It seeks to develop insights among students on the relevance of environmental studies along with issues associated with its pollution, disaster and management of environmental problems

Learning outcome:

1. This paper will be useful for students in developing ideas on environmental issues includingdisasters that geographers need to address.
2. This paper will be useful for students preparing for different competitive exams including civil services along with enhancing services to society in addressing awareness levels towards the environment

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: VI

Course Name: Introduction to Remote Sensing andGIS

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I: Introduction to Remote Sensing

1. Remote Sensing: Definition and History of Development. (3 classes)
2. Principles of Remote Sensing System: Energy sources, EMR and its interaction with Atmosphere and Earth Features; Platform, Sensor and Resolutions; Aerial and Satellite Remote Sensing; Fundamentals of Photogrammetry.
3. Remote Sensing data products, sources and characteristics; Elements of Image Interpretation (Visual & Digital); Digital Image Processing: Image Enhancement and Classification (Supervised and Un-supervised). (6classes)
4. Application of Remote Sensing: Land, Vegetation and Water (3 classes)

Unit II: Introduction to GIS

1. Geographical Information System (GIS): Definition, Development, Components, and Functions; Open source GIS. (3 classes)
2. GIS Data Types & Structures: Spatial and Non-Spatial Data; Raster and Vector Data Structure, Database Management System (DBMS). (3 classes)
3. Data Layer Extraction and Spatial Analysis: Buffer, proximity and viewshed analysis; overlay analysis. (4 Classes)
4. Application of GIS in geographical studies (site/habitat suitability analysis, network analysis, flood damage estimation) (4 classes)

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Aerial photo interpretation and visual interpretation of satellite imagery and preparation of thematic maps. 2 assignments
2. Analysis of aerial photographs and satellite images: Determination of photo scale and object height from aerial photos (using a mirror stereoscope); Digital classification of satellite images:supervised and unsupervised. 3 assignments

3. Geo-referencing and Data layer creation: geometric correction, digitization of different layers using point, line and polygon, attribute data input and their thematic representation, Buffer analysis, Overlay analysis. (3 Assignments)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press.
2. Jensen J. R., 2004: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall.
3. Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India.
4. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
6. Rees W. G., 2001: Physical Principles of Remote Sensing, Cambridge University Press.
7. Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub.
8. Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS, McGraw-Hill.
9. Sarkar, A. (2015): Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi.
10. Chauniyal, D.D. (2010): Sudur Samvedanevam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad.
11. Burrough, P.A. and Mc Donnel, R.A.,1998: Principles of Geographical Information Systems, Oxford University Press.

Course Objective:

- This paper is a core paper that intends to introduce students to the interface of Remote Sensing and GIS
- It seeks to develop new insights among students on the relevance of geospatial studies within the field of geography.

Learning outcome:

- The paper remains useful for students in developing skills in spatial data analysis to pursue a research programme.
- Understanding the use of Different RS and GIS softwares

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: VI

Course Name: Surveying Techniques

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

Field surveying: Its meaning, types and significance in geography. (2 Classes)

Unit II:

Principles of surveying: plane and geodetic surveying; Principles of triangulation. (3Classes)

Unit III:

Principles and Techniques of surveying by Plane Table, Prismatic Compass, Theodolite, DumpyLevel and Total Station (8 Classes)

Unit IV:

Methods of radiation, intersection, traversing, contouring and leveling in surveying. (4Classes)

Unit V:

GPS: Basic concept, principles and utilities (3Classes)

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Preparation of a plan or a map of an area within the college campus or any suitable area using Plane Table (applying both radiation and intersection methods) (2 Assignments)
2. Open and Closed Traverse Surveying with Prismatic Compass: Preparation of plan alongwith adjustment of closing errors. (2 Assignments)
3. Closed Traverse Surveying with Theodolite: Plotting of data for preparation of a plan through computation of Reduced Bearing, Consecutive Co-ordinates and Independent Co- ordinates; Measurement of height of object/objects using Theodolite (2 Assignments)
4. Profile levelling and contouring in a selected area by Dumpy Level (2 Assignments)
5. Preparing a map of a short trail along with prominent features by using hand-held GPS and associated software/freeware. (2 Assignments)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Campbell, J., 1984: Introductory Cartography, Prentice Hall Inc., Englewood Cliff.
2. Misra, R.P. and Ramesh, A., 1995: Fundamentals of Cartography, Concept Publishing Company, New Delhi.
3. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York. Raisz, E.: Principles of Cartography, McGraw Hills, London.
4. Kenetkar, T.P. and Kulkarni, S.U.: Surveying and Levelling, Vol. I II, Vidyarthi Gritha Prakashan, Pune.
5. Das, A.K. 2021: Pocket Size Handbook on Handling of GPS for Field Studies, GTAD and Aranyak, Guwahati (In PDF format).

Course Objective: This course on Surveying Techniques provides a general understanding of the field of surveying including the use of modern survey tools to enhance knowledge and skill for field-based geographic study. It focuses on various types of field survey instruments; principles of different types of ground surveying, and methods of carrying out surveys for the preparation of maps/plans for different spatial contexts.

Learning outcome:

- Understanding the importance of various field surveying techniques in geographical study
- General understanding of preparation techniques of different types of plans and map
- An acquaintance of different surveying tool and techniques for the representation of variousspatial objects/phenomena.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: VI

Course Name: Urban Geography

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

Urban Geography: Nature and scope; approaches and trends in urban geography; Origin and growth of towns in global and national contexts; Types and characteristics of towns; Functional classification of towns; Schemes of city classification (J.M. Houston's, G. Taylor's and L. Mumfordschemes). (12 classes)

Unit II:

Patterns of Urbanisation in Developed and developing countries; Components of Urbanization and urban population growth; Organization of urban space: Urban Morphology and land use structure; Theories of the internal structure of Towns: the Sector Theory of Homer and Hoyt, and the MultipleNuclei Theory of Harris and Ullman (10 classes)

Unit III:

Concept of city-region, urban agglomeration, urban sprawl, umland and periphery, rural-urban dichotomy and continuum, urban fringe, satellite town, new town, smart cities. (8 classes)

Unit IV:

Urban issues and problems: Housing, slums, civic amenities (transportation and drinking water), traffic congestion, pollution (air, land, water, noise), urban waste disposal and crime. (8 classes)

Unit V:

Urbanization and urban development planning in India: Trend and regional patterns of urbanization; national urban development policies and programmes; emerging urban issues in Delhi NCR, Mumbai and Guwahati. (7 classes)

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Plotting of million cities of India by using proportionate sphere method. (1 Exercise)
2. Map showing distribution of class I and II urban centres in Assam/NE India by using proportionate sphere method. (1 Exercise)
3. Determination of spatial mean centres of urban settlements using weighted (Population asweight) centrographic measure in Assam and NE India.(2 Exercises)
4. Calculation of distribution pattern of urban settlements in a District/State of N.E. Indiausing Nearest Neighbour Analysis. (1 Exercise)
5. Choropleth map showing spatial pattern of level of urbanization in Assam and N.E. India. (2Exercises)
6. Determination of rank-size relationship of urban centres in Assam/N.E. India/India. (1 Exercise)
7. Urban population potential mapping based on selected urban centres of Assam/N.E. India.(1 Exercise)
8. Delineation of urban influence zones of selected urban centres of Assam/N.E. India usingReilly's breaking point formula. (1 Exercise)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Bala, R. (1986): Urbanisation in India, Rawat, Jaipur.
2. Bansal, S.C. (2010): Urban Geography, Meenakshi Prakashan, Meerut.
3. Fyfe N. R. and Kenny J. T., 2005: The Urban Geography Reader, Routledge.
4. Graham S. and Marvin S., 2001: Splintering Urbanism: Networked Infrastructures,Technological Mobilitiesand the Urban Condition, Routledge.
5. Hall T., 2006: Urban Geography, Taylor and Francis.
6. Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: Urban Geography, John Wiley.
7. Knox P. L. and McCarthy L., 2005: Urbanization: An Introduction to Urban Geography, Pearson Prentice Hall New York.
8. Knox P. L. and Pinch S., 2006: Urban Social Geography: An Introduction, Prentice- Hall.
9. Kundu, A. (1992): Urban Development and Urban Research in India, Khanna Publication,New Delhi.
10. Nangia, S. (1976): Delhi Metropolitan Region: A Study in Settlement Geography, RajeshPublication, New Delhi.
11. Pacione M., 2009: Urban Geography: A Global Perspective, Taylor and Francis.
12. Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press,New Delhi
13. Sassen S., 2001: The Global City: New York, London and Tokyo, Princeton University Press.
14. Siddhartha K and Mukherjee S, (1996): Cities, Urbanisation and Urban Systems, Transworldmedia and communication, New Delhi
15. Singh, R.B. (Eds.) (2001) Urban Sustainability in the Context of Global Change, SciencePub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.

16. Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities Advances in Geographical and Environmental Studies, Springer.

Course Objective:

- This paper introduces the students to the field of urban geography and its major aspects.
- It seeks to develop new insights among students on the relevance of an urban geography and associated problems in a rapidly urbanizing world.

Learning outcome:

- The paper will be useful for students in developing ideas on how geographical factors organize urban spaces and how geographers seek to address various urban problems and issues.
- It will help build skills among students seeking advanced studies on urban development and planning.
- The paper will be useful for students preparing for various competitive examinations including civil services.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in

Four-year Undergraduate Programme

Subject: Geography

Semester: VI

Course Name: Geography of North East India

(Optional)

Course Level: Higher

100 Marks (Theory =60 Marks, Practical = 20 Marks, Internal Assessment = 20 Marks)

Part I: Theory (3 Credits, 60 marks, 45 classes of one-hour duration)

Unit I:

North-East India and its locational and strategic significance; Administrative divisions.; Physical setting: Physiographic divisions of NE India and their characteristics; Rivers and water bodies, Climate and its characteristics; forest cover; protected forest areas, soil types and their distribution.

Unit II:

Population: Trend of growth, variation in growth and distribution at state levels, ethnic composition; Age and sex composition; Linguistic and religious composition, literacy level, educational and healthcare infrastructures.

Unit III:

Production pattern and characteristics of agriculture in the region of rice, jute and tea at the state level; characteristics of shifting cultivation in the hill region; contemporary transformations in the agricultural sector including horticulture, Pisciculture etc.

Unit IV:

Agriculture and Industrial development scenario: Regional pattern of Industrial development, Distribution and production of coal, Petroleum and cement in the region; Potentiality of agro-based, handloom and handicraft industries in the region; problems of Industrial development in the region.

Unit V:

Transport, Communication system and trade: patterns of transport and communication systems (state level scenario); nature of trade in the region; problems and prospects of Act East policy towards improving the trade relations.

Part II: Practical (1 credit, 20 Marks, 15 Classes of two-hour duration)

Unit I: Practical Works (16 marks) (Two questions of 8 marks each)

1. Trend of population growth and growth rates in N.E. India since 1901 using Census data (Source: censusindia.gov.in). (2 assignments)
2. Choropleth mapping to show spatial variation in urbanization level in NE India. (1 assignment)
3. Spatial variation in the patterns of the religious composition of the population in NE India and Social composition of the population (SC, ST and General) in N.E. India using a carto-statistical tool (2 assignments)

4. Trend of food grains production (Rabi and Kharif crops) in Northeast India using band-graph. (1assignment)
5. Map showing the distribution of major tribal groups in North-East India. (1assignment)

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 marks)
2. Viva-voce (2 marks)

Reading List

1. Bhagabati, A.K., Bora, A. K. and Kar, B.K.: Geography of Assam, Rajesh Publications, New Delhi.
2. Taher, M and Ahmed, P.: Geography of North East India, Mani Manik Prakash, Guwahati.
3. Das,M..M.:PeasantAgricultureinAssam,Inter–IndiaPublications,NewDelhi.
4. Gopal Krishnan, R : Geography of North East India
5. Bhattacharya, P.2006 : Trend in Tourism Potentiality, Bani Mandir,Guwahati
6. Bhagabati, A.K.(ed):Biodiversity of Assam, Eastern Book House, Guwahati
7. Bhattacharyya, N.N. : North East India, Rajesh Publication, New Delhi
8. Srivastava, S.C. : Demographic Profile of N.E. India, Mittal Publications.
9. Basic Statistics of NE Inda, NEC, Shillong (various issues- accessible in PDF format)
10. India tourist statistics, Ministry of Tourism, Govt. of India (various issues - accessible inPDF format)

Course Objective:

- This paper intends to introduce students to the northeastern parts of India having a special identityamidst the Indian Union.
- It seeks to develop new insights among students on the significance of geographical dimensions ofthe native region.
- A field study is incorporated to make the students understand meso-regional diversity in respect ofits land, people and economy.

Learning outcome:

- The paper will be useful for students in developing an understanding of native regional geography and its various unique dimensions.
- It will also be useful for students preparing for various competitive examinations includingcivil services.

Theory Credit : Three (3)
Practical Credit : One (1)

No. of Required Classes : 60
No. of Contact Classes : 40
No. of Non-Contact Classes : 20

Particulars of Course Designer (Department of Geography, Gauhati University, geography@gauhati.ac.in