

DEPARTMENT OF GEOGRAPHY

SEMESTER VII

Category II

**Geography Courses for Undergraduate Programme of study with Geography as one of
the Core Disciplines**

(B.A. Programmes with Geography as Major discipline)

DSC-13A

DISCIPLINE SPECIFIC CORE COURSE
GEOGRAPHICAL TECHNIQUES (PRACTICAL)
(DSC 13A)

Course title & Code	Credits	Credit distribution			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Geographical Techniques (PRACTICAL) DSC13A	4	2	0	2	Passed Class 12th	NIL

Learning Objectives

- To equip students with a robust understanding of core geographical techniques and their theoretical underpinnings, essential for rigorous spatial analysis and research.
- Students will gain an understanding of the nature, scope, elements, practices and principles of cartography and the nuanced application of map scales.
- To enable students to critically evaluate and select appropriate map projections for diverse geographical contexts
- Students will develop the ability to apply a wide range of diagrammatic and thematic mapping techniques to effectively represent, analyze, and communicate complex geographical data.
- Students will be able to organize data, construct frequency distributions, and calculate and interpret basic measures of central tendency and dispersion.

Learning Outcomes

- Students will learn to read, interpret, and create maps.
- Students will demonstrate a deep understanding of map projections, enabling them to articulate the properties, merits, and demerits of various projections and strategically choose the most suitable projection for specific mapping tasks.
- Emphasis will be placed on various thematic mapping techniques to effectively visualize and communicate spatial data, patterns, trends, and relationships within geographical datasets, and to discern the appropriate use of each method.
- Students will develop skills in applying basic statistical analysis to geographical data and their day-to-day uses.
- Students will be able to select, apply, and integrate appropriate geographical techniques (cartographic, statistical, thematic mapping) to address specific geographical research questions, from data conceptualization to final presentation.

Course Outline

Unit I: Introduction to Cartography (Theory: 15 hours)

- Nature and Scope of Cartography
- Elements of a Map
- Classification of maps
- Representation of map scales; Plain Scale and Comparative Scale

Unit 2: Map Projections (Theory: 15 hours)

- Geographic Coordinate System: Latitude and Longitude, Datum
- Concept and Choice of Map Projections
- Classification of Map Projections
- Properties, Merits and Demerits of Zenithal, Polar Stereographic, Conical with two standard parallel and Mercator's Projection.

Unit -3: Thematic Mapping and Data Representation Techniques (Practical- Lab Based: 30 hours)

- Introduction to Thematic Mapping
- Types of Diagrams: Line, Bar, Pie
- Isopleth Maps: Properties, Uses and Limitations
- Choropleth and Dot Methods: Properties, Merits and Demerits

Unit-4: Introduction to Statistical Methods in Geography (Practical- Lab Based: 30 hours)

- Significance of statistical methods in Geography
- Tabulation and Frequency Distribution Table
- Measures of Central Tendency: Arithmetic Mean, Median, and Mode
- Measures of Dispersion: Standard Deviation and Variance

Essential Readings:

- Anson, R., & Ormelling, F. J. (1994). *International Cartographic Association: Basic cartography Vol.* Pregmen Press.
- Hammond, P., & McCullagh, P. S. (1978). *Quantitative techniques in geography: An introduction.* Oxford University Press.
- King, L. S. (1969). *Statistical analysis in geography.* Prentice-Hall.
- Kraak, M. J. (2010). *Cartography: Visualization of geospatial data* (3rd ed.). Pearson Education Ltd.
- Mahmood, A. (1977). *Statistical methods in geographical studies.* Concept Publishing.
- Misra, R. P. (2014). *Fundamentals of cartography* (2nd rev. & enl. ed.). Concept Publishing.
- Monkhouse, F. J., & Wilkinson, H. R. (1973). *Maps and diagrams.* Methuen.
- Rhind, D. W., & Taylor, D. R. F. (Eds.). (1989). *Cartography: Past, present and future.* Elsevier, International Cartographic Association.
- Robinson, A. H. (2009). *Elements of cartography.* John Wiley & Sons.
- Sarkar, A. (2015). *Practical geography: A systematic approach.* Orient Black Swan Private Ltd.
- Singh, G. (1998). *Map work and practical geography* (4th ed.). Vikas Publishing House.

Suggested Readings:

- Sharma, J. P. (2010). *Prayogic bhugol* (Hindi). Rastogi Publishers.
- Singh, R. L., & Dutta, P. K. (2012). *Prayogatmak bhugol* (Hindi). Central Book Depot.
- Singh, R. L., & Singh, R. P. B. (1991). *Prayogtmak bhugol ke mool tatva* (Hindi). Kalyani Publishers.
- Singh, R. L., & Singh, R. P. B. (1999). *Elements of practical geography.* Kalyani Publisher.