

## Ph. D Programme - GEOPH

### Programme Specific Outcomes

- PSO1.** Students contribute to knowledge creation by executing research in physical and human domains.
- PSO2.** The students learn to identify, formulate, review research literature, and analyze research problems to arrive at substantiated conclusions.
- PSO3.** They develop the skill of sound technique of precise, objective and ethical writing.
- PSO4.** The students are trained in data management-collection (both primary and secondary sources), analysis, representation and interpretation of data with ethical issues in mind.
- PSO5.** The research findings strengthen the discipline and its teaching.

### Scheme of Ph. D Course Work – GEOPH

(As per Credit System w.e.f. the academic year 2017-18)

There shall be three papers, including two theory papers and one practical paper. Each paper shall be of 100 marks. In the theory papers, the end semester examination shall carry 80 marks and 20 marks for internal assessment.

Sem.	Paper code	Nomenclature	Hrs/week L+T+P	Marks			Exam. hours	Credits L+T+P
				Internal Assessment	End Sem. Exam	Total		
I	17GEOMP11C1	Research Methodology in Geography	3+1+0	20	80	100	03	3+1+0
	17GEOMP11C2	Methods and Techniques in Geography	3+1+0	20	80	100	03	3+1+0
	17GEOMP11C3	Practical: Advanced Computer based Techniques in Geography	0+0+8	-	100	100	04	0+0+4
Credits (Sem.-I)			Total Credits = 12					

**Ph.D. Course Work - GEOPH**  
**January-December 2017 onwards**  
**17GEOMP11C1 - RESEARCH METHODOLOGY IN GEOGRAPHY**

Credit: 04 (3+1 +0)  
End Semester Exam: 80 marks  
Internal Assessment: 20 marks  
Total: 100 marks  
Time: 3 hrs

**Course Outcomes:**  
**Students would be able to:**

- CO1:** Know fundamentals of research with a focus on raising geographic questions and parameters of geographic perspective.
- CO2:** Develop an understanding in identification and formulation of research problem on theme in geographic spirit and learn data management.
- CO3:** Familiarize with research writing process and produce a quality thesis.

**Unit-I**

Research: Nature, meaning and types; Geographic research and choice of approaches: Geographic perspective: nature of Geography, Geographic Questions and parameters of Geographic perspective; Research ethics

**Unit-II**

Issues pertinent to thesis in Geography: Research proposal: issues and formulation; Literature search and review of published research in relevant area

**Unit-III**

Significance of use of data in Geography; Data generation for quantitative analysis; Data production for qualitative analysis

**Unit-IV**

Data representation; Data Interpretation; Research writing; Plagiarism; Preparing for viva-voce

**Note:**

There will be eight questions in all, two from each unit. Candidates will be required to attempt four questions selecting one question from each unit. All questions will carry equal marks.

**Recommend Readings:**

1. Booth, Wayne C., Gregory G. Colomb, and Joseph M. Williams. 2008. **The Craft of**
2. Booth, Wayne C., Gregory G. Colomb, and Joseph M. Williams. 2013. **A Manual for**
3. Clifford, Nicholas J. and Gill Valentine eds. 2003. **Key Methods in Geography**. London: Sage.
4. Gunning, R. 1952. **The Technique of Clear Writing**. New York: McGraw-Hill.

5. Hart, John Fraser. 1976. "Ruminations of a Dyspeptic Ex-Editor". **The Professional**
6. Holloway, Sarah L. et. al. eds. 2003. **Key Concepts in Geography**. London: Sage.
7. Kitchin, Rob and Nicholas J. Tale. 2000. **Conducting Research into Human Geography**. Essex: Pearson Education.
8. Krishan, Gopal and Nina Singh. 2017. **Researching Geography: The Indian Context**. London:Routledge. (South Asian edn.)
9. Montello, Daniel R. and Paul C. Sutton. 2006. **Scientific Research Methods in Geography**.
10. Sharp, John A., and Keith Howard. 1996. **The Management of a Student Research Project**. 2nd edn. Aldershot, England: Gower Publishing Limited.
- Stoddart, D.R. ed. 1981. **Geography, Ideology and Social Concern**. Oxford: Basil Blackwell.
11. Strunk, William Jr., and E. B. White. 1979. **The Elements of Style**. New York: Macmillan Publishing Company.
- Unwin, Tim. 1992. **The Place of Geography**. Essex; Prentice Hall.
12. William, Robin. 2014. **The Non-Designer's Design Book**. 4th edn. San Francisco, CA: Peachpit Press
13. Young, P.V. 2001. **Scientific Social Surveys and Research**. New Delhi: Prentice Hall of India.
14. Zinsser, William. 2006. **On Writing Well: The Classic Guide to Writing Nonfiction**. 7tedn. New York: Harper Collins Publishers.

**Ph.D. Course Work - GEOPH**  
**January-December 2017 onwards**  
**17GEOMP11C2 - METHODS AND TECHNIQUES IN GEOGRAPHY**

Credits: 4 (3+1+0)  
Max. Marks: 100  
End Semester Exam: 80  
Internal Assessment: 20  
Time: 3 Hours

**Course Outcomes:**

**Students would be able to:**

- CO1:** Appreciate the difference between qualitative and quantitative methods of research in geography.
- CO2:** Be aware of various types and sources of data, and they can prepare sampling design and sampling frame for collection of data. They are aware of the nature of research in qualitative mode in geography.
- CO3:** Explore spatial data visually, and apply geo-spatial technologies in geographical research.

**Unit-I**

Quantitative and Qualitative Research; quantitative and qualitative methods

**Unit-II**

Methods of Data Collection: Primary and secondary data sources; Methods of primary and secondary data collection; Sampling Methods-sampling size and sample frames.

**Unit-III**

Spatial Data: Types of Spatial data, Source of Spatial data, Exploring spatial data visually.

**Unit-IV**

Geospatial technology: GPS, GIS and Satellite image, Role of Geospatial technology in Geography,

Note: There will be eight questions in all, two from each unit. Candidates will be required to attempt four questions selecting one question from each unit. All questions will carry equal marks.

**Recommended Readings:**

1. Fortheringham, A.S, Brunson,C and Charlton, M.(2000) *Quantitative Geography*, Sage
2. Rogers, Peter A. (2009), *Statistical Methods for Geography*, Sage Publications, London.
3. Hammond,R.and McCullah,P (2009) *Quantitative Techniques in Geography*, Clarendon, Oxford.

**Ph.D. Course Work - GEOPH**  
**January-December 2017 onwards**  
**17GEOMP11C3 - ADVANCED COMPUTER BASED TECHNIQUES IN**  
**GEOGRAPHY**

Credits: 04(0+0+4)  
Max. Marks: 100  
End Semester Exam: 100  
Distribution of marks:  
Lab Test: 60 marks  
Lab Record: 20 marks  
Viva-Voce: 20 marks  
Time: 4 Hours

**Course Outcomes:**

**Students would be able to:**

**CO1:** Demonstrate knowledge and understanding of: enter and edit data, format data cells and construct formulas.

**CO2:** Familiarize with basic SPSS functions and its tools.

**CO3:** Generate maps after conducting the simple spatial analysis with the help of secondary and remote sensing data.

**Unit-I**

Basics about Excel: Table, formatting, sorting and filtering; use of basic formulae; random number generator; statistical charts (line graphs, bar diagrams, scatter diagram, control charts, histogram etc.)

**Unit-II**

SPSS Environment: entering data into data editor; Pearson product moment correlation, Linear regression analysis and residual mapping through GIS; Factor analysis, naming of factors, factor score and plotting of factor score with GIS software.

**Unit-III**

Data for GIS: Data model and data structure. Spatial Statistics and Geostatistical Analysis – analyzing patterns, mapping clusters and spatial relationships with GIS software

**Unit-IV**

In Situ Data Collection: Introducing Remote Sensing, Data Acquisition through Remote Sensing technique; displaying Landsat/LISS imagery, creating a composite image from Landsat and LISS imageries, suitable band combinations for various uses with the help of Landsat/LISS imageries

**Note:**

1. There will be eight questions in all, two from each unit. Candidates will be required to attempt four questions selecting one question from each unit. All questions will carry equal marks.
2. The practical exam shall be conducted by a board of internal examiners comprising course-in charge and HOD/nominee of the department.

**Recommend Readings:**

1. A.Stewart Fotheringham (2000), *Quantitative Geography*, Sage, New Delhi.
2. J.R. Jensen and R.R. Jensen (2013), *Introductory Geographic Information System*, Pearson, Delhi.
3. Lo, C.P and Yeung, A.K.W (2005), *Concepts and Techniques of Geographic Information Systems*, API, New Delhi.
4. Schuurman, N. (2003), *GIS: A Short Introduction*, Oxford, Blackwell.