Ph.D. Coursework Syllabus

Centre for Studies in Geography
Dibrugarh University

Course –I

RESEARCH METHODOLOGY

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit – I: **Marks: 12**

Research: Definition, purpose and types of research – pure, applied, action, empirical, historical, descriptive and analytical. Significance of research in Geography.

Steps in Research: Research Design – characteristics, components and types. Problem identification, review of literature, formulation of objectives, hypotheses, significance, methodology, etc.

Unit – II: **Marks: 12**

Hypotheses: Meaning – importance – types – sources – characteristics – different forms of hypothesis – formulation – difficulties in formulation – testing of hypotheses.

Research Methods: Definition – advantages and limitations – steps involved in historical methods, case study methods, survey methods, experimental methods, field investigation methods, evaluation of research method, action research, ex-post facto research etc.

Unit – III: **Marks: 12**

Collecting of data: Primary data – methods of collection – observation, schedule, interview and questionnaire

Secondary data: Meaning – sources – limitations – cautions

Sampling: Types of sampling – steps in sampling – advantages – limitations

Unit – IV: **Marks: 12**

Data processing: Checking – editing – coding – grouping techniques – tabulation.

Data Analysis & Presentation: Methods of analysis – descriptive and inferential – use of statistical methods in data analysis – cartographic methods

in data presentation – use of diagrams, maps etc. – computer application in mapping – GIS – remote sensing graphic & mapping etc.

Unit – V: **Marks: 12**

Structuring the Report: Chapter format – pagination – using quotations – presenting footnotes – abbreviations – presentation of tables, maps and figures – referencing – documentation – use and format of appendices – indexing.

Research Report: Contents – styles of reporting – steps in drafting – editing & evaluating the final draft – precautions for writing research report.

Suggested readings:

1. Research Methodology, Methods & Techniques – C.R. Kothari
2. Methods & Techniques of Social Research – Wilkinson & Bhanderkar
3. Research Methodology: A Hard Book – R.P. Mishra
4. Research Methodology – G.R. Basoti & K.K. Sharmah
5. Methods of Social Research – Groode & Halt
6. Training in Research Methodology in Social Research in India - ICSSR
7. Theory and Practice in Social Research – Haus Raj
8. Models in Geography – Chorley, R.J. and Haggett, Peter
9. Urban Research Methods – Gibbs
10. Maps & Diagrams – F.J. Monk house & Wilkinson
11. Statistical Methods & the Geography – S. Gregore

Course –II

Methods in Geography.

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit-I: Quantitative Methods: Bi-variate analysis.

1. Correlation and regression analysis-concepts and techniques.
2. Construction of regression line; interpolation, prediction and extrapolation.
3. Statistical tests of significance, residuals and their mapping.

Unit-II: Quantitative Methods: Probability and Sampling.

1. Need of Quantitative Methods in Geography.
2. Probabilities distribution: Concept and Utility.
3. Sampling Methods and Application.

Unit-III: Thematic Cartography

1. Trends in the development of Cartographic techniques.
2. Concept of thematic mapping and its applicability in Geography.
3. Data source and techniques of analysis of thematic mapping.

Unit-IV: Fundamentals of Remote Sensing

1. Historical Development of remote sensing as a technology-Relevance of remote sensing in Geography.
2. Concept and basics: Energy source, energy and radiation principles, energy interactions in the atmosphere and earth surface features.
3. Remote sensing systems: platforms, sensors and radiation records.

Unit-V: Fundamentals of Geography Information Systems.

1. Geography as a spatial science; maps and spatial information, dynamics of spatial information, elements of information technology.
2. Geographic objects and their relations-definition and development of GIS.
3. Computer environment for GIS.

Suggested readings:

1. Research Methodology, Methods & Techniques – C.R. Kothari
2. Methods & Techniques of Social Research – Wilkinson & Bhanderkar
3. Research Methodology: A Hard Book – R.P. Mishra
4. Research Methodology – G.R. Basoti & K.K. Sharmah
5. Methods of Social Research – Groode & Halt
6. Training in Research Methodology in Social Research in India - ICSSR
7. Theory and Practice in Social Research – Haus Raj

8. Models in Geography – Chorley, R.J. and Haggett, Peter
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11. Statistical Methods & the Geography – S. Gregore

Course –III

POPULATION GEOGRAPHY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit – I: Nature, scope and significance of population geography, approaches and methodologies of population geography, historical development of population geography as a field of specialization, sources of population data. Census enumeration, problems of mapping population data.

Unit – II: Measures of population growth and demographic transition, Distribution of population and its geographical determinants, population density and its types, world pattern of population distribution.

Unit – III: Measures, determinants and world pattern of fertility and mortality, Migration of population – causes, internal and international migrations, Age and Sex composition etc.

Unit–IV: Rural – Urban composition of population, functional composition of population, urbanization, a comparative study of developing and developed countries, with special reference to India.

Unit–V: Population theories and population research – natural law – based population theories and their relevancy in present day context, overpopulation, optimum and depopulation, population resources and development, population resource regions of the world, population policy in India.

Books Recommended:

1. **Singh, R.L**.: Applied Geography
2. **Singh, R.L**.: Readings in Rural Geography
3. **Smalies, A**.: The Geography of Towns
4. **Decoke** and others: Population Geography: A reader
5. **Zelinsky** : A Prologue to population Geography
6. **Mayer and Koh**: Reading in Urban Geography
7. **Negi**: Human Geography
8. **Preston Jones**: Geography of Man

Notes: The Students in addition to the above books should refer to various Geographical Journals Published by various Geographical societies.

POLITICAL GEOGRAPHY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

1. Meaning and definition of Political Geography: concept of three scale structures-study of International Relations (Geopolitics), study of the State at the Centre and the study of localities

2. Advancement of "Critical Political Geographies": arguments from postmodern, post structural and post colonial theories i.e. for the Feminist geography and the Development geography recognizing the imperialistic and universalizing nature.

3. Propagation over time through neo-colonialism.

4. Relationship between government and its people.

5. Relationships between states including international trades and treaties.

6. Functions, demarcations and policies of boundaries.

7. Political implications and influence of political power on geographical space.

8. Study of Electoral geography.

Books Recommended:

1. **Agnew, J.** (1997) *Political Geography*: A reader London:
2. **Buleon, P.** (1992) 'The State of Political Geography in France in the 1970s and 1980s' *Progress in Human Geography* Vol. 16 (1) pp24-40
3. **Harvey, D.** (1996) *Justics, Nature and the Geography of difference* Oxford: Blackwell
4. **Johnston, R.J.** (1979) *Political, Electoral and Spatial Systems* Oxford: Clarendon Press
5. **Painter, J.** (1995) *Politics, Geography and 'Political Geography'*: *A Critical Perspective* London.
6. **Pepper, D.** (1996) *Modern environmentalism*, London
7. **Sack, R.D.** (1986) *Human territoriality: its theory and history* Cambridge: Cambridge University Press
8. **Short, J.R.** (1993) *An introduction to political geography*: 2nd edn. London
9. **Spykman Nicholas John.** (1944) *The Geography of the Peace*, New York, Harcourt, Brace and Company
10. **Sutton, I.,** ed. (1991) *"The Political Geography of Indian Country,"* Symposium, American Indian Culture and Research Journal, 15(2): 1-169.
11. **Taylor, P.J.** (1993) *Political geography: World Economy, Nation State and Locality* Harlow: Longman Scientific & Technical
12. **Emrys Jones**: Human Geography
13. **Hammond, C.W**.: elements of Human Geography
14. **Huntington, E**.: Principles of Human Geography

AGRICULTURAL GEOGRAPHY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit – I: Nature, scope, significance and development of agricultural geography. Approaches to the study of agricultural geography: Commodity, systematic and regional. Origin and dispersal of agricultural Sources of agricultural data.

Unit–II: Determinants of agricultural land use. Physical, economic, social and technological, land holding and land tenure systems, Land reforms, land use Policy and planning. Selected agricultural concepts and their measurements; cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization and specialization, efficiency and productivity, crop combination regions and agricultural development.

Unit–III: Theories of agricultural location based on several multi-dimensioned factors: Von Thunen's theory of agricultural location and its recent modifications; whittlesey's classification of agricultural regions, land use and land capability.

Unit–IV: Agriculture in India – Land use and shifting cropping pattern. Regional pattern of productivity in India. Green revolution, White revolution, Food deficit and food surplus regions; Specific problems in Indian agriculture and their management and planning. Agricultural policy in India.

Unit–V: Contemporary Issues: Food, nutrition and hunger, drought and food security, food aid programmes: environment degradation due to role of irrigation, role of irrigation, fertilizers, insecticides etc.

Books Recommended:

1. **Majid Hussain** (1971): "Agricultural Geography", Inter-India Publications, Delhi
2. **Goh Cheng Leong** (1997): "Human and Economic Geography", Oxford University Press, Kolalumphur.
3. **Jasbir Singh, Dhilon, S.S**. (1994): "Agricultural Geography", McGraw Hill, New Delhi.
4. **Negi, B.S**. (1998): Agricultural Geography, Dedarnath & Ramnath, New Delhi
5. **Census Hand Book.**

FLUVIAL GEOMORPHOLOGY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

1. Geomorphology and Fluvial Geomorphology – meaning – Scope – elements of fluvial geomorphology – concepts – recent trends

2. Hydrology – meaning & scope – hydrological cycle – hydrological input – output – streamflow – ground water – infiltration

3. River basin as fluvio – geomorphic unit – morphometry of drainage basin – drainage network – classification of rivers

4. Fluvial processes of a river – erosion – transportation – deposition – sediments in river – classification – measurement & its significance

5. Water and sediments in river channel – types of flow – types of load – discharge – velocity – measurement of erosion

6. River channel forms & processes – floods – hydraulics – channel geometry

7. Environmental management in drainage basin – watershed management – form & process – based management of drainage basin – wetland management

8. Palaeo – geomorphology of river channel – tectonic and neotectonic effects on fluvial geomorphology – fluvial models in research

Selected readings:

1. Fluvial Processes in Geomorphology – Leopold, Wolman & Miller
2. Introduction to Fluvial Processes – Richard J. Chorley
3. Geomorphology – C.A. Cotton
4. Principles of geomorphology – W.D. Thornbury
5. Introduction to Geomorphology – V.S. Kale & A. Gupta
6. Techniques in Geomorphology – C.A.M. King
7. Geomorphology – Savindra Singh

GEOMORPHOLOGY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

1. Geomorphology – definition – scope – brief history of evolution – types and tools – basic concepts

2. Lithology – origin – interior of the earth – plate tectonics – mountain and continent building – weathering and erosion

3. Fluvial processes in river

4. Erosional processes and forms in arid and semi – arid areas

5. Glacial processes and forms

6. Coastal forms and processes

7. Ground water processes and forms

8. Climate and Geomorphology – Geomorphology in environmental management

Selected readings:

1. Principles of Geomorphology – W.D. Thornbury
2. A Text Book of Geomorphology - Worcester
3. Geomorphology in Environmental Management – Cooke & Doornkamp
4. Geomorphology – C.A. Cotton
5. Geomorphology – Savindra Singh
6. Techniques in Geomorphology – C.A.M. King
7. Introduction to Geomorphology – V.S. Kale & A. Gupta

GEOGRAPHY OF RESOURCES (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

1. Concept of resources – classification of resources – criteria of classification – their definitions & entity – concept of sustainable development – conservation – eco – friendly use of resources

2. Resource Inventory – resource identification – survey – problems – mapping – measurement – zonation and regionalization – utilization – resource monitoring and environmental response

3. Range land resources inventory – range land mapping – data collection – range land monitoring – ecological and seasonal range condition

4. Resource monitoring and environmental impact assessment – resource renewing and exhaustion monitoring – utilization of resources – impact on environment – climate – desertification – habitat degradation assessment methods – use of computers in resource assessment

5. Planning and development of resources – problem identification and planning for development

Selected readings:

1. Economic Geography – A Study of Resources – Guha & Chattaraj
2. Economic Geography – T.A. Hartshorn & John W. Alexander
3. Economic Geography – Johnes & Darkenwald
4. Economic Geography – Prithwish Roy

(OPTIONAL)

GEOGRAPHY OF POPULATION & HUMAN SETTLEMENT

Internal Assessment – 40 marks
End Semester Examination – 60 marks

1. Geography of Population – meaning & scope – recent trends – relation with human geography

2. Source of data – distribution and density – thematic mapping – statistical methods

3. Population change – population indices – migration

4. Population composition – literacy – population theories – population policies

5. Geography of human settlement – meaning & scope – recent trend of study

6. Classification of settlement – rural & urban – classification of rural & urban settlement and criteria of identification and factors of development

7. Morphology of rural & urban settlement – size – pattern – distribution – functional boundary – central place – hierarchy of settlement – urban sprawling – centrifugal & centripetal force of rural & urban settlements

8. Measurement of different dimensions of settlement & mapping

9. Ecological impact of rural & urban settlement – environmental impact assessment (EIA)

Selected readings:

1. Geography of Population – R.C. Chandra
2. Principles of Human Geography – H.Robinson & F.S. Hudson
3. Geography of Settlement – R.Y. Singh
4. Human Geography – J. Fellmann, A. Getis & J. Getis
5. Readings in Urban Geography – H.M. Mayer & C.F. Kohn
6. Urbanisation and Regional development – R.B. Mandal & G.L. Peters

SOCIAL GEOGRAPHY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

1. Social geography – meaning & scope – nature – history of development – recent trend of study

2. Geography of ethnic, social, economic and cultural groups

3. Geography of space

4. Social geography of language

5. Religion & religious activities

6. Geography of gender

7. Housing geography

8. Geography of crime and disorder

9. Modernisation & social change

10. Region as cultural entity

Selected readings:

1. Social geography – Aijazuddin Ahmed
2. Social Geography – John Cater z7 Trevor Jones
3. An Introduction to Social Geography – M. Taher
4. Readings in Social Geography – Jones, E.

(OPTIONAL)

ECOSYSTEM AND NATURAL RESOURCE MANAGEMENT

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Course content

1. The concept of ecosystem and its significance in geography

2. Relationship between ecosystem and natural resources, transfer of energy and matter productivity and stability in the ecosystem

3. Ecological criteria of resource management and resource processes

4. Ecological principles related with availability, productivity, variety and cycling of abiotic resources: Water, Soil, Air and Minerals

5. Ecological laws governing diversity and renewability of biotic resources

6. Principles of management as applied to natural resources

7. Role of technology – strategy and Human organizations in natural resource management

8. Exploration and evaluation of natural resources, especially with the help of remote sensing technique in inaccessible ecosystem

9. Ecosystem based conservation of natural resource and environment

Suggested readings:

1. Barrow, C.J. (1999): Environmental Management, Routlege, London
2. Dawson, J.A. and Doornkamp, J.C. (eds, 1975): Evaluating the Human environment – Essays in Applied Geography, Edward Arnold Pub. Ltd. London
3. Emlish, P.W. and Mayfield, R.C. (eds, 1973): Man, Space and Environment, Oxford Uni Press, New York
4. Mandal, R.B. and Signha, V.N.P. (eds, 1980): Recent trends and concepts in Geography, Voll. II, Concept Pub. Co. New Delhi
5. Odum, E.P. (1971): Fundamentals of Ecology, W.B. Sanders, Philadelphia
6. Park, Chris. C. (1981): Ecology and Environmental Management: A Geographical Perspective, Butterworth S. London
7. Ramde Francis, (1984): Ecology of Natural Resources, John Wilely & Sons, New York
8. Simmons, IG (1981) (2nd ed): The Ecology of Natural Resources, Edward Arnold (Publishers) Ltd, London
9. Singh, Savindra, (1997): Environmental Geography, Prayag Pustak Bhawan, Allahabad
10. Smith, R.L. (ed, 1975): The Ecology of Man: An Ecosystem Approach, Harper & Row Publishers, New Delhi

ENVIRONMENTAL GEOMORPHOLOGY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Course content

1. Environmental geomorphology; nature, scope, significance and perspective

2. System approach in physical environment, geoenvironment, geo system and threshold

3. Appraisal and evaluation of geoenvironment and landscape sensivity

4. Influence of geographic environment on physical environment and man

5. Natural Geohazards: Nature and types

6. Man as geomorphic agent: Man – induced alterations in processes and forms and their influence – beneficial and deleterious

7. Identification, assessment and mapping of geomorphic hazards and geoenvironmental degradation, especially with the help of remote sensing

8. Landscape conservation: Zoning, ranking risk management, monitoring, combating and predicting geomorphic hazards

Suggested readings:

1. Barrett, Eric C and Curtis, Leonard, F (eds, 1974): Environmental Remote Sensing: Applications and achievements, Edward Arnold, London
2. Betz, Jr Frederick (ed, 1975): Environmental Geology, Dowden Hutchinson & Ross, Inc, Pennsylvania
3. Bolt, B.A. Horn, W.L., et.al. (1975): Geological Hazards: Earthquakes – Tsunamies – Volcanoes, Avalanches – Landslides – Floods, Springer – Verlag, New York
4. Coates, Donald, R. (ed, 1972): Environmental Geomorphology and Landscape Conservation Vol. I, Prior to 1990, Dowden, Hutchinson A& Ross, Pennsylvania
5. Cook, R.U. and Dornkamp, J.C. (2nd ed, 1993): Geomorphology in Environmental Mangement: A new introduction, claendon Press, Oxford
6. Dubey, Alok, (1990): Environmental Geomorphology – A Study of Trans – Yamuna Region, Inter – India Publications, New Delhi
7. Goudic, A, (3rd ed, 1990): The Human Impact on the Natural Environment, Basil Blackwell Oxford, U.K.
8. Hails, John R. (ed, 1972): Studies in Applied Geomorphology: A perspective of the contribution of geomorphology to interdisciplinary and environmental Management, Elsevier Scientific Publishing Co, Amsterdam
9. Hart, M.G. (1986): Geomorphology: Pure and Applied, George Allen & Unwin, London
10. Mitchell, C.W. (1973): Terrain Evaluation, Longmans, London
11. Singh, Savindra (1998): Geomorphology Prayag Pustak Bhawan, Allahabad
12. Sharma, H.S. (ed,1991): Indian Geomorphology, Concept Publishing Co., New Delhi
13. Valdiya, S.K. (1987): Environmental Geology: Indian Context, Tata-MeGraw Hill Publishing, New Delhi

REGIONAL PLANNING (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit – I: **Meaning and Scope of Planning**

1. Concept of Planning and its relevancy in the process of development
2. Historical development of regional planning with emphasis on India
3. Region in the context of planning and the methods of regionalization

Unit – II: **Methodology of Regional Planning**

1. Analytical and procedural Techniques of Regional Planning
2. Physico-socio-economic regionalization and planning
3. Identification of problem region – Target groups and Strategy of development

Unit – III: **Methods of Demarcating Regions for Planning**

1. Techniques of measuring the levels of Development and Disparity
2. Strategies for reducing inequality and disparity
3. Regional Development in India-Problems and Prospects

Unit – IV: **Transport Planning and Management**

1. Transport Planning – Problems and Strategies
2. Integration between different modes of Transport
3. Integration between environment and land-use planning, public spaces, etc.

Unit – V: **Health Planning and Management**

1. Health planning strategies in India and its impact on society
2. Indicators of health status and development plans for the health
3. Human development with special reference to India

HUMAN GEOGRAPHY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit – I: **Marks: 12**

Human Geography: Definition, Branches, Scope & Development. Modern approaches in Human Geography – Locational, Behavioral, Humanistic, Marxist and Post modern approaches.

Unit – II: **Marks: 12**

Population Geography – Definition, Scope & Development

Recent trend – Population theories

Population – Problems & Prospects

Population policies – Principles – Population policies of India

Unit – III: **Marks: 12**

Rural Settlement – Types and Patterns, Urban growth – Process – Problems of Urbanization, Rural – Urban fringe – Peripheral areas – Understanding rural change.

Unit – IV: **Marks: 12**

Meaning, Scope and Development of Cultural Geography

Cultural integration – Cultural landscape, Man and Culture

Unit – V: **Marks: 12**

Definition, Scope and Development of Social Geography

Space – concepts of space in social geography, processes of social change and transformation

Modernization and Socio – cultural changes

Books Recommended:

1. Huntington, E. (1951): Principles in Human Geography, John Wiley and Sons, LNC, New York
2. Clarke, J.I. (1972): Population Geography, Pergamon Press, Oxford
3. Chandana, R.C. (1986): A Geography of Population, Kalyani Publishers, New Delhi
4. Sundram, K.V. et.al. ()1986 : Population Geography, Heritage Publishers, Delhi
5. Vias, Nelson (2006): Changing livelihood in Rural areas in the book Population Change and Rural Society by Kandal and Brown eds
6. Carter, H. (1972): The Story of Urban Geography, Edward Arnold, London
7. Wagner, P.L. & Mikesell, M.W. (ed. 1982): Readings in Cultural Geography, Chicago
8. Thomas, W.L. (1956): Man's Role in Changing the face of Earth, Chicago
9. Jones Emmys and John, Eyles (1977): A Introduction to Social Geography, London
10. Srinivas, M.N.: Social Change in Modern India, Orient Longman, Delhi
11. Singh, Yogendra: Modernisation and Social Change, Orient Longman.

ECONOMIC GEOGRAPHY (OPTIONAL)

Internal Assessment – 40 marks
End Semester Examination – 60 marks

Unit – I: **Marks: 20**

Economic Geography**:** Meaning and scope

Importance: Importance in analyzing contemporary societies and economies

Sectors of Economy: Primary, secondary, tertiary and quaternary

Unit – II: **Marks: 20**

Economic development – characteristics, classification of industries – location of industries – factors of location – industrial location theories – Weber, Losch, Hoover, Smith

Unit – III: **Marks: 20**

Agricultural Geography – meaning & scope. Classical Models of Agricultural land use,

Agricultural region, Crop combination and Crop intensity.

Changing scenario of agriculture: Challenges & opportunities

Books Recommended:

1. Guha, J.L. & Chattaraj, P.R. (1999 New edition): A New Approach to Economic Geography
2. Alexander (1986): Economic Geography, Prentice Hall
3. Losch, A (1954): The Economics of Location, New Haven
4. Chaudhuri, M.R. (1970): Indian Industries, Development and Location, Oxford
5. Berry et.al. (1993): The Spatial Organization of Land Use, (Ch.-9) in the Global Economy
6. Ilbery, (1998): Chapter 4 from Agricultural productivism to post-productivism. In the Geography of Rural Change

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