

UNIVERSITY OF KERALA

SYLLABUS

**M. Sc. GEOGRAPHY
(Semester)**

2018 Admissions Onwards

UNIVERSITY OF KERALA
M.Sc. GEOGRAPHY (SEMESTER) COURSE STRUCTURE

Semester Code	Paper Code	Title of the Paper	Instructional Hrs/Week	Duration of ESA Hrs	Maximum Scores			
						CA	ESA	Total
			L	P				
I	GO211	Principles of Geomorphology	6	-	3	25	75	100
	GO212	Climatology	6	-	3	25	75	100
	GO213A	Concepts and Trends in Geography	6	-	3	25	75	100
	GO213B	Political Geography	6	-	3	25	75	100
	GO214	Practical I: Physical Geography	-	7	3	25	75	100
II	GO221	Principles of Remote Sensing	6	-	3	25	75	100
	GO222	Regional Geography of India	6	-	3	25	75	100
	GO223A	Geography of Tourism	6	-	3	25	75	100
	GO223B	Economic Geography	6	-	3	25	75	100
	GO224	Practical II: Computer Applications and Remote Sensing	-	7	3	25	75	100
III	GO231	Urban Geography	6	-	3	25	75	100
	GO232	Principles of Geographic Information System	6	-	3	25	75	100
	GO233A	Research Methodology in Geography	6	-	3	25	75	100
	GO233B	Geography of Health	6	-	3	25	75	100
	GO234	Practical III: Geographic Information System	-	7	3	25	75	100

IV	GO241	Environmental Geography	6	-	3	25	75	100
	GO242	Regional Planning and Development	6	-	3	25	75	100
	GO243A	Agricultural Geography	6	-	3	25	75	100
	GO243B	Population Geography	6	-	3	25	75	100
	GO244	Practical IV: Quantitative Techniques and Cartography	-	7	3	25	75	100
	GO245	Dissertation			3			100
	GO246	Comprehensive Viva-Voce			3			100

L – Lecture, P – Practical, CA- Continuous Assessment, ESA – End Semester Assessment. Out of 100 scores earmarked for dissertation 20 scores will be set apart for viva-voce examination based on the dissertation.

Examination for Practical I & II will be conducted at the end of IInd Semester and Practical III & IV will be conducted at the end of IVth Semester.

GO 211: PRINCIPLES OF GEOMORPHOLOGY

UNIT

1. Development of Geomorphic thought - Basic Concept in Geomorphology.
2. Geomorphic Processes and forms - Fluvial Geomorphic system - Drainage system and pattern - Morphometry of Drainage Basins - Channel Morphology - Channel Pattern- Glacial Landscapes - Aeolian Landscapes - Desertification - Coastal Geomorphology - Classification of Coasts - Coastal Process and forms - Waves and current process - Beach Profile - Coastal dunes - Estuaries - Tidal Flats - Deltas - Beach Erosion - Sea level Changes - Karst Landforms - Process - Surface forms - Subterranean forms - Human impact on Karst.
3. Landform Evolution - views of Davis, Penk, King and Hack - Dynamic Equilibrium Concept - Arid Cycle - Slopes - Basic Characteristics - Ideas of Wood - Concepts of Slope Decline - Slope Replacement and Parallel Retreat of Slopes.
4. Erosion Surfaces and their interpretations - Climatic Geomorphology and Morphogenetic Regions.
5. Applied Geomorphology with reference to Mineral Exploration, Engineering and Hydrologic studies - Anthropogenic Geomorphology.

References

1. Chorley R J : Spatial Analysis in Geomorphology, Methuen, London, 1972.
2. Cooke R U & Doornakamp J C : Geomorphology in Environmental Management - An Introduction, Clarendon Press, Oxford, 1974.
3. Dury G H: The Face of the Earth, Penguin Harmondsworth, 1959.
4. Fairbridge R W : Encyclopaedia of Geomorphology, Reinholdts, New York, 1968.
5. Goudie A : The nature of Environment, Oxford and Blackwell, London, 1993.
6. Garner H F : The Origin of Landscape - A Synthesis of Geomorphology, Oxford University Press, London, 1974.
7. Mitchell C W : Terrain Evaluation, Longman, London, 1973.
8. Oliver C D : Weathering, Longman, London, 1979.
9. Pitty A F : Introduction to Geomorphology, Methuen, London, 1971.
10. Stoddart D R(ed.) : Processes and Forms in Geomorphology, Routledge, New York 1996.
11. Skinner B J & Porter S C : The Dynamic Earth, John Wiley, New York, 1995.
12. Sparks B W : Geomorphology, Longman, London, 1960.
13. Sharma H S (ed.) : Perspectives in Geomorphology, Concept, New Delhi 1980.
14. Singh S : Geomorphology, Prayag Publication, Allahabad, 1998.
15. Thornbury W D : Principles of Geomorphology, John Wiley, New York, 1960.

GO 212 : CLIMATOLOGY

UNIT

1. The Composition and Structure of the Atmosphere – Insolation – Heat Budget of the Earth – Temperature Inversion - Atmospheric Stability and Instability – Atmospheric Motion – Causes of Air Motion – Vertical Motion – General Circulation of the Atmosphere – Local Winds – Jet Streams – Atmospheric Moisture – Humidity – Evaporation – Condensation – Cloud Formation and Classification – Precipitation – Types of Precipitation.
2. Tropical and Temperate Weather Systems – Air Masses and Fronts – Temperate Cyclones – Tropical Cyclones – Thunderstorms – Monsoons – Ocean – Atmosphere Interaction – El-Nino and Southern Oscillations – La Nina.
3. Climatic Classifications of Koeppen, Trewartha and Thornthwaite – Major Climates of the World – Tropical Rain Forest, Mediterranean, Tropical Deserts and Tundra Climates.
4. Climatic Changes – Evidences, Past and Present – Possible Causes – Ozone Depletion – Global Warming and its Impacts.
5. Applied Climatology – Climate and Agriculture – Weather Relations of Crops – Rice, Wheat, Tea, Coffee and Coconut – Agro-Climatic Regions of India-Drought – Definition, Classification – Weather and Diseases – Urban Climates.

References

1. Barry R G and Chorley P J : Atmosphere Weather and Climate, Routledge, London and New York, 1998.
2. Critchfield J H : General Climatology, Prentice Hall India, New Delhi, 1993.
3. Das P K : Monsoons, National Book Trust, New Delhi, 1987.
4. Fein J S and Stephens P N : Monsoons, Wiley Interscience 1987.
5. India Meteorological Department : Climatological Tables of Observatories in India, Govt. of India, 1968.
6. Lal D S : Climatology, Chaitanya Publications, Allahabad, 1986.
7. Lydolph P E : the Climate of Earth, Rowman, 1985.
8. Menon P A : Our Weather, National Book Trust, New Delhi, 1989.
9. KREL Karel Hughes and Julian Mays : Understanding Weather, Routledge, 2004.
10. Robinson P J and Henderson S: Contemporary Climatology, Henlow, 1999.
11. Thompson R D and Perry A (ed) : Applied Climatology – Principles and Practices, Routledge, London 1997.

GO 213 A : CONCEPTS AND TRENDS IN GEOGRAPHY

UNIT

1. Pre-history of Geographical Ideas – Greeks, Romans, Arabs and Ancient Indians – Impact of Explorations and Discoveries.
2. Modern Geographical Thought – Americans : Hartshorne, William Morris Davis, Ellen Churhill, Semple and Ellsworth Huntington – British: Halford J Mackinder, Herbertson and Roxby – German : Alexander Von Humboldt, Carl Ritter, Ratzel, Hettner and Albert Penk – French : Vidal-de-la-Blache, Jean Brunet, Elise Reclus, Albert Demangeon – Development of Geography in India.
3. Dualism and Dichotomies in Geography – Determinism vs. Possibilism, Physical vs. Human, General vs. Regional, Quantitative vs, Qualitative.
4. Recent Trends in Geography – (Man-Land, Area Studies, Spatial Tradition and Earth Science) – Quantitative Revolution – Paradigms in Geography – Systems Approach – Regional Concept.
5. New Synthesis in Geography – Empiricist Philosophy of Regional Geography – Scientific Explanations/Analysis -Trend Towards a New Synthesis – Multi-disciplinary Approach- Data Explosion – Role of Remote Sensing, Geographic Information System and Global Positioning System.

Reference

1. Abler Ronald, Adams John S, Gould Peter : Spatial Organisation – The Geographer's View of the World, Prentice Hall, New Jersey, 1971.
2. Ali S M : The Geography of Puranas, Peoples Publishing House, Delhi, 1966.
3. Amedeo Douglas : An Introduction to Scientific Reasoning in Geography, John Wiley, New York, 1971.
4. Dikshit R D(ed.) : The Art and Science of Geography-Integrated Readings, Prentice Hall of India, New Delhi 1994.
5. Hartshorne R : Perspectives on Nature of Geography, Rand McNally & Co. 1959.
6. Hussain M : Evolution of Geographic Thought, Rawat Publications, Jaipur, 1984.
7. Johnson R J : Philosophy and Human Geography, Edward Arnold, London, 1983.
8. Johnson R J : The Future of Geography, Methuen, London, 1988.
9. Minshull R : The Changing Nature of Geography, Hutchinson University Library, London, 1970.

GO 213 B : POLITICAL GEOGRAPHY

UNIT

1. Definition, Nature and Scope – Recent Developments in Political Geography – Approaches to the study of Political Geography - Major Schools of Thought.
2. Geographic Elements of the State - Physical Elements - Human Elements - Economic Elements - Political Geography and Environment Inertia.
3. Themes in Political Geography - State, Nation – Nation Building - Frontiers and Boundaries – Colonialism - De-Colonialism - Neo-Colonialism - Federalism and Other forms of Governance - The Changing Pattern of World Powers - Perspectives on Core-Periphery Concept - Conflicts and Co-operation.
4. Geo-Political Significance of Indian Ocean - Political Geography of SAARC Countries.
5. Political Geography of Contemporary India with Special Reference to Changing Political Map of India - Unity in Diversity - Centripetal and Centrifugal Forces - Stability and Instability - Inter-State Issues (like Water Disputes, Riparian Claims) and Conflict Resolutions, Insurgence in Boarder States - Emergence of new States - Federal India - Panchayath Raj.

References

1. Martin Jones, Rhys Jones, Michael Woods : Introduction to Political Geography – Space, Place and Political, Routledge, 2004.
2. Colin Flint : Introduction to Geopolitics, Routledge, 2011.
3. Dikshit R D : Political Geography – A Contemporary Perspective, Tata McGraw Hill, New Delhi, 1996.
4. Dikshit R D : Political Geography – A Century of Progress, Sage, New Delhi, 1999.
5. Kevin R Cox, Murray Low and Jennifer Robinson, The Sage Handbook of Political Geography, Sage Publishers, 2008.
6. Taylor Peter : Political Geography, Longman, London, 1985.

GO 214: PRACTICAL PAPER I PHYSICAL GEOGRAPHY

UNIT

1. Slopes - Methods of Representation and Conversion – Gradient – Degree - Percentage – Graphical - Calculation of average Slope - Wentworth's Method, Smith's Method of Relative Relief - Preparation of Slope Maps – Area-Height Curve - Hypsometric Curve.
2. Profiles - Simple, Superimposed, Composite, and Projected - Drainage Basin Analysis.
3. Delineation of Basins – Subdivisions - Stream Ordering - Strahler's and Horton's Methods - Bifurcation Ratio - Drainage Density - River Thalweg.
3. Block Diagrams - One Point Perspective and Two Point Perspective Block Diagrams – Block Diagrams from Contour Maps - Layer and Multiple Section Methods - Block Diagrams representing Erosional and Depositional features produced by River, Glacier, Wind, Underground Water and Waves.
4. Preparation of Climatic Maps and Diagrams – Representation of Climatic Data by Columnar, Linear and Circular Graphs – Frequency Graphs, Wind Rose Diagrams, Climographs, and Hythergraphs.
5. Concept of Water Balance – Calculation of water Balance and determination of Climatic Types using Thornthwait's Method – Determination of Climatic types using Koeppen's Method.- Study of Indian Daily Weather Report.

References

1. Monkhouse and Wilkinson : Maps and Diagrams.
2. Singh L.R : Practical Geography.

GO: 221: PRINCIPLES OF REMOTE SENSING

UNIT I

Remote Sensing: Definition ; Components Energy source and energy interactions with the atmosphere and earth surface, platforms, sensors; Ideal and real remote sensing systems. History of Remote Sensing.

UNIT II

Aerial remote sensing - Camera, axis , lens, angle of coverage, scale - Marginal information on Aerial Photographs - Relief Displacement- Parallax and Height Measurement - Stereo Model - Photomosaic – Flight-Planning – Photogrammetry - Digital Photogrammetry - Applications of Photogrammetry in urban planning.

UNIT III

Satellite Remote Sensing: Types of Satellites ; Resolution : Spatial, Spectral, Radiometric and Temporal: Satellite Programs of various countries and organizations : Landsat, Spot, Ikonos, IRS, and Digital Globe.

Microwave, Infra-red, Hyper Spectral, Lidar, Thermal, and Radar based remote sensing and their applications , Online sources of remote sensing data - USGS Earth Explorer, NASA Earth Observation, Bhuvan-Indian Geo-Platform of ISRO, Global Land Cover Facility.

UNIT IV

Digital Image Processing – Image Rectification – Geometric Correction, Radiometric Correction, Noise Removal; Image Enhancement - Image Classification - Supervised and unsupervised - Scope and Limitations.

UNIT V

Applications of remote sensing in Geology, Agriculture, Land Use, Forestry, Urban planning, Hydrology, Environment Assessment and Wild life studies, Archaeology.

References

1. Lillesand T. M and Kiefer R. W, Remote sensing and Image Interpretation, John Wiley and Sons
2. Campbell, James, Introduction to Remote Sensing, Gullifor Press.
3. Jensen J. R. Introductory Digital Image Processing – A Remote Sensing Perspective, Prentice Hall
4. Dong, Pinliang and Qi Chen, LIDAR Remote Sensing and Applications, CRC Press, Taylor and Francis Group.
5. <https://geoawesomeness.com/list-of-top-10-sources-of-free-remote-sensing-data/>

GO 222 : REGIONAL GEOGRAPHY OF INDIA

UNIT

1. Basis of Regionalization: Geo political, climatic, physiographic, historic, demographic and socio-economic dimensions of regionalization.
2. Macro Region: Study of natural and human resources and resource utilization of Northern Mountains.
3. Meso Regions: Physical and cultural resources of Punjab-Haryana plain, Gangetic plain, Brahmaputra valley.
4. Micro Region: Physical, human and economic resources of selected regions of Peninsular Plateau - Chotanagpur, Karnataka, Malwa, Bundelkhand, Western Ghats.
5. Case studies of Micro/Meso regions in detail.
 - (i) Natural/Physical: Coastal India
 - (ii) Political : Kerala

References

1. Centre for Science & Environment (1988) State of India's, Environment, New Delhi.
2. Deshpande C. D. India: A Regional Interpretation ICSSR & Northern Book Centre, 1992.
3. Dreze Jean & Amartya Sen (ed.) India Economic Development and Social opportunity,. Oxford University Press, New Delhi, 1996.
4. Kundu A. Raza Moonis: Indian Economy: the Regional Dimension, Spectrum Publishers, New Delhi, 1982.
5. Robinson Francis: The Cambridge Encyclopedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives, Cambridge University Press, London, 1989.
6. Singh R L (ed.): India – A Regional Geography, National Geographical Society, India, Varanasi, 1971.
7. Spate OHK & ATA Learmonth – India & Pakistan Methuen, London, 1967.
8. Tirtha R & Gopal Krishna, Emerging India, Reprinted by Rawat Publications, Jaipur.

GO 223 A : GEOGRAPHY OF TOURISM

UNIT

1. Historical Evolution and Development of Tourism – Ancient, Medieval and Modern – Meaning and Nature of Tourism – Definition of Tourism – Basic Components and Elements of Tourism Forms and Types of Tourism.
2. Travel Motivations – Factors Influencing the Growth of Tourism – Accommodations –Types of Hotels – Supplementary Accommodations – Role of Transport in Tourism Development.
3. The Impact of Tourism – Economic, Socio-Cultural and Environmental Impacts – Multiplier Effect on the Economy – Role of Travel Agencies in Tourism – Tour Itinerary – International Organizations –Travel Formalities – VISA, Passport, Credit Cards.
4. Tourism Planning - Development and Environmental Aspects – Major Natural and Cultural Attractions of Spain, Russia, Hong Kong, Germany and Thailand.
5. Tourism in India – Growth and Development – Major Natural and Cultural Attractions – Problems and Prospects – Tourism in Kerala.

References

1. Bhatia A K : Tourism Development – Principles and Practices, Sterling Publishers, New Delhi, 1996.
2. Bhatia A K : International Tourism – Fundamentals and Practices, Sterling Publishers, New Delhi, 1991.
3. Chandra R H : Hill Tourism Planning and Development, Kanishka Publishers, New Delhi .1998.
4. Hunter C and Green H : Tourism and the Environment, Routledge, London 1995.
5. Inskip E : Tourism Planning – An Integrated and Sustainable Approach, Von Nostrand and Reinhold, New York, 1991.
6. Lea J : Tourism and Development in the Third World, Routledge, London, 1988.
7. Milton D : Geography of World Tourism, Prentice Hall, New York, 1993.

GO 223 B : ECONOMIC GEOGRAPHY

UNIT

1. Nature Scope and Significance of Economic Geography - Resource and Economic Development - A Global Perspective
2. Classification of Resources according to Distribution, Utilisation and Potentials - Renewable and Non-renewable Resources - Short-term Strategies.
3. Agriculture Location Theories - Von Thunen's Agricultural Location Model - Sinclair's Theory, Oloff Jonasson's Theory - Whittlesay's Classification - Merits and Demerits.
4. Industry Location and Theories - Least Cost Approach - Webers Theory - Maximum Revenue Approach - Toad Palender, Edgar Hoover, August Losch, David M Smith, Harold Hotelling - Behavioural Approach - Allan Pred, Product Life Cycle - Structural Approach.
5. World Trade - Laftla - EEF - EFTA - World's Major Trade Zones - Western Europe, North America, Latin America, Australia, Russia and Eastern Europe, Asia.

Reference

1. Berry J L Geography of Market Centres and Retail Distribution Prentice Hall, New York, 1967.
2. Chatterjee S P : Economic Geography of Asia, Allied Book Agency, Calcutta, 1984.
3. Chorley, R J and Haggett P (ed.) : Network Analysis in Geography, Arnold 1969.
4. Dreze J and Sen A : India -Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996.

GO 224 : PRACTICAL PAPER II
COMPUTER APPLICATIONS AND REMOTE SENSING

UNIT

1. Introduction to Computers - Hardware and Software - Operating Systems - Working with Microsoft Windows - File Management - Creation of Files and Folders - Moving, Cutting, Copying, Pasting and Deleting of Files and Folders.
2. Introduction to Microsoft Office Package - Word, Excel, Power Point - Outlook and Access - Working with Microsoft Word - Creation of New Files, Documents, Templates - Save, Edit, Format, Insert Table, Pictures, Pages - Adding Headers and Footers – Out-put Generation.
3. Working with Microsoft Excel - Creation of New worksheet - Formatting of Cells - Statistical Analysis of Data - Creation of Charts - Formatting Charts - Output Generation.
4. Visual Interpretation of Aerial Photographs - Land use/Land Cover Mapping – Settlements and Urban Area Mapping - Visual Interpretation of Satellite Images - Land Use/Land Cover Mapping - Settlements and Urban Area Mapping.
5. Digital Image Processing - Image Enhancement - Image Classification Techniques - Unsupervised and Supervised Classification.

References

1. Avery T E : Interpretation of Aerial Photographs
2. Reeves Robert G : Manual of Remote Sensing
3. Muller : Digital Image Processing in Remote Sensing.
4. John R Jensen : Introductory Digital Image Processing.

GO 231 : URBAN GEOGRAPHY

UNIT

1. Nature, Scope and Significance of Urban Geography – Origin and Evolution of Urban Centres - Location and Siting of Urban Centres - Classification of Urban Centres - Different Approaches to the Study of Urban Geography – Factors associated with the growth of Cities.
2. Classification of Urban Centres on the basis of a)Size, b)Function – Rank-Size Rule – Harris and Nelson’s Scheme of Classification – Classification of Indian Cities by Ashok Mitra.
3. Urban Centers – Their Spatial and Functional Relationships – Central Place Theory – Economic basis of Urban Settlements – Concepts of Basic and Non-Basic Functions.
4. Urban Morphology – Land Use Models – Theories of Burgess, Harris and Hoyt – Central Business District and its Characteristics – Morphology of Indian Cities – Urban Housing – Urban Housing Policies and Programmes in India - Urban Slums – Urban Fringe – Its Characteristics and Development.
5. Salient Features of the Processes of Urbanisation in India – Problems and Prospects.

References

1. Alam S M : Hyderabad –Secunderabad Twin Cities, Asia Publishing House, Bombay.
2. Richard Chorley and Peter Haggett : Integrated Models in Geography, Routledge Revival, 2012.
3. Alan Wilson : Urban Modelling, Routledge, 2012.
4. Kevin Archer : The City –The Basics, Routledge, 2012.
5. David Kaplan, James O Wheeler and Steven Holloway : Urban Geography, Wiley, 2008.
6. Truman Asa Hartshorn : Interpreting the City – An Urban Geography, Wiley, 1992.

GO 232 : PRINCIPLES OF GEOGRAPHIC INFORMATION SYSTEM

UNIT I

GIS : Definition, Components, Data in GIS - Spatial Data, Attribute Data and their characteristics. Sources of Spatial and attribute data. Data input and editing of spatial and attribute data, Data Input techniques, Error Rectification, Transformation and Generalisation.

UNIT II

Spatial Data Models : Vector and Raster Data Models – Comparison of raster and vector data -Spatial Data Structures, Spatial and Attribute data modelling and management.

UNIT III

Spatial Data Management : Database Management System – RDBMS - Linking Spatial and Attribute data, Spatial data analysis - Measurement of length, perimeter and area – Query Models – Reclassification – Buffer Analysis – Neighborhood functions- Overlay Analysis and Boolean Operators.

UNIT IV

Spatial Decision Support Systems : Spatial Analysis : Spatial Interpolation and surface analysis; Modeling Surfaces - Trend surfaces and Digital Elevation Models. - Modeling Networks : Network analysis.

UNIT V

Web GIS and Mobile GIS - Basic Concept and Components, Possibilities and Prospects ,Open source software QGIS-, ILWIS, SAGA GIS, Geo Server, Open data sources for GIS analysis – Open Street Map, USGS Earth Explorer, NASA's Socioeconomic Data and Applications Center (SEDAC), United Nations Environmental Data Explorer, FAO Geo Network. Location Allocation and Facility Management using GIS.

References

1. Burrough P.A : Principles of GIS
2. Heywood, Ian, Sarah Cornelius and Steve Carver : An Introduction to Geographical Information System
3. Magune D : Geographical Information System – Principles and Application
4. <http://nptel.ac.in/courses/105102015/>
5. http://web.mit.edu/11.520/www/lectures/internet_gis08_slides.pdf
6. www.ent.mrt.ac.lk/dialog/documents/GIS%20for%20LBS.ppt
7. [http://spatial.ucsb.edu/eventfiles/docs/WebGIS Principles and Applications UCSB.pdf](http://spatial.ucsb.edu/eventfiles/docs/WebGIS_Principles_and_Applications_UCSB.pdf)
8. <https://gisgeography.com/best-free-gis-data-sources-raster-vector/>
9. <https://scihub.copernicus.eu/dhus/>

GO 233 A : RESEARCH METHODOLOGY

UNIT

1. Research : Meaning and Definition – Need for Scientific Research – types of Research – Applied and fundamental Research in Geography – Concepts of Theories and Laws in Geography.
2. Research Design ; Identification of Problems – Review of Literature – Hypothesis – Formulation of Hypothesis – Testing of Hypothesis in Geography – use of Models and Empirical Techniques in the Analysis of Geographical Problems.
3. Sampling : Types of Sampling – Spatial Sampling – Areal Line and Point Sampling – Significance of Sampling in Geographical Research.
4. Data Acquisition and Analysis : Collection of data – Primary and Secondary data _ Alternative Sources of data – various Methods of Primary Data Collection – Schedule, Interview – Drafting on Questionnaire – Data Preparation Process.
5. Thesis Writing : Organisation of the Thesis – the Preliminaries: the Text and reference materials – Drafting of the Thesis – First, Second and Final drafts – Preparation of Bibliography – Writing of Abstracts, Research papers for Seminars and Conferences - Journal Publications.

References

1. Basil Gomez & John Paul Jones III(ed.) : Research methods in Geography – A Critical Introduction, Wiley-Blackwell, London, 2010.
2. Danier R Montello & Paul Sutton : An Introduction to Scientific Research Methods in Geography, Sage Publications, 2006.
3. Iain Hay : Qualitative Research Methods in Human Geography, Oxford University Press, 2005.
4. Robin Flowerdew & David Lozell Martin : Methods in Human Geography – A Guide for students Doing a Research Project, Prentice Hall, 2005.
5. Kothari C R : Research Methodology – Methods and Techniques, Vishwaprakashana, New Delhi, 1990.

GO 233 B : GEOGRAPHY OF HEALTH

UNIT I

1. Medical Geography – Origin and Development – Traditional and Contemporary considerations - Approaches to the Study of Medical Geography.
2. Disease Ecology – Epidemiology – Disease Diffusion – Tropical Diseases – Infectious and Non-Infectious Diseases – Environmental Factors responsible for the occurrence of Diseases like Malaria, Filariasis, Tuberculosis, Bronchitis, Asthma – prone Areas in Kerala - Geocancerology.
3. Changing urban Environment and emerging Health Problems – Incidence of Communicable and Waterborne Diseases – Control measures – AIDS in Kerala – Geography of Malnutrition and Hunger in India – Vitamin Deficiency Diseases – Prone Areas – Problems and Issues.
4. Mortality and Morbidity in Kerala – Health Status of Kerala.
5. Geography of Healthcare - Location and use of Healthcare Facilities – Healthcare Delivery systems in India – Modern and Traditional Healthcare Delivery System – Distribution of Healthcare Systems in Kerala.

Reference

1. McGlashan N D : Medical Geography, Methuen, London, 1972.
2. Learmonth A T A : Patterns of disease and Hunger – A Study in Medical Geography, David & Charles, Victoria, 1978.
3. May J M : Studies in Disease Ecology, Halfner Publications, New York, 1961.
4. Rais Aktar and Learmonth A T A : Geographical Aspects of Health and Diseases in India.
5. Philips D R : Health and Healthcare in the Third World, Longman, London 1990.

**GO 234 : PRACTICAL PAPER III
GEOGRAPHIC INFORMATION SYSTEM**

UNIT

1. QGIS : Over view - Adding Raster Layer – Georeferencing - Creating New Vector Layer - Project Settings - Assigning Co-ordinate Reference Systems.
2. Raster-Vector conversion - On screen digitizing - Creation of Point, Line and Polygon layers from Raster Image.
3. Adding Attribute Data - Editing Attribute Table - Preparation of Thematic Maps.
4. Analysis in QGIS - Buffer Analysis - Overlay Analysis - Net work analysis.
5. Output Generation - Preparation of Layout - Printing.

Reference

1. QGIS User Manual.

GO 241 : ENVIRONMENTAL GEOGRAPHY

UNIT

1. Definitions and Concepts in Environmental Studies : Components of Physical Environment: Interdependence and Inter-relations - Concept of Ecosystems: Components and Structure of Ecosystem - Major Ecosystems of the World.
2. Environmental Degradation and Manifestations : Land, Water (Surface & Ground) and Air - Climate change and Disasters - Debate over Nature vs. Human Induced - Natural Hazards and Disasters - Flood and Droughts – Cyclones - Earthquakes and Tsunami - Landslides and Reservoir Induced Seismicity.
3. Environment-Development Debate : Environmental Movements - Chipko Movement in the Himalayas, Narmada Valley Issues, Bhopal Gas Tragedy and Save Silent Valley Movement - Concept of Sustainable Development.
4. Energy Conservation, Clean Energy and Recycling - Coastal Zone Regulations in India : Increasing Urbanization and Shrinking Wetlands of Kerala.
5. Environmental Monitoring - Environmental Impact Assessment - Concept of Management of the Environment : Role of Public and Private Sectors - National Environment Policy.

References

1. Bonnett A 2008 : What is Geography, Sage Publishers, London.
2. Fox R G and Starn O (ed.) : Between Resistance and Revolution : Cultural Politics and Social Protest, New Brunswick N J, Rutgers University Press, 1997.
3. Heynen N, McCarthy, Prudham S and Robbins P(eds.) : Neoliberal Environments : False Promises and Unnatural Consequences, New York, Routledge 2007.
4. Dahlman C 2010 : Introduction to Geography : People, Places and Environment (5th Edition), Prentice Hall, New York.
5. UNEP 2012. GEO 5 : Global Environment Outlook 5, United Nations Environment Program, The Associate Press, New York.
6. Karl S Z immerera : Human Geography and the "New Ecology": The Prospect and Promise of Integration. Annals of the Association of American Geographers , Vol 84, 1994.
7. Environmental Science and Technology, ACS Publications.
8. KSBB, Keralathile Thanneerthadangal Samrakshanavum Paripalanavum, Kerala State Biodiversity Board, Thiruvananthapuram.
9. Castree N: 2008b, Neo-Liberalising Nature II: Processes, Outcomes and Effects. Environment and Planning A 40(1) : 153-173.
10. Ministry of Environment and Forests (MoEF), Government of India, 2009. Final Frontier : Agenda to Protect the Ecosystem and Habitat of India's Coast for Conservation and Livelihood Security, New Delhi.

GO 242 : REGIONAL PLANNING AND DEVELOPMENT

UNIT I

Geographical Perspectives in Regional Planning and Development – Types of Regions – Formal, Functional, Uniform, Nodal, Sectoral, Composite Planning Regions – Regional Hierarchy – Methods of Regional Delineation.

UNIT II

Conceptual and Theoretical Framework of Regional Planning – Theories of Central Place (Christaller), Market Centre (Losch), Growth Centres (Perroux), Spread Effect and Backwash Effect (Myrdal), Tricking Down and Polarization Effect (Hirschman).

UNIT III

Development Processes – Indicators of Development – Measurement of Levels of Development – Regional Imbalances in Development.

UNIT IV

Regional Planning and Development in India – Regional Dimensions in National Planning – Regional Development strategies and Policies of Development – Spatial approach to sectoral development – Agriculture, Basic and Heavy Industries – Regional Imbalances in Development in India – Strategies for Special Regions – Hill Region, Tribal Region, Flood Prone Region, Drought Prone Region.

UNIT V

Concept of Micro Level Planning – Decentralized Planning with reference to District, Block and Panchayat – Watershed planning – People's Participation in Planning Process.

References

1. Alber R, et. al. : Spatial Organization – The Geographers View of the World, Prentice Hall, N.J., 1971.
2. Bhat L S : Regional Planning in India, Statistical Publishing Society, Calcutta, 1973.
3. Bhat L S et. al. : Micro Level planning – A case study of Karnal area, Haryana, K.B. Publications, New Delhi, 1976.
4. Chorly R J & Haggett P : Models in Geography, Methuen, London, 1967.
5. Gosal G.S and Krishnan G : Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
6. Government of India, Planning Commission : Third Five year Plan, Chapter on Regional Imbalances in Development, New Delhi, 1961.
7. Mahesh Chand, V K Puri : Regional Planning in India, Allied Publishers Ltd., New Delhi.
8. Jayasri Ray Chaudhuri : An introduction to Development and Regional Planning With special reference to India, Orient Longman Ltd.

GO 243 A : AGRICULTURAL GEOGRAPHY

UNIT

1. Nature Scope and Significance of Agricultural Geography - Approaches to the Study of Agricultural Geography - Major Elements of Agriculture - Land, Labour, Capital and Market.
2. Determinants of Agricultural Land-use - Physical- Economic - Social - Institutional and Technological.
3. Agricultural Location Theories - Von Thunen's Agricultural Location Model - Sinclair's Theory - Oloff Jonasson's Theory.
4. Land-use surveys - Land Capability Classifications - Measurement of Agricultural Productivity - Methods of Delineating Crop Combination Regions - Weaver's, Doi's, Raifullah's Methods - Crop Diversification Region - Bhatia's Method.
5. Agricultural Regions of the World - A Review of Whittlesay's Agricultural Classification - Agricultural Regions of India and their Characteristics - Agricultural Regions of Kerala.

Reference

1. Bayliss Smith T P : The Ecology of Agricultural Systems, Cambridge University Press, London 1987.
2. Gregor H P : Geography of Agriculture, Prentice Hall, New York, 1970.
3. Garnier B J and Delobez A : Geography of Marketing, Longman, London, 1979.
4. Grigg D B : Agricultural Systems of the World, Cambridge University Press, London, 1974.
5. Singh J L and Dhillon S S : Agricultural Geography, Tata McGraw Hill, New Delhi, 1988.
6. Tarrent J R : Agricultural Geography, John Wiley, New York, 1974.

GO 243 B: POPULATION GEOGRAPHY

UNIT I

1. Scope and objectives of Population Geography - Comparison with Demography – Sources of Population Data – Their level of Reliability – Attributes of Population – Demographic, Social and Economic.
2. Growth and Distribution of World Population – Concepts of optimum, over and under population – Demographic Transition Theory – Theories of Population : Malthus, Ricardo and Marx.
3. Population Dynamics – Measurements of Fertility and Mortality – Their World Pattern – Migration : Causes and Consequences : National and International patterns : Ancient and Modern Periods.
4. Population composition of India : Age and Sex : Family and Household : Literacy and Education : Religion : Castes and Tribes : Rural and Urban : Occupation Structure – India's Population Policies – Human Development Index and its components.
5. Population in Kerala – Distribution, Growth and Density : Rural and Urban : Sex Ratio : Literary and occupational Structure : Migration : Causes and Consequences.

References

1. Hussain Majid : Human Geography, Jaipur, Rawat Publication, 2011.
2. Fellmann J : Getis A & Getis J, 2007, Human Geography : Landscapes of Human Activities, New York, USA.

**GO 244 : PRACTICAL PAPER IV
QUANTITATIVE TECHNIQUES & CARTOGRAPHY**

UNIT

1. Thematic Mapping - Mapping Population & settlements - Dot Maps - Choropleth Maps - Isopleth Maps - Potential Population Surface - Transportation Net Work Analysis; Measures of Accessibility, Connectivity and Efficiency of Transport Net Work - Preparation of Maps.
2. Mapping Agricultural Data - Index of Concentration and Diversification – Maps – Diagrams - Land Use Maps - Chorochromatic and Choroschematic maps - Locational Sector Diagrams.
3. Surveying – GPS - Total Station.
4. Quantitative Techniques in Geography - Measurement of Association - Simple and Multiple Correlation - Simple and Multivariate Regression - Measures of Skewness and Kurtosis; Testing Measures - Testing of Hypothesis - Test of Significance - Student's T-Test and Chi-Square Test - Crop Combination Analysis - Weaver's, Doi's, and Coppock's Methods.
5. Study Tour/Field Work.

References

1. Misra R P & Ramesh A : Fundamentals of Cartography
2. Monkhouse and Wilkinson : Maps and Diagrams
3. Statistics for Geo-Scientists : Saroj K Pal.
4. Jasbir Singh & Dhillon : Agricultural Geography

A total of 25 marks are set apart for the Study Tour/Field Work. Study Tour/Field work can be to any destination inside the country, which is limited to 10 days. Each student has to submit a bonafide report of the study Tour/Field Work at the time of practical examination.

Note :

1. The Department shall approve the topics for dissertation and it will be valued by a panel of examiners. Two typed copies of dissertation as per the general instructions provided in the 'Guide lines for the preparation and submission of Dissertation by PG students in Geography' are to be submitted at the end of IVth Semester, to the Department.
2. A Comprehensive Viva–Voce examination for a maximum of 100 marks shall be conducted at the end of the IVth Semester.
3. For the conduct of Exercises of practical II & III one Computer should be made available for a group of maximum 4 students and a teacher should be in charge of each group.

INSTRUCTIONS TO QUESTION PAPER SETTERS

The syllabus of each theory paper has 5 units. While setting question papers equal weightage is to be given to each unit. Each question paper is for an examination of three hours duration and has three sections viz., Section A, Section B, and Section C, constituting a total of 75 marks as detailed below.

- Section A : Five questions, one each from each unit containing three short answer type questions marked a, b, and c. The student has to answer two questions from each of the five questions (2 x 5 = 10 marks).
- Section B : Five questions each from one each unit containing two short essay type questions marked a and b. The student has to answer any one question from each of the five questions (5x5=25marks).
- Five essay questions, one each from each unit. The student has to answer any three questions (3 x10=30 marks).