UNIVERSITY OF KERALA

SYLLABUS

M. Sc. GEOGRAPHY
(Semester)

2018 Admissions Onwards
<table>
<thead>
<tr>
<th>Semester Code</th>
<th>Paper Code</th>
<th>Title of the Paper</th>
<th>Instructional Hrs/Week</th>
<th>Duration of ESA Hrs</th>
<th>Maximum Scores</th>
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<td>GO211</td>
<td>Principles of Geomorphology</td>
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<td>GO212</td>
<td>Climatology</td>
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<td>GO213A</td>
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<td>GO214</td>
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<td>GO222</td>
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<td>GO223A</td>
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<td>GO223B</td>
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<td>Practical II: Computer Applications and Remote Sensing</td>
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<td>III</td>
<td>GO231</td>
<td>Urban Geography</td>
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<td>GO242</td>
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<td>GO246</td>
<td>Comprehensive Viva-Voce</td>
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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 II\textsuperscript{nd} Semester and Practical III & IV will be conducted at the end of IV\textsuperscript{th} Semester.
GO 211: PRINCIPLES OF GEOMORPHOLOGY

UNIT

1. Development of Geomorphic thought - Basic Concept in Geomorphology.

References

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.
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

5. India Meteorological Department : Climatological Tables of Observatories in India, Govt. of
India, 1968.
GO 213 A : CONCEPTS AND TRENDS IN GEOGRAPHY

UNIT

3. Dualism and Dichotomies in Geography – Determinism vs. Possibilism, Physical vs. Human, General vs. Regional, Quantitative vs. Qualitative.

Reference

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.
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

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.
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

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


UNIT IV

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
GO 222 : REGIONAL GEOGRAPHY OF INDIA

UNIT

1. Basis of Regionalization: Geo political, climatic, physiographic, historic, demographic and socio-economic dimensions of regionalization.


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

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.
4. Tourism Planning - Development and Environmental Aspects – Major Natural and Cultural Attractions of Spain, Russia, Hong Kong, Germany and Thailand.

References

GO 223 B : ECONOMIC GEOGRAPHY

UNIT

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.

Reference

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.

References

1. Avery T E : Interpretation of Aerial Photographs
GO 231 : URBAN GEOGRAPHY

UNIT

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.
5. Salient Features of the Processes of Urbanisation in India – Problems and Prospects.

References

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


UNIT IV


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

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/
6. www.ent.mrt.ac.lk/dialog/documents/GIS%20for%20LBS.ppt
GO 233 A : RESEARCH METHODOLOGY

UNIT


References

UNIT I


Reference

UNIT

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.
5. Output Generation - Preparation of Layout - Printing.

Reference

GO 241: ENVIRONMENTAL GEOGRAPHY

UNIT

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.

References

8. KSBB, Keralathile Thanneerthadangal Samrakshanavum Paripalanavum, Kerala State Biodiversity Board, Thiruvananthapuram.
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 (Herchman).

UNIT III

UNIT IV

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
GO 243 A : AGRICULTURAL GEOGRAPHY

UNIT

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.

Reference

GO 243 B: POPULATION GEOGRAPHY

UNIT I


References

GO 244 : PRACTICAL PAPER IV
QUANTITATIVE TECHNIQUES & CARTOGRAPHY

UNIT

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

2. Monkhouse and Wilkinson : Maps and Diagrams
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).