UNIVERSITY OF KERALA

FIRST DEGREE PROGRAMME IN GEOGRAPHY UNDER CHOICE BASED CREDIT AND SEMESTER SYSTEM (CBCSS)

SCHEME AND SYLLABUS (2018 ADMISSION ONWARDS)
In this programme, we aim to provide a solid foundation in all aspects of Geography and to show a broad spectrum of modern trends in geography and to develop experimental, synthetic and application skills of students. The Syllabi are framed in such a way that it bridges the gap between the Plus Two and Post Graduate levels of Geography by providing a more complete and logical framework in almost all areas of the subject.

The Programme also aims:

1. To provide education in Geography of the highest quality at the undergraduate level and produce graduates of the caliber sought by Industries and Public Service as well as Academic Teachers and Researchers of the future.

2. To attract outstanding students from all backgrounds.

3. To provide an intellectually stimulating environment in which the students have the opportunity to develop their skills and enthusiasms to the best of their potential.

4. To maintain the highest academic standards in undergraduate teaching.

5. To impart the skills required to gather information from resources and use them.

6. To equip the students in gathering spatial information, analyse, synthesize and to suggest solutions to Geographical problems.

Objectives:

By the end of the Programme, the students should have

1. Attained a common level in elementary and basic principles of Geography and laid a strong foundation in earth related sciences for their future courses.

2. Developed their analytical skills through wide range of expertise in handling applications of geography by their training acquired through the field work and lab.
## KERALA UNIVERSITY

### PROGRAMME STRUCTURE FOR FIRST DEGREE IN GEOGRAPHY UNDER CHOICE BASED CREDIT AND SEMESTER SYSTEM

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<tr>
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### SEMESTER I

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The number of students assigned to do the Project Work under the guidance of a Teacher is fixed as Six; since the Project Work in Geography involves Field Work.

GG 1141 – PRINCIPLES OF GEOMORPHOLOGY

Credit - 4
No. of Contact Classes - 72

UNIT – I
Origin of the Earth - Theories – Gaseous Hypothesis – Nebular Hypothesis - Planetesimal Hypothesis - Tidal Hypothesis - Binary Star Theory - Interstellar Dust Hypothesis - Shape and size of the earth - Latitudes and Longitudes - Seasons and Time.

References
http://www.britanica.com
http://www.aboutcivil.org/geological origin of earth-theories-hypothesis.html
http://www.worldatlas.com/atlas/image.html
http://www.time and date.com/calendar/aboutseasons.html
Willem J Luyten - A Review of Theories of Origin of Earth - Popular Astronomy

UNIT - II

References
http://www.oceanatlas.com
http://www.skwirk.com
http://education.nationalgeographic.com
www.trincoll.edu/isostasy.html
http://journal-cambridge.org

UNIT - III

References
www.golearngeo.wordpress.com
www.unm.edu/eps
www.eqses.geosc.psu.edu/faults.html
www.cotf.edu/ete/modules/plates
www.ucm.berkeleyedu/geology/techtonics.html
www.earthquakespectra.org

UNIT - IV

References
www.uxi.ciu.edu/weathering
forces.si.edu/soils
www.nrcsusta.gov/wps/por
www.landfood.ubc.ca/soil

UNIT-V

References
1. Strahler A N and Strahler A N; Modern Physical Geography
2. Jeffrey H; The Earth-its origin and physical composition.
3. Fairbridge R W; Encyclopedia of Geomorphology
4. Monkhouse F J; Principles of Physical Geography
5. Sparks B W; Geomorphology
6. Woolridge and R S. Morgan; Physical basis of Geography
8. Sharma H S; Perspectives in Geomorphology, Concept
9. Singh S; Geomorphology, Prayag Publications
10. www.oocities.org/geomw1
GG 1221 – FUNDAMENTALS OF GIS AND REMOTE SENSING

Credit - 3
No. of Contact Classes - 72

UNIT I

UNIT II
Data Products: Aerial Photos and Satellite Imageries; Resolution - Types, Definition and Significance; Aerial Photos – Types and Characteristics, A brief outline of Orthophotos and Stereoscopy; Satellites - Types based on Orbit/Path and altitude and their significance, GPS; Satellite Imageries - Digital, Analog, Path Row and Scale.

UNIT III

References for unit I, II and III

UNIT IV
Data, Information and Knowledge: Definition and Relationship; Information System - Definition and Components; GIS - Definition and Components; Data in GIS - Spatial and Attribute; Characteristics of Spatial Data - Co-ordinates, Projection, Datum; Spatial data sources - Field Survey, Aerial Photos, Satellite Imagery, GPS; Attribute Data Sources - Census, Surveys, Aerial Photos, Satellite Imagery; Data format - Raster and Vector- their structure, advantages and disadvantages.

UNIT V
Data Input in GIS: Keyboard entry, scanning, digitization (manual and automatic), Raster to Vector Conversion, Electronic Data Transfer; Data errors in Spatial and Attribute Data Entry; Error Rectification Methods for Spatial and Attribute Data in Raster and Vector Format; Measurement of length, perimeter and area for both Raster and Vector.

References for Unit IV and V
2. http://otec.uoregon.edu/data-wisdom.htm
7. The GIS Glossary, Environmental System Research Institute, Canada, 1996
GG1341 – CLIMATOLOGY & OCEANOGRAPHY

Credit - 3
No. of Contact Classes - 54

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Waves – Tides – Currents – Currents of Indian, Pacific and Atlantic Oceans – Coral Reefs – Formation – Types.

References
1. An Introduction to Climate – Glenn T Trewartha Mc GrawHill
2. General Climatology – Howard J Critchfield, Phi Learning Pvt Ltd, 1983
4. Physical basis of Geography – Wooldridge and Morgan Longman Green
5. Modern Physical Geography – Arthur N. Strahler and All H. Strahler Wiley
7. Physical Geography, D. S. Lal - Sharda Pustak Bhawan, Allahabad.
8. Oceanography – D. S. Lal, Sharda Pustak Bhawan, Allahabad, 2009
12. www.imd.gov.in/
GG1441 – HUMAN GEOGRAPHY

Credit 3
No. of Contact hours – 54

UNIT I
Nature and Scope of Human Geography; Environments as Controls, Human Impacts, Determinism, Possibilism, Neo-Determinism - Contributions of Alexander Von Humboldt, Carl Ritter, Friedrich Ratzel and Vidal de la Blache.
Basic Concepts: Space: Absolute, Relative and Relational Spaces, Place, Scale, Location, Direction and Distance

References

UNIT II

Measuring Interaction: Distance Decay Model, Gravity Model, Potential Model.


Human Population – Distribution and Density- Factors affecting them; Malthusian Theory, Optimum Population, Demographic Transition Model, Migration and Types of migration

References

UNIT III
Culture: Components of Culture; Culture Traits; Culture Complex; Culture Region; Culture Realm
Cultural Ecology; the Structure of Culture: Ideological, Technological and Sociological Sub-systems.

References

UNIT IV
Language and Religion: Classification of Languages: Language Families, World Pattern of Languages: Language Spread; Language Change; Dialects, Religion and Culture: Classification of Religion; Universalizing Religions, Ethnic Religions, Traditional Religions World Pattern of Religions; Major Religions of the World; Judaism, Christianity, Islam, Hinduism, Buddhism, Secularism

References

UNIT V

References
GG1442 – PRACTICAL PAPER I
SCALES AND MAP PROJECTIONS

Credit - 2
No. of Contact Classes - 72

UNIT I
Scales – Construction of Plain Scale, Comparative Scale, Diagonal Scale and Time Scale.

UNIT II
Map Reduction and Enlargement Methods.

UNIT III
Datum - Coordinate systems – geographic and projected – Geo-Referencing using GPS.

UNIT IV
Introduction to Map Projections – Principles – Classification.

UNIT V
Graphical Construction, properties, uses and limitations of the following projections (2 exercises each).
- Zenithal – Equidistant and Equal Area – Gnomonic, Stereographic and Orthographic (Polar Case only)
- Conical – Simple Conical Projection with one standard parallel, Conical Projection with two standard parallels, Bonne’s Projection, Polyconic Projection – Sinusoidal Projection-International Projection (Theory only).
- Cylindrical – Natural Cylindrical Projection, Simple Cylindrical Projection, Cylindrical Equal Area Projection
- Conventional Projection – Sinusoidal and Molleweide’s Projection.

References
2. Thomas Newton Andrews: A complete and comprehensive course of Scale Drawing, University of California.
5. Gopal Singh: Map work and Practical Geography, Vikas Publishing House Pvt. Ltd.
GG 1541 - GEOGRAPHY OF INDIA

Credit - 4
No. of Contact Classes - 72

UNIT I
India in the context of Southeast and South Asia; a Land of Diversities; unity within diversities – Physical features – Major Physiographic Divisions – Drainage Systems – Indian Monsoon; Regional and seasonal variation of climate – rainfall – famines and floods –climatic divisions – Soil types – their characteristics and distribution – vegetation types

UNIT II
Characteristics and problems of Indian Agriculture – Geographical requirements, distribution and production of major crops – Rice, Wheat, Millets, Cotton, Sugarcane, Tea, Coffee and Oil seeds – Irrigation in India – need types – Multipurpose River Valley Projects – Mega Power Projects

UNIT III
Minerals – iron ore, manganese, bauxite, mica and copper – their distribution; Power resources – Hydel, Thermal and Atomic – distribution of Coal, Petroleum and Natural Gas – Sources of Non-conventional Energy;

UNIT IV
Distribution of population – density, growth of population; – Analytical study of social and demographic characteristics of population - population problems and planning

UNIT V
Major Industrial regions in India – Location factors of industries - An examination of relationship of location factors of Iron and Steel, Cotton Textile, Sugar and IT industries –Transport – Road, Railway, Inland Waterways and Airways – Major Ports

References :
1. Deshpande C D : India – A Regional Interpretation, Northern Book Centre, New Delhi, 1992.
UNIT I

UNIT II

UNIT III
Mineral Resources – Occurrence - Distribution; Rare Earths and their distribution; Power Resources – Hydroelectric Projects - Capacity and Production – Thermal Power Generation; Marine Resources – Fisheries; Fishing Villages – Importance of Fishing in the Economy of Kerala.

UNIT IV

UNIT V

Reference
1. Geography of Kerala – Dr. George Kurian.
2. Economy of Kerala – Karunakaran and Sankaranarayanan.
4. Gazetteer of Kerala – Kerala Gazetteer, Govt. of Kerala
5. Geology of Kerala - Dr. K. Soman, Geological Society of India
7. District Hand books- Dept. of Public Relations, Govt. of Kerala
8. www.envis.ker.nic.in/
GG 1543 - GEOGRAPHY OF RESOURCES

Credit - 3
No. of Contact Classes - 54

UNIT I
Concepts of Resource Geography: Definition, Scope, Approaches – Concept and Classification.

References

UNIT II
Natural Resources: Classification, Types: Forests, Fisheries, Dairying activity; Minerals – Iron ore, Bauxite; Energy resources – Coal, Petroleum and Natural gas, Hydroelectric Power, Nuclear; World energy crisis, Measures to overcome energy crisis.

References

UNIT III

References
1. Dr. Alka Gautam, 2015, Geography of resources, Exploitation, Conservation and Management.

UNIT IV
Major Industries; Iron and Steel, Cotton and Textiles, Petro-Chemical and Sugar, Concept of Multinational and Transnational Companies, Software, Technology Parks and Cyber-cities –Trade Strategies, Pattern and Current flows of International Trade, Ricardian theory, Major Trading Blocks of the World, Employment Structure, Export and Import (Exim), Trade Balance, Role of
GATT and Subsequently WTO with special reference to International Trade with Developing World – Concept of Quaternary and Quinary Activities.

References

UNIT V
Conservation of Natural Resources: Forest, Soil, Water, Energy Resources – Concept of Sustainable Development.

Reference
GG 1544 - WORLD REGIONAL GEOGRAPHY

Credits - 4
No. of Contact Classes - 72

UNIT I

References

UNIT II
World Distribution of Mountains, Plains, Plateaus, Lakes and rivers – their influence on man.

References

UNIT III
Major Natural Regions of the World - Physical, Cultural and Economic aspects Tropical and subtropical – Equatorial rainforest, Tropical Savannah, Hot deserts, Mediterranean.

References
UNIT IV

Major Natural Regions of the World - Physical, Cultural and Economic aspects Temperate and frigid regions – Temperate grasslands, Taiga, Tundra.

References

UNIT V

A Regional Study of two selected South Asian nations – Sri Lanka and Nepal.

References
OPEN COURSE
GG 1551.1 - GEOGRAPHY OF TOURISM

Credit - 2
No. of Contact Classes - 54

UNIT I
Tourism: Definition – Types of Tourism – Maps – Types of Maps – Elements of Map Reading - Title, Scales, Directions, Symbols, Legends - Geography and tourism.

UNIT II
Elements of tourism – Attraction – Classification - Accessibility – Role of Transport in Tourism Accommodation – Types of Accommodation - Travel Motivations.

UNIT III
Tourism Restrictions - Passport, Visa, Credit card and Foreign exchange. Socio economic and cultural impacts of tourism.

UNIT IV
Role of travel agencies in tourism - Concept of package tour-publicity - Tourism Organizations - WTO, ITDC & KTDC –functions.

UNIT V
Tourism in Kerala - Major natural and cultural attractions.

References
OPEN COURSE
GG 1551.2 - PHYSICAL GEOGRAPHY

Credit - 2
No. of Contact Classes - 54

UNIT I

UNIT II
Landforms: Major relief features - External and Internal forces and agents - features formed by running water - wind - glaciers.

UNIT III

UNIT IV

UNIT V

References
6. Robinson H, Biogeography, ELBS & MacDonald and Evans, London.
OPEN COURSE
GG 1551.3 - GENERAL GEOGRAPHY

Credit - 2
No. of Contact Classes - 54

UNIT I

UNIT II

UNIT III

UNIT IV
Resources of World with special reference to India - Resource types – Agriculture (Rice and Wheat) – Forestry – Fisheries – Minerals – Power resources – Major Industries.

UNIT V

References

OPEN COURSE
GG 1551.4 - BIO-GEOGRAPHY

Credit - 2
No. of Contact Classes - 54

UNIT I

UNIT II

UNIT III

UNIT IV

1. Tropical Rain Forests, 2. Tropical Grasslands
3. Deserts 4. Temperate Grasslands

UNIT V
1. Broad-Leaved Evergreen Forest
2. Mountains
3. Taiga
4. Tundra

References

GG 1641 - CARTOGRAPHY

Credit - 4
No. of Contact Classes - 72

UNIT I
Nature and Scope of Cartography: History of Cartography; Ancient Period, late Medieval Period –
Early Modern Period – Recent Period; Meaning of Maps, Classification of Maps, Artistic learning
and scientific bases of Cartography – Cartography as a Science of Human Communication –
Branches of Cartography

UNIT II
Process of Map Making: Map Compilation: Enlargement and Reduction of Maps, Generalisation,
Procedure for Compilation – Thematic and Complex Mapping – Types and problems

UNIT III
Map Design and Layout: Principles of Map Design – Constraints in Map Design – Symbolization –
Format of a Map – Lettering and Toponomy: Lettering: Style, Form, Size – Mechanics of Lettering.

UNIT IV
Map Reproduction: Automated and Computer Cartography – Special Purpose Maps: Planning and
Designing Maps for a) Blind b)Children c)Neo-literates d) Business and Commercial
Organizations.

UNIT V
Cartographic Appreciation of Survey of India Topographical Maps.

References
   Company, New Delhi.
   Data, Prentice Hall.
GG1642 – ENVIRONMENTAL GEOGRAPHY

Credit - 4
No. of Contact Classes - 72

UNIT I

References

UNIT II
Concept of Ecosystem: its structure and classification; Functions of the Ecosystem: Food-Chain, Food-Web, Food-Pyramid and Nutrient Cycles.

References

UNIT III
Disruptions in Ecosystem: Natural (Floods, Droughts, Quakes, Tsunamis, and Volcanic Eruptions) and Human-caused Environmental Problems (Erosion, Degradation, Pollution, and Climate Change): Human modifications: Consequences of Agriculture (Green Revolution), Mining and Industrial Development.

References

UNIT IV

References

UNIT V
Environmental Management and Planning – Concept of Sustainable Development.

Reference

GG 1661 - AN INTRODUCTION TO DISASTER MANAGEMENT

Credits - 2
No. of Contact Classes - 54

UNIT I

References

UNIT II
Disaster Management Cycle; Disaster Management Phases - Prevention and Preparedness – Mitigation - Response and Recovery; Community Based Disaster Management - Roles and Responsibilities of Community.

References

UNIT III
Hazard and Vulnerability Profile of India; Disaster prone or vulnerable areas in India with emphasis to Cyclones, Earthquakes and Floods; Structural and Non-structural measures for Disaster Risk Reduction in Earthquake and Cyclone Prone Areas.

References
UNIT IV
Disasters and Development - Impact of Development Projects such as Dams, Embankments, Changes in Land-use and setting up of New Industries. Impacts of Disasters: on Health - Mental Health – Social - Economy and Environment. Understanding differential Impacts on people based on Caste, Class, Gender, Age, Location, Disability and Religion. Indigenous Knowledge and Disaster Prevention.

References

UNIT V
Need for Gender and Culture sensitive disaster management. Disaster management plan - components

References
2. Kurowa, Julio, Disaster Reduction: Living in harmony with nature Quebec or World, Peru, S. A.
GG1643 – PRACTICAL PAPER II
REPRESENTATION AND INTERPRETATION OF GEOGRAPHIC DATA

Credit - 4
No. of Contact Classes - 108

UNIT I
Geographical Representation and Analysis of Socio-economic Data by means of Line graph – Simple, Multiple : Bar Graph – simple, Sub-divided/Compound, Multiple Bar Diagram, Percentage Bar Graph, Band Graph, Rectangular Diagram, Pie Diagram, Ring Diagram, Comparative Circles, Graduated Sphere Diagram, Pictogram, Age-Sex Pyramid, Traffic Flow SuDiagram.

UNIT II

UNIT III
Study of various meteorological signs and symbols.

UNIT IV
Station model.

UNIT V
Study and interpretation of Indian Daily Weather Reports of different seasons.

References
6. www.skwirk.com/
8. Steven A Ackerman, John A Knox : Meteorology, Jones and Bartlett Learning
9. www.hpe.neep.noaa.gov/
10. www.imd.gov.in/
GG1644 – PRACTICAL PAPER III
MAP READING AND ANALYSIS

Credit - 4
No. of Contact Classes - 54

UNIT I
Maps and their Classification.

UNIT II

UNIT III
Concept of Slope and Gradient, Intervisibility.

UNIT IV
Study of Indian Topographic Maps – Lay out and numbering, conventional singns and symbols, grid references, Interpretation of Topographic Maps (1:250,000/1:50,000/1:25,000 – one each) – Marginal Information, Relief, Drainage, Natural Vegetation, Settlements, Occupation, Irrigation, Transport and Communication.

References
2. Singh R L: Elements of Practical Geography, Kalyani Publishers
6. www.nwcg.gov/
7. http://geology.isu.edu/
GG1645 – PRACTICAL PAPER IV
SURVEYING AND LEVELLING

Credit - 3
No. of Contact Classes - 90

UNIT I
Principles of Surveying – equipment for land survey – their advantages and disadvantages.

UNIT II
Surveying by means of
2. Prismatic Compass – preparation of simple transects by open and closed traverse
3. Plane Table – Radiation and Intersection methods.
4. Indian Clinometer – use of Clinometers with plane table.

UNIT III
Field Work/Study Tour to places of geographic importance with the duration of not exceeding seven days.

References
4. www.levelling.uhi.ac.uk/
5. https://archive.org/details/surveyingfieldwo00will
   New Delhi, 2009
7. Subramanian R: Surveying and Levelling, OUP India, 2013
8. www.academia.edu/.../CHAIN AND TAPE SURVEY G

Note : Out of the total 80 marks, 10 marks are earmarked for Study tour/Field Work report.