



**CENTRE FOR DISTANCE EDUCATION
BHARATHIDASAN UNIVERSITY, TIRUCHIRAPALLI-620024**

M.Sc. Geography

Curriculum Structure

Year	Category	Title of the Course
I	Major	Climatology
	Major	Geomorphology
	Major	Oceanography and Biogeography
	Major	Geographical Thought
	Major	Practical-I Cartography
II	Major	Population and Settlement Geography
	Major	Economic and Agricultural Geography
	Major	Political, Social and Cultural Geography
	Elective (Any One)	1. Geography of India (or) 2. Regional Planning
	Major	Practical-II Remote Sensing and GIS

CLIMATOLOGY

Unit I Composition and structure of the atmosphere – Insolation and heat budget of the earth - Distribution of temperature

Unit II Atmospheric pressure – General circulation of winds – Monsoon - Local winds - Jet Streams

Unit III Stability and instability of atmosphere - Hydrological cycle: Condensation, Evaporation and Clouds - Precipitation: Forms and types

Unit IV Air masses - Fronts - Temperate and tropical cyclones - El Nino and La Nino

Unit V Classification of world climates: Koppen's and Thornthwaite's scheme Global warming and climate change - Application of Geoinformatics

References

1. Barry, R.G. & Chorley, R.J., (2003) Atmosphere, Weather and Climate, 11th Edition, Routledge.
2. Critchfield, H.J. (1996), General Climatology, Prentice Hall, New Jersey.
3. Waugh D. (2005) Geography: An Integrated Approach, Nelson Thornes, Cheltenham.
4. Lal, D.S., (2005) Climatology, Sharda Pustak Bhawan, Allahabad.
5. Christopherson, R. W. and Birkeland, G. H., (2012) Geosystems: An Introduction to Physical Geography (8th edition), Pearson Education, New Jersey.
6. Strahler, A. H. and Strahler, A N., (2001) Modern Physical Geography (4/E), John Wiley and Sons, Inc., New York.

GEOMORPHOLOGY

Unit I Fundamental Concepts - Factors controlling landform development

Unit II Endogeneic and Exogeneic process - Geosynclines and Mountain building - Continental drift and plate tectonics

Unit III Denudation agents - Weathering - Mass Movement - Concept of cycle of erosion

Unit IV Landforms associated with fluvial, glacial, arid, coastal and Karst topography

Unit V Slope forms and processes - Environmental and applied geomorphology - Application of Geoinformatics

References

1. Dayal, P., (1990). A Text book Geomorphology, Shukla Book Depot, Patna
2. Kale, V.S. and Gupta, A. (2001) Introduction to Geomorphology, Orient Longman, London
3. Huggett R.J. (2007) Fundamentals of Geomorphology, Routledge, New York.
4. Thornbury, W.D. (2004) Principles of Geomorphology, John Wiley, New York.
5. Small, R.J., (1978). The Study of Landforms: A Textbook of Geomorphology, Cambridge University Press, New York.
6. Worcester, P.G., (1948). A Textbook of Geomorphology, Von Nostrand Reinhold, Company, New York.
7. Christopherson, R. W. and Birkeland, G. H., (2012) Geosystems: An Introduction to Physical Geography (8th edition), Pearson Education, New Jersey.

OCEANOGRAPHY AND BIOGEOGRAPHY

Unit I Distribution of Land and sea – Origins of ocean basins - Surface configuration of the ocean floor

Unit II Bottom relief of Indian, Atlantic and Pacific Oceans - Marine deposits - Coral reefs

Unit III Temperature and salinity of oceans - Waves, Tides and Currents - Currents of Indian, Atlantic and Pacific Oceans

Unit IV Factors influencing distribution of plants and animals - Forms and functions of ecosystem - Forest, grassland, marine and mountain ecosystem

Unit V Biodiversity and its depletion - Conservation and management of ecosystems - Environmental hazards and problems of pollution - Ozone depletion

References

1. Sharma, R. C. & Vatal, M., (1970) Oceanography for Geographers, Chaitanya Publishing House, Allahabad.
2. Lal. D.S., 1990. Oceanography, Chatianya Publishing House, Allahabad,
3. Strahler, A. H. and Strahler, A N., (2001) Modern Physical Geography (4/E), John Wiley and Sons, Inc., New York.
4. Chandana R. C., 2002: Environmental Geography, Kalyani, Ludhiana.
5. Saxena, H.M., 1999: Environmental Geography, Rawat Pub., Jaipur.
6. Robinson (1982) Biogeography, ELBS Mc Donald and Evans London
7. Seddon, B. (1971) Biogeography – Duck worth, London

GEOGRAPHICAL THOUGHT

Unit I Evolution of geographic thought during ancient and medieval period - Impact of exploration and discoveries

Unit II Foundations of modern geography - Contribution of German, French, British and American Schools

Unit III Development of Geography in India - Conceptual and methodological developments during 20th Century - Changing paradigms

Unit IV Man and environment - Determinism and Possibilism - Impact of positivism, humanism, radicalism and behaviouralism in geography

Unit V Areal differentiation and spatial organization - Quantitative revolution – Systems approach – Multidisciplinary approach - Role of remote sensing and GIS

References

1. Adhikari, S., (1992) Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad
2. Hartshorn, R., (1959). Perspective on Nature of Geography, AAAG, Washington D.C.
3. Harvey, D., (1972). Explanation in Geography, Edward Arnold Publications, New Delhi
4. Hussain, M., (1995). Evolution of Geographical thought, Rawal Publicatons, Jaipur
5. Negi, B.S., (1994) Geographical Thought, Kedar Nath Ram Nath, Meerut
6. Wayne Davis, K.D., (1972). Conceptual Revolution in Geography, University of London Press, London.
7. Dikshit R. D., 1997: Geographical Thought: A Contextual History of Ideas, Prentice– Hall India.
8. Singh, R.B. 2016 Progress in Indian Geography, Indian National Science Academy, New Delhi.

PRACTICAL-I
CARTOGRAPHY

- Ex.1. Construction of map scales
- Ex.2. Construction of map projections
- Ex.3. SOI Toposheet layout and numbering
- Ex.4. Drawing conventional signs and symbols of toposheets and weather charts
- Ex.5. Interpretation of toposheets
- Ex.6. Preparation of choropleth, isopleth and dot maps
- Ex.7. Preparation of climatic diagrams
- Ex.8. Slope analysis
- Ex.9. Morphometric analysis
- Ex.10. Statistical Analysis

Note: Each candidate shall be required to prepare a practical record using suitable cartographic techniques within the stipulated time period. The record should complete in all aspects, duly signed by the teacher-in-charge and submitted before the practical exam.

References

1. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
2. Mishra, R.P (2014) Fundamentals of Cartography, Concept publication, New Delhi.
3. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
4. Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
5. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
6. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.

II Year

POPULATION AND SETTLEMENT GEOGRAPHY

Unit - I Factors affecting population distribution - Patterns of population density and growth

Unit - II Population policy issues - Population Theories (Malthusian, Optimum Theory and Demographic Transition) - Age and sex composition

Unit - III Measurements of fertility and mortality - Patterns and process of migration - Population-resource regions

Unit - IV Site, situation, types, size and growth of human settlements - Morphology of urban settlements - Urban fringe - City region

Unit - V Settlement systems - Primate city - Settlement hierarchy, Central Place theory and rank-size rule - Losch's theory of market centres

References

1. B.N.Ghosh (1985) - Fundamentals of population geography, sterling publishing, New Delhi.
2. Chandha, R.C (1986) - A Geography of population, Concepts, patterns, Kalyani publishers, New Delhi.
3. Trewartha G.T. (1969) - A Geography of population, World patterns, John Wiley & sons. New York.
4. Majid Hussain (2011), Human Geography, Fourth edition, Rawal Publicatons, Jaipur
5. Goh Cheng Leong & Morgan, G.C. (1982) Human and Economic Geography, 2nd Edition, Oxford University Press, New Delhi.
6. Ramachandran, R., (1992) Urbanisation and Urban Systems in India, Oxford University Press, New Delhi
7. Sumita Ghosh (1998) Introduction to Settlement Geography, Orient Longman, London
8. Mandal, R.B. (2008) Urban geography - A textbook. Concept Publishing Company, New Delhi
9. Carter H., the Study of Urban Geography, Edward Arnold, London, 1972.

ECONOMIC AND AGRICULTURAL GEOGRAPHY

Unit I Location of economic activities and spatial organization of economics - Classification of economies - Sectors of economy (primary, secondary, tertiary, quaternary and quinary)

Unit II Classification of natural resources - Renewable and non-renewable resources - Classification of minerals and energy resources - Conservation of resources

Unit III Classification of industries - Theories of industrial location (Weber's and Losch's approaches) - Major industries (iron and steel, textile, food processing, chemicals and knowledge based industries) - Industrial regions

Unit IV Modes of transportation - Accessibility and connectivity - Comparative cost advantages - Internal and International trade - Globalization and economic development

Unit V Delimitation of agricultural regions - Measurement of agricultural productivity and efficiency - Crop combination and diversification - Von Thunen's model and its modifications - Whittlesey's agricultural systems of the world

References

1. Goh Cheng Leong & Morgan, G.C. (1982) Human and Economic Geography, 2nd Edition, Oxford University Press, New Delhi.
2. Siddhartha, K. (2013) Economic Geography, Kishalay Publications Pvt. Ltd., New Delhi.
3. Saxena, H.M. (2013) Economic Geography, Rawat Publications, Jaipur.
4. Negi, B.S. (1995) Economic and Commercial Geography of the World, KedarNath Ram Nath, Delhi.
5. Prithwish Roy (2014) Economic Geography - A study of Resources, New Central Book Agency, Kolkata.
6. Knowles, R. & Wareing, J. (2004) Economic and Social Geography Made Simple, Rupa & Co., Kolkata.
7. Gupta V.K. (1977) Economic and Commercial Geography, Sultan Chand and Sons, New Delhi
8. Hussain M. (2004) Agricultural Geography, Rawat Publications, Jaipur.
9. Morgon W.B. and Munton, R.J.C (1971) Agricultural Geography, Methuen, London,
10. Von Royen, William, (1954) The Agricultural Resources of the World, Atlas Prentice Hall, New York,

POLITICAL, SOCIAL AND CULTURAL GEOGRAPHY

Unit I Geopolitics - Global strategic views (Heartland and Rimland theories) - Sea power - Geopolitical significance of the Indian Ocean

Unit II Concepts of Nation, State and Nation-State – Boundaries and frontiers - Politics of world resources - Geography and federalism

Unit III Social structure and processes - Elements of social geography (ethnicity, tribe, dialect, language, caste and religion) - Geographical bases of social formation

Unit IV Concept of social well-being - Measurement of human development - Social-transformation and changes in India

Unit V Components of culture - Concept culture-areas and cultural regions - Cultural changes - Cultural diversity

References

1. Knox, P. &Marston, S. (2013) Human Geography: Places and Regions in Global Context, 6th Edition, Pearson Education, New Delhi
2. Dikshit, R. D. (1999) Political Geography, Tata MacGraw Hill Publication, New Delhi.
3. Glassner M.I. (1993) Political Geography, John Wiley, New York,
4. Adhikari, S. (2004) Political Geography, Rawat Publication, New Delhi.
5. Short, J.R. (1982) An Introduction to Political Geography, Routledge and Kegan Paul, London,
6. Pounds, N.J.G. (1972) Political Geography, 2nd ed., McGraw-Hill, New York.
7. Aijazuddin, A. (2006) Social Geography, Rawat Publication, New Delhi.
8. Rubenstein, J. M. and Becon, J. M. (1990) Cultural Geography, John Wileyand Sons Inc., New York.
9. Casino V. J. D. (2009) Social Geography: A Critical Introduction, Wiley Blackwell, New Jersey.

Elective-1

GEOGRAPHY OF INDIA

Unit –I Physiographic divisions - Climate and its regional variations - Drainage systems

Unit –II Natural vegetation - Major soil types - Coastal and marine resources - Water resources

Unit –III Irrigation - Agriculture (major food and cash crops) - Agro-climatic regions

Unit –IV Mineral and power resources (iron ore, mica, manganese, bauxite, coal and petroleum) Major industries (iron and steel, sugar, cement, cotton textiles, engineering and chemical) - Industrial regions

Unit –V Population distribution and growth - Urbanization - Regional disparities in social and economic development - Hazard and vulnerability profile of India

References

1. Khullar, D.R. (2014) India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
2. Majid Husain (2009) Geography of India, Tata McGraw hill Education Private Ltd, New Delhi.
3. Sharma T.C. (2003) – India – An Economic & Commercial Geography, Vikas Publishing House Pvt. Ltd. New Delhi.
4. Gopal Singh (1970) – a Geography of India – Atnaram & sons, New Delhi.
5. Singh, R. L.(ed.) (1971) India: A Regional Geography, National Geographical Society India, Varanasi.
6. Spate, O.H.K. and Learmonth, A.T.A. (1967) India and Pakistan - Land, People and Economy, Methuen & Co., London.
7. Open Government Data (OGD) Platform India, <https://data.gov.in/>
8. National Atlas of India, NATMO Publications, <http://www.natmo.gov.in/publications>
9. Census of India Publications, <http://www.censusindia.gov.in/>
10. NIDM Publications, <http://nidm.gov.in/books.asp>
11. Statistical Year Book India, <http://www.mospi.gov.in/statistical-year-book-india/2017>

Elective-2

REGIONAL PLANNING

Unit –I Geography and regional planning - Concept of planning region - Framework of regional planning - Approaches to regional planning analysis

Unit –II Types of regions - Methods of regional delineation - Regional hierarchy - Growth pole and growth center

Unit –III Regional planning in India (appraisal of five-year planning) - Development programmes in India (command area, drought prone, metropolitan, river valley, tribal and hill area projects)

Unit –IV Indicators of regional development - Regional imbalances and inequalities in India - Regional allocation of resources in India

Unit –V Town planning (basic concepts, need and functions) - Urban Planning Classical Theories (Concentric Zone, Sector, Multiple Nuclei models) - Metropolitan Planning in India

References

1. Misra .R.P. (1992) Regional Planning : Concepts, Techniques, Politics and Case Studies. Concept Publishing Company, New Delhi
2. Chand, M. and Puri, V.N. (2013) Regional Planning in India, Allied Publishers Pvt.Ltd., New Delhi.
3. Misra .R.P., Sundram, K.V. and V.L.S Prakasa Rao (1974) Regional Development in India : A New Strategy, Vikas publishing House, New Delhi.
4. Hiraskar, G.K. (2012) Fundamentals of Town Planning, Dhanpat Rai Publications
5. Gordan C.E., (1974) Urban Planning Problems, Leonard Hills Books, London

PRACTICAL-II
REMOTE SENSING AND GIS

- Ex.1. Marginal information of aerial photos and satellite images
- Ex.2. Study the elements of visual image interpretation
- Ex.3. Preparation of land use / land cover map from remote sensing images
- Ex.4. Introduction to open source GIS software
- Ex.5. Georeferencing of maps
- Ex.6. Digitization of point, line and polygons
- Ex.7. Preparation of map layout
- Ex.8. Field data collection using GNSS
- Ex.9. Preparation of individual project work report

Note: Each candidate shall be required to prepare a practical record-cum-project report using remote sensing and GIS techniques within the stipulated time period. The record/report should complete in all aspects, duly signed by the teacher-in-charge and submitted before the practical exam.

References

1. Lillisand.T.M, and Kiefer, P.W., (1998). Remote Sensing and Image Interpretation, John Wiley & Sons, New York.
2. Mishra, R.P (2014) Fundamentals of Cartography, Concept publication, New Delhi.
3. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
4. Sutton,T.Dassau, O. and Sutton, M. (2009) A Gentle Introduction to GIS, Spatial Planning & Information, Department ofLand Affairs, Eastern Cape.
5. <http://www.qgis.org/en/docs/index.html>