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 I: 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).*InternationalCartographicAssociation:Basic cartography Vol.* Pregmen Press.
- Hammond, P.,&McCullagh,P.S.(1978).*Quantitativetechniquesingeography:An introduction*. Oxford University Press.
- King, L.S. (1969). *Statistical analysis in geography*. Prentice-Hall.
- Kraak, M.J. (2010).*Cartography:Visualizationofgeospatialdata*(3rded.).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* (4thed.).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 SPECIFI CCORE 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 indifferent 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, 3rd 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 SPECIF ELECTIVECOURSE - B.A. MULTIDISCIPLINARY– REGIONAL PLANNING AND DEVELOPMENT (DSE-19)

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

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 ofRegional 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 CaseStudies. 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.