

**PH.D. COURSE WORK SYLLABUS  
UNDER THE NEW UGC Ph.D. REGULATION 2016**



**GEOGRAPHY 2018**

Department of Geography  
**Diamond Harbour Women's University**  
Sarisha, 24 Parganas (South), West Bengal, India-743368

## PREAMBLE

### Ph.D. COURSE WORK AND COURSE-END EXAMINATION

1. Each Ph.D. student has to complete a course work of six months duration. There are four courses consisting **200 marks and 08 credits**
2. About the course work and related matters the UGC Regulation 2016 will be followed.
3. There are **two compulsory courses** i.e. Research Methodology and review of the research (GEO/Ph.D./CC/101), Computer Application and research orientation (GEO/Ph.D./CC/102) and two optional courses i.e. GEO/Ph.D./OC/103 (quantitative geomorphology, soil and environment and urban studies) and Dissertation Project (GEO/Ph.D./OC/104).
4. Each student has to opt one optional course from GEO/Ph.D./CC/103) and another from GEO/Ph.D./CC/104
5. Each candidate has to be prepared a dissertation project and to be submitted at the semester end examination.
6. A course end examination to be held and it is to be conducted by the University.
7. A student must have to obtain 50% marks in the course work examination to qualify.

### STRUCTURE OF THE SYLLABUS:

| Course Code                               | Title of the Course                                                                                                           | Number of Lectures | Credits | Full Marks |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|------------|
| GEO/Ph.D./CC/101<br><b>Compulsory</b>     | Research Methodology and review of the research [Compulsory]                                                                  | 4 hours/week       | 2       | Marks-50   |
| GEO/Ph.D./CC/102<br><b>Compulsory</b>     | Computer Application and research orientation [Compulsory]                                                                    | 4 hours/week       | 2       | Marks-50   |
| GEO/Ph.D./OC/103<br><b>Elective Units</b> | Quantitative Geomorphology <b>(Optional)</b><br>Soil and Environment <b>(Optional)</b><br>Urban Studies <b>(Optional)</b>     | 4 hours/week       | 2       | Marks-50   |
| GEO/Ph.D./OC/104<br><b>Elective Units</b> | Dissertation Project On Physical Geography <b>(Optional)</b><br><br>Dissertation Project On Human Geography <b>(Optional)</b> | 4 hours/week       | 2       | Marks-50   |
|                                           |                                                                                                                               |                    | 08      | 200        |

### COURSE CODE- GEO/Ph.D./CC/101 RESEARCH METHODOLOGY

Full marks-50 [Semester Examination-40, Internal Assessment-10]

**[Exam Duration-2 Hours]**

**Pattern of Questions:** Two questions each of 10 marks are to be set from each unit and one question is to be attempted. There must be maximum two parts for each question.

### **UNIT-1: CONCEPT OF RESEARCH**

- 1.1 Definition and objectives: Ontology and Epistemology of geographical research
- 1.2 Approaches to research in geography: Empiricism; Realism; Structuralism
- 1.3 Critical Approaches: Post Structuralism; Post-modernism
- 1.4 Ethical Issues in Research

### **UNIT-2: RESEARCH DESIGN**

- 2.1 Significance; Structural design of a good research proposal
- 2.2 Problems formulation; identification of research gaps; selection of objectives and methodology
- 2.3 Methodological development of the research: Inductive and deductive Axioms
- 2.4 Planning of research: data source, data collection, processing and management

### **UNIT-3: REVIEW OF RESEARCH**

- 3.1 Identification of authentic literature
- 3.2 Importance of existing literature corresponding to the methodologies and issues of research
- 3.3 How to write a literature review?
- 3.4 Citation, references and bibliography

### **UNIT-4: QUANTITATIVE AND QUALITATIVE RESEARCH**

- 3.1 Qualitative and Quantitative research
- 3.2 Sampling methods: Selection of Samples; Types of Sampling
- 3.3 Formulation of Interview Schedule/Questionnaire
- 3.4 Case Study; Focus Group Discussion; Participatory research; Action research

### **INTERNAL ASSESSMENT:**

**Review of literature on a selected topic (Not less than 20 pages of A4 size and 1.5 spacing)**

**COURSE CODE- GEO/Ph.D./CC/102**  
**COMPUTER APPLICATION AND RESEARCH ORIENTATION**  
**[COMPULSORY]**

**Full marks-50 [Semester Examination-40, Internal Assessment-10]**  
**[Exam Duration-2 Hours]**

**Pattern of Questions:** Two questions each of 10 marks are to be set from each unit and one question is to be attempted. There must be maximum two parts for each question.

**UNIT-1: COMPUTER SYSTEM**

- 1.1 Fundamentals of Computer: OS, input-output devices, hardware and software
- 1.2 MS offices and components: Excel-spread sheet; graphical representation; univariate and bivariate analysis
- 1.3 Data base management system
- 1.4 Using World Wide Web for research

**UNIT-2: APPLICATION OF STATISTICAL SOFTWARE**

- 2.1 Regression: Linear, exponential, and logistic
- 2.2 Testing of hypothesis
- 2.3 Multivariate analysis
- 2.4 Factor analysis

**UNIT-3: APPLICATION OF RS**

- 3.1 Sources of Satellite data: BHUBAN, USGS, Google Earth
- 3.2 Digital Image Processing
- 3.3 Image Classification: Supervised and unsupervised
- 3.4 GPS & GNSS

**UNIT-4: APPLICATION OF GIS**

- 4.1 Geo-referencing, Data layering and buffering
- 4.2 Data integration: weighted overlay analysis
- 4.3 GIS Modelling
- 4.4 Application of GIS in research

**COURSE CODE- GEO/Ph.D./OC/104, DISSERTATION PROJECT**  
**QUANTITATIVE GEOMORPHOLOGY [OPTIONAL]**

**Full marks-50**  
**OR**

**COURSE CODE- GEO/Ph.D./OC/104, DISSERTATION PROJECT**  
**SOIL AND ENVIRONMENT [OPTIONAL]**

**Full marks-50**  
**OR**

**COURSE CODE- GEO/Ph.D./OC/104, DISSERTATION PROJECT**  
**URBAN STUDIES [OPTIONAL]**

**Full marks-50**

A candidate has to be made a dissertation project. This is an elective unit. There are three options i.e. **quantitative geomorphology, soil and environment** and **urban studies**. The topic of the dissertation is to be selected from the said options.

**Pattern of Evaluation:** There are two parts of the evaluation of the dissertation project. The preparation of a dissertation project and its submission will cover 30 marks and the presentation of the said project will contain 20 marks.

A dissertation project is to be prepared and be submitted at the end of the semester for its evaluation. All the Candidates have to present their dissertation project through power point before an external expert and departmental faculty members.

**Guidelines:**

The following is a list of the required parts of the dissertation in the order in which they should appear in the manuscript.

1. Title Page
2. Abstract
3. Dedication/Preface (optional)
4. Acknowledgments (optional)
5. Table of Contents
6. List of Tables (if any)
7. List of Figures (if any)
8. List of Abbreviations, Plates, Equations, Theorems, Symbols, Definitions etc. (if any)
9. Thematic arrangement of Chapters including introduction (Introduction must include background, statement of the problem, objectives, methodology, limitations and literature review).
10. Bibliography (or References, or Works Cited)
11. Appendix or Appendices (if any)

[The dissertation project will not exceed 50 pages. The manuscript must follow font size of 12 with times new roman font. The spacing of the lines is 1.5. API style should be followed to make a list of references].

**COURSE CODE- GEO/Ph.D./OC/103**  
**URBAN STUDIES [OPTIONAL]**

**Full marks-50 [Semester Examination-40, Internal Assessment-10]  
[Exam Duration-2 Hours]**

**Pattern of Questions:** Two questions each of 10 marks are to be set from each unit and one question is to be attempted. There must be at least two parts of each question.

**UNIT I: CONCEPTUAL ISSUES IN URBAN GEOGRAPHY**

- 1.1 Urban space and its changing dynamics
- 1.2 Approaches to Urban Geography: Traditional, Quantitative, Critical
- 1.3 Overview of Urbanisation: developed and developing countries
- 1.4 Relevance of social area; neighbourhood and community

**UNIT II: URBAN ISSUES AND CHALLENGES**

- 2.1 Economic: Land Rent, Market, Movement of capital
- 2.2 Socio-political: Factorial ecology, Neo-liberal urbanism and its facets
- 2.3 Environmental: Land, Water, Air, Waste, Ecological footprint
- 2.4 Contemporary research issues in urban planning: a) Housing and physical infrastructure b) Social capital – health and education c) Crime, segregation, gentrification d) Local Governments: Participatory planning and e-governance

**UNIT III: URBAN MANAGEMENT, POLICY AND GOVERNANCE IN INDIA**

- 3.1 Urban Development Policies in India: An Overview (NCU to Present)
- 3.2 Implication of 74<sup>th</sup> CAA on urban local governance
- 3.3 Impact of globalization on urbanization and development
- 3.4 Sustainable Urban Management: Issues and Case-studies

**UNIT IV: ANALYSIS IN URBAN GEOGRAPHY**

- 4.1 Analysis of demographic aspects and socio-economic dimensions of urban areas
- 4.2 Perception mapping of urban issues
- 4.3 Participatory Mapping of neighborhoods for planning and management
- 4.4 Application of RS-GIS in urban studies: Image processing and GIS

**COURSE CODE- GEO/Ph.D./OC/103  
QUANTITATIVE GEOMORPHOLOGY [OPTIONAL]**

**Full marks-50 [Semester Examination-40, Internal Assessment-10]  
[Exam Duration-2 Hours]**

**Pattern of Questions:** Two questions each of 10 marks are to be set from each unit and one question is to be attempted. There must be at least two parts of each question.

**UNIT – 1: FLOOD PLAIN GEOMORPHOLOGY**

- 1.1. Flood plain Forms and Processes
- 1.2. Channel forms and patterns: meander geometry, flow pattern
- 1.3. Channel migration: bank erosion processes; sedimentation
- 1.4. Estuarine Processes: Impact of sea-level rise and anthropogenic activities

**UNIT - II: WATERSHED ANALYSIS**

- 2.1. Drainage basin Morphometry: shape parameters, areal parameters, relief parameters
- 2.2. Geomorphology and watershed management
- 2.3. Watershed management approaches and policies in India: Concept of Watershed Districts
- 2.4. Water budget and management

**UNIT – III: GEOMORPHOLOGY AND HAZARD MANAGEMENT**

- 3.1. Concept of Geomorphic hazards, susceptibility, vulnerability and risk
- 3.2. Coastal Erosion and Flood hazards: Vulnerability assessment and management
- 3.3. Soil erosion and landslide vulnerability assessment and management
- 3.4. Application of Geoinformatics in hazards management

**UNIT – IV: APPLICATION OF INSTRUMENTS IN GEOMORPHOLOGY**

- 4.1. Total Station Surveying
- 4.2. Abney level and clinometer, Distometer, Branton Compass
- 4.3. Water current meter and Echo-sounder; Aquatic Doppler Current Profile (ADCP)
- 4.4. Grain size distribution analysis using soil sieving apparatus

**COURSE CODE- GEO/Ph.D./CC/104  
SOIL AND ENVIRONMENT [OPTIONAL]**

**Full marks-50 [Semester Examination-40, Internal Assessment-10]  
[Exam Duration-2 Hours]**

**Pattern of Questions:** Two questions each of 10 marks are to be set from each unit and one question is to be attempted. There must be at least two parts of each question.

**UNIT-1: SOIL FORMATION PROCESSES, CLASSIFICATION AND DISTRIBUTION OF SOIL**

- 1.1: Soil Formation: Factors and Processes
- 1.2: Study of Soil Profile
- 1.3: Classification of soil; Dakucheav, Marbut, Soil Taxonomy.
- 1.4: Soil Survey: Methods and techniques

**UNIT- 2: PROPERTIES OF SOIL, SOIL POLLUTION AND CONSERVATION**

- 1.1: Physical Properties of Soil and their significance on fertility.
- 1.2: Chemical Properties of soil and their significance on fertility.
- 1.3: Genesis and Nature of Humus, Factors affecting Soil Organic Matter, Macro and Micro Nutrients of Soil.
- 1.4: Contamination of Soil, Prevention and Control of soil pollution and its Conservation.

**UNIT-3: ENVIRONMENTAL ISSUES**

- 3.1 Land degradation, deforestation, Salinization
- 3.2 Air pollution, water pollution, lowering of ground water level
- 3.3 Climate change and related issues
- 3.4 Industrial development and environmental degradation

**UNIT-4: ENVIRONMENT MANAGEMENT SYSTEM**

- 4.1 Principles and types of environment management system
- 4.2 EIA: Principle and process
- 4.3 Wetland and waste land management
- 4.4 RS & GIS in environment management

**Suggested Readings**

- 1. Bose Ashish 1972: Studies in Indian Urbanization, 1970-71, Tate Mc GrawHill, Bombay.



2. Bose Ashish 1978: Urbanization in India. Academic Books Ltd., Bombay.
3. Berry, B.J.L. and Kasarda, J.D. 1977: Contemporary Urban Ecology. Macmillan, New York.
4. Carter, H. 1972: The study of Urban Geography. Edward Arnold, London.
5. Dickinson, R.E. 1974: City and Region. Routledge and Kegan Paul Ltd. London.
6. Diddee, Jaymala 1997: Indian Medium Towns, Rawat Publications, Jaipur.
7. Dutt, Ashok et. al. 1994: The Asian Cities: Processes of Development, Characteristics and Planning. GeoJournal Library, London.
8. Fyfe, Nicholas R. and Kenny, Judith T. (eds.) 2005: The Urban Geography Reader. Routledge, London.
9. Gallien, A.B. and S. Eisner 1963: Urban Pattern, New York.
10. HUDCO-HSMI. 2001: The States of Indian Cities, HUDCO HSMI, New Delhi.
11. Jha, R. and Nasreen Siddiqui 2000: Towards People Friendly Cities, UNICEF Maharashtra State Office, Mumbai.
12. Kaplan, D. and Wheeler, J. 2008: Urban Geography, John Wiley
13. Knox, Paul and Pinch, Steven 2006: Urban Social Geography. Pearson Prentice-Hall, Englewood Cliffs NJ. 5th Ed.
14. Kumar, B. and R.B. Singh 2003: Urban Development and Anthropogenic Climatic Change. Manak Publications, New Delhi.
15. Kundu, A. 2005: Urban Development and Urban Research in India, Khama Publishers, New Delhi.
16. Mandal, R.B. 2000: Urban Geography: A Textbook, Concept Pub. Co., New Delhi.
17. Mathur, M.P. 2007: Norms and Standards of Municipal Basic Services in India, National Institute of Urban Affairs, New Delhi available on [www.niua.org](http://www.niua.org) (accessed on 1st June 2017).
18. Mishra, R.P. and others 1974: Regional Development Planning in India, Vikas Publishing, Delhi.
19. Misra, R.P. and Misra, K. (eds.) 1998: Million Cities of India Vol.I/II Sustainable Foundation, New Delhi.
20. Mohan Sudha 2005: Urban Development and New Localism, Rawat Publications, Jaipur.
21. Pacione, Michael 2005: Urban Geography: A Global Perspective. 2<sup>nd</sup> ed. Routledge, London.
22. Prakasa Rao, V.L.S. 1983: Urbanisation in India: Spatial Dimensions, Concept, New Delhi.
23. Ramachandran, R. 1989: Urbanisation and Urban System in India, Oxford University Press, New Delhi.
24. Rao, R. Rammohan and S. Simhadri 1999: Indian Cities: Towards Next Millenium, Rawat Publications, Jaipur.
25. Singh, R.L. 1955: Banaras: A Study in Urban Geography, NandKishor and Brothers, Banaras.
26. Singh, Ravinder Sandhu (ed) 2003: Urbanisation in India, Sage Publications, New Delhi.
27. Sivaramakrishnan, K.C. et al. 2005: A Hand Book of Urbanisation in India, Oxford University Press, New Delhi.
28. Taylor, Griffith 1949: Urban Geography, Methuen and Co. Ltd., London.
29. Tiwari, V.K. and others (ed.) 1986: Indian Cities: Ecological Perspectives. Concept, New Delhi.
30. Toyne, P. and Newby, P. 1971: Techniques in Human Geography, Macmillan, London
31. UNCHS-UN HABITAT 2001: Cities in a Globalising World. Global Report on Human Settlement, Earthscan, London and Sterling, VA.
32. UN-HABITAT 2003: Water and Sanitation in World Cities: Local Action for Global Goals, Earthscan London.
33. Vaidya, Chetan 2009: Urban Issues, Reforms and Way Forward in India working paper No. 4/2009-DEA available on [www.niua.org](http://www.niua.org) (accessed on 1st June 2017).

