

Approved in the Post Graduate Board of Studies (BoS) meeting in subject of Geography held on 22/03/2025

Faculty of Social Sciences
HIMACHAL PRADESH UNIVERSITY

(A State Government University Accredited with 'A' Grade by NAAC)



Choice Based Credit System
Course Structure and Syllabus
For
PhD Course Work in Geography
(2024- 2025)

Department of Geography
Himachal Pradesh University
Summerhill, Shimla-171005

Kahlon

[Signature] *[Signature]*

Course Structure and Syllabus
For
Doctor of Philosophy (PhD) in Geography

About the Course:

The course work of study leading to **Doctor of Philosophy (PhD) in Geography** in Himachal Pradesh University, Shimla shall be of six months duration spread over one semester. The course has been designed as per the instructions issued by the Himachal Pradesh University and University Grants Commission (UGC). It consists of combination of three course papers i.e. core (02) and Discipline specific (1). The curriculum design has focus on both the theoretical and practical training to enable students to work as professional geographers who can understand the basics of research techniques and contemporary geographical issues. The students have to qualify all three papers to complete the required course work leading to PhD programme in Geography. The number of seats, eligibility, basis of admission, age limit, reservation, fee structure, scheme of examination and qualifying marks will be as per the rules and regulations of Himachal Pradesh University as prescribed in the University Ordinance and Handbook of Information (HBI) changed from time to time. The candidates will have to produce the proof of their having passed the Bachelor's Degree, Post Graduate degree, M.Phil Degree with required percentage of marks and UGC JRF/NET/SLET certificates before the last date of admission as fixed for the candidates by the admission committee of the Department, failing which their candidature will stand cancelled.

Programme Outcomes: The key programme outcomes (POs) are as under:

- PO1. Cognizance of nature, principles and concepts of research in geography
- PO2. Understanding, classifying and recognising significance of data in geographic research
- PO3. Acquaintance with quantitative techniques, research methods and Geo-spatial technical skills in geographical research
- PO4. Understanding the philosophy of ethics, integrity and publication ethics
- PO5. Acquaintance with indexing and citation database and research metrics
- PO6. Understanding nuances of thesis writing in geography
- PO7. Training students addressing socio-economic and environment problems



Department of Geography
Himachal Pradesh University, Shimla

Course work for Ph.D in Geography

The following Choice Based Credit Scheme Course Work for PhD in Geography implementation w.e.f. academic session 2024-25 onwards. There shall be compulsory two Core and one Discipline Specific (Elective) in the PhD course work. The scheme of examination and the detailed syllabi for the three course papers will be as follows:

Course Code	Course Type	Title of Paper	Lectures	Credits	Maximum Marks	Minimum Pass Marks
RPE-PhD	Common for all PhD Students	Research and Publication Ethics	2	2	50	25
GEO.501	Core	Research Methodology in Geography	5	5	100	50
GEO.502	Discipline Specific Elective Course	Advanced Statistical and Geo-spatial Techniques	5	5	100	50
		Total	12	12	250	125^(*)

(*) **Note:-** The Passing marks for PhD course work will be 55% aggregate, with minimum 50% in each individual course (all three courses) vide Dean of Studies notification no :- 1-60/2024-HPU(DS) dated 15th February, 2025.

Ph.D in Geography course work will consist of Three Courses (12 Credits):-

Course-1: Research and Publication Ethics, RPE (common for all HPU's PhD Programme) with a Credit Weightage of 2.

Course-2: Research Methodology (Discipline-wise) with a Credit Weightage of 5. The course will consist of five modules/Units.

Course-3: Discipline-specific research-oriented Elective course with a Credit Weightage of 5. The course will consist of five modules/Units.

Notes:-

- *The Course and scheme for Course-1 **Research and Publication Ethics** has been notified vide Notification No-7-1/2024-HPU(Acad.) dated 3rd February, 2025.
- These guidelines will be applicable from session 2024-25 onwards (beginning from the batch admitted in November-December, 2024).
- These guidelines are issued w.r.t notification No. 7-1/2024-HPU(Acad.) dated 03rd February, 2025.
- The Students can opt for MOOCs-SWAYAM and other accredited online platforms course, with prior approval of relevant bodies.

Shahen

[Signature]

Course: RPE-PhD
Research and Publication Ethics

Credit Weightage: 2
Max Marks: 50

Course description:

Research and Publication Ethics (RPE) is a two credit course approved by University Grants Commission (UGC) for awareness about publication ethics and publication misconducts. Overview of this course has total 6 major contents focusing on basics of philosophy of science and ethics, research integrity, publication ethics and practice based contents such as open access publishing, publication misconduct, Databases and research metrics. After completion of this course research students will have awareness about the publication ethics and publication misconducts.

Course objectives:

- Promote the importance of research integrity.
- Discuss the principles of publications ethics
- Educate on identifying research misconduct and predatory publishing.
- Discuss indexing and citation databases.
- Provide information on open access publications and research metrics.
- Introduce various plagiarism detection tools.

Course learning outcomes:

- Understanding research integrity and publication ethics
- Cognizance of the misconduct and plagiarism in research
- Knowledge about predatory journals
- Utilization of various online literature data bases and software to analyze their research output.

Unit – I

Philosophy and Ethics

- Introduction to Philosophy: definition, nature and scope, concept, Branches,
- Ethics: definition, moral philosophy, nature of moral judgments and reactions

Unit – II

Scientific Conduct

- 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 – III

Publication Ethics

- Publication ethics: definition, introduction and importance
- Best practices/ standards setting initiatives and guidelines: COPE, WAME, etc.
- Conflicts of interest
- Publication misconduct: Definition, concept, problems that lead to unethical behavior and vice versa, type
- Violation of publication ethics. authorship and contributorship
- Identification of publication misconduct, complaints and appeals
- Predatory publishers and journals

Shahla

[Signature]

Unit-IV

Open Access publishing

- Open access publications and initiatives
- SHERPA/ROMEO online resource to check publisher copyright & self-archiving policies
- Software tool to identify predatory publication developed by SPPU
- Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal, etc.

Unit – V

Publication Misconduct

A. Group Discussions:

- Subject specific ethical issues, FFP, authorship
- Conflicts of interest
- Complaints and appeals: examples and fraud from India and abroad

B. Software tools:

- Use of plagiarism software like Turnitin, Urkund and other open-source software tools

Unit – VI

Databases and Research Metrics

A. Databases:

- Indexing databases
- Citation database: Web of Science, Scopus etc.,

B. Research Metrics:

- Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score
- Metrics: h-index, g-index, i10 index, almetrics

Instructions for paper setter and students:

- **Evaluation Criteria:** Continuous assessment will be conducted through tutorials, assignments, quizzes and group discussions. Students with at least 75% attendance in classes will be considered eligible for the final written examination.
- **Maximum Marks:** Maximum marks for the course paper would be 50 and pass marks would be minimum 50% in each individual course. The Passing marks for PhD course work will be 55% aggregate (all three courses).
- **Duration of Examination:** Written examination would be of 3 hours duration and would be conducted in the university. The question paper for the written examination shall be set by the external examiner as per the university norms.
- **Pattern of Question Paper:** There will be 7 questions covering all the units. The first 6 Questions of explanatory answers (1, 2, 3, 4, 5 & 6) of 6 marks each will consist of one question from each unit, with internal choice provided, meaning there will be two questions from each unit. The 7th question will consist of 10 short answer type questions using Roman numerals (i, ii, iii.....x) each with 2 marks, covering all the units. There will be at least one question from each unit, and students will be required to attempt any 7 questions out of 10.

Suggested Readings:

- Beall, J. (2012) – Predatory publishers are corrupting open access. Nature, 489(7415), 179.
<https://doi.org/10.1038/489179a>.
- Bird, A. (2006). Philosophy of Science. Routledge.



Bratag, Tracey (2016). The Handbook of Academic Integrity. Springer.

Chaddah, P. (2018): Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN:978-9387480865.

Grudniewicz, Agnes, D. Moher, Kelly D. Cobey+32 authors (2019). Predatory journals: no definition, no defense. Nature, Vol. 576.

http://www.insaindia.res.in/pdf/Ethics_Book.pdf

Israel, Mark, Iain Hay (2006). Research Ethics for Social Scientists. London.

Lang, James M. (2013). Cheating Lessons: Learning from Academic Dishonesty. Harvard University Press.

Macintyre, Alasdair (1967). A Short History of Ethics. London.

Resnik, D. B. (2011): What is ethics in research & why is it important? National Institute of Environmental Health Sciences, 1-10. Retrieved from <http://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>

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

Macintyre, Alasdair (1967): A short History of Ethics.

National Academy of Science, National Academy of Engineering and institute of Medicine (2009) on being a Scientist: A Guide of Responsible Conduct in Research.

<https://www.nlehs.nih.gov/research/resources/bioethics/whatis/index.cfm>

Whitley Jr., Bernard E. & Patricia Keith-Spiegel (2001). Academic Dishonesty: An Educator's Guide. Psychology Press.

Skahlon

[Signature] *[Signature]*

Course: GEOG.501
Research Methodology in Geography

Credit Weightage: 5
Max Marks: 100

Course description:

This course introduces students to the key approaches that geographers use to answer important questions and solve complex problems relating to the social world. The subject provides a conceptual and practical overview of the diverse research methods used in geography. It is designed to help students pursuing research programme(s) in Geography to prepare for their research based thesis work. Topics covered include the scope of geographical research, research design, sampling design and data collection, data analysis and presentation, data interpretation and thesis writing skills.

Course objectives:

- To understand essentials of research in Geography and its significance
- To understand the ways data are collected, classified, tabulated and analyzed
- To make students aware about fundamentals of sampling techniques in geographic research
- To make research students proficient about application of Qualitative and Quantitative techniques in geographic research
- To make students aware about the basics of thesis writing

Course learning outcomes:

- Acquaintance with basics of research, its typology and conceptualization of research problem
- Understanding of sources, types and tools of data collection and data analysis
- Cognizance of data representation and interpretation
- Understanding nuances of thesis writing in geography

UNIT-I

Perspectives in Geographic Research, Geographic questions in research, Meaning and Types of Research, essential features of quality of a thesis in geography, issues pertinent to a thesis in geography

UNIT-II

Identification and formulation of Research problem, Writing of the research proposal-issues and formulation, Literature search and review, formulation of research hypotheses and their testing.

UNIT-III

Sources and methods of primary Data Collection- Field work, observation Method, the Questionnaire, Sampling- Sampling design, sampling frame, sampling methods and types
Secondary Data: Census, National Sample Survey Organization, Central Statistical Organization, National Family Health Survey, The Economic Survey, Centre for monitoring Indian economy(CMIE) database

UNIT-IV

Data Analysis-Qualitative Methods-Phenomenology, ethnography, Grounded Theory, Content analysis, Discourse analysis and historiography, Quantitative Research designs, Comparison between quantitative and qualitative research, data interpretation.

UNIT-V

Research paper and thesis writing in Geography; Writing of the Thesis, Format for Scientific Report Writing, Reference Citing, Footnoting and Bibliography, Finalizing the thesis and its Presentation.

Skahlon

Dr. K. S. S. S.

J. S.

Instructions for paper setter and students:

- **Evaluation Criteria:** Continuous assessment will be conducted through tutorials, assignments, quizzes and group discussions. Students with at least 75% attendance in classes will be considered eligible for the final written examination.
- **Maximum Marks:** Maximum marks for the course paper would be 100 and pass marks would be minimum 50% in each individual course. The Passing marks for PhD course work will be 55% aggregate (all three courses).
- **Duration of Examination:** Written examination would be of 3 hours duration and would be conducted in the university. The question paper for the written examination shall be set by the external examiner as per the university norms.
- **Pattern of Question Paper:** There will be 11 questions covering all the units. The first 10 Questions of explanatory answers (1, 2, 3, 10) of 12 marks each will consist of one question from each unit, with internal choice provided, meaning there will be two questions from each unit. The students will be required to attempt one question from each unit. The 11th question will consist of 10 short answer type questions using Roman numerals (i, ii, iii,x) each with 5 marks, covering all the units. The students will be required to attempt any 8 questions out of 10.

Suggested Readings:

- Blaxter, L.; Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham.
- Davis, P.C. (1985): Data Description and Presentation, Oxford, London.
- Dikshit, R. D. (2003): The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
- Flowerdew, R. and Martin, David. (2005): Methods in Human Geography: A Guide for Students Doing a Research Project, Second Edition, Routledge, USA.
- Hay, I. (ed.) (2000): Qualitative Research Methods in Human Geography. Oxford University Press, New York.
- Kitchin, R. and Tate, N., (2001): Conducting Research into Human Geography. Theory, Methodology and Practice. Prentice-Hall, London.
- Krishan, G. and Singh, N., (2020): Researching Geography- The Indian Context, Second Edition, Routledge, London and New York.
- Kothari, C. R. (2008): Research Methodology, Methods & Techniques, New Age International Publisher, New Delhi.
- Limb, M. (2001): Qualitative Methodologies for Geographers. Issue and Debates. Edward Arnold, London.
- Mishra, H.N. & Singh, V.P. (2002): Research Methodology in Geography, Rawat Publications, Jaipur.
- Misra, R.P. (1985): Research Methodology, Concept Publishing Co., New Delhi.
- Stoddart, R.H. (1982): Field, Techniques and Research Methods in Geography, Kendall Hunt, Dubuque.
- Warf, B. (Ed) (2006): Encyclopedia of Human Geography. SAGE Publications, London.

Skahlan

Dr. Dikshit *J.L.*

Course: GEOG.502
Advanced Statistical and Geo-spatial Techniques

Credit Weightage: 5

Max Marks: 100

Course description:

Geography is a spatial science which aims at spatial analysis of phenomena, concepts and relationships among different entities to enhance and deepen geographic knowledge. In this regard, both descriptive and inferential statistical techniques in combination with geospatial tools have been useful to make geographical analysis amenable to the researchers. In this present course, the students will come across statistical approaches like probability, correlation and regression. The research students will also learn about data reduction techniques of factor analysis principal components analysis. They will be also given hands on training on GIS packages during the course work.

Course objectives:

- To explain the students about need and use of statistical techniques in geographic research
- To elucidate the students about concepts of probability and distributions in Geography
- To explain the students about the nature and degree of relationship between variables.
- To understand the cause and effect relationship among the variables
- To learn about data reduction strategies and techniques in multivariate analysis
- To train students about geoprocessing and morphometric techniques

Course learning outcomes:

- Determining the need and use of quantitative techniques in Geography
- Understanding and evaluating the nature of data and their spatial distribution
- Acquaintance with probability density functions
- Understanding the nature, degree and casual effect of relationship among variables
- Acquaintance with surface analysis approaches and techniques in geographic research

Unit-I

Describing Geographical Data, Measuring Geographical Data, Summarizing Geographical Data, Descriptive models and Geographical Data: Frequency distribution, Normal distribution, Binominal, Poisson distribution and their geographical applications.

Unit-II

Statistical Inference, estimation and confidence, sampling procedures, sampling distributions: Probability and Non-probability, standard error, Correlation: Karl Pearson & Spearman's, Regression: Simple Linear Model, Estimation Procedures

Unit-III

Spatial randomness, nearest neighbor index, Introduction to multivariate analysis- Factor analysis and Principal component analysis, One way Analysis of Variance and Two- way Analysis of Variance, Gravity model

Unit-IV

Georeferencing Maps/Images, Digitization of Raster Map, Preparation of Attribute Tables, Editing and Joining Tables, Analyzing Attribute Data: Calculating Area, Perimeter, and Length. Spatial Representation: Mapping Techniques, Spatial Representation: Symbolizing and Map Layouts,



UNIT-V

Basic Analysis in GIS: Buffering, Overlay and Query Building, spatial data analysis, surface analysis, morphometric analysis, GPS Applications, Collection of ground control points using hand held GPS receiver, Transferring data from GPS receiver to PC and point data analysis.

Instructions for paper setter and students:

- **Evaluation Criteria:** Continuous assessment will be conducted through tutorials, assignments, quizzes and group discussions. Students with at least 75% attendance in classes will be considered eligible for the final written examination.
- **Maximum Marks:** Maximum marks for the course paper would be 100 and pass marks would be minimum 50% in each individual course. The Passing marks for PhD course work will be 55% aggregate (all three courses).
- **Duration of Examination:** Written examination would be of 3 hours duration and would be conducted in the university. The question paper for the written examination shall be set by the external examiner as per the university norms.
- **Pattern of Question Paper:** There will be 11 questions covering all the units. The first 10 Questions of explanatory answers (1, 2, 3, 10) of **12 marks** each will consist of one question from each unit, with internal choice provided, meaning there will be two questions from each unit. The students will be required to attempt one question from each unit. The 11th question will consist of 10 short answer type questions using Roman numerals (i, ii, iii.....x) each with 5 marks, covering all the units. The students will be required to attempt any 8 questions out of 10.

Suggested Readings:

- Taylor, Peter J. (1977): Quantitative Methods in Geography, An Introduction to Spatial Analysis. Houghton Mifflin Company, Boston, USA.
- Hammond, R. and Patrik McCullagh (1974): Quantitative Methods in Geography, Clarendon Press, Oxford.
- Smith, David M. (1975): Patterns in Human Geography. An introduction to Numerical Methods, Crane Russak & Company, Inc New York.
- Frank Harry and Steven C. Althoen (1994): Statistics Concepts and Applications, Cambridge University Press.
- Gulor, S.K.: Statistical Methods
- Elhance, D.N. (1972): Fundamentals of Statistics, Kitab Mahal, Allahabad.
- M. de Smith, M. Goodchild, P. Longley; Geospatial Analysis - a comprehensive guide. 3rd edition © 2006-2009; Published by Matador (an imprint of Troubador Publishing Ltd) on behalf of The Winchelsea Press; ISBN 13: 9781848761582; Free web
- Lance A. Waller and Carol A. Gotway (2004). Applied Spatial Statistics for Public Health Data. Wiley, New York.
- Trevor C. Bailey and Anthony C. Gatrell. (1995). Interactive Spatial Data Analysis, Prentice Hall.
- Roger S. Bivand, Edzer J. Pebesma, and V. Gómez-Rubio (2013). Applied Spatial Data Analysis with R, 2nd edition. Springer, New York.
- Anselin, Luc. (2005). Exploring Spatial Data with GeoDa™: A Workbook, available at <http://www.csiss.org/clearinghouse/GeoDa/geodaworkbook.pdf>
- Tyagi, N and Rana, N.K (2015): Geospatial technology: Applications in Natural Resource Appraisal & Management, R. K. Books, Darya Ganj, Delhi.
- Larry O'Brien (1992): Introducing Quantitative Geography Measurement, methods and generalised linear models, Rutledge Publishers New York and London

