

# UNIVERSITY OF KERALA

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

SCHEME AND SYLLABUS  
(2014 ADMISSION ONWARDS)

**UNIVERSITY OF KERALA**  
**FIRST DEGREE PROGRAMME IN GEOGRAPHY**  
**CHOICE BASED CREDIT AND SEMESTER SYSTEM**

**Aims and Objectives of the Programme**

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

- (i) 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.
- (ii) to attract outstanding students from all backgrounds.
- (iii) 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.
- (iv) to maintain the highest academic standards in undergraduate teaching
- (v) to impart the skills required to gather information from resources and use them.
- (vi) to equip the students in gathering spatial information, analyze, synthesize and to suggest solutions to geographical problems

**Objectives:**

By the end of the Programme, the students should have

- (i) Attained a common level in elementary and basic principles of geography and laid a strong foundation in earth related sciences for their future courses.
- (ii) Developed their analytical skills through a 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**

Course Code	Course title	Instructional hours/week		Credit	Exam hours	Marks		Total Credit
		L	P			Internal	External	
<b>SEMESTER I</b>								
EN 1111	English	5		4	3	20%	80%	17
1111	Addl. Language	4		3				
EN 1121	Foundation course	4		2				
GG 1141	<b>Principles of Geomorphology</b>	2	2	4				
GL 1131	<b>Complementary Course I (GEOLOGY)</b>	2	2	2				
ST 1131.3	<b>Complementary Course II (STATISTICS)</b>	2	2	2				
		25		17				
<b>SEMESTER II</b>								
EN 1211	English - I	4		3	3	20%	80%	17
EN 1212	English - II	5		4				
1211	Addl. Language	4		3				
GG 1221	<b>Fundamentals of GIS &amp; Remote Sensing</b>	2	2	3				
GL 1231	<b>Complementary Course I (GEOLOGY)</b>	2	2	2				
ST 1231/3	<b>Complementary Course II (STATISTICS)</b>	2	2	2				
		25						
				17				
<b>SEMESTER III</b>								
EN 1311	English	5		4	3	20%	80%	17
1311	Addl. Language	5		4				
GG 1341	<b>Climatology &amp; Oceanography</b>	3		3				
GG 1342	<b>Practical I</b>		2	*				
GL 1331	<b>Complementary Course I (GEOLOGY)</b>	3	2	3				
ST 1331.3	<b>Complementary Course II (STATISTICS)</b>	3	2	3				
		25		17				

SEMESTER IV							
EN 1411	English	5	4	3	20%	80%	28
1411	Addl. Language	5	4				
GG 1441	<b>Human Geography</b>	3	3				
GG 1442	<b>Practical I</b>	2	3				
GL 1431	<b>Complementary Course (GEOLOGY)</b>	3	3				
GL 1432	<b>Complementary Course (GEOLOGY) Practical</b>	2	4				
ST 1431.3	<b>Complementary Course II (STATISTICS)</b>	3	3				
ST 1432.3	<b>Complementary Course II Practical (STATISTICS)</b>	2	4				
		25	28				
SEMESTER V							
GG 1541	<b>Geography of India</b>	4	4	3	20%	80%	16
GG 1542	<b>Geography of Kerala</b>	3	3				
GG 1543	<b>Geography of Resources</b>	3	3				
GG 1544	<b>World Regional Geography</b>	4	4				
GG 1551.1	Open course <b>GEOGRAPHY OF TOURISM</b> <b>PHYSICAL GEOGRAPHY</b> <b>GENERAL GEORAPHY</b> <b>BIO GEOGRAPHY</b>	3	2				
GG 1551.2							
GG 1551.3							
GG 1551.4							
GG 1545	Practical II	6	*				
	<b>Project*</b>	2	*				
		25	16				
SEMESTER VI							
GG1641	<b>Cartography</b>	4	4	3	20%	80%	25
GG1642	<b>Environmental Geography</b>	4	4				
GG1661	<b>An Introduction to Disaster Management</b>	3	2				
GG 1643	Practical II		4				
GG1644	Practical III	6	4				
GG1645	Practical IV	5	3				
GG 1646	<b>Project*</b>	3	4				
		25	25				

\*The number of students assigned to do the project work under the guidance of a teacher is fixed as 6 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.aboutcivil.org/geological_origin_of_earth-theories-hypothesis.html)

<http://www.worldatlas.com/atlas/image.html>

<http://www.time.com/time> and [date.com/calendar/aboutseasons.html](http://date.com/calendar/aboutseasons.html)

Willem.J.Luyten-A Review of Theories of Origin of Earth- Popular Astronomy

#### **UNIT-II**

Distribution of Land and Water-Tetrahydal hypothesis-Major Relief features of the Earth- Mountains-Plains- Plateaus-Lakes- Structure and Composition of the Earth- Isostasy

#### REFERENCES

<http://www.oceanatlas.com>

<http://www.skwirk.com>

<http://education.nationalgeographic.com>

[www.trincoll.edu/isostasy.htm](http://www.trincoll.edu/isostasy.htm)

<http://journal-cambridge.org>

#### **UNIT -III**

Endogenic and exogenic forces-Endogenic forces-Folds-Parts of fold-Types of fold-Symmetrical fold Asymmetrical fold -Isoclinal fold-Recumbent fold-Overthrust fold-Faults-Fault types-Normal-Reverse-Strike dip-Volcanoes-Earthquakes-Continental Drift-Plate Tectonics

#### REFERENCES

[www.golearngeo.wordpress.com](http://www.golearngeo.wordpress.com)

[epswww.unm.edu/eps](http://epswww.unm.edu/eps)

[eqses.geosc.psu.edu/faults.html](http://eqses.geosc.psu.edu/faults.html)

[www.cotf.edu/ete/modules/plates](http://www.cotf.edu/ete/modules/plates)

[www.ucm.berkeleyedu/geology/tectonics.html](http://www.ucm.berkeleyedu/geology/tectonics.html)

[earthquakespectra.org](http://earthquakespectra.org)

#### UNIT-IV

Exogenic Forces-Weathering-Factors-Types-Soils-Soil formation-Soil Characteristics-Soil Profile-Soil Classification

#### REFERENCES

[www.uxi.ciu.edu/weathering](http://www.uxi.ciu.edu/weathering)  
[forces.si.edu/soils](http://forces.si.edu/soils)  
[www.nrcsusta.gov/wps/por](http://www.nrcsusta.gov/wps/por)  
[www.landfood.ubc.ca/soil](http://www.landfood.ubc.ca/soil)

#### UNIT-V

Gradation-Agents of Gradation-Erosional and Depositional landforms formed due to the work of Running water-Underground water-Wind-Glaciers-Sea waves-Concept of Normal Cycle of Erosion

#### REFERENCES

[www.oocities.org/geomwl](http://www.oocities.org/geomwl)

1. A.N .Strahler and A.N.Strahler; 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
7. Dayal. P; Textbook of Geomorphology, Rajesh Publications
8. Sharma. H.S; Perspectives in Geomorphology, Concept
9. Singh S; Geomorphology, Prayag Publications

## GG 1221- FUNDAMENTALS OF GIS AND REMOTE SENSING

**Credit 3**

**No. of Contact hrs. 72**

### **UNIT I**

Remote Sensing: definition and components; Energy sources- types, active and passive remote sensing; Electromagnetic Radiation- Characteristics, Electromagnetic Spectrum, Spectral bands used in remote sensing, atmospheric windows; Atmospheric interactions; Interaction with earth surface features- spectral signature, Spectral Reflectance Profile - Definition and profiles for vegetation, soil and water; Platforms- Definition and types; Sensors – Types ( Multispectral Scanner, Hyperspectral Scanner, Thermal Scanners); Scanning- Across track and Along track scanning

### **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**

Elements of Visual Image interpretation (for aerial photos and satellite imageries); A brief account of satellite remote sensing programmes of India, United States and France. Advantages of Satellite remote sensing and aerial surveys  
References for unit I, II AND III:

1. [Thomas Lillesand, Ralph W. Kiefer](#),(any edition) ,Remote Sensing and Image Interpretation, John Wiley and Sons, New York.
2. [http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/resource/tutor/fundam/pdf/fundamentals\\_e.pdf](http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/resource/tutor/fundam/pdf/fundamentals_e.pdf)
3. <http://www.nrcan.gc.ca/earth-sciences/geomatics/satellite-imagery-air-photos/satellite-imagery-products/educational-resources/9309>
4. [http://www.cdioinstitute.org/papers/Day1/AERIAL%20PHOTOGRAPHY\\_Abraham\\_Thomas.pdf](http://www.cdioinstitute.org/papers/Day1/AERIAL%20PHOTOGRAPHY_Abraham_Thomas.pdf)

### **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, air photos , satellite imageries, GPS; Attribute data sources- census, surveys, air photos, satellite imagery; Data format- Raster and Vector- their structure, advantages and disadvantages

**UNIT V**

Data Input in GIS – key board 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

1. Haywood, Ian, Cornelius, Sarah & Carver, Steve (any edition), 'An Introduction to Geographical Information Systems', Prentice Hall, Pearson Education, U.K
2. <http://otec.uoregon.edu/data-wisdom.htm>
3. <http://www.pasda.psu.edu/tutorials/gisbasics.asp>
4. [http://catalog.flatworldknowledge.com/bookhub/reader/3798?e=campbell\\_1.0-ch03\\_s01](http://catalog.flatworldknowledge.com/bookhub/reader/3798?e=campbell_1.0-ch03_s01)
5. Canada Center for Remote Sensing, 'Fundamentals of Remote Sensing, Canada
6. Konecny Gottfried, 'Geoinformation: Remote Sensing, Photogrammetry and Geographic Information Systems', Taylor and Francis, London, 2003
7. The GIS Glossary, Environmental System Research Institute, Canada, 1996
8. Longley, Paul A et al. 'Geographic Information Systems and Science, John Wiley, England, 2005
9. Francis Harvey, 'A Primer of GIS: Fundamentals of Geographic and Cartographic Concepts', The Guildford Press New York, 2008
10. De By, Rolf A 'Principles of Geographic Information Systems' ITC Educational Textbook Series 1, ITC, Netherlands, 2001

**GG 1341 - CLIMATOLOGY & OCEANOGRAPHY**

**Credit 3**

**No. of Contact hrs. 54**

**UNIT I**

Atmosphere – Composition – Structure - Weather and Climate - Insolation and Temperature - Heat balance - Horizontal and vertical distribution of temperature - Global warming – Causes and effects

**UNIT II**

Atmospheric pressure – Measurement – Major pressure belts – General circulation of the atmosphere – Planetary winds - Monsoon – local winds.

**UNIT III**

Humidity and Precipitation – Condensation - Forms – Fog and Cloud – types- Precipitation- Types – Air masses – types - Fronts – Cyclones – Tropical Cyclones – Temperate cyclones – Anticyclones.



**UNIT IV**

Oceans – Relief of ocean floor – Bottom relief of Atlantic, Pacific and Indian oceans – Temperature – Distribution – Salinity – Factors and distribution.

**UNIT V**

Waves – Tides – Currents – Currents of Indian, Pacific and Atlantic Oceans – Coral reefs – formation –types- Deposits in ocean floor – Marine resources.

**References**

1. An Introduction to Climate –Glenn. T. Trewartha Mc GrawHill
2. General Climatology –Howard. J. Critchfield ,Phi Learning Pvt Ltd ,1983
3. Atmosphere, Weather and Climate Barry and Chorley, Routledge, London, 2003
4. Physical Basis of Geography –Wooldridge and Morgan Longman Green
5. Modern Physical Geography-Arthur N Strahler and Allen H Strahler Wiley
6. Physical Geography Majid Husain , Rawat Publications Jaipur,2003
7. Oceanography –D. S .Lal, ShardaPustakBhawan Allahabad,2009
8. Edward Linacre & Bart Geerts- Climate and Weather Explained, Routledge, London, 2003
9. Gabler R. E, Petersen, J. F,Trapasso L. M and Sack D – Physical Geography, Brooks/Cole, Belmont, USA, 2009
10. Craghan M – Physical Geography: A Self Teaching Guide, John Wiley & Sons, Canada, 2003

**GG 1441-HUMAN GEOGRAPHY**

Credit 3

No. of Contact hrs– 54

**UNIT I**

**Nature of geographic enquiries:** Theory and Geography – Ontology, Epistemology, Ideology and Methodology of geographical knowledge: Geography and Human Geography  
**Definitions of Geography:** Immanuel Kant, Alexander von Humboldt, Halford Mackinder, Richard Hartshorne, H.C. Darby, Yi-Fu Tuan, Peter Haggett, Ron Johnston, David Harvey, Edward W. Soja, Doreen Massey, Richard Peet, Neil Smith

**Basic concepts:** Space: Absolute, relative and relational spaces, Place and Nature, Scale, Location, Direction and Distance

**Reading list:**

1. [Brendan Bartley](#), [Phil Hubbard](#), [Rob Kitchin](#), “Introducing Theory” in *Thinking Geographically*, Bloomsbury Academic (2005)
2. Derek Gregory, “Geography,” in Gregory et al eds., *Dictionary of Human Geography*, (2009)
3. John Agnew and David Livingstone, “Introduction,” in Agnew and Livingstone, eds., *The SAGE Handbook of Geographical Knowledge* (2011), 1---17

4. Rob Kitchin and Nigel Thrift, International Encyclopaedia of Human Geography, Elsevier Ltd (2009)

Internet Sources:

1. Margaret Roberts: <http://georgiesgeographypage.wikispaces.com/file/view/Enquiry-+roberts.pdf>
2. David Harvey: <http://frontdeskapparatus.com/files/harvey2004.pdf>

## UNIT II

### **Spatial Interaction and Spatial Behavior:**

Basis of Interaction: Edward Ullman model; complementarity, transferability, and intervening opportunity.

Measuring Interaction: Distance decay, the gravity model, potential model

Human Spatial Behavior: Mobility, territoriality, space-time prism

Spatial Interaction and the Accumulation of Information: Information Flows, Information and Perception, *Perception of Environment*

### **Reading list:**

1. Fellmann, J., Getis, A. & Getis, J. (2007) Chapter 3 of *Human Geography: Landscapes of Human Activities*. New York, USA: McGraw-Hill.
2. Knox, P.L. & Marston, S.A. (2007) *Places and Regions in Global Context: Human Geography*. Upper Saddle River, New Jersey: Prentice Hall.

## UNIT III

Culture: Components of culture; Culture traits; culture complex; culture region; culture realm

Cultural ecology; Environments as controls; Human impacts;

Roots of culture; cultural divergence; origin of agriculture; Neolithic innovations;

Culture hearths; Egypt, Crete, Mesopotamia, Indus Valley, northern China, south-eastern Asia, sub-Saharan Africa, Americas

The structure of culture: ideological, technological and sociological sub-systems

The cultural change: Globalisation and global culture; Folk and Popular culture; Cultural minorities

### **Reading list:**

1. Fellmann, J., Getis, A. & Getis, J. (2007) Chapter 2 of *Human Geography: Landscapes of Human Activities*. New York, USA: McGraw-Hill.
2. [Erin H. Fouberg](#), [Alexander B. Murphy](#), [Harm J. de Blij](#). (2011) *Human Geography: People, Place, and Culture*, 10th Edition, Wiley

## UNIT IV

Language and religion:

Classification of languages: language families;

World Pattern of languages: language spread; language change; Dialects

Language, Territoriality, and Identity

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

**Reading list:**

1. Fellmann, J., Getis, A. & Getis, J. (2007) Chapter 5 of *Human Geography: Landscapes of Human Activities*. New York, USA: McGraw-Hill.
2. [Erin H. Fouberg](#), [Alexander B. Murphy](#), [Harm J. de Blij](#). (2011) *Human Geography: People, Place, and Culture*, 10th Edition, Wiley

**UNIT V**

Human Settlements – Rural – Types and patterns and functions – Urban – Urbanization – Pattern and Functions – Urban morphology – Urban problems

Reading List

1. Mandal, R. B., (2001) *Introduction to Rural Settlements*, Concept Publishing Company, New Delhi, Second Edition
2. Haggett, Peter, (1979) *Geography A Modern Synthesis*, Harper International, London

**GG 1442 - PRACTICAL PAPER I**

**SCALES AND MAP PROJECTIONS**

Credit - 2

No. of Contact hours: 72

**UNIT I**

Scales – Construction of plain scale, comparative scale, diagonal scale and time scale

**UNIT II**

Map Enlargement and Reduction 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:**

1. Monkhouse and Wilkinson: Maps and Diagrams, Methuen and Company
2. Thomas Newton Andrews: A complete and comprehensive course of Scale drawing, University of California
3. Kellaway George P: Map Projections, Bibliobazar, 2011
4. R.L.Singh: Elements of Practical Geography, Kalyani Publishers
5. Gopal Singh: Map work and Practical Geography, Vikas Publishing House Pvt. Limited
6. MZA Khan: Text Book of Practical Geography, Concept Publishing House
7. Lev M. Bugayevskiy and John Snyder: Map Projections – A Reference Manual, Taylor and Francis
8. Eric W. Garfarend and Friedrich W. Krumm: Map Projections – Cartographic Information Systems, Springer
9. <http://nationalatlas.gov> > [Articles](#)
10. [www.colorado.edu/geography](http://www.colorado.edu/geography)

**GG 1541 - GEOGRAPHY OF INDIA**

Credits : 4

No. of Contact hours : 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 rare earths – their distribution; Power resources – hydel, thermal and atomic – distribution of coal, petroleum and natural gas – sources of non-conventional energy; marine resources

**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 – Locational factors of industries - An examination of relationship of locational factors of iron and steel, cotton textile, sugar and IT industries – Transport – Road, railway, inland waterways and airways – Major ports – India’s international trade

**References :**

1. Deshpande C D – India – A Regional Interpretation , Northern Book Centre, New Delhi. 1992
2. Farmer B H – An Introduction to South Asia, Methuen, London 1983
3. Learmonth ATA et.al (ed) – Man and Land of South Asia, Concept Publishers, New Delhi
4. Mitra A – Levels of Regional Development India, Census of India, Vol. I, Part I-A(i) and (ii) New Delhi, 1967
5. Routray, J.K – Geography of Regional Disparity, Asian Institute of Technology, Bangkok, 1993
6. Shafi M – Geography of South Asia, McMillan & Co, Calcutta, 2000
7. Singh R L (ed) : India – A Regional Geography, National Geographical Society, India, Varanasi, 1971
8. Spate OHK and Learmonth ATA – India and Pakistan – Land, People and Economy, Methuen & Co. London 1967
9. Valdiya KS – Dynamic Himalaya, University Press, Hyderabad, 1998
10. Wadia D N – Geology of India, McMillan & Co. London 1967
11. Khullar, DR, India: A Comprehensive Geography, Kalyani Publishers, New Delhi, 2006

**GG 1542: GEOGRAPHY OF KERALA**

Credits: 3

No. of Contact hours: 54

**UNIT I**

Location-Relief features-Geology, Soil-Drainage-Wealth and climate-Annual rainfall-Seasonal

Rainfall-Variability of rainfall-features and effects of monsoon-Biodiversity-Forests-Wild animals-wildlife sanctuaries and National Parks

**UNIT II**

Agriculture-Cereal and other crops-their area under cultivation-plantation crops-horticulture-problems and prospects of agriculture.

**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**

Industries in Kerala: - Major industries - Cottage and small scale industries - tourism industry – potentialities – major tourist centers.

#### **UNIT V**

Distribution and growth of population, density, literacy, sex-ratio:Trend of urbanization – major urbanization problems; roads, railways, waterways and airways.

#### **Reference**

1. Geography of Kerala – Dr. George Kurian
2. Economy of Kerala – Karunakaran and Sankaranarayanan
3. Resource Atlas of Kerala – Centre for Earth Science Studies
4. Gazetteer of Kerala – Kerala Gazetteer, Govt. of Kerala
5. Geology of Kerala - Dr. K. Soman, Geological Society of India
6. Water Atlas of Kerala – CWRDM, Kozhikkode
7. District Hand books- Dept. of Public Relations, Govt. of Keala

### **GG 1543: GEOGRAPHY OF RESOURCES**

Credits: 3

No. of Contact hours: 54

#### **UNIT I**

**Concepts of Resource Geography:** Definition, Scope, Approaches - Concept and Classification, Types; Forest, Fish, Grassland and Livestock, Mineral, Energy Resources, Approaches of resource utilization; Environmental and Economic.

#### **References:**

1. Clark, Gordon L., Feldman, Maryann P., Gertler, Meric S. (2003). (eds.). *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press.
2. Robert W. Kates, Ian Burton (ed). 1986. *Geography, Resources and Environment*, Volume 1: Selected Writings of Gilbert F White. University of Chicago Press.
3. Knowles, R. and Wareing, J. (2000). *Economic and Social Geography Made Simple*. New Delhi: Rupa and Company.

4. Leong, G. C. and Morgan, G. C. (1982). *Human and Economic Geography*. Singapore: Oxford University Press.

## UNIT II

**Resource Utilization and Conservation:** Problems of Distribution, Utilisation and Conservation of natural Resources, World Energy Crisis, Measures to overcome the Energy Crisis, Forrester-Meadows model on Limits to Growth, Management, Optimum and Sustainable Use of Natural Resources.

### References:

1. Guha, J. S. and Chattoraj, P. R. (2002). *A New Approach to Economic Geography: A Study of Resources*. Kolkata: The World Press Private Limited.
2. Bagchi-Sen, Saharmistha and Smith, Helen Lawton. (2006). *Economic geography: past, present and future*, Oxon (United Kingdom): Routledge.

## UNIT III

**Primary, Secondary and Tertiary Activities:** Concept, Classification and Importance - Problems and Trends of Management with special reference to Mining, Forestry, Fishing and Livestock Farming - Typology and World agricultural Regions, L.D Stamp, DerwentWhittlesey's Classification, Von Thunen's Theory of Agricultural Location, Weaver, World food and Nutrition Problems - Structure and Types of Industries, Industrial location theory of Weber – Major industries; Iron and Steel, Cotton and Textile, Ship building - Land, Labour, Capital, Raw Material, Market, Industrial Location and Growth Models regarding Economic Activities: Weber, Losch and Gunnar Myrdal - Major industries; iron and steel, textiles, petro-chemical and sugar, Concept of Multinational and Transnational Companies, Software, Technology Parks and Cyber-cities –

## UNIT IV

**Transport and Trade:** Economic Adjustments of Space by Reducing Distance Transport Systems, Flow Theory, Development of network of interchange, Network Analysis, Telecommunications; Determinants, 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:

1. Hanink, D. M. (1997). *Principles and Applications of Economic Geography: Economy, Policy, Environment*. New York: John Wiley and Sons, Inc.
2. Floor Brouwer (2008). *Sustainable Land Management: Strategies to Cope with the Marginalisation of Agriculture*. Edward Elgar Publishing. ISBN: 1782543481, 9781782543480.

**UNIT V**

**Land Use Classification and Patterns:** Qualitative and Quantitative Systems of Classification, Land Use Surveys and Techniques, Land capability and Suitability Surveys, Land Acquisition Problems in Developing Countries; Concept of EPZ and SEZ Development; Land Reforms in India

## References:

1. Ajit Kumar Singh (1997). Land Use, Environment and Economic Growth in India. M.D. Publications Pvt. Ltd., India.
2. Floor Brouwer, Bruce A. McCarl (2006). Agriculture and Climate Beyond 2015: A New Perspective on Future Land Use Patterns.

**GG 1544: WORLD REGIONAL GEOGRAPHY**

No. of credits : 4  
No. of contact hours : 72

**UNIT I**

**Concept of a region - Types** – Naively given region, Instituted regions, Formal region – *natural region, socio cultural region*, Functional regions, Planning regions - **Methods of regionalization** - Identification of formal regions, identification of functional regions

## References

1. Darshan Singh Manku (2002) – A regional Geography of the World, Kalyani Publishers
2. David L Clawson (1995) – World Regional Geography, A Developmental Approach, Prentice Hall
3. Johnson, Haarmann, Clawson (2010) World Regional Geography, Prentice Hall
4. Mahesh Chand Puri - Regional Planning in India, Allied Publishers, New Delhi pp.1-11
5. Misra R P – Regional Planning, Concepts, Techniques, Policy and case studies, Concept Publishing Co. Ltd, Delhi
6. Unstead J E – Systematic World Regional Geography

**UNIT II**

**World distribution of Mountains, Plains, Plateaus, Lakes and rivers** – their influence on man

## References

1. Majid Husian – Fundamentals of Physical Geography, Rawat publications, New Delhi pp.152-171



2. Goh Cheng Leong – Certificate Physical and Human Geography, Oxford University Press New Delhi, pp. 12-19
3. Khanna KK, Gupta VK – Economic and Commercial Geography, Sultan Chand and Sons, Educational Publishers, New Delhi
4. RenuBala – Textobook of Geography, Ankit Publishing House, New Delhi
5. Qazi SA, NavaidShabirQazi – Geography of the world, APH Publishing Corporation, New Delhi

### UNIT III

**Major Natural Regions of the World** - Physical, Cultural and Economic aspects  
***Tropical and sub-tropical*** – Equatorial rainforest, Tropical Savannah, Hot deserts, Mediterranean

#### References

1. AlkaGautam (2007) – World Geography, ShardaPustakBhawan, Allahabad
2. Christopher L Satter, Josph J Hobbs – essentials of World Regional Geography, Thompson Books
3. Lal DS – Climatology, ShardaPustakBhawan, Allahabad pp. 340-375
4. Majid Husain (2008) – World Geography, Rawat Publications, New Delhi
5. Khanna KK, Gupta VK – Economic and Commercial Geography, Sultan Chand and Sons, Educational Publishers, New Delhi
6. Robinson H – World Regional Geography
7. Tikha, Bali, Sekhon (2007) – World Regional Geography, New Academic Publishing Co., Jalandhar

### UNIT IV

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

#### References

1. AlkaGautam (2007) – World Geography, ShardaPustakBhawan, Allahabad
2. Khanna KK, Gupta VK – Economic and Commercial Geography, Sultan Chand and Sons, Educational Publishers, New Delhi
3. Majid Husain (2008) – World Geography, Rawat Publications, New Delhi
4. Tikha, Bali, Sekhon (2007) – World Regional Geography, New Academic Publishing Co., Jalandhar

### UNIT V

#### **Modification in environment due to human interference**

- **Land degradation** – Definition, causes – Land degradation in Amazon basin
- **Impact of climate change** – Global warming in Artic, Antarctica, African Savannah, Tropical ever green forest
- **Impact of Globalization** on more economically developed and less economically developed countries
- Global pattern of **Food security** and insecurity

### **Modification in environment due to human interference**

- **Land degradation** – Definition, causes – Land degradation in Amazon basin
- **Impact of climate change** – Global warming in Arctic, Antarctica, African Savannah, Tropical ever green forest
- **Impact of Globalization** on more economically developed and less economically developed countries
- Global pattern of **Food security** and insecurity

### References

1. David Redfern – Climate change, Philip Allan Updates 2010, Hodder Education, Hacheatte, UK, Oxfordshire
2. David Waught – Geography and Integrated Approach, Heleson Thomas Ltd, UK
3. Gautam Kumar – Climate change man and environment, Daya Publishing House, New Delhi
4. Michael Witherick – Food and famine, Philip Allan Updates 2010, Hodder Education, Hacheatte, UK, Oxfordshire
5. Savindra Singh – Environmental Geography, Kalyani Publishers

### Internet Resources

1. [bethgaylor.weebly.com/.../amazon\\_rainforest\\_deforestation-\\_geog\\_text...](http://bethgaylor.weebly.com/.../amazon_rainforest_deforestation-_geog_text...)
2. <https://sites.google.com/site/.../the-consequences-of-land-degradation>
3. [en.wikipedia.org/wiki/Land\\_degradation](http://en.wikipedia.org/wiki/Land_degradation)
4. [www.who.int/globalchange/ecosystems/desert/en/](http://www.who.int/globalchange/ecosystems/desert/en/)
5. [www.preservearticles.com/.../what-are-the-causes-of-land-degradation.ht...](http://www.preservearticles.com/.../what-are-the-causes-of-land-degradation.ht...)
6. [climate.nasa.gov/effects](http://climate.nasa.gov/effects)
7. [www.epa.gov/climatechange/science/causes.htm](http://www.epa.gov/climatechange/science/causes.htm)
8. [www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)
9. [www.independent.co.uk](http://www.independent.co.uk) > [News](#) > [Environment](#) > [Climate Change](#)
10. [wwf.panda.org](http://wwf.panda.org) > [What We Do](#) > [Priority Places](#) > [Amazon](#) > [Problems](#)
11. [www.rainforestfoundationuk.org](http://www.rainforestfoundationuk.org)

## **OPEN COURSE**

### **GG 1551.1 GEOGRAPHY OF TOURISM**

**No. of Credits: 2**

**No. of contact hrs.: 54**

#### **UNIT I**

Geography and tourism-map- types of maps-Elements of map reading-concept of leisure-Travel and tourism-Travel in ancient, medieval, and modern times.

#### **UNIT II**

Elements of tourism-Attraction-classification-Accessibility –Role of transport in tourism Accommodation- types-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-Tourist organizations-WTO, ITDC & KTDC –functions.

### **UNIT V**

Tourism in Kerala-Major natural and cultural attractions

#### References

1. Alan .A. Lew, Mitchell Hall, Alan .A. Williams, A Companion to Tourism-edited by, Black well publishing Ltd ,2004.
2. Ratandeep Singh, Dynamics of Modern Tourism-, KanishkaPublications, New Delhi 1998
3. Singh L.R. Fundamentals of Practical Geography,ShardaPustakBhavanAllahabad,2006.
4. Singh, Ratan Deep, Infrastructure of Tourism in India-,KanishkaPublications,NewDelhi ,1998.
5. Bhatia A.K, International Tourism –Fundamentals and Practices, , Sterling Publishing House.
6. Negi J. M, Tourism and Travel- Concepts and Principles ,GitanjaliPublishing House, Delhi, 1990
7. Cook, A., Laura, Roy .A, Yale, J MarquaJoseph .J, Tourism- The Business of Travel Prentice Hall-2007

### **OPEN COURSE**

### **GG 1551.2 PHYSICAL GEOGRAPHY**

**No. of Credits: 2**

**No. of contact hrs.: 54**

### **UNIT I**

General Geography: Geographical locations - latitude, longitude and time zone, Solar System and Planets.

### **UNIT II**

Landforms: Major relief features, External and Internal forces and agents, features formed by running water, wind and glaciers -Normal cycle of Erosion.

**UNIT III**

Climatology: Atmosphere, Insolation – Temperature, Pressure – Wind– Humidity – Forms of Condensation and Precipitation – types and distribution of rainfall – Air mass – Fronts cyclones

**UNIT IV**

Oceanography: Land and Sea distribution – Bottom Topography of oceans – temperature, salinity, currents, tides, coral reefs, ocean deposits, resources.

**UNIT V**

Elements of biogeography: ecosystems, food chain, food web – environment, habitat and plant- animal association; zoogeography; distribution of major animal groupings; elements of plant geography, distribution of forests and major communities

**References**

1. Dayal, P., (1990) A Text book of Geomorphology, Shukia BookDepot, Patna, India.
2. Lal, D.S., (1996) Climatology, Allahabad, Chaitanya PublishingHouse
3. Strahler. A.H., and Strahler.A.N., (2001) Modern Physical Geography(Fourth Edition), New York; John Wiley and Sons, Inc.
4. Thornbury.W.D., (1954) Principles of Geomorphology, John Wileyand sons, Inc., New York.
5. Worcester, P.G., (1948) A Textbook of Geomorphology, VonNostrand Reinhold, Company, New York.
6. Robinson, H.,Biogeography, ELBS & MacDonald and Evans, London, 1972

**OPEN COURSE****GG 1551.3 GENERAL GEOGRAPHY**

**No. of Credits: 2**

**No. of contact hrs.: 54**

**UNIT 1**

**Physical Geography - Universe and Solar System** – Galaxies, Stars, Planetary System, Eclipses, Motions of the Earth, Latitude and Longitude, Time Zones, Greenwich Mean Time, Standard time, Solstice, Equinoxes; **Earth Structure - Composition of Crust** – Rocks and Minerals; **Earth Movements** – Endogenic forces, Exogenic forces – Volcano, Earthquake - Continental Drift, Plate Tectonics theories **Landforms** – Enumeration of deposition and erosional landforms of Fluvial, Glacial, Marine, Karst, Arid - **General Landforms** – Mountains, Plateaus and Plains – types and their distribution- **Weathering** – Physical,

*Chemical and Organic* – **Atmosphere** – Composition, Structure, Distribution of Pressure belts, Types of Wind; **Hydrosphere** – Major Oceans, Profile of Ocean floor, Islands, Salinity, Coral reefs and Atolls, Ocean currents, Tides.

## UNIT II

**Human Geography** – *World population*, distribution, growth – factors affecting them – Races -Migration, Settlement – Rural, Urban - Urbanization –Tourism – Globalization – Different levels of development of nations – sustainable development

## UNIT III

**Environmental Geography** – Man and Environment relationship – *Ecosystem* – Structure, classification, biomes-food web-food pyramid-nutrient cycles – Bio-diversity - Natural hazards – Environmental degradation – Man’s modification of the biosphere – Environmental problems – Pollution - Environment management and planning –Conservation

## UNIT IV

**Resources of World** with special reference to **India** - Resource types – **Agriculture**: Rice, Wheat, Cotton, Tobacco, Sugarcane, Tea, Coffee, Forestry, Fisheries; **Minerals** – Iron ore, Bauxite, Manganese, Mica; **Power resources** – Coal, Petroleum, Thermal, Hydro, Nuclear; **Industries** – Cotton textiles, Sugar, Iron, Steel, Ship building, Automobiles, Engineering,

## UNIT V

**Geography of India**– Location, Physiographic divisions, Drainage System, climate, Soil, Natural vegetation, Flora and Fauna - Population – Distribution, Growth, Composition, Racial groups, Languages, Religion, Urbanization – **Kerala** – Physiography, Drainage, climate, Major crops, minerals, industries, population and urbanization

## References

1. Dayal P (1990) A Text book of Geomorphology, Shukia Book Depot, Patna, India
2. Lal DS (1996) – Climatology, Chaitanya Publishing House, Allahabad
3. Strahler AH and Strahler AN (2001) Modern Physical Geography, John Wiley and Sons, Inc, New York
4. Khullar, DR, India: A Comprehensive Geography, Kalyani Publishers, New Delhi, 2006
5. Castree Noel, Demeritt David, Liverman Diana, Rhoads Bruce (Ed.) (2009) A Companion to Environmental Geography, Blackwell Publishing Ltd, Hong Kong
6. Linacre Edward and Geerts Bart (2003) Climate and Weather Explained, Routledge London
7. Leong, G. C. and Morgan, G. C. (1982). *Human and Economic Geography*. Singapore: Oxford University Press.
8. Knowles, R. and Wareing, J. (2000). *Economic and Social Geography Made Simple*. New Delhi: Rupa and Company

**OPEN COURSE**

**GG 1551.4BIO-GEOGRAPHY**

**No. of Credits: 2**

**No. of contact hrs.: 54**

**UNIT I**

Definition, Scope and significance of Biogeography – Basic Ecological principles: Darwin's Theory of Evolution – Concepts of Biome, Ecotone and Community

**UNIT II**

Origin of Fauna and Flora – Plant and animal evolution through Geological times – Distribution of Plant life on Earth and its relation to Soil types, Climates and Human Practices.

**UNIT III**

Problems of extinction of plant and animal life - Habitat degradation- and their conservation - process of desertification-its consequences and its management principles. Industrial effluent and its effect on fresh water biology management practices, (Special Reference to India.)

**UNIT IV**

Major Terrestrial biomes: Study of biomes with reference to regional climate, vegetation, structure, ecological succession, species richness, geographical affinities, soils, faunal adaptations, mapping at a global level (Applicable for both Unit – IV and Unit - V)

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**

1. Cox, C.D. and Moore P.D., Biogeography: An Ecological and Evolutionary Approach 5<sup>th</sup>edn., Blackwell, 1993
2. Huggett, R.J., Fundamentals of Biogeography, Routledge, 2004
3. Llies,J., Introduction to Zoogeography, McMillan, London, 1974

4. Khoshoo, T.N. and Sharma M. (ed.), Indian Geo-sphere-Biosphere Har-Anand Publication, Delhi, 1991 2
5. Lapedes, D.N. (ed), Encyclopedia of Environmental Science, McGraw Hill, 1974
6. Mathur H.S., Essentials of Biogeography, Anuj Printers, Jaipur, 1998 Pears, N., Basic Biogeography 2<sup>nd</sup> edition, Longman, London, 1985
7. Simmon I.G., Biogeography, Natural and Cultural, Longman, London, 1974
8. Tivy, J., Biogeography: A study of Plants in Ecosphere, Oliver an Boyd, 1992
9. Ian, N Healey, C. Barry Cox, Peter D. Moore, Biogeography: An Ecological and Evolutionary approach, Blackwell, Oxford, 1972
10. Pielou E.C., Biogeography, John Wiley, New York, 1973
11. Husain M., Biogeography, Anmol Publication, New Delhi, 1994
  
12. Robinson, H., Biogeography, ELBS & MacDonald and Evans, London, 1972

### **GG 1641: CARTOGRAPHY**

**No. of credits : 4**

**No. of contact hours : 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: Elements of maps, procedure of mapping data – map compilation– elements of generalization; simplification, classification – controls of generalization – symbolization – thematic and complex mapping – types and problems

#### **UNIT III**

Map design and layout – principles; Toponymy and map reproduction; Automated and computer cartography

#### **UNIT IV**

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 Topographic maps

References

1. Misra R. P and Ramesh A, (1989) Fundamentals of Cartography. Concept Publishing Company, New Delhi
2. Robinson, A.H et al, (1995) Elements of Cartography, Wiley
3. Jan Kraak, Menno and OrmelingFerjan (2003) Cartography: Visualization of Geospatial Data, Prentice Hall
4. Deetz, Charles Henry (2005) Cartography, University Press of Pacific

## **GG 1642: ENVIRONMENTAL GEOGRAPHY**

**No. of credits : 4**

**No. of contact hours : 72**

### **UNIT I**

Nature and Scope of Environmental Geography – Types of Environment-Physical-Biological-Cultural- Components of Environment –Biotic –Abiotic;Human-Environment Relationship – Recent trends.

#### References

1. Bodkin, E.: Environmental studies, Charles E. Merrill Pub. Co., Columbus, Ohio, 1982
2. Nobel and Wright: Environmental Science, Prentice Hall, New York, 1996

### **UNIT II**

Concept of Ecosystem: its structure and classification; Functions of the Ecosystem: Food-chain, Food-web, Food-pyramid and Nutrient Cycles

#### References

1. Odum, E.P. : Fundamentals of Ecology, W.B. Saunders, Philadelphia, 1971
2. Manners, I.R. and Mikesell, M.W.(eds), Perspectives on Environment, Commission on College Geography, Publ. no. 13, Washington D.C.,1974

### **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

1. Russwurm, L.H. and Sommerville, E.(eds.) : Man's Natural Environment – A systems Approach, Duxbury, Massachusetts, 1985
2. R.B Singh,Environmental Geography,Heritage Publishers,1990



**UNIT IV**

Environment and health – Environment and development; Environmental Movements (Chipko, Narmada BachaoAndolan), environmental Movements in Kerala (MadhavGadgil/KasturiRangan Reports, Aranmula Airport, Various Wetland Reclamations and localized anti-reclamation movements)

## References

1. Agarwal, A. and Sen, S.: The Citizen's Fifth Report, Centre for Science and Environment. New Delhi 1999
2. Chandna, R.C.: Environmental Awareness, Kalyani Publishers, New Delhi, 1998
3. Sharma, H.S.: RathambhoreSanctuary – Dilemma of Eco-development, Concept.

**UNIT V**

Environmental Management and Planning: laws, valuation and impact assessments, Concept of Sustainable Development

## References

1. Noel Castree, David Demeritt, Diana Liverman, Bruce Rhoads, A Companion to Environmental Geography, Blackwell companions,2009
2. Baker, Susan: Sustainable Development,Routledge,2006

**GG 1661 - AN INTRODUCTION TO DISASTER MANAGEMENT**

**No. of Credits: 2**

**No. of Contact hrs. 54**

**UNIT I**

Disaster Management- Meaning and Definition; Definitions of Disaster, Hazard, Risks, Vulnerability, and Resilience and their relationship; Classification of disasters- Human induced and Natural; Causes of Disasters; impacts of disasters. Factors affecting Vulnerability – Economic, Political, Environmental and Social

## References

- [www.ifrc.org/en/what-we-do/disaster-management/](http://www.ifrc.org/en/what-we-do/disaster-management/)
- Coppola, Damon (2011), **Introduction to International Disaster Management, Elsevier** ISBN: 978-0-12-382174-4
- Abbott ,Patrick Leon (2008), Natural Disasters ,McGraw-Hill,**ISBN-13:** 978-0072428650

**UNIT II**

Disaster Management Cycle; Disaster Management Phases- Prevention and Preparedness, Mitigation, Response and Recovery; Community based disaster management - Roles and responsibilities of community, An over view of Disaster Management Act – Disaster

Management Strategies to be adopted by Panchayati raj institutions, local bodies, states and the centre.

#### References

- <http://www.mnmk.ro/documents/2008/2008-6.pdf>
- Carresi,A.L, et al (2013) **Disaster Management: International Lessons in Risk Reduction, Response and Recovery** , Routledge, U.K.

[http://www.ndma.gov.in/images/ndma-pdf/DM\\_act2005.pdf](http://www.ndma.gov.in/images/ndma-pdf/DM_act2005.pdf)

#### 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

- <http://www.ndma.gov.in/en/vulnerability-profile.html>
- <http://www.ndma.gov.in/en/media-public-awareness/disaster/naturaldisaster/earthquakes.html>
- <http://www.ndma.gov.in/en/media-public-awareness/disaster/natural-disaster/floods.html>

<http://www.ndma.gov.in/en/media-public-awareness/disaster/natural-disaster/cyclones.html>

#### 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

- Carresi,A.L, et al (2013) **Disaster Management: International Lessons in Risk Reduction, Response and Recovery** , Routledge, U.K.

#### UNIT V

Standard Operating Procedures (SOP) – Definition and the need for SOP's. Gender and culture sensitive disaster management - purpose. Disaster management plan- components

#### References

<http://ndmindia.nic.in/SOP-NDM-2010.pdf>

1. Kurowa, Julio, Disaster Reduction: Living in harmony with nature Quebecor World Peru S.A

2. C Emdad Hague, Mitigation of natural hazards and disasters: International perspectives, Springer, 2005
3. Shaw Rajib and Krishnamurthy R.R (2009) Disaster Management: Global Challenges and Local Solutions, Universities Press
4. Kapoor Mukesh, (2009) Disaster Management, Universities Press
5. DiwanParang, (2010) A Manual on Disaster Mangement, Universities Press

## **GG 1643- PRACTICAL PAPER II**

### **REPRESENTATION AND INTERPRETATION OF GEOGRAPHIC DATA**

No. of Credits: 4

No. of contact hours: 108

#### **UNIT I**

Graphical Representation and analysis of Socio-economic data by means of Line graph – Simple, Multiple; Bar Graph – Simple, Compound/divided bar graph, Multiple Bar Diagram, Band Graph/Percentage Bar Graph, Rectangular diagram, Pie Diagram, Ring Diagram, Comparative circles, Sphere Diagram, Pictogram, Age-Sex Pyramid, Traffic Flow Diagram

#### **UNIT II**

Representation of temperature, pressure, wind and rainfall data by means of line and bar graph – isotherms – isobars – isohyets, construction and significance of Taylor's Climograph – Hythergraph – Windrose diagram

#### **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:**

1. Monkhouse and Wilkinson: Maps and Diagrams, Metheun and Company
2. R.L.Singh: Elements of Practical Geography, Kalyani Publishers
3. Gopal Singh: Map work and Practical Geography, Vikas Publishing House Pvt. Limited

4. M H Siddiqui: Teaching of Geography, Chaman Enterprises
5. Graham T. Richardson: Illustrations – Everybody’s complete and practical handbook, The Humana Press Inc., NJ
6. [www.skwirk.com/](http://www.skwirk.com/)
7. [www.gsa.qld.edu.au/](http://www.gsa.qld.edu.au/)
8. Steven A. Ackerman, John A.Knox: Meteorology, Jones and Bartlett Learning
9. [www.hpc.ncep.noaa.gov/](http://www.hpc.ncep.noaa.gov/)
10. [www.imd.gov.in/](http://www.imd.gov.in/)

### **GG 1644: PRACTICAL PAPER III**

#### **MAP READING AND ANALYSIS**

No. of Credits: 4

No. of contact hours: 54

#### **UNIT I**

Maps and their classification

#### **UNIT II**

Representation of relief in maps – Spot heights, hachures, hill shading, layer tints and contours – representation of important landform features by contours – Uniform/conical hill, uniform depression, concave slope, convex slope, uniform slope, terraced slope, v-shaped valley, gorge, u-shaped valley, hanging valley, knoll, ridge and saddle, escarpment, spur, re-entrant, sea-cliff, waterfall, cirque, Plateau, Dissected plateau

#### **UNIT III**

Concept of slope and gradient, intervisibility

#### **UNIT IV**

Study of Indian Topographic Maps – Lay out and numbering, conventional signs 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:**

1. Monkhouse and Wilkinson: Maps and Diagrams, Metheun and Company
2. R.L.Singh: Elements of Practical Geography, Kalyani Publishers
3. Gopal Singh: Map work and Practical Geography, Vikas publishing house pvt. Limited
4. K.K.Rampal: Mapping and compilation – methods and techniques, Concept and Publishing House
5. Rollin D.Salisbury: Interpretation of Topographic maps, Nabu Press, 2012
6. [www.nwcg.gov/](http://www.nwcg.gov/)

7. <http://geology.isu.edu/>
8. <http://www.nrm.qld.gov.au/>
9. Ian F.Mahaney: Topographic Maps, PowerKids Press
10. Nelson Petrie: Analysis and Interpretation of Topographic Maps, Orient BlackswanPvt.Ltd

### **GG 1645: PRACTICAL PAPER IV SURVEYING AND LEVELLING**

No. of Credits: 3

No. of contact hours: 90

#### **UNIT I**

Principles of surveying – equipment for land survey – their advantages and disadvantages

#### **UNIT II**

Surveying by means of

1. Chain and Tape – preparation of plans and calculation of area
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
5. Dumpy level – drawing of profiles

#### **UNIT III**

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

#### **References:**

1. R. L .Singh: Elements of Practical Geography, Kalyani Publishers
2. Gopal Singh: Map work and Practical Geography, Vikas Publishing House Pvt. Limited
3. <http://www.whycos.org/>
4. [www.levelling.uhi.ac.uk/](http://www.levelling.uhi.ac.uk/)
5. <https://archive.org/details/surveyingfieldwo00will>
6. S.S.Bhavikatti: Surveying and Levelling, Vol.I, IK International Publishing House Pvt Ltd., New Delhi, 2009
7. R. Subramanian: Surveying and Levelling, OUP India, 2013
8. [www.academia.edu/.../CHAIN AND TAPE SURVEY G](http://www.academia.edu/.../CHAIN_AND_TAPE_SURVEY_G)
9. <http://nptel.ac.in/>
10. [www.bajr.org/Documents/BasicSurvey.pdf](http://www.bajr.org/Documents/BasicSurvey.pdf)

**Note: Of the total 80 marks, 10 marks are earmarked for Field Work/ Study tour report**