DEPARTMENT OF GEOGRAPHY

PH.D. COURSE WORK SYLLABUS

2024

(As per NEP-2020)

OPERATIONAL NOTE

INTRODUCTION

The Department has been offering Ph.D. Courses as an essential component of the Research Programme since 1999-2000. The course structure and the syllabus are periodically revised keeping in mind the changing thrust areas of teaching and research in the Department and in tune with changing needs and advances made in Geographical research both at the National and International level. The last revision in the Ph.D. course syllabus was effected in the year 2018. It was felt imperative to restructure and modify the syllabus in the year 2024 to include new elements and frontiers that have emerged in the field of Geography during the past decade or so and in keeping in tune with UGC regulation on coursework as per NEP-2020 guidelines for qualitative improvement in research in the country.

STRUCTURE

- The Syllabus is made for Ph.D. course. All candidates selected for the course will have to undergo the coursework and shall have to qualify for registration by securing a minimum grade as provided in the relevant ordinance. Candidates who have already completed their M. Phil (with coursework) or have successfully completed a coursework securing minimum grades prescribed but without obtaining an M. Phil Degree are ordinarily exempted from doing the coursework.

- The Coursework is to be completed within one semester. There will be School-level course on 'Research and Publication Ethics' having 2 credits for all the admitted scholars in different departments under the School (SHES-RPE-700). Apartment from that there 3 (three) papers offered by the Department of 4 credits each. The Courses GE-CC-701: Research Methodology in Geography; GE-CC-702: Preparation of Research Proposal are compulsory and each candidate will be required to select one more course from among the options available in a given year (GE-OC-703). Selection of the optional papers will be made by the DRC for each candidate depending upon the area of research interest of the candidate. The total credit for the Ph. D. Course Work is 14.

- All optional papers will be a judicious combination of both lectures as well as seminars.

- Evaluation of the coursework will be based on two parts. Continuous evaluation (One credit) and End-Term Examination (Three Credits). Continuous Evaluation in each course may include but is not necessarily confined to (a) term papers (b) Book/article reviews and/or literature surveys. (e) Laboratory techniques of analysis and (f) Hands-on training/practicals in respective labs. The end-term examination unless specified otherwise will consist of a written examination of three hours in each paper with 6 questions and the candidates will answer 4 questions, selecting at least one from each Unit.

Paper Code	Title of the paper	Credits	Marks
SHES-RPE-700	Research and Publication Ethics	2	50
GE-CC-701	Research Methodology in Geography	4	100
GE -CC- 702	Preparation of Research Proposal	4	100
Area of research specific courses (Optional)			
GE-OC- 703	Contemporary Geomorphic Issues in Northeast India	4	100
GE-OC- 704	Geo-Hydrological Processes of Extreme Humid Tropics	4	100
GE-OC 705	Location and Area Development	4	100
GE-OC- 706	Population, Development and Environment	4	100
GE-OC- 707	Regional Analysis with Special Reference to India	4	100
GE-OC-708	Remote Sensing/GIS Techniques for Agricultural Geography	4	100
GE-OC-709	Contemporary Issues in Urban Development with Special Reference to India	4	100
GE-OC-710	Geographical Perspectives in Cultural Tourism	4	100
Total Credits (14)			**350**

SHES-RPE-700

RESEARCH AND PUBLICATION ETHICS

(This is a School Level Compulsory Course)

2 Credits

GE-CC-701: RESEARCH METHODOLOGY IN GEOGRAPHY

Credits - 4

Course Outline

UNIT I.

a. Writing a research proposal in Geography

i. Selection of broad area of research and Statement of the problem

ii. Review of literature

iii. Research questions

iv. Objectives

b. Research Methodology: Types of data, Data collection through Primary surveys, Field survey, Questionnaire, Sample design, Gathering of secondary data, Hypothesis formulation and indicators

UNIT II:

Data analysis, Data representation, Data interpretation, Research writing, Publication and Ethics

UNIT III:

Use of Statistical Techniques

a. Sampling: Test of small and large samples - 'Z', 't', 'F' and Chi square; Probability, Distribution and Time Series

b. Measures of dispersion, Spatial Variation and Spatial disparity

UNIT IV:

Use of Software: Hands on training on SPSS, Arc-GIS, ERDAS Imagine and Open source software

Suggested readings:

Amdeo, D and Golledge, R.G. (1975). An Introduction to Scientific Reasoning in Geography, Wiley, New York.

Bunge, W (1963). Theoretical Geography, Lund Studies in Geography Series C, No.1, University of Lund, Stockholm.

Chorley, RJ. and Hagget, P (1967). Models in Geography, Edward Arnold, London.

Harvey, D. (1969). Explanations in Geography, Edward Arnold, London.

Gilbert, N. (1993). Researching Social Life, Sage, New Delhi.

Kuhn, T (1962). The Structure of Scientific Revolution, CUP, Chicago

GE -CC- 702 : PREPARATION OF RESEARCH PROPOSAL

Credit - 4

Course Outline

UNIT I

1. Literature review on broad area of research

UNIT II

2. Book review of at least two relevant books to be identified by the respective supervisor

UNIT III

3. Review of at least two published research papers in peer-reviewed indexed journals and relevant to the topic/ area of interest

UNIT IV

4. Preparation of synopsis

Note: Assessment method

- Through a seminar presentation
- Not lecture based course
- Instruction based on continuous contact with respective supervisors
- Continuous evaluation (25%) to be made by concerned supervisors on the basis of assessment of literature review, book reviews as well as research paper reviews
- End semester examination (75%) will be based on presentation and viva voce ofM.PhillPh.D research proposals prepared by each candidate and evaluated by a committee of experts constituted by the department.

Suggested Readings:

Krishan, Gopal and Singh, Nina (2017). Research Methodology, Routledge,

Birsch, T.W. (1949) Maps: Topographical and Statistical, Clarendon Press, Oxford,.

Burrough P.A (1986).Principles of Geographical Information Systems for land Resource Assessment, Oxford University Press

Campbell, J.B. (2002). Introduction to Remote Sensing, Guilford Press, New York,

Lillesand T.M. & RW Kiefer, (1999) Remote Sensing and Image Interpretation, John Wiley & Sons, New York (Fourth Edition)

Monkhouse, H.J (2000) Maps and Diagrams, Methuen & CO. London,

Pal, S.K. (1998) Statistics for Geoscientists- Techniques and Application, Concept Publications, N. Delhi Das, N.G. - Statistics. Mc. Gnw mid.Edh (India) Pvt. Ltd. 2013.

Sarkar, Ashis- Quantitative Geography, Orient Blackswan, 2013

Mamood, Aslam - Statistical Methods in geographical Studies, Rajesh Publication 1986.

GE-OC- 703: CONTEMPORARY GEOMORPHIC ISSUES IN NORTHEAST INIDA

Credit-4

Course Outline

UNIT I

1. Fluvial Erosion Issues: Rills and gully formation and development of bad lands; river bank erosion and bank line migration; soil erosion

2. Fluvial Transportation Issues: Heavy sediment load in the rivers; discharge and sediment load

UNIT II

3. Fluvial Deposition Issues: Fresh sediment deposition on fertile plains; formation of recent sand bars in the river channels; silting of reservoirs

4. Discharge in the Rivers: Sources, fluctuations and floods

5. Changing Courses ofthe Rivers in Northeast India

UNIT III

6. Slope Instability in Northeast India: Landslides; subsidence; causes and impact of slope instability

7. Landscape Degradation: pollution and depletion of land and water resources; physical degradation of landscape due to mining, quarrying and construction works

UNIT IV

8. Landscape Conservation: Monitoring degradation; Combating degradation; Restoration of landscape

(Note: Continuous evaluation shall consist of a) term paper: 15% and b) Seminar: 1 0%).

Suggested Readings:

Betz, Jr. Frederick (ed.), 1975. *Environmental Geology*. Dowden Hutchinson & Ross, Inc., Stroudsburg, Pennsylvania.

Coats, Donald R. (ed.), 1972. *Environmental Geomorphology and Landscape Conservation, Vol.* 1: *Prior to 1900.* Dowden Hutchinson & Ross, Inc., Stroudsburg, Pennsylvania.

Coleman, 1M., 1969. Brahmaputra River: Channel processes and sedimentation. *Sedimentary Geology,* 8: 129-239.

Cooke, R. U. and Doornkamp, 1e., 1993 (Second Edition). *Geomorphology in Environmental Management: A New introduction.* Clarendon Press, Oxford. Flawn,

Peter T., 1972. *Environmental Geology: Conservation, Land Use Planning and Resource Management.* Harper & Row, Pub!., New York.

Goswami, D.C., 1985. Brahmaputra River, Assam, India: Physiography, basin denudation, and channel aggradation. *Water Resource Research,* 21: 959-978.

Hart, M.G., 1986. *Geomorphology: Pure and Applied.* George Allen & Unwin, London. Kale; V.S. (ed.), 1998. *Flood Studies in India.* Geological Society of India, Bangalore.

Leopold, L.B., Wolman, IvLG., and l'vliller, J.P., 1964. *Fluvial Processes in Geommorphology.*

W.H. Freeman, Francisco. Morisawa, M., 1985. *Rivers: Form and Process.* Longman, London.

Panniza, M., 1996. *Environmental Geomorphology.* Elsevier, Amsterdam.

Starkel, L. and Basu, S., 1997. *Rains, Landslides and Floods in the Darjeeling Himalaya.* INSA, New DeihL Vaidia, K.S., 1987. *Environmental Geology: Indian Context.* Tata-McGraw-Hill Publishing Co. Ltd., New Delhi.

GE-OC- 704: GEO-HYDROLOGICAL PROCESSES OF EXTREME HUMID TROPICS

Credits: 4

Course Outline

UNIT I

1. Introduction to the study of the Humid Tropics & special reference to the extreme humid areas of the southern region of Meghalaya

2. General understanding of geomorphic studies in tropical areas

3. Geological framework

UNIT II

4. General Geomorphic processes: Weathering, Erosion and Deposition; Slope processes

5. Hydrological processes: Precipitation, Interception, Evaporation, Runoff and Infiltration

6. River Channels: Morphology, Streamflow, Competence of streams, Loads in streams

7. Landforms: Nature and characteristics, Topographic diversity, Unique topographic expressions

UNIT III

8. The human dimension: Adaptation to topographic and climatic conditions, Changing population and changing needs

9. Land degradation & Soil Loss

10. Natural resource management & Sustainability

UNIT IV

11. Techniques of measurement, Field experiments & Lab Training: Morphometry and Mapping of river channels, Assessment of loads in river channels, Use of RS & GIS Techniques in long & short term assessments.

NOTE:

1. Sessional to be based on a) Assignments; b) Field Data collection & Measurements (25%)
2. Contact hours with Course Supervisor(s) on the basis of need

Suggested Readings:

Thomas, M.F.(1994). *Geomorphology in the Tropics : A Study of Weathering* & *Denudation in Low Latitudes*, John Wiley, London

Faniran, A.K. & Jeje, L.K.(!983). *Humid Tropical Geomorphology*, Longmans, New York

Kellman, A & Takaberry, R. (1997). *Tropical Environments*, Routledge, London.

Starkel, L & Singh, S (2004). *Rainfall, Runoff* & *Soil Erosion in the Globally Extreme Humid Area, Cherrapunji Region, India*, Polish Academy of Sciences, Warsaw.

Starkel, L. et.al.,(2008). *Environmental Changes* & *Geomorphic Hazards*, Bookwell, New Delhi

Starkel, L. et.al., (2010). *Land Degradation* & *Eco-restoration in the Extremely Wet Monsoon Environment of Cherrapunji*, Bookwell, New Delhi.

Goudie, A. (1990). *Geomorphological Tecchniques*, 2nd Edition, Unwin Hyman, London.

Ward, R.C. (1967). *Principles ofHydrology*, McGraw-Hill, London. Subramanya, K. (2009). *Engineering Hydrology*, Tata McGraw-Hill.

GE-OC 705: LOCATION AND AREA DEVELOPMENT

Credit-4

Course Outline

UNIT I

1. Concept of location over space in its geographical and geometrical context Issues of development in context with location of activities, Spatial processes of development

2. Role of location in socio economic development of area, Importance of accessibility of location in development

UNIT II

3. Spatial efficiency, spatial Interactions and Area-planning: its measurements like Nearest Neighbour Analysis, Location -allocation of activities, farm location and agricultural land use

UNIT III

4. Primacy in spatio-functional organization, its impact on development:
Location of market activities and agricultural land use, Location of industrial activities and spatial demand, Facility locations and Users distance

UNIT IV

5. Location and transport as common infrastructure for development

Suggested Readings:

Amedeo, D. and R. G. Golledge (1975) *An Introduction to Scientific Reasoning in Geography*, John Wiley and Sons, New York

Haggett, P. (1974) *Geography-A Modern Synthesis,* MIT Press Cambridge, Massa.

Scott, Allen J. (1971) *Combinatorial Programming-Spatial Analysis and Planning,* Methuen and Co, London

Sen, L. K. et.al. (1975) *Growth Centres in Raichur* , N.I.R.D., Hyderabad

Dear, M. J. and Flusty S. (2002) *Spaces ofPost-Modernity*, Blackwell Publishers, UK

Lee, R. and Wells J. (1997) *Geographies ofEconomics,* Arnold, London

Kuzmin, S.A. (1977) An integrated approach to development and employment, *International Labour Review,* voI.115(3).

GE-OC- 706: POPULATION, DEVELOPMENT AND ENVIRONMENT

Credit-4

Course Outline

UNIT I

1. Concepts: population, development, environment.
2. Theories: Malthus, Marx, Neo-Malthusians, Cornucopian.

UNIT II

3. Demographic transition: Stages, forms and implications.
4. Ageing: Concept, measurement, Global and Indian Patterns, implications

UNIT III

5. Human development: components, measurement, distribution, poverty.
6. Women and development: -Gender roles, indicators of gender inequality, women and work participation, reproductive health.

UNIT IV

7. Population and environment: Climate change and global warming, food security.
8. Measurement:-Vital rates, life table, population projection. '

Suggested Readings:

Newbold Bruce. K. (2007) *Six Billion Plus:-World Population in the Twenty First Century,* Rowman and Little field Pub. USA.

Zukerman Ben et al (1996) *Human Population and Environmental Crises,* Jone & Berlett, Boston.
Saraswati Raju et al (1999) *Atlas of Women and Men in India,* Kali for women New. Delhi.

Devaki Jain (2005) *Women Development and UN-A Sixty Year Quest for Equality and Justice,* Indiana Univ Press USA.

Domash M. et al (2001) *Putting Women in Place,* Gulliford Press New York .

Sailkind Neil J (2006) *Encyclopaedia of Human Development Vol I,II, III,* Sage. New York.

NCAER (2004) *East India Human Development Report,* OUP, New Delhi.

Ramakumar R. (2006) *Technical Demography,* New Age International New Delhi.

Premi M. K. (2006) *Population of India In the new Millennium, Census 2001* National Book Trust New Delhi.

Council for Social Development (2006) *India Social Development Report,* OUP New. Delhi.

GE-OC- 707: REGIONAL ANALYSIS WITH SPECIAL REFERENCE TO INDIA

Credit-4

Course Outline

UNIT I

1. Regions, regional systems, regional disparities, regionalism

2. Theories of regional development (Myrdal-Hirschman, Dependency-World Systems & Export-Base)

UNIT II

3. Urban-regional theories: Economic Base theory, Threshold Theory, New Urbanism

4. Methods and techniques of regionalisation and regional analysis with special reference to India

UNIT III

5. Regional resource analysis; Resource regions (with special reference to India); Natural Resource and Livelihoods; Sustainability issues; Conflicts in development goals, Megaprojects and disadvantaged communities (Tribes, forest-dwellers, nomads, fishermen etc)

UNIT IV

6. Manufacturing belts and complexes of India, Post-Ford ism, Industrial regions-emerging patterns and regional disparities in India

Suggested Readings:

Alanso,W & Friedman, (ed.)(1974). Regional Policy: A Reader. Mass, MIT Press.

Berry, BJL and Marble, D (ed.)(1968): Spatial Analysis, NJ, Engelwood-Cliff.

Fujita, M and Krugman, P et al (1998). On the Evolution of Hierarchical Urban Systems, European Economic Review, 43 :209-251.

Gadgil, M & Guha R (1992): This Fissured Land: An Ecological History of India. New Delhi, OUP.

Guha Ramachandra & Madan T.N (1994): Social Ecology. New Delhi, OUP.

Isard, W (1970). Location and Space Economy. Philadelphia, U. Penn.

Jacobs, Jane (1961). The Death and Life of Great American Cities. New York, Random House.

Kundu, A (1977). Urbanization and Regional Development in India. New Delhi, Concept.

Mitra, Asok (1968). Levels of Regional Development in India. Census Monograph No.8, New Delhi, Government of India

GE-OC-708: REMOTE SENSING/GIS TECHNIQUES FOR AGRICULTURAL GEOGRAPHY

Credit: 4

Course Outline

UNIT-I

Remote Sensing and its Important in Agricultural Survey a. Utility in agricultural survey, b. Satellite data analysis, c. Data processing on GIS, d. Characteristics of the agricultural landscape, e. Characteristic of EMR on Agricultural Survey

UNIT-II

Present System of Generating Agricultural data and its Problem

a. Crop, b. range land, c. livestock, d, data reliability, e. cost & benefit, f. Timeless

UNIT-III

Application of Remote Sensing Techniques for Agricultural Survey

a. Estimation & Spectral Analysis of Crops & Damage Assessment, Land Evaluation & Assessment, Soil Classification & Mapping

UNIT-IV

Advantages of Remote Sensing Techniques in Agricultural Survey

a. Vantage point, b. coverage, c. permanent record, e. mapping, d. cost saving, e. real time capability

Note: internal assessment (25%): hand on GIS and digital satellite data analysis

1. Sessional Assessment
2. Discussion with Supervisor

Suggested Readings:

Estes, E John. and Senger, W Leslle. (1974). Remote Sensing Techniques for Environmental Analysis, Hamilton publishing company, California.

Desmond Ball (1989). Geographic Information System: Defense Application, Pergamon press (Australia) P.LTD, Australia

Anjl Reddy, M. (2000). Remote Sensing and Geographic Information System, The Book Syndicate Hyderabad.

Agarwal, C.S., and Garg, P.K. (2000). Remote Sensing in Natural Resources Monitoring and Management, Wheeler publishing, A Division of A.H. Wheeler & Co. Ltd ,New Delhi.

Mather, P.M. (1987). Computer processing of Remote Sensing image: An Introduction, John Wiley & Sons

Patel Surendra Singh, A.N. (1992). Remote Sensing: Principles and Applications, Scientific publisher, Jodhpur, pp. 1-40

Rao ,U. R. (1996). Space Technology for Sustainable Development, Tata McGrawHill Publishing company Ltd, New Delhi.

Magurie, D. J David (1989). Computer in Geography, Longman Group (EF) Ltd, Hongkong,pp.63-67

Mohan Sundran Ranjan (1995). Space Today, National book trust, New Delhi.

GE-OC-709: CONTEMPORARY ISSUES IN URBAN DEVELOPMENT WITH SPECIAL REFERENCE TO INDIA

Credits-4

Course Outline

UNIT I

1. Towards an Urban Society: Development of Cities Million cities in India

2. Urbanization in India: 21st Century Challenges and Opportunities

UNIT II

3. Problems of Urban India: Housing, Transportation, Waste Disposal, Sanitation, Power and Water

4. Urban Informal Sector, Slums, Urban Crimes

UNIT III

5. India's Urban Challenges: Smart Cities and Sustainable urbanism

6. Urban Sprawl, Urban Heat Island, Urban Hazards and Risk Mitigation

UNIT IV

7. Urban Policies: Planning Commission, national urban Transport Policy, Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

8. Application of RS &GIS in urban Analysis In India

Suggested Readings:

Anderson, N. (1959). The Urban Community: A World Perspective, Holt, Rinchalt and Winston Inc. New York.

Berry, B.IL & Horton.F.F (1970). Geographical Perspectives on Urban Systems, Prentice Hall,

Englewood Cliffs, NJ

Bolay, I.C. (2006). 'Slums and Urban Development: Questions on Society and Globalisation', The European Journal ofDevelopment Research, Vol.I8, No.2, pp.284-298.

Breeze, G (1963), Urban Development problems in India. Annals ofthe Association of American

Geographers, Vo153, pp 253-265

Bose A (1978) India's urbanization: 1901-2001. Tata McGraw-Hill, New Delhi

Das AK (2007) Urban planning in India. Rawat Publication, New Delhi

Dutt AK, Venugopal G (1983) Spatial patterns of crime among Indian cities. Geoforum 14(2):223

Jain AK (2008) A sustainable vision for urban India. Kalpaz, Delhi

Johnson, C. (Ed.) (2011), Indian Cities: Managing Urban Growth, Metropolis Research Publication, Mumbai.

Ministry of Urban Development (2006a) Report of Steering Committee on Urban Development for 11th Five-Year Plan

Ministry of Urban Development (2006b). Report of the 11th Five-Year Plan (2007-2012) Working Group on Urban Housing with Focus on Slums

Ministry of Urban Development (2006c). National Urban Transport Policy (2006). Ministry of Urban Development, Government of India

Ministry of Urban Development (2007). National Urban Sanitation Policy. Ministry of Urban Development, Government of India

Ministry of Urban Development (2011). High-Powered Expert Committee Report on Indian Urban Infrastructure and Services. Ministry of Urban Development, Government of India

Ministry of Urban Development, Government of India (1988). Report of National Commission on Urbanization. Government of India, New Delhi

Nath V (2007). Urbanization, urban development and metropolitan cities in India. Concept, New Delhi

National Crime Record Bureau (2009). Crime in India 2009. Ministry of Home Affairs, Government of India

Ramachandran, R (1993), Urbanization and urban Systems of India, Oxford, New Delhi

GE-OC-710: GEOGRAPHICAL PERSPECTIVES IN CULTURAL TOURISM

Credit-4

Course Outline

UNIT I

1. Conceptual framework for understanding cultural tourism from a geographical perspective

2. Inventing tourism places: cultural construction and alternative tourism geographies

UNIT II

3. Relationships between culture and tourism

4. Role and impact of culture and tourism on attractiveness

UNIT III

5. Cultures and communities: the socio-cultural relationships between hosts and visitors

6. Cultural practices and tourism impacts on culture on the Indigenous communities of Malaysia, Mongolia and Taiwan

UNIT IV

7. Rationale for Indigenous tourism; The Indigenous tourism system

8. Traditional ecological knowledge and Indigenous tourism

Suggested Readings:

Williams S. (1998). Tourism Geography, Rutledge: London

Mathieson, A. and Wall, G (1997). Tourism: A Community Approach, Longman: Harlow Murphy, P.E. (1985). Tourism: A Community Approach Rutledge: London

Theobald, W. (ed) (1994). Global Tourism: the Next Decade, Butterworth Heinemann: Oxford

Urry, J.. (1990). The Tourist Gaze, Sage: London

Prentice, R. (1993). Tourism and Heritage Attractions, Rutledge: London

Richards, G. (ed) (1996). Cultural Tourism In Europe, CAB International: Wallingford

Richards, G. (ed) (2007). Cultural Tourism: Global and Local perspectives, Haworth Press: New York

Butler, R and Hinch, T (ed) (2007). Tourism and Indigenous People: Issues and Implications, Butterworth Heinemann: Oxford

Ryan, C and Aicken, M. (1995). Indigenous Tourism: The Commodification and Management of Culture, Elsevier: Amsterdam