

SIKKIM UNIVERSITY

(A Central University Established by an Act of Parliament of India, 2007)

LEARNING OUTCOME - BASED CURRICULUM

Curriculum for Ph.D. Coursework

(With effect from Academic Session 2023-24)



DEPARTMENT OF GEOGRAPHY

SIKKIM UNIVERISTY

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GANGTOK, SIKKIM, INDIA

1. Preamble

The Department of Geography embarked on its journey in 2010 with a mandate to focus on teaching and research on Eastern Himalaya. The students, research scholars and faculty members, for more than a decade have been carrying out critical research in the field of cryosphere, water resources, food production systems, fluvial geomorphology, environmental degradation, climate change, disaster management, man-animal conflicts, tourism geography, borderlands, livelihood, migration, socio-spatial exclusions, equity and sustainable urbanisation in the Himalayas. The Department has been making concerted efforts to contribute to evidence-based policy formulation for sustainable solutions in areas of environmental concerns, climate change and development.

The Ph.D. programme offered by the Department pays attention on agricultural geography, fluvial geomorphology, economic geography, population geography, social geography, geography of borderlands and urban geography. In keeping with the interdisciplinary tenor and focus of the Department, these programmes interface socio- economic, human, institutional, technological, infrastructural and environmental factors with issues of development in hilly and mountainous regions of North-East India with a pluralistic viewpoint, social equity and sustainable development. In doing so, research and teaching in the Department over the years have evolved appropriate paradigms and tools of analyses including remote sensing and GIS.

The Ph.D. coursework curriculum in the Department is unique in terms of a judicious mix of courses which combine the classical with the modern and the theoretical with the practical in response to emerging disciplinary challenges, particularly in the context of Eastern Himalaya. It discusses current research interests in the discipline along with the methodological advancements. The course work exposes the students to the collaborative, inter-disciplinary and transdisciplinary research and their outputs. The students get training in identifying relevant research materials, filtering them and provide a review of the same.

2. Research Degree Attributes (RDA)

A research degree takes a student through the terrain of development of theoretical knowledge, their application and exposure to different research techniques available in the discipline of Geography. The specific RDAs are as follows:

RDA 1: to demonstrate the ability to engage with the theoretical knowledge.

RDA 2: to demonstrate the ability to use the knowledge of Geography in formulating and tackling spatial problems and identifying and applying appropriate geographical principles and methodologies to solve a wide range of problems associated with Geography.

RDA 3: to develop personal skills such as the ability to work both independently and in a group.

RDA 4: to demonstrate professional behaviour such as being objective, unbiased and truthful in all aspects of work and avoiding unethical behaviour such as fabricating, falsifying or misrepresenting data or to committing plagiarism.

RDA 5: to exercise the ability to identify the potential ethical issues in work-related situations.

RDA 6: to demonstrate appreciation of intellectual property, environmental and sustainability issues.

RDA 7: Promoting safe learning and working environment.

3. Programme Learning Outcomes (PLO)

After completing the course work, a student will be able to:

PLO 1: Reflect on the philosophy of research and learn various concepts.

PLO 2: Learn and apply various quantitative methods for research.

PLO 3: Understand the emerging areas of research.

PLO 4: Understand research and publication ethics.

PLO 5: Conduct and write a critical Review of literature.

PLO 6: Identify research gaps in a particular field of study.

PLO 7: Develop a research proposal.

4. CURRICULUM STRUCTURE for Ph.D. COURSE WORK

Paper Code	Paper	L	T	P	Total Credit	Total Marks	IA	EA
GEO-C-701	Research Methodology	3	1	0	4	100	50	50
GEO-C-702	Emerging Areas of Research in Geography	3	1	0	4	100	50	50
GEO-C-703	Research and Publication Ethics	1	1	0	2	50	25	25
GEO-P-704	Reading and Writing Skill Development (Non-Teaching)	0	0	2	2	50	25	25
Total		7	3	2	12	300	150	150

GEO-C-701		
Research Methodology		
Semester: First Semester	Course Level: 700	Total Marks: 100
L+T+P: 3+1+0= 4 Credits	Lecture: 45 Hrs + Tutorial: 15 Hrs + Practical: 0 Hrs	

Course Learning Outcomes (CLO)

On successful completion of the course, students shall be able to:

CLO1: exhibit understanding of research processes (reading, evaluating, and developing);

CLO2: carry out literature reviews using print and online databases both

CLO3: discover, describe, evaluate, and prepare the stand-out essentials of a research proposal/report

CLO4: describe and build-up a feasible research interest area using specific research designs

CLO5: Evaluate and discern quantitative and qualitative research paradigms and link the use of each in one's research

CLO6: describe, compare, and contrast descriptive and inferential statistics, and provide examples related to their use in research

CLO7: describe sampling methods, measurement scales and instruments, and appropriate uses of each of these.

Course Outline

Unit-I Scientific Research

Research: relevance of conceptual framework, identification of research problem, objectives, hypotheses, research questions, model building in Geography, Paradigm and paradigm shift

Unit-II Typology of Research Methods

Epistemology & Ontology, descriptive research, exploratory research, explanatory research and research on causality, comparative research, hypothesis testing research, survey research, cross-sectional research, longitudinal research, experimental and quasi-experimental research, evaluation research, case study, pilot study, field research, collaborative approaches, behavioural research, qualitative and mixed methods of research

Unit-III Sampling Fundamentals and Analysis of Variance (ANOVA)

Sampling Distribution of Mean, Concept of Standard errors, Type I & II errors, Test of significance, comparing of means (z, t and f test); ANOVA technique, Setting up ANOVA table

Unit-IV Time Series

Meaning and necessity; components of time series; measurement of trend; monthly trend from annual data; measurement of seasonal variation.

Suggested Teaching Learning Strategies:

Lecture-cum discussion, Visuals-aid lectures, Classroom Participation, Group Discussion, Individual Presentation, Case Studies and Term Papers/Tutorials

Assessment Framework

- A) Classroom Participation
- B) Presentation / Group Discussion
- C) Assignment /Term paper/ Book Review
- D) Sessional Test

Suggested Readings:

1. Blalock, H. M. (1979). Social Statistics, Series in Sociology, New York: McGraw-Hill
2. Chorley, R.J. and P. Haggett. (1973). Models in Geography, London: Methuen
3. Ebdon, David, (1991). Statistics in Geography, London: Blackwell Publishers.
4. Gupta, Goon & M.K. Gupta (1991). Fundamental of Statistics, New Delhi: McGraw Hills Book Company
5. Harris, R. (2016). Quantitative Geography: the Basics, London: SAGE Publications Ltd
6. Mehmood, Aslam. (1998). Quantitative Methods in Geography, (Rev Ed.), New Delhi: Rajesh Publications,
7. Monkhouse, F.J. (1971). Maps and Diagrams, London: Methuen
8. Pal, Saroj (1998). Statistics for Geoscientists: Techniques and Applications, New Delhi: Concept
9. Yule, G. U. & Kendal, M.G. (1973). An introduction to the Theory of Statistics, 14th Ed., London: Charles-Griffin

10. Fotheringham, A.S, C. Brunsdon & M. Charlton (2000). Quantitative Geography: Perspective on Spatial Data Analysis, London: Sage

GEO-C-702		
Emerging Areas of Research in Geography		
Semester: First Semester	Course Level: 700	Total Marks: 100
L+T+P: 3+1+0= 4 Credits	Lecture: 45 Hrs + Tutorial: 15 Hrs + Practical: 0 Hrs	

As new matters and contemporary technologies keep arising, geography will continue to evolve and contribute to our understanding of spaces and places accordingly. This paper has thus been formulated with the following learning outcomes:

Course Learning Outcomes:

On successful completion of the course, students shall be able to:

- CLO1: Understand the concept of Coupled Human and Natural Systems (CHANS).
- CLO2: Examine the application of CHANS framework across different spatial contexts.
- CLO3: Explain the concept of Earth System Governance.
- CLO3: Discuss various dimensions of Anthropocene.
- CLO4: Assess division of labour, social and environment justice.
- CLO5: Explain differential citizenship, geopolitics of climate change and digital geographies including significance of virtual spaces.
- CLO6: Evaluate the issues emerging from critical mobilities and its possible effects on conflicts and peace scenarios.

Course Outline

Unit-I Coupled Human and Natural Systems (CHANS)

Concepts, theory and Methodology; patterns and processes: Variations of CHANS across space, time and organisations; some examples of complexities of CHANS; Earth System Governance: conceptual understandings and progress

Unit-II Geographies of Globalization

Globalisation and Changing World Economy, Culture and Security
Flexible Accumulation and New International Division of Labour,
Accumulation by Dispossession and Social and environmental justice.

Unit-III Geographies of Anthropocene

New Perspectives on Nature-Society relationship, Concept of Anthropocene, Globalization and Knowledge Politics, Geopolitics and Climate Change. Differential citizenship identities, Vulnerabilities and Marginalisation, Digital geographies- online communities, virtual space and place, socio-cultural implications of digital technologies.

Unit-IV Critical Mobilities & Conflicts

Approaches to Mobility, Neoliberalism - Labour Migration, Trafficking, Undocumented Migration; Forced Migration, Geopolitics and International Refugee Crisis; Citizenship in worlds of mobilities. Geographies of Conflicts and Peace- understanding conflicts and peacebuilding and post conflicts constructions.

Suggested Teaching Learning Strategies:

Lecture-cum discussion, Visuals-aid lectures, Classroom Participation, Group Discussion, Individual Presentation, Case Studies and Term Papers/Tutorials

Assessment Framework

The assessment may be done in any mode or combination as given below:

- A) Classroom Participation
- B) Presentation / Group Discussion
- C) Assignment /Term paper/ Book Review
- D) Sessional Test

Suggested Readings:

1. Castree, Noel. (2014)."Geography and the Anthropocene II: Current contributions." *Geography Compass* 8, no. 7 : 450-463.
2. Cresswell, T., Merriman, P. (2012) *Geographies of Mobilities: Practices, Spaces, Subjects*. Ashgate. Aldershot.

3. Dalby, S. (2013). Biopolitics and climate security in the Anthropocene. *Geoforum*, 49, pp.184-192
4. Jianguo Liu, et al. (2017). Complexity of Coupled Human and Natural Systems. *Science*, Vol. 317, pp. 1513-1516
5. Kaplan, R. D (2013). *The Revenge of Geography: What the Map Tells Us About Coming Conflicts and the Battle Against Fate*. New York: Random House Trade Paperbacks
6. Knox, P., John, A. & McCarthy, L. (2015). *The Geography of the World Economy*, New York: Routledge.
7. Lewellen, Ted C. (2002). *The Anthropology of Globalisation: Cultural Anthropology enters the 21st Century*. Westport: Greenwood Publishing Group Inc.
8. Murray, W.E. and J. Overton, (2014). *Geographies of Globalization*. London: Routledge.
9. Merriman, P (2012) *Mobility, Space, and Culture*. London: Routledge.
10. Toffin, G. and Pfaff-Czarnecka, J. eds., (2014). *Facing Globalization in the Himalayas: Belonging and the Politics of the Self* (Vol. 5). Delhi: SAGE Publications India.

GEO-C-703		
Research and Publication Ethics		
Semester: First Semester	Course Level: 700	Total Marks: 50
L+T+P: 1+1+0= 2 Credits	Lecture: 15 Hrs + Tutorial: 15 Hrs + Practical: 0 Hrs	

Course Learning Outcomes

On successful completion of the course, the students will be able to:

CLO1: remember the concepts of research philosophy and ethics.

CLO2: explain the scientific misconducts like falsification, fabrication, plagiarism and publication misconduct.

CLO3: demonstrate and use the data bases like Scopus and Web of Science for literature review and finding gaps in research.

CLO4: Analyse the best journal suitable for future publications.

CLO5: Evaluate their write-ups in accordance with plagiarism reports generated by Urkund or any open-source plagiarism detection tools/software.

Course Outline

Unit 1: Introduction to Philosophy, Ethics and Scientific Conduct

Introduction to Philosophy: definition, nature and Scope, Concept, Branches; Ethics: definition, moral philosophy, nature of moral judgements and reaction; Ethics with respect to science and research; Intellectual honesty and research integrity; Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP); Redundant publications: duplicate and overlapping publications, salami slicing; Selective reporting and misrepresentation of data.

Unit 2: Publication Ethics

Publication ethics: definition, introduction and importance; Best practices /Standards setting initiatives and guidelines: COPE and WAME; Conflicts of interest; Publication misconduct; Violation of publication ethics, authorship and contributorship; Identification of publication misconduct; complaints and appeals; Predatory publishers and journals

Unit 3: Open Access Publishing

Open access publications and initiatives; SHEERPA/RoMEO online resource to check publisher copyright & Self – archiving policies; Software tool to identify predatory publications developed by SPPU; Journal finder /Journal suggestion tools

UNIT4: Publication Misconduct, Data Base & Research Metrics

Group Discussions: Subject specific ethical issues, FFP, authorship; Conflicts of interest; Complaints and appeals: examples and fraud from India and abroad; Use of plagiarism software like Urkund and other open-source software tools; Databases: Indexing databases, Citation databases: Web of Science, Scopus, etc.; Research Metrics: Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score; Metrics: h-index, g index, i10 index, altmetrics

Suggested Readings:

1. Bird, A. (2006). Philosophy of Science. Routledge
2. MacIntyre, Alasdair (1967). A Short History of Ethics. London

3. P.Chaddah, (2018). Ethics in Competitive Research: Do not get Scooped; do not get Plagiarized, ISBN: :978-9387480865
4. Being a Scientist: A Guide to responsible conduct in Research: Third Edition, National Academies Press.
5. Resnik, D.B. (2011). What is ethics in research & why is it important. National institute of Environmental
6. Taylor, Gordon. (1989). The student's writing guide for the arts and social sciences. Cambridge: Cambridge University Press
7. Beall, J: (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179-179.<https://doi.org/10.1038/489179a>
8. Indian National Science Academy (INSA) (2019). Ethics in Science Education, Research and Governance. http://www.insaindia.res.in/pdf/Ethics_Book.pdf
9. Knight, Peter, & Tony Parsons. (2004). How to do your Essays, Exams and Coursework in Geography and Related Disciplines. London: Routledge
10. Haisler, Peter (2011). How to write a Good Research paper, Frederiksberg: Samfunds Litteratur

Suggested Teaching-Learning Strategies: lecture cum discussion & hands-on-training

Assessment Framework

- A. Classroom participation,
- B. Assignment (Written or Oral),
- C. Presentation,
- D. Sessional Test and
- E. Group Discussion

GEO-C-704		
Reading Writing and Skill Development		
Semester: First Semester	Course Level: 700	Total Marks: 100
L+T+P: 0+0+2= 2 Credits	Lecture: 0 Hrs + Tutorial: 0 Hrs + Practical: 60 Hrs	

Course Learning Outcomes

On successful completion of the course, the research scholars will be able to:

CLO1: identify the basic skills in reading and writing academic essays, research papers and thesis

CLO2: understand the importance and utility of Scopus and Web of Science databases for writing academic essays, research papers and thesis

CLO3: illustrate the methods for the scientometric analysis

CLO4: plan the outline of the Ph.D synopsis

Course Outline

Unit I: Learning to Read and Write-Fundamentals

This module is targeted to develop the basic skills of reading and writing among students. It consists of two workshops of general nature.

Workshop I: Developing Basic Reading skills

This workshop emphasizes developing basic skills in reading. Students will read at least one essay of general nature.

Workshop II: Developing Basic Writing Skills

This workshop emphasizes developing basic skills for writing. Students will develop one essay of general nature.

Unit II- Learning to Read and Write-Advanced

This module consists of two workshops focusing on development of advanced skills required for reading and writing for academic purpose.

Workshop III: Critical Reading and Review

This workshop is designed to help students developing skills for critical reading and thinking. Students will read at least twenty-five journal articles and two books of academic nature.

Workshop –IV Critical Writing and Preparation of Study Area Map

This workshop is designed to expose the students to academic writings. It emphasizes the development of writing skills for academic purposes such as writing academic essays, research papers, dissertation/thesis. Here students will develop one literature survey-based essay, research design and outline of a project/thesis.

Students will be required to learn the basics of digitization and layout in GIS environment.

Students will be required to present the assignments in the workshop.

Note: In this non-teaching course books, articles etc. should be linked to the proposed area of research of the scholar.

Suggested Teaching-Learning Strategy: Informal interactions over series of self-learning workshops involving participation and team-work over four workshops.

Assessment Framework

- A. Group Discussion
- B. Literature Review Presentation and Discussion
- C. Assignments and Secondary Data Exploration (Statistical/Satellite Images)
- D. Workshops and Presentation of Draft Research Proposal

Suggested Readings:

1. Thody, Angela. (2006). Writing and presenting research. London: Sage
2. Taylor, Gordon. (1989). The student's writing guide for the arts and social sciences. Cambridge: Cambridge University Press
3. Davies, A., K. Hoggart & L. Lees. (2014) Researching human geography. London: Routledge.
4. Parsons, Tony, & Peter G. Knight. (2015). How to do your dissertation in geography and related disciplines. London: Routledge
5. Knight, Peter, & Tony Parsons. (2004). How to do your Essays, Exams and Coursework in Geography and Related Disciplines. London: Routledge
6. Bonney, C. R., & Robert J. S. (2011) "Learning to think critically." Handbook of research on learning and instruction: pp. 166-198.

7. Blandfor, Elisabeth (2009). How to Write the Best Research Paper Ever, Bloomington: Author House
8. Haisler, Peter (2011). How to write a Good Research paper, Frederiksberg: Samfunds Litteratur
9. Lester, J.D. (2007). Principles of Writing Research Papers. London: Penguin Academics
10. Graustein, J.S. (2013). How to Write an Exceptional Thesis or Dissertation. Florida: Atlanta Publishing Group.

Note: Learners are advised to use the latest edition of readings

