

**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  
(DSC-13A)**

Course title & Code	Credits	Credit distribution			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Geographical Techniques (DSC-13A)	4	3	1	0	Class 12th	NIL

**Learning Objectives**

- Students will gain an understanding of the nature, scope, elements, and principles of cartography
- They will be able to apply various diagrammatic and thematic mapping techniques to represent 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**

- The course aims to build a foundational understanding of the principles and practices of cartography.
- This course evaluates and selects appropriate map projections for specific geographic applications.
- Emphasis will be placed on various thematic mapping techniques to effectively visualize and communicate spatial data.
- It will help understand and apply basic statistical methods for interpreting geographical data

## Course Outline

### Unit 1: Introduction to Cartography

- Nature and Scope of Cartography
- Elements of a Map
- Classification of maps
- Representation of map scales

### Unit 2: Map Projections

- 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

- 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

- 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

### Note:

- **Hands on exercises for continuous assessment (CA) are to be done from all the units.**
- **No construction questions should be asked in the end term semester exam from Maps and Diagrams.**
- **Basic calculation questions will be asked on Measures of Central Tendency and Dispersion in the end term semester exam.**

## Teaching Plan

**Unit1:15 hours**

**Unit2:15 hours**

**Unit3:15 hours**

**Unit4:15 hours**

**Total: 60 hours**

### References-Essential:

- 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 (2<sup>nd</sup> 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.

### Suggestive 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

**DEPARTMENT OF GEOGRAPHY**

**SEMESTER VIII**

**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-14A**

**DISCIPLINE SPECIFIC CORE COURSE  
INTRODUCTION TO GEO SPATIAL TECHNOLOGIES  
(DSC-14A)**

Course title & Code	Credits	Credit distribution			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Introduction to Geospatial Technologies (DSC-14A)	4	3	1	0	Class12th	NIL

**Learning Objectives**

- Understand the principles of remote sensing, including Remote Sensing Platforms and sensor types.
- Students will get the basic understanding of the concept and components of GIS, and its significance in geographical study.
- Explain the principles of GPS technology, including how satellite signals are used to determine location.
- Explore various applications of RS, GIS and GPS in different fields, such as Land Use and Land Cover, Natural Resource Management etc

**Learning Outcomes**

- Students will be able to explain the Stages of Remote Sensing and describe different types of remote sensing sensors.
- Students will be able to define GIS, describe its components, and differentiate between vector and raster data models.
- Students will be able to describe how GPS works
- They will be able to apply of RS, GIS and GPS in Geographical studies.

## Course Outline

### Unit I: FUNDAMENTALS OF REMOTE SENSING

- Definition, Stages of Remote Sensing
- Types of Remote Sensing Platforms
- Sensors(LANDSAT and IRS)
- Resolution: Spectral, Spatial, Temporal, and Radiometric Resolution.

### UNIT 2: GEOGRAPHICAL INFORMATION SYSTEM (GIS)

- Definition and Components of GIS
- Types of Data: Spatial and Non-Spatial Data
- Types of Data Structure: Raster and Vector
- Overview of GIS software

### UNIT 3: GLOBAL POSITIONING SYSTEM

- Fundamentals of GPS
- Segments of GPS
- Global Navigation Satellite Systems (NavIC, NAVSTAR)
- GPS technology in Geographical studies

### UNIT 4: APPLICATION OF REMOTE SENSING AND GIS

- Land Use and Land Cover
- Natural Resource Management
- Urban Studies
- Disaster Management

## Teaching Plan

**Unit1: 15hours**

**Unit2: 15hours**

**Unit 3: 15 hours**

**Unit 4: 15 hours**

**Total: 60 hours**

## References:

Campbell, J.C., and Wynne, R.H. (2022) Introduction to Remote Sensing, 5thed. The Guilford Press. New York 622p.

Jenson, J.R. (2000). Remote Sensing of the Environment – An Earth Resource Perspective, Prentice Hall Inc.

Lillisand, T.M. and Keifer, R.W.(2011)). Remote Sensing and Image Interpretation', 3rd Edition John Willey and Sons, New York.

Sabins, F.F. (2007) Remote Sensing: Principles and Interpretation, 3<sup>rd</sup> Edition, Waveland Pr, Inc , ISBN-13-978-1577665076

Burrough, P.A., McDonnell, R.A. and Lloyd, D. McDonnell (2016). Principles of Geographical Information Systems, UK: Oxford University Press.

DeMers M.N., 2000: Fundamentals of Geographic Information Systems, NJ, USA: John Wiley & Sons.

Nag, P.(2008). Introduction to GIS. New Delhi, India: Concept.

Sarkar, A. (2015) Practical geography: A systematic approach. New Delhi, India: Orient Black Swan Private Ltd.

**DISCIPLINE SPECIFIC ELECTIVE COURSE - B.A.  
MULTIDISCIPLINARY- REGIONAL PLANNING AND  
DEVELOPMENT (DSE-19)**

Course title & Code	Credits	Duration (Hrs per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
<b>REGIONAL PLANNING AND DEVELOPMENT (DSE-19)</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>Class 12th</b>	<b>NIL</b>

**Special note:** This course may be offered exclusively to B.A. (P) students only

**Learning Objectives:**

- Understanding the basic concepts related to regional planning and development
- Detailed analysis about the different types of regions and their planning processes
- This course aims to equip students with hands-on skills and techniques for analyzing regional development patterns and planning strategies.

**Learning Outcomes:**

- The course aims to provide an in depth understanding about types of regions at different scales
- It will provide thorough understanding about development dynamics and concepts
- It will give an in-depth knowledge about tracing the region-capes

**Course Outline**

**Unit 1: Introduction to Region, Development and planning**

- Definition and concept of a region
- Types and classification of regions
- Concept of development
- Concept of Regional planning

## **Unit II: Dimensions and Measurement of Development**

- Economic Growth vs Development; Efficiency-Equity Debate
- Measuring Development: Dimensions and Indicators
- Physical Quality of Life Index and Human Development Index
- Concept of Underdevelopment; Economic Development and Inequality

## **Unit III: Theories and Models of Regional Planning and Development**

- Growth Pole Theory (Perroux)
- Core-Periphery Model (Friedmann and Hirschman)
- Myrdal's Cumulative Causation Theory
- Rostow's Stages of Growth

## **Unit IV: Regional Disparities**

- Concept of Regional Disparities
- Causes and Consequences of Regional Disparities
- Strategies for balanced Regional Development
- Sustainable Regional Development and Inclusive Plan

## **Teaching Plan**

Unit 1: 15 hours

Unit 2: 15hours

Unit 3: 15hours

Unit 4: 15 hours

**Total: 60 hours**

## **Essential Readings:**

1. Bhargava, G. 2001. Development of India's Urban, Rural, and Regional Planning in 21st Century: Policy Perspective, Gyan Publishing House.
2. Chand, M., Puri, V.K. 2000. Regional Planning In India, Allied Publishers Ltd. Chandana,
3. Chandna, R. C. (2000): Regional Planning: A Comprehensive Text. Kalyani Publishers., New Delhi.
4. Chaudhuri, J. R. (2001): An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.
5. Cowen, M.P. and Shenton, R.W. (1996): Doctrines of Development, Routledge, London.
6. Doyle, T. and McEachern, D. (1998): Environment and Politics. Routledge, London.
7. Friedmann, J. (1992): Empowerment: The Politics of Alternative Development. Blackwell, Cambridge MA and Oxford.
8. Glasson, J. 2017. Contemporary Issues in Regional Planning, Routledge.
9. Gore, C. 2011. Regions in Question: Space, Development Theory, and Regional Policy, Routledge.
10. Gregory, D., Johnston, R., Pratt, G., Watts., Whatmore, S. (Eds) 2009. The Dictionary of Human Geography, 5th ed, Wiley.



11. Hall, P., Tewdwr-Jones, M. 2010. Urban and Regional Planning, Routledge.
12. Hettne, B., Inotai, A. and Sunkel, O. (eds.) (1999 – 2000): Studies in the New Regionalism. Vol. I-V. Macmillan Press, London.
13. Higgins, B., Savoie, D.J. 2017. Regional Development: Theories and Their Application, Routledge.
14. Isard, W. (1960): Methods of Regional Analysis. MIT Press, Cambridge, MA.
15. Leys, C. (1996): The Rise and Fall of Development Theory. Indian University Press, Bloomington, and James Curry, Oxford.
16. Sen, A. (2000): Development as freedom. Development in Practice-Oxford-, 10(2), 258-258.

### **Suggested Readings:**

1. Mahesh Chand and Puri V K (2011), Regional Planning in India, Allied Publishers Private Limited, New Delhi.
2. Misra, R. P. (ed.) (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies. 2nd edition. Concept Publishing Company., New Delhi.
3. Misra, R.P. and Natraj, V.K. (1978): Regional Planning and National Development. Vikas, New Delhi.
4. Nath, V. 2009. Regional Development and Planning in India, Concept Publishing Company.
5. Sundaram K V 1997, Decentralised Multi level Planning – Principles and Practice, Concept Publishing Company, New Delhi
6. Kuklinski, A. R. (1972): Growth Poles and Growth Centres in Regional Planning. Mouton and Co., Paris.
7. Kuklinski, A.R. (ed.) (1975): Regional Development and Planning: International Perspective, Sijthoff-Leydor.
8. Friedmann, J. and Alonso, W. (ed.) (1973): Regional Development and Planning. The MIT Press, Mass.