

**SYLLABUS
FOR
PhD. COURSE WORK
IN
GEOGRAPHY**

(As per the Revised PhD Regulations, 2020)



DEPARTMENT OF GEOGRAPHY

School of Science and Thechnology

**BODOLAND UNIVERSITY
KOKRAJHAR 783370**

PhD COURSE WORK

COURSE STRUCTURE

Candidates selected for PhD programme requires to undergo a one-semester Course Work (Six month's duration) covering five Papers as follows:-

SN	COURSE NO.	PAPER CODE	TITLE OF THE COURSE	CREDITS	MARKS
1.	PAPER I	RGGY-I	RESEARCH METHODOLOGY IN GEOGRAPHIC RESEARCH	3 (45 Hrs)	100 (20+20+60)
2.	PAPER-II	RGGY-II	METHODS AND TECHNIQUES IN GEOGRAPHIC RESEARCH	3 (45 Hrs)	100 (20+20+60)
3.	PAPER III	RGGY-III	REVIEW AND PRESENTATION	3 (45 Hrs)	100 (60+40)
3.	PAPER IV (OPTIONAL PAPER)	RGGYO-IV(A)	OPTION A: PHYSICAL GEOGRAPHY	3 (45 Hrs)	100 (20+20+60)
		RGGYO-IV(B)	OPTION B: HUMAN GEOGRAPHIC RESEARCH		
5.	PAPER V	RPE-V (COMMON)	ETHICS IN RESEARCH & PUBLICATIONS	2 (30 Hrs)	50
Total				14 credits (210 hrs)	

A) The course structure is 60:20:20 for the first four papers. Each paper (paper I to IV) of the course work shall be evaluated through semester theory exam (60%), assignments/periodical (20%) and seminar presentation/Group discussion (20%). The total marks for Paper I to Paper IV are 100. Paper V is common for the whole university and carries a total of 50 marks.

B) A scholar must have a minimum of 70% attendance during the Course work. A scholar has to obtain a minimum of 55% of marks or equivalent grade in the Course work examination.

C) Calculation of Semester Grade point Average (GGPA) shall be made according to the following formula:

$$SGPA = \frac{\sum(C_i G_i)}{\sum(C_i)}$$
 where,

C_i = Number of Credits for the i th Course

G_i = Grade point obtained in the i th course

The following grading scale is applied to indicate the performances of the scholar in the Course work examination.

GRADE	O	E	A	B	C	F	I
Grade details	9	8	7	6	5	0	---
Description	Outstanding	Excellent	Very Good	Good	Fair	Poor	Incomplete
Marks (%)	90 to 100	80 to 89	70 to 79	60 to 59	50 to 59	0 to 49	---

D) Preparation of question paper and evaluation of scripts etc. will be done by the DRC members of the department appointed by the Controller of Examinations.

E) Candidates who have done M.Phil Courses in regular mode with course work from recognized institutions in subject Geography are exempted from course work.

F) Women candidates who were admitted and completed PhD course work from other UGC recognized institutions/universities in the subject Geography and relocated to this university are exempted from course work.

RGGY-I: RESEARCH METHODOLOGY IN GEOGRAPHIC RESEARCH
Marks = 100 (20+20+60)

UNIT: 1 FUNDAMENTALS OF GEOGRAPHIC RESEARCH **15**

Meaning of research, Philosophical issues in geographic research, Types of research: Descriptive vs Analytical, Applied vs Fundamental and Quantitative vs Qualitative. Research problem: Defining and formulation of the research problem, Selection process of the research problem, Necessity of defining the problem.

Literature review: Its importance and need in synopsis writing, in finding the research gap, in thesis writing etc.

UNIT II: PROCESS OF GEOGRAPHIC RESEARCH **15**

Research design: Basic principles, needs and features of a good design;
Concept of Laws, Theories, Model building;
Inductive and Deductive approaches in geographic research;
Hypothesis formulation and testing in Geography;

UNIT III: RESEARCH TOOL AND TECHNIQUE **15**

Tools of data collection: Questionnaire, Interview Schedule, Difference between Questionnaire and Interview Schedule, Google Form

Techniques of data collection: Direct interview, Focus group discussion, Telephonic interview, Online Survey, Key informant's interview

Sampling: Non-probability sampling: Purposive sampling and Snowball sampling; Probability sampling: Simple random sampling, Cluster sampling, Probability Proportionate to Size
Sample Size determination

UNIT IV: REFERENCING AND DISSERTATION WRITING **15**

Referencing: Citation and APA style of Reference, Use of Mendeley

Dissertation: Physical Structure; Layout of the Dissertation: Preliminary Pages, Main Text, End Matter, Chapterization, preparation of content, numbering heading and tables

Suggested Readings:

1. Neuman, W. Lawrence (2014). Social Research Methods: Qualitative and Quantitative Approaches, Seventh Edition. Pearson Education Limited.
2. Ladusingh, Laishram (2018). Survey Sampling Methods. Eastern Economy Edition. PHI Learning Private Limited – Delhi.
3. Gomez, Basil and John Paul Jones III (2010). Research Methods in Geography, A Critical Introduction. Wiley-Blackwell

4. Hanneman, R; Kposowa, A J & Riddle, M (2014). *Basic Statistics for Social Research*. Jossey-Bass, A Wiley Imprint.
5. Flick, Uwe (2009). *An introduction to qualitative research*, Fourth Edition. SAGE Publications India Pvt Ltd.
6. Ackoff, R. L., 1961. *The Design of Social Research*, University of Chicago Press, Chicago.
7. Goode William, J. and Hatt, Paul K., 1952. *Methods in Social Research*, McGraw Hill Company, Inc., New York.
8. Kothari, C. R., 1993: *Research Methodology. Methods and Techniques*, 2nd ed., Wiley Eastern Ltd., New Delhi.
9. Mishra, R. P., 1989: *Research Methodology. A Handbook*, Concept Publishing Company, New Delhi.
10. Misra, H. N. and Singh, V. P., 1998. *Research Methodology in Geography*, Concept Publishing Company, New Delhi.
11. Montello, Danial R. and Paul C. Sutton, 2006. *An Introduction to Scientific Research Methods in Geography*, Sage Publications, London
12. Nalwa, V., 1992. *The A B C of Research for Behavioural and Social Sciences*, Wiley Eastern, New Delhi.
13. Prasad, H., 1992. *Research Methods and Techniques in Geography*, Rawat Publications, Jaipur.

RGGY-II: METHODS AND TECHNIQUES IN GEOGRAPHIC RESEARCH

Marks = 100 (20+20+60)

UNIT I: BASICS OF COMPUTER 15

Microsoft Word: Basics; Preparation of simple and complex tables; Need and uses of track change mode; Inserting shapes and symbols; Add ons to M.S. Word: Mendeley
Microsoft Excel: Application of arithmetic functions; Preparation of different forms of graph: Line graph, Bar Diagram, Histogram, Pie Chart, Age-Sex pyramid; Sort and Filter
Microsoft PowerPoint: Slide layout; Slide Design; Inserting various objects;
Browsing the internet for searching literature and sharing of data and results among inter groups

UNIT II: QUANTITATIVE TECHNIQUES USING APPROPRIATE SOFTWARE 15

Tabulation of geographic data: Uni-variate, Bi-variate and Multi-variate tables
Measures of central tendency: Mean and Median;
Measures of dispersion: Standard deviation, Quartile deviation
Construction of Indices – Unweighted and Weighted;
Local Indicators of Spatial Autocorrelation – Using Geoda; Degree of clustering, Nearest neighbour analysis,
Correlation, regression analysis,
Binary logistic regression, Multi-nominal logistic regression
Hypothesis testing: Chi-Square analysis, F-test, T-test
Network and time series analysis – Change Point Analysis

UNIT III: CARTOGRAPHIC TECHNIQUES 15

Cartographic techniques and their use in geographic research;
Map as a geographic research tool;
Base maps: nature, problems of selection and construction in research;
Techniques of data representation in research: cartograms, graphs, charts etc. in Thesis writing

UNIT IV: APPLICATION OF MODERN GEOGRAPHIC TECHNIQUES 15

Use of remote sensing data in geographic research;
Concept of GIS and its application in geographic research;
Concept of Datum, coordinate system and map projection in GIS;
Data models: spatial and attribute data models, Raster and vector data models;
Spatial analysis: Buffer, Proximity analysis, overlay analysis and their use in research;
Integration of GIS outputs with research problems;
GPS techniques and its application

Suggested Readings:

1. Gregory, S., 1978: *Statistical Methods and the Geographer*, Longman, London.
2. Hammond R and P. S. McCullagh, 1974: *Quantitative Techniques in Geography: An*

Introduction, Clarendon Press, Oxford.

3. Johnston R. J., 1973: *Multivariate Statistical Analysis in Geography*, Longman, London.
4. King, L. J., 1969: *Statistical Methods in Geographical Studies*, London.
5. Mahmood, A., 1977: *Statistical Methods in Geographical Studies*, Concept Publications, Delhi.
6. Maurice Yeats, 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw, Hill, New York.
7. Paul, S. K., 1998: *Statistics for Geoscientists*, Tata McGraw Hill, New Delhi.
8. Robinson, G. M., 1998: *Methods and Techniques in Human Geography*, John Wiley & Sons, Chichester.
9. David Unwin, (1981). *Introductory Spatial Analysis*, Methuen, London.
10. John P.Cole and Cuchlaine A. M. King, 1968: *Quantitative Geography*, John Wiley, London.
11. Koutsoyiannis, (1973). *Theory of Econometrics*, Memillan, London.
12. Peter Haggett, Andrew D. Cliff, & Allan Frey, 1977: *Location Methods Vol. I and II*, Edward Arnold, London. Version 1.0, 2014 Page 20 of 52
13. Campbell J. (1989). *Introduction to Remote Sensing*, Guilford, New York
14. Curran, Paul J. (1985). *Principles of Remote Sensing*, Longman, London, 1985
15. Hord R.M. (1989). *Digital Image Processing of Remotely Sensed Data*, Academic, New York.
16. Luder D. (1959). *Aerial Photography Interpretation: Principles and Application*, McGraw Hill, New York.
17. Pratt W.K. (1978). *Digital Image Processing* Wiley, New York.
18. Cuff J. D. and Mattson M. T., 1982: *Thematic Maps: Their Design and Production*, Methuen Young Books.
19. Dent B. D., Torguson J. S., and Holder T. W., 2008: *Cartography: Thematic Map Design* (6th Edition), Mcgraw-Hill Higher Education.
20. Gupta K. K. and Tyagi V. C., 1992: *Working with Maps*, Survey of India, DST, New Delhi.
21. Kraak M.-J. and Ormeling F., 2003: *Cartography: Visualization of Geo-Spatial Data*, Prentice-Hall.
22. Mishra R. P. and Ramesh A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
23. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
24. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
25. Slocum T. A., McMaster R. B. and Kessler F. C., 2008: *Thematic Cartography and Geovisualization* (3rd Edition), Prentice-Hall.
26. Tyner J. A., 2010: *Principles of Map Design*, The Guilford Press.
27. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
28. Singh, L R & Singh R (1977): *Manchitra or Paryaogatamek Bhugol* , Central Book, Depot, Allahabad.
29. Bhopal Singh R L and Duttta P K (2012) *Prayogatama Bhugol*, Central Book Depot, Allahabad.

RGGY-III: REVIEW AND PRESENTATION

Marks = 100 (60+40)

Seminar/Viva (40)

PART-A: REVIEW OF PUBLISHED JOURNAL ARTICLES 60

- Framing of research paper manuscript for publication in journals 05
- Submission of a complete assignment on review of research work. 05
- Review research journals with issues related to the area of PhD work 50
(Consider five themes relevant to your research area/objectives of the research. Take five research articles on each theme. Total number of articles to be reviewed-twenty-five)
The reviewed paper should be recent ones, except for classical works
Literature should be cited and reference to be made in APA referencing style

PART-B: PRESENTATION OF REVIEWS 40

- A seminar on the review work is required to present covering all five themes.
- Presentation on review needs to be arranged as per the themes and objectives of the research.

**RGGYO-IV (A): PHYSICAL GEOGRAPHY
MARKS 100 (20+20+60)**

UNIT-I: RESEARCH SPOTLIGHTS IN PHYSICAL GEOGRAPHY 15

Scope and Subject Matter of Physical Geography: Lithosphere and landform development study, Atmosphere and Climate, Hydrosphere and Processes

UNIT-II: RESEARCH TECHNIQUES IN GEOMORPHOLOGY 15

Scope of Geomorphology, Process of understanding Geomorphology, Geomorphological data and techniques of their collection, presentation and analysis, Geomorphology in Soil Studies and Mapping, Tools used in laboratory analysis, Geomorphological Field Mapping and Models, Application of GIS and Remote Sensing for Problem-solving & Planning

UNIT III: DOMAIN & PERSPECTIVES OF RESEARCH IN PHYSICAL GEOGRAPHY 15

- Landform development: processes and forms of landform development (landform studies, surface & groundwater studies, watershed as a geomorphic unit)
- Geomorphic hazards management: landslide, flood, riverbank erosion and channel migration
- Physical geographic/geomorphic studies on river basin with particular reference to N.E. India
- Dynamics of Climate: Global Warming and Climate Change; Applied Geomorphology in Environmental Management and Sustainable Development

UNIT IV: CONTEMPORARY ISSUES IN PHYSICAL GEOGRAPHIC / GEOMORPHIC RESEARCH 15

- Nature and Relevance of contemporary issues in Physical Geography
- Interlinking of rivers in India, Glimpses of Global Water Crisis
- Geomorphic Issues: GLOF- Glacial Lake Outburst Floods

Suggested Readings:

1. Chorley, Wolman and Miller, 1969: Fluvial Processes in Geomorphology, W.H. Freeman and Company, San Francisco.
2. Chorley, R. J. (ed), 1969: Water, Earth and Man, Methuen, London.
3. Chow, V. T., 1964: Handbook of Applied Hydrology, McGraw Hill Book Company, New York.
4. Folk, R. L., 1980: Petrology of Sedimentary Rocks, Hemphill Publishing Co. Austin, Tx.
5. Garde, R. J. and Ranga Raju, K.G.: Mechanism of Sediment Transportation.
6. Gregory, K. J. and Walling, D. E., 1973: Drainage basin Form and Processes, Arnold, London.

7. Kanidhton, D., 1984: *Fluvial Forms and Processes*, Edward Arnold, London.
8. Leopold, Wolman and Miller, 1964: *Fluvial Processes in Geomorphology*, W. H. Freeman and Company, San Francisco.
9. Morisawa, M., 1968: *Streams: Their Dynamics and Morphology*, McGraw Hill Book The company, New York.
10. Mutreja, K. N., 1986: *Applied Hydrology*, McGraw Hill Book Company, New York.
11. Petts, G. E. and Foster, I., 1985: *Rivers and Landscape*, Edward Arnold, London.
12. Rao, K. L., 1975: *India's Water Wealth*, Orient Longman, New Delhi.
13. Schumm, S. A., 1977: *The Fluvial System*, Wiley Interscience, New York.
14. Schumm, S. A. (ed), 1977: *Drainage Basin Morphology*.
15. Smith, D.I. and Stopp, P., 1978: *The River Basin: An Introduction to the Study of Hydrology*,

RGGYO-IV (B): HUMAN GEOGRAPHIC RESEARCH
Marks = 100 (20+20+60)

UNIT I: GEOGRAPHY OF WELL-BEING AND LIVELIHOOD **15**

The conceptual basis of social well-being and selection of indicators;
Literacy, health and social well being;
Regional disparity in literacy and education in India;
Regional difference in healthcare facilities in India;
The social disparity in educational attainment in the case of gender;
Women and Work Participation;
Livelihood adaptation and security

UNIT II: GEOGRAPHY OF URBAN ENVIRONMENT AND HUMAN DEVELOPMENT **15**

Issues in Housing and urban sustainability, Urban Sprawl;
Urban Slums and the Urban Poor;
Urban Infrastructure-Transportation, Power & Water;
Urban Pollution (Air, Water and Noise) and Health Impacts;
Urban Crimes and emerging associated problems
Human Development and Human Resource Utilization;
Human resource development data and devising indices;
Concept and Computation of HRD or HDI;

UNIT: III FORCED MIGRATION

15

Understanding the difference between migration and forced migration, types of forced migration;
Understanding differences among internally displaced persons, stateless population, refugees, asylum seekers, illegal immigrants.
Research issues relating to a) Development Induced Displacement, b) Conflict Induced Displacement, c) Disaster Induced Displacement, d) Economic Induced Displacement, e) Internal Displacement and Trafficking in human beings, e) Left Behind women, f) Unemployment and Migration, g) Migration and health.

UNIT: IV FERTILITY AND HEALTH

15

Measures of fertility and Reproduction; Implications of adolescent fertility and below replacement level fertility;
Importance of family planning in current society;
Causes of biased sex ratio at birth; implications of son preference;
Indoor pollution and child health; Food consumption and nutrition
Sanitation and child health; Health seeking behaviour;
Implications of reference period in health research
Flash flood and health issues; Health status and care of elderly

Suggested Readings:

1. Cernea, M. M., 2002. Impoverishment Risks, Risk Management, and Reconstruction: A Model of Population Displacement and Resettlement.
2. Das, S.K. (ed), 2008. Blisters on their Feet, Tales of Internally Displaced Persons in India's North East. Sage India.
3. IDMC, 2019. Global Report on Internal Displacement 2019. Internal Displacement Monitoring Centre
4. Lundquist, J H; Anderton, DL; Yaukey,D (2015). Demography, The Study of the human population, Fourth Edition. Waveland Press: Long Grove, Illinois.
5. United Nations, 2001. Guiding principles on internal displacement. <https://www.unhcr.org/protection/idps/43ce1cff2/guiding-principles-internal-displacement.html>
6. UNHCR, 1999. Reproductive health in refugee situations, An interagency field manual. United Nations High Commissioner for Refugees.
7. UNHCR, 2009. UNHCR Note on Refugee Integration in Central Europe. United Nations High Commissioner for Refugees Regional Representation for Central Europe <https://www.refworld.org/pdfid/4bfe70d72.pdf>
8. UNHCR, 2018. Global trends, Forced displacement in 2018. United Nations High Commissioner for Refugees.
9. WHOSE, 2018. The health of refugees and migrants, Regional situation analysis, practices, experiences, lessons learned and ways forward. World Health Organisation South-East Asia Region. <https://www.who.int/migrants/publications/SEARO-report.pdf?ua=1>
10. World Bank Group, 2017. Forcibly Displaced, Toward a Development Approach Supporting Refugees, the Internally Displaced, and Their Hosts.
11. Knox, P., 1995: Social Well-being: A Spatial Perspective, Oxford University Press, Oxford.
12. Momsen, J. H. and Townsend, G., 1987: *Geography of Gender in the Third World*,
13. Hutchinson, State University of New York Press, London, New York.
14. Sharma, H. N., 2000. 'Social Geography' in Singh, J.(ed.) Progress in Indian Geography(1996- 2000), INSA, New Delhi.
15. Smith, D. M.,1977. Human Geography: A Welfare Approach, Edward Arnold,
16. Noble, A. G. and Dutta, A. K. (eds): *India: Cultural Pattern and Processes*, West View Press, Colorado.
17. Srinivas, M.N.,1986: *India: Social Structure*, Hindustan Publishing Corporation, Delhi.
18. Pension, M., 1987: *Social Geography: Process and Prospect*, Croom Helm, London.
19. Sopher, D.E.(ed): *An Exploration Of India: Geographical Perspectives on Society and Culture*, Longman, London
20. P.,1995: *Social Well-being: A Spatial Perspective*, Oxford University Press, Oxford.
21. Milton,
22. Smith, D.M., 1973: *A Geography of Social Well-being*, McGraw Hill, New York. Smith,

RPE-V: ETHICS IN RESEARCH & PUBLICATIONS

Marks = 50
(COMMON PAPER)

Course Structure: The course comprises six modules, as listed in the table below. Each module has 4-5 units.

Modules	Unit Titles	Teaching Hours
Theory		
RPE 01	Philosophy and Ethics	4
RPE 02	Scientific Conduct	4
RPE 03	Publication Ethics	7
Practice		
RPE 04	Open Access Publishing	4
RPE 05	Publication Misconduct	4
RPE 06	Databases and Research Metrics	7
	Total	30

Syllabus in Details:

THEORY

RPE 01: PHILOSOPHY AND ETHICS (3 hrs.)

1. Introduction to Philosophy: Definition, nature and scope, concept, branches
2. Ethics: Definition, moral philosophy, nature of moral judgments and reactions

RPE 02: SCIENTIFIC CONDUCT (5 hours)

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication and Plagiarism(FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing.
5. Selective reporting and misrepresentation of data

RPE 03: PUBLICATION ETHICS (7 hrs)

1. Publication Ethics: definition, introduction and importance
2. Best practices /standards-setting initiatives and guidelines: COPE, WAME etc
3. Conflicts of Interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, type.
5. Violation of publication ethics, authorship and contributorship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals.

PRACTICE:

RPE 04: OPEN ACCESS PUBLISHING (4 hrs)

1. Open access publications and initiative
2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving

- policies
- 3. Software tool to identify predatory publications developed by SPPU
- 4. Journal finder /journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc

RPE 05: PUBLICATION MISCONDUCT (4 hrs.)

- A. Group Discussions (2 hrs.)
 - 1. Subject-specific ethical issues, FFP, authorship
 - 2. Conflicts of interest
 - 3. Complaints and appeals: examples and fraud from India and abroad
- B. Software tools (2 hrs.)
 - Use of plagiarism software like Turnitin, Urkund and other open-source software tools

RPE 06: DATABASES AND RESEARCH METRICS (7hrs.)

- A. Databases (4 hrs)
 - 1. Indexing databases
 - 2. Citation databases: Web of Science, Scopus etc.
- B. Research Metrics (3 hrs)
 - 1. Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP. Cite Score
 - 2. Metrics: h-index, g index. i10index. Altmetrics

References:

- Bird, A (2006). Philosophy of Science. Routledge
- MacIntyre, Alasdair (1967) A Short History of Ethics. London
- P, Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized ISBN-978- 9387480865
- National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009) On being a scientist: A Guide to Responsible Conduct in Research 3rd edition National Academies Press
- Resnik, D. B. (2011). What is ethics in research & why it is important. National Institute of Environmental Health Sciences, 1-10, Retrieved from <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>
- Beall, J. (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179-179 <https://doi.org/10.1038/489179a>
- Indian National Science Academy (INSA). Ethics in Science Education, Research and governance(2019) ISBN:978-81 -939482-1-7 http://www.insaindia.res.in/pdf/Ethics_Book.pdf