

Syllabus for
BA/B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)
Course effective from the academic year 2019-20

1st Semester

This is approved in the Academic Council held on 8/11/2019



GAUHATI UNIVERSITY

Guwahati-781014

September 2019

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Class 1 Hour 1	Duration	Credit
1 Theory Class	1 Hour	1
1 Tutorial Class	1 Hour	1
1 Practical Class	2 Hours	1

Credit and Marks distribution scheme for CBCS Curriculum: Honours Course (1st Semester)

Semester	Course Type	Paper Code	Paper Name	Credits	Full Marks
Semester I Marks 400 Credit 22	Ability enhancement Course	ENG-AE-1014/ ASM-AE-1014	English Communication Paper, Assamese/ MIL Communication paper	4	100
	Honours Core	GGY - HC – 1016	Geomorphology (Theory + Practical)	4+2=6	100
		GGY - HC – 1026	Cartographic Techniques (Theory + Practical)	4+2=6	100
	Generic Elective paper (Anyone)*	GGY- HG- 1016	Physical Geography	6	100
		GGY - HG – 1026	Disaster management	6	100
		GGY - HG – 1036	Geography of Tourism	6	100

B.A./B.Sc. (Honours) Geography - CBCS

Subject	Semester	Paper type	Paper Code	Paper name	Total Marks	Marks Distribution					Paper Credit
						External			Internal		
						Theory	Practical	Sessional	Practical /Assignments	Attendance	
Geography	1 st	Honours Core	GGY-HC-1016	Geomorphology (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	1 st	Honours Core	GGY-HC-1026	Cartographic Techniques (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	1 st	Generic Elective	GGY-HG-1016	Physical Geography	100	80		10	6	4	6
Geography	1 st	Generic Elective	GGY-HG-1026	Disaster management	100	80		10	6	4	6
Geography	1 st	Generic Elective	GGY-HG-1036	Geography of Tourism	100	80		10	6	4	6

*Honours Geography students have to take generic subjects from other disciplines

NB: The examinations for the practicals for course GGY-HC 1016 and GGY-HC-1026 will be held on same day. There will be two questions of 8 marks along with 2 marks for viva and 2 marks for practical note book for each paper. Students will prepare one practical book for evaluation having two parts for paper GGY-HC-1016 and GGY-HC-1026. Examiners will submit marks in two separate marks folio.

Syllabus for
B.A./B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)

Name and Code of the Courses

Core Courses (14 Compulsory Papers)

Semester I

GGY - HC - 1016: Geomorphology

GGY - HC - 1026: Cartographic Techniques

Semester II

GGY - HC - 2016: Human Geography

GGY - HC - 2026: Climatology and Biogeography

Semester III

GGY - HC - 3016: Climatology

GGY - HC - 3026: Geography of India

GGY - HC - 3036: Statistical Methods in Geography (Practical)

Semester IV

GGY - HC - 4016: Economic Geography

GGY - HC - 4026: Environmental Geography

GGY - HC - 4036: Remote Sensing and GIS (Practical)

Semester V

GGY - HC - 5016: Regional Planning and Development

GGY - HC - 5026: Field Work and Research Methodology (Practical)

Semester VI

GGY - HC - 6016: Evolution of Geographical Thought

GGY - HC - 6026: Disaster Management based Project Work (Practical)

Skill Enhancement Course (2 Compulsory Papers)

Semester III

GGY - SE - 3014: Remote Sensing (Practical)

GGY - SE - 3024: Advanced Spatial Statistical Techniques

Semester IV

GGY - SE - 4014: Geographical Information System (Practical)

GGY - SE - 4024: Research Methods (Practical)

Discipline-Specific Elective Course for Honours (4 Compulsory Papers)

Semester V

DSE-1

GGY - HE - 5016: Population Geography

GGY - HE - 5026: Resource Geography

DSE-2

GGY - HE - 5036: Urban Geography

GGY - HE - 5046: Agricultural Geography

Semester VI

DSE-3

GGY - HE - 6016: Geography of Health and Wellbeing

GGY - HE - 6026: Political Geography

DSE-4

GGY - HE - 6036: Hydrology and Oceanography

GGY - HE - 6046: Social Geography

GGY - HE – 6056: Project Work/Dissertation

Note: Dissertation/Project: Engaging Students in a Project/ Dissertation work, which requires knowledge application and problem-solving, is considered to be important in the learning process. All students enrolled in an undergraduate degree program (Honours) will have the option of choosing to undertake Project/Dissertation work for 6 credits in lieu of a 6 credit Discipline Specific Elective course in the Sixth semester only

Generic Elective Course for Honours (4 Compulsory Papers)

Semester I (Anyone)

GGY- HG- 1016 Physical Geography

GGY - HG - 1026: Disaster Management

GGY - HG - 1036: Geography of Tourism

Semester II (Anyone)

GGY- HG- 2016 Human Geography

GGY - HG - 2026: Spatial Information Technology

GGY - HG - 2036: Regional Development

Semester III (Anyone)

GGY - HG - 3016: General Cartography (Practical)

GGY - HG - 3026: Climate Change: Vulnerability and Adaptation

GGY - HG - 3036: Rural Development

Semester IV (Anyone)

GGY - HG - 4016: Environmental Geography

GGY - HG - 4026: Industrial Geography

GGY - HG - 4036: Sustainable Development

Note: Practical paper will not have tutorials.

Core Course

CBCS-based U.G. Course in Geography, 2019
Syllabus of Core Course

Course Name: Geomorphology
Paper Code: GGY - HC - 1016

Course objectives

- To provide a general idea about the topographic and surficial characteristics of the earth's surface to the students.
- To make the students aware of the dynamic geomorphic processes responsible for the development of landforms of varied types and nature.
- To apply scientific knowledge on landform development based on geomorphic concepts, principles and theories.

Course outcomes

- The students will learn that the earth is unstable and it is undergoing constant changes due to dynamic earth's processes.
- The students will come to know about the meaning and scope of geomorphology as a major branch of Physical Geography.
- After gaining knowledge based on the contents embodied in this paper, the students will be able to realize the importance of geomorphological knowledge as applied in various developmental activities executed in different areas.

Geomorphology Part A (Theory) Credit 4 (40 Classes)

1. Geomorphology: Nature, Scope and Significance (4 classes)
2. Structure and characteristics of the earth's crust and interior (4 classes)
3. Forces of landform development: Endogenetic forces (folding, faulting earthquakes and volcanoes) and exogenetic forces (weathering, erosion and mass wasting) (10 classes)
4. Earth Movements: Continental drift theory, Isostasy, Mountain building: views of Holmes and Kober, Plate tectonics. (10 classes)
5. Concept of Cycle of Erosion: Davis and Penck, Landform development under Fluvial, Aeolian and Glacial conditions. (12 classes)

Geomorphology Part B (Practical)

Credit 2

(20 classes of two-hour duration each)

1. Study of Topographical Maps: Topographical map content and numbering system, the general interpretation of toposheets in respect of physical characteristics. (5 classes)
(3 Assignments)
2. Profile Drawing (serial, superimposed, projected and composite). (4 classes)
(3 Assignments)
3. Preparation of Slope Map / Relative Relief Map: Wentworth's method and Smith's method (5 classes) (3 Assignments)
4. Delineation of drainage basin and drainage network, construction of cross and long profiles, stream ordering by Horton and Strahler's method (6 classes) (6 Assignments)

Reading List

1. Bloom A. L., 2003: *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: *World Geomorphology*, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), *Geosystems: An Introduction to Physical Geography*, 8 Ed., Macmillan Publishing Company
4. Kale V. S. and Gupta A., 2001: *Introduction to Geomorphology*, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: *Fluvial Forms and Processes*, Edward Arnold Publishers, London.
6. Richards K. S., 1982: *Rivers: Form and Processes in Alluvial Channels*, Methuen, London.
7. Selby, M.J., (2005), *Earth's Changing Surface*, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to Physical Geology*, 4th Edition, John Wiley and Sons.
9. Strahler, A. N. and Strahler, A. H., 2008: *Modern Physical Geography*, John Wiley & Sons, New York.
10. Thornbury W. D., 1968: *Principles of Geomorphology*, Wiley.
11. Steers, J.A., 1988: *The Unstable Earth*, Kalyani Publishers, New Delhi.
12. Monkhouse, F.J. and Wilkinson, H.R., 1989: *Maps and Diagrams*, B.I. Publications Ltd., Mumbai.

13. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
14. Singh, L.R., 2013: *Fundamentals of Practical Geography*, Sharda Pustak Bhawan, Allahabad.
15. Sarkar, A., 2015: *Practical Geography: A Systematic Approach*. Orient Black Swan Private Ltd., New Delhi
16. Misra, R. P. and Ramesh, A., 1989: *Fundamentals of Cartography*, Concept Publishing Company, New Delhi.

CBCS-based U.G. Course in Geography, 2019
Syllabus of Core Course

Course: Cartographic Techniques
Paper Code: GGY - HC - 1026

Course objectives

This course on Cartographic Techniques provides a general understanding of the field of cartography including its modern developments and importance in geographic study. It more particularly focuses on various types of map scale and their construction; principles of map projection and construction of selected few; and preparation of thematic maps through the representation of various geographical data using different cartographic techniques.

Course outcomes

- Understanding the importance of various cartographic techniques in geographical study
- General understanding of map type, map scale and map content.
- An acquaintance of different cartographic techniques for representation of various facets of physical and human geographic data of any area.

Cartographic Techniques Part A (Theory) Credit 4 (40 classes)

1. Cartography – Meaning, Development (Traditional and Modern Cartography) and Importance of Cartography in Geography. (8 classes)
2. Shape and size of the earth, coordinate system (latitude and longitude) (8 classes)
3. Maps: Types, scale and content, representation of point, line and area in maps (8 classes)
4. Map Projections: Concept of Map Projection, Classification of Map Projections and choice of map projection. (10 classes)
5. Thematic mapping: Concept and types (6 classes)

Cartographic Techniques Part B (Practical) Credit 2
(20 classes of two-hour duration each)

1. Construction of graphical scale (linear, diagonal and comparative); conversion of map scale (6 classes) (10 Assignments)
2. Construction of graticules of Zenithal Polar Gnomonic and Stereographic, Simple Conical with one standard parallel, Bonne's conical, Gall's Stereographic Cylindrical along with their properties, uses and limitations. (8 classes) (5 Assignments)

3. Preparation of thematic maps (choropleth, isopleth and pie diagram) for representing various physical and human geographic data. (6 classes) (6 Assignments)

Reading List

1. Anson R. and Ormelling F. J., 1994: *International Cartographic Association: Basic Cartographic Vol.*, Pergaman Press.
2. Gupta K.K. and Tyagi, V. C., 1992: *Working with Map*, Survey of India, DST, New Delhi.
3. Misra R.P. and Ramesh, A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
4. Monkhouse F. J. and Wilkinson H. R., 1973: *Maps and Diagrams*, Methuen, London.
5. Rhind D. W. and Taylor D. R. F., (eds.), 1989: *Cartography: Past, Present and Future*, Elsevier, International Cartographic Association.
6. Robinson A. H., 2009: *Elements of Cartography*, John Wiley and Sons, New York.
7. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
8. Sarkar, A. (2015) *Practical Geography: A Systematic Approach*. Orient Black Swan Private Ltd., New Delhi
9. Singh, L.R., 2013: *Fundamentals of Practical Geography*, Sharda Pustak Bhawan, Allahabad.
10. Talukder, S., 2008: *Introduction to Map Projections*, EBH Publishers (India), Guwahati.

Generic Elective Course for Honours

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Physical Geography

Paper Code: GGY-HG-1016

Course objectives

- a) To provide a general idea about the topographic and surficial characteristics of the earth's surface to the students.
- b) To make the students aware of the dynamic geomorphic processes responsible for the development of landforms of varied types and nature.
- c) To impart applied scientific knowledge on landform development based on geomorphic concepts, principles and theories.

Specific outcomes

- (i) The students will learn that the earth is unstable and it is undergoing constant changes due to dynamic earth's processes.
- (ii) The students will come to know about the meaning and scope of geomorphology, which a major branch of Physical Geography.
- (iii) After gaining knowledge based on the contents embodied in this paper, the students will be able to realize the importance of geomorphological knowledge as applied in various developmental activities executed on the land and over the earth's surface.

Physical Geography

6 credit (60 classes)

1. Physical Geography – Definition and Scope, Components of Earth System.
2. Atmosphere – Composition and the vertical structure, Heat Balance, Global Circulation Pattern, Monsoon, Climatic Classification (Koppen).
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence,
4. Endogenetic and Exogenetic processes, Works of River, Fluvial Cycle of Erosion – Davis
5. Hydrosphere – Hydrological Cycle, Ocean Bottom Relief Features, Tides and Currents.

Reading List

1. Conserva H. T., 2004: Illustrated Dictionary of Physical Geography, Author House, USA.
2. Gabler R. E., Petersen J. F. and Trapasso, L. M., 2007: Essentials of Physical Geography (8th Edition), Thompson, Brooks/Cole, USA.
3. Garrett N., 2000: Advanced Geography, Oxford University Press.
4. Goudie, A., 1984: The Nature of the Environment: An Advanced Physical Geography, Basil Blackwell Publishers, Oxford.
5. Hamblin, W. K., 1995: Earth's Dynamic System, Prentice-Hall, N.J.
6. Husain M., 2002: Fundamentals of Physical Geography, Rawat Publications, Jaipur.
7. Monkhouse, F. J. 2009: Principles of Physical Geography, Platinum Publishers, Kolkata.
8. Strahler A. N. and Strahler A. H., 2008: Modern Physical Geography, John Wiley & Sons, New York.

Generic Elective Course for Honours

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Disaster Management

Paper Code: GGY - HG - 1026

Course objectives

- To make the students aware of the types and nature of disasters on Spatio-temporal dimensions.
- To provide information and knowledge about how disasters can be checked and managed.

Course outcomes

- The students will be able to analyse the causes and management issues related to disasters taking place in students' own localities.
- (ii) The students will be well versed with the various disaster management strategies and their applicability in different situations.

Disaster Management

1. Hazard and Disasters: Concept, Definition, and types
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping
3. Disasters in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping.
4. Manmade disasters: Causes, Impact, Distribution and Mapping
5. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disasters

Reading List

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Geography of Tourism

Paper Code: GGY - HG - 1036

Course objectives

- This paper introduces students to the field of tourism from the lens of a geographer and its specificities
- It seeks to develop new insights among students on how tourism and allied activities shape the economy and geography of an area, region, country or the globe.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical factors tangent on tourism activities and how geographers seek to address issues of development and carrying capacities of varied environments.
- It will build skills for students seeking to enrol in a research programme and/or provide openings for them with tourism/eco-tourism planning agencies.

Geography of Tourism

1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism by Robinson.
2. Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage
3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings Incentives Conventions and Exhibitions (MICE)
4. Impact of Tourism: Economy; Environment; Society
5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert, North East India and Coastal Areas; National Tourism Policy

Reading List

1. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi.
2. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.

3. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
4. Page, S. J. (2011) Tourism Management: An Introduction, Butterworth-Heinemann-The USA. Chapter 2.
5. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
6. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
7. Singh Jagbir (2014) "Eco-Tourism" Published by - I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

Syllabus for
BA/B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)
Course effective from the academic year 2019-20

IInd Semester

This is approved in the Academic Council held on 8/11/2019



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September 2019

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Class 1 Hour 1	Duration	Credit
1 Theory Class	1 Hour	1
1 Tutorial Class	1 Hour	1
1 Practical Class	2 Hours	1

Credit and Marks distribution scheme for CBCS Curriculum: Honours Course (IInd Semester)

Semester	Course Type	Paper Code	Paper Name	Credits	Full Marks
Semester II Marks 400 Credit 22	Ability enhancement Course	ENV-AE-2014	Environmental Studies	4	100
	Honours Core	GGY - HC – 2016	Human Geography (Theory + Practical)	4+2=6	100
		GGY - HC – 2026	Climatology and Biogeography (Theory + Practical)	4+2=6	100
	Generic Elective paper	GGY- HG- 2016	Human Geography (Theory + Practical)	4+2=6	100

Subject	Semester	Paper type	Paper Code	Paper name	Total Marks	Marks Distribution					Paper Credit
						External		Internal			
						Theory	Practical	Sessional	GD/Assignments	Attendance	
Geography	IIInd	Honours Core	GGY-HC-2016	Human Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IIInd	Honours Core	GGY-HC-2026	Climatology and Biogeography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IIInd	Generic Elective*	GGY-HG-2016	Human Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6

*Honours Geography students have to take generic subjects from other disciplines

NB: The examinations for the practicals for course GGY-HC 2016 and GGY-HC-2026 will be held on same day. There will be two questions of 8 marks along with 2 marks for viva and 2 marks for practical note book for each paper. Students will prepare one practical book for evaluation having two parts for paper GGY-HC-1016 and GGY-HC-1026. Examiners will submit marks in two separate marks folio.

Core Course

CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course name : Human Geography

Paper code : GGY HC – 2016

Total Marks:100 (including 20 marks for internal assessment)

Course objectives

- This paper is a core paper that intends to introduce students to human geography and how humankind transforms and gets transformed by geographic space.
- It seeks to develop new insights among students on the relevance of human-environmental relationships and how a spatial perspective shapes these relationships.

Course outcomes

- The paper will be useful for students in developing ideas on human-environment issues that geographers usually address in the anthropocene
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Human Geography (Theory)

60 classes

1. Defining the field of human geography: Meaning and Scope; Nature of human geography and its relation with other social sciences. 8classes.
2. Schools of human geography: Human Ecology, Landscape and Locational. 8classes.
3. Paradigms of man-environment relationship study: Determinism, Possibilism, Neodeterminism, and Cultural Determinism. 14 classes
4. Man and environment relationship: Impact of environment on man in different geographical conditions; Impact of man and its activities on environment in different parts of the world; Impact of Population growth on development and environmental degradations; House types in different environmental conditions. 10classes
5. Man and culture: Ethnicity and Race; Global patterns of racial composition of population and associated characteristics of major racial groups; Global patterns of religious and linguistic composition of population; Tribal people of India and their socio-economic characteristics. 10classes
6. Human Settlements: Rural and urban settlements - Origin, growth and morphological characteristics; Types/Patterns of rural settlements; Burgess and Hoyt theories of internal structure of town; patterns of urbanization: Global and Indian scenario. 10classes

Human Geography (Practical)

30 classes

1. Traditional house types of selected ethnic groups of N.E. India and India. (2 Assignments)
2. Trend of population growth in the world in relation to five most populous countries of the world using line graph. (2 Assignments)
3. Religious and Linguistic composition of population in the world and five most populous countries of the world using pie-graph. (2 Assignments)
4. Spatial patterns of scheduled tribes population and urban population in India at state level through choropleth map (based on percentage and LQ). (2 Assignments)
5. Drawing of major rural settlement types/patterns; Morphological diagram of a village and a town (preferably based on student's own village and town); Drawing of internal model structure of towns according to Burgess and Hoyt. (4 Assignments)
6. Mapping of distribution of major racial and linguistic groups of population in the world. (2 Assignments)
7. Practical Note book 2 marks
8. Viva-voce 2 marks

Reading List

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
3. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
4. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
5. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course name : Climatology and Biogeography

Paper code : GGY HC - 2026

Total Marks:100 (including 20 marks for internal assessment)

Course objectives

- This paper is a core paper that intends to introduce students to the rationale underlying climatological studies in geography
- It seeks to develop new insights among students on the relevance of climatic variable stangenting on climate change.
- This paper intend to develop an understanding in the physical and human factors responsible for the distribution, conservation, and restriction of living organisms on the earth surface.

Course outcomes

- The paper will be useful for students in developing ideas on climate related aspects of geographical analyses.
- The paper will help provide theoretical insights and perspectives to students if they wish to pursue a research programme in future.
- Students will develop a basic understanding of the introductory concepts in biogeography.
- The paper be very useful for students preparing for UGC NET-JRF / SLET exam and other competitive exams including civil services.

Part I: Theory (60 marks)

Group A: Climatology (35 marks)

35 classes

1. Atmospheric Composition and Structure ; Variation with Altitude, Latitude and Season.
(5 Classes)
2. Insolation and Temperature; Factors and Distribution and Heat Budget. (5 Classes)
3. Atmospheric Pressure and Wind system; Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams. (5 Classes)
4. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog, Precipitation Types, Stability and Instability. (5 Classes)
5. Climatic classification of Koppen and Trewartha. (5 Classes)
6. Cyclones and anticyclones; Tropical Cyclones, Extra Tropical Cyclone, (5 Classes)

7. Monsoon - Origin and Mechanism. (5 Classes)

Group B: Biogeography (25 marks) 25 classes

1. Meaning, Scope and Significance of biogeography (5 Classes)
2. Ecology and Ecosystem, Structure and functioning of ecosystem (5 Classes)
3. Global distribution of major plants and animals. (5 Classes)
4. Biomes and Biodiversity hotspots of the world. (5 Classes)
5. Soil as a component of environment , soil formation process and factors , soil composition and horizon, Soil types and their distribution in India (5 Classes)

Part II: Practical (20 marks)

Climatology (one question of 8 marks)

1. Interpretation of Indian Weather map for Monsoon and non–monsoon seasons/months based on various weather symbols depicted on maps.
2. Preparation of weather reports of Indian subcontinent by analyzing the weather satellite images of at least three consecutive days (e.g. INSAT 3D, NOAA satellite).
https://mausam.imd.gov.in/imd_latest/contents/satellite.php#.
3. Preparation of rainfall-temperature graphs; hythergraph, climograph and ergograph taking data from India/ N.E.India/Assam;
4. Calculation of average annual rainfall and variability of annual rainfall and preparation of rainfall distribution and variability maps (using isopleths).

Biogeography (one question of 8 marks)

5. Mapping of protected areas (National park, biosphere reserve and wildlife sanctuary) of Assam/ N.E. India/ India.
6. Mapping of phytogeographic and zoogeographic regions of the world.
7. Mapping of Biodiversity hotspots of the world.
8. Mapping of Soil types of Assam/N.E. India and Soil horizons.

9. Practical Note book (Climatology and Biogeography) 2 marks

10. Viva-voce 2 marks

Reading List

1. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
2. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
3. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
6. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
7. Gupta L S(2000): *Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya*, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, D S (2006): *Jalvayu Vigyan*, Prayag Pustak Bhavan, Allahabad
9. Vatal, M (1986): *Bhautik Bhugol*, Central Book Depot, Allahabad
10. Singh, S (2009): *Jalvayu Vigyan*, Prayag Pustak Bhawan, Allahabad
11. *Soil and Biogeography*, Kalyani Publishers., Manideep Raj
12. Cox, C.B., Moore, P.D. and Ladle, R., 2016. *Biogeography: an ecological and evolutionary approach*. John Wiley & Sons.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Course

Course Name: Human Geography

Paper Code: GGY-HG-2016

Total Marks:100 (including 20 marks for internal assessment)

Course objectives

- This paper is a core paper that intends to introduce students to human geography and how humankind transforms and gets transformed by geographic space.
- It seeks to develop new insights among students on the relevance of human-environmental relationships and how a spatial perspective shapes these relationships.

Course outcomes

- The paper will be useful for students in developing ideas on human-environment issues that geographers usually address in the anthropocene
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Human Geography (Theory) 60 Marks

(60 classes)

1. Field of human geography: meaning, scope and importance. 10 classes
2. Concepts of man-environment relationship: Determinism and Possibilism. 10 classes
3. Impact of environment on man; impact of man on environment; population growth and environmental changes; house types in different environmental conditions. 14 classes
4. Global patterns of racial, religious and linguistic composition of population. 12classes
5. Origin, growth and characteristics of rural and urban settlements; Patterns of rural settlements; Patterns of urbanization in India and N.E. India. 12 classes

Human Geography (Practical) 20 Marks

(30 classes)

1. Traditional house types of selected ethnic groups of North-East India. (1 assignment)
2. Trend of population growth in the world in relation to five most populous countries of the world using line graph. . (1 assignment)
3. Religious composition of population in the world and three most populous countries of the world using pie-graph. (2 assignments)
4. Spatial patterns of urban population in Assam and N.E. India at state level through choropleth map. (2 assignments)

5. Drawing of major rural settlement types/patterns; Morphological diagram of a village and a town (preferably based on student's own village and town). . (3 assignments)
6. Practical Note book 2 marks
7. Viva-voce 2 marks

Reading List:

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
3. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
4. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
5. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

Syllabus for
BA/B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)
Course effective from the academic year 2019-20

IIIrd Semester

This is approved in the Academic Council held on 8/11/2019



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Guwahati-781014

September 2019

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CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Climatology

Paper Code: GGY - HC - 3016

Course objectives

- This paper is a core paper that intends to introduce students to the rationale underlying climatological studies in geography
- It seeks to develop new insights among students on the relevance of climatic variable stangenting on climate change.

Course outcomes

- The paper will be useful for students in developing ideas on climate related aspects of geographical analyses.
- The paper will help provide theoretical insights and perspectives to students if they wish to pursue a research programme in future.
- The paper be very useful for students preparing for UGC NET-JRF / SLET exam and other competitive exams including civil services.

Climatology

1. Atmospheric Composition and Structure – Variation with Altitude, Latitude and Season.
2. Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.
3. Atmospheric Pressure and Winds – Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams.
4. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability; Climatic Regions (Koppen)
5. Cyclones – Tropical Cyclones, Extra Tropical Cyclones, Monsoon - Origin and Mechanism.

Reading List

1. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
2. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
3. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
6. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
7. Gupta L S(2000): *Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya*, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, D S (2006): *Jalvayu Vigyan*, Prayag Pustak Bhavan, Allahabad
9. Vatal, M (1986): *Bhautik Bhugol*, Central Book Depot, Allahabad
10. Singh, S (2009): *Jalvayu Vigyan*, Prayag Pustak Bhawan, Allahabad

CBCS-based U.G. Course in Geography, 2018

Syllabus of Core Course

Course Name: Geography of India

Paper Code: GGY - HC - 3026

Course objectives

- This paper is a core paper that intends to introduce students to the India as a geographical entity
- It seeks to develop new insights among students on the relevance of geographical studies and India's contemporary geographical issues.

Course outcomes

- The paper will be useful for students in developing perspectives on Indian geography and its systematic study.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Geography of India

1. Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)
2. Population: Distribution and growth, Structure
3. Economic: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; agricultural production and distribution of rice and wheat, industrial development : automobile and Information technology
4. Social: Distribution of population by race, caste, religion, language, tribes and their correlates
5. North-East India: location, physiography, socio-economic setup.

Reading List

1. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. 2001. *Geographical Dictionary of India*. Vision Books, New Delhi.
3. Mandal R. B. (ed.), 1990: *Patterns of Regional Geography – An Intentional Perspective. Vol. 3 –Indian Perspective.*
4. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India*, Census of India

5. Sharma, T. C. 2003: *India - Economic and Commercial Geography*. Vikas Publ., New Delhi.
6. Singh R. L., 1971: *India: A Regional Geography*, National Geographical Society of India.
7. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
8. Spate O. H. K. and Learmonth A. T. A., 1967: *India and Pakistan: A General and Regional Geography*, Methuen.
9. Tirtha, Ranjit 2002: *Geography of India*, Rawat Publs., Jaipur & New Delhi.
10. Pathak, C. R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
11. Tiwari, R.C. (2007) *Geography of India*. Prayag Pustak Bhawan, Allahabad
12. Sharma, T.C. (2013) *Economic Geography of India*. Rawat Publication, Jaipur

CBCS-based U.G. Course in Geography, 2019
Syllabus of Core Course

Course Name: Statistical Methods in Geography (Practical)
Paper Code: GGY - HC - 3036

Course objectives : The paper Statistical Methods in Geography (Practical) throws light on the importance of data in geography. It deals with the methods and techniques of data collection, data tabulation, data interpretation and analysis. This paper provides an understanding of the pure and applied nature of Geography along with the key elements in the discipline.

Course outcomes

- Thorough understanding of the statistical methods and techniques used in Geography ;
- Understanding of data tabulation, sample size and types and the methods of handling data in the field;
- Deeper knowledge of bivariate correlation and regression for geographic data analysis and interpretation along with mapping.

Statistical Methods in Geography (Practical)

1. Use of Data in Geography: Geographical Data Matrix, Significance of Statistical Methods in Geography; Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval, Ratio).
2. Tabulation and Descriptive Statistics: Frequencies (Deciles, Quartiles), Cross Tabulation, Central Tendency (Mean, Median and Mode, Centro-graphic Techniques, Dispersion (Standard Deviation, Variance and Coefficient of Variation).
3. Sampling: Purposive, Random, Systematic and Stratified and their utilities in Geographic studies..
4. Time series analysis techniques: Moving average and Least Square Methods.
5. Association and Correlation: Rank Correlation, Pearson Product Moment Correlation, application of linear bivariate correlation and regression analysis in geographic studies; Regression residual

Class Record: Each student will submit a record containing five exercises:

1. Construct a data matrix of about (10 x 10) with each row representing an areal unit (districts or villages or towns) and about 10 columns of relevant attributes of the areal units.
2. Based on the above table, a frequency table, measures of central tendency and dispersion would be computed and interpreted for any two attributes.
3. Histograms and frequency curve would be prepared on the entire data set and attempt to fit a normal curve and interpreted for one or two variables.
4. From the data matrix a sample set (20 Percent) would be drawn using, random - systematic and stratified methods of sampling and locate the samples on a map with a short note on methods used.
5. Based on of the sample set and using two relevant attributes, a scatter and regression line would be plotted and residual from regression would be mapped with a short interpretation.

Reading List

1. Berry B. J. L. and Marble D. F. (eds.): *Spatial Analysis – A Reader in Geography*.
2. Ebdon D., 1977: *Statistics in Geography: A Practical Approach*.
3. Gragory, S., :1963: *Statistical*
4. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction*, Oxford University Press.
5. King L. S., 1969: *Statistical Analysis in Geography*, Prentice-Hall.
6. Mahmood A., 1977: *Statistical Methods in Geographical Studies*, Concept.
7. Monkhouse, F.J. & Wilkinson, H.R., 1989: *Maps and Diagrams*, B.I Publication, New Delhi
8. Pal S. K., 1998: *Statistics for Geoscientists*, Tata McGraw Hill, New Delhi.
9. Sarkar, A. (2013) *Quantitative geography: techniques and presentations*. Orient Black Swan Private Ltd., New Delhi
10. Silk J., 1979: *Statistical Concepts in Geography*, Allen and Unwin, London.
11. Spiegel M. R.: *Statistics, Schaum's Outline Series*.
12. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.
13. Shinha, Indira (2007) *Sankhyiki bhugol*. Discovery Publishing House, New Delhi

Syllabus for
BA/B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)
Course effective from the academic year 2019-20

4th Semester

This is approved in the Academic Council held on 8/11/2019



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September 2019

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CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Economic Geography

Paper Code: GGY - HC - 4016

Course objectives

- This paper is a core paper that intends to introduce students to the principles of economic geography
- It seeks to develop new insights among students on the relevance of economy and geography and associated problems in contemporary times.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical aspects organise economic space and will offer perspectives to students if they wish to pursue a research programme.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Economic Geography

1. Introduction: Concept and classification of economic activity
2. Factors Affecting location of Economic Activity with special reference to Agriculture (Von Thunen theory), Industry (Weber's theory).
3. Primary Activities: Subsistence and Commercial agriculture, forestry, fishing and mining.
4. Secondary Activities: Manufacturing (Cotton Textile, Iron and Steel), Concept of Manufacturing Regions, Special Economic Zones and Technology Parks.
5. Tertiary Activities: Transport, Trade and Services.

Reading List

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.
3. Hodder B. W. and Lee Roger, 1974: *Economic Geography*, Taylor and Francis.

4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: The Integration of Regions and Nations*, Princeton University Press.
5. Wheeler J. O., 1998: *Economic Geography*, Wiley..
6. Durand L., 1961: *Economic Geography*, Crowell.
7. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
8. Willington D. E., 2008: *Economic Geography*, Husband Press.
9. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: *The Oxford*

CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Environmental Geography

Paper Code: GGY - HC - 4026

Course objectives

- This paper is a core paper that intends to introduce students to geography and environment interface
- It seeks to develop new insights among students on the relevance of environmental studies from a spatial perspective.

Course outcomes

- The paper will be useful for students in developing ideas on environmental issues that geographers usually address
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Environmental Geography

1. Environmental Geography – Concept, Scope and Significance
2. Human-Environment Relationships – Historical Progression, Adaptation in different Biomes.
3. Eco-system: concept, types and components, structure and functions; Ecology– Concept and principles.
4. Major Global Environmental Problems: Pollution, Deforestation, Desertification, Global Warming, Bio-Depletion
5. Environmental Programmes and Policies – Global, National and Local

Reading List

1. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunningham W. P. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*. Rawat Publication, Jaipur

5. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson BrooksCole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies*, Springer
8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Ceneage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan. Allahabad.
10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
11. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies*, Springer
12. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub..
13. Singh, Savindra 2001. *Paryavaran Bhugol*, Prayag Pustak Bhawan, Allahabad. (in Hindi)

CBCS-based U.G. Course in Geography, 2019
Syllabus of Core Course

Course Name: Remote Sensing and GIS (Practical)
Paper Code: GGY - HC - 4036

Course objectives

- This paper is a core paper that intends to introduce students to the interface of Remote Sensing and GIS
- It seeks to develop new insights among students on the relevance of geospatial studies within the field of geography.

Course outcomes

- The paper remains useful for students in developing skills in spatial data analysis if they wish to pursue a research programme.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Remote Sensing and GIS (Practical)

1. Remote Sensing and GIS: Definition and Components, Development, Platforms and Types,
2. Aerial Photography and Satellite Remote Sensing: Principles, Types and Geometry of Aerial Photograph; Principles of Remote Sensing, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.
3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure
4. Image Processing (Digital and Manual) and Data Analysis: Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering); Classification (Supervised and Un-supervised), Geo-Referencing; Editing and Output; Overlays
5. Interpretation and Application of Remote Sensing and GIS: Land use/ Land Cover, Urban Sprawl Analysis; Forests Monitoring

Practical Record: A project file consisting of two exercises will be done from aerial photos and satellite images (scale, orientation and interpretation) and 3 exercises on using any GIS Software on above mentioned themes.

Reading List

1. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press.
2. Jensen J. R., 2004: *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall.
3. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
4. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.
6. Rees W. G., 2001: *Physical Principles of Remote Sensing*, Cambridge University Press.
7. Singh R. B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.
8. Wolf P. R. and Dewitt B. A., 2000: *Elements of Photogrammetry: With Applications in GIS*, McGraw-Hill.
9. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
10. Chauniyal, D.D. (2010) *Sudur Samvedan evam Bhogolik Suchana Pranali*, Sharda Pustak Bhawan, Allahabad

Syllabus for
BA/B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)
Course effective from the academic year 2019-20

5th Semester

This is approved in the Academic Council held on 8/11/2019



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Guwahati-781014

September 2019

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CBCS-based U.G. Course in Geography, 2018

Syllabus of Core Course

Course Name: Regional Planning and Development

Paper Code: GGY - HC - 5016

Course objectives

- This paper is a core paper that intends to introduce students to the rationale underlying the relevance of balanced regional development and spatial inequalities in geography
- It seeks to develop new insights among students on the issue of development and disparities among geographical regions

Course outcomes

- The paper will be useful for students in developing ideas on disparities within and between countries and their fallout.
- The paper will help provide theoretical insights and perspectives to students if they wish to pursue a research programme in future.
- The paper be very useful for students preparing for UGC NET-JRF / SLET exam and other competitive exams including civil services.

Regional Planning and Development

1. Definition of Region, Evolution and Types of Regional planning: Formal, Functional, and Planning Regions and Regional Planning; Need for Regional Planning; Types of regional Planning.
2. Choice of a Region for Planning: Characteristics of an Ideal Planning Region; Delineation of Planning Region; Regionalization of India for Planning (Agro Ecological Zones)
3. Theories and Models for Regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian Context; Myrdal, Hirschman, Rostow and Friedmann; Village Cluster
4. Concept of Development and Regional Disparity, Concept of sustainable development, Measuring development: Indicators (Economic, Social and Environmental); Human development.
5. Planning regions of India with special reference to North-East India

Reading List

1. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P.I, 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory and Applications*, MIT Press, Massachusetts.
4. Gore C. G., 1984: *Regions in Question: Space, Development Theory and Regional Policy*, Methuen, London.
5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: *Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis-Verlag, Marburg.
6. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
7. Johnson E. A. J., 1970: *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
8. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
9. UNDP 2001-04: *Human Development Report*, Oxford University Press.
10. World Bank 2001-05: *World Development Report*, Oxford University Press, New

CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Field Work and Research Methodology (Practical)

Paper Code: GGY - HC - 5026

Course objectives: The paper Field Work and Research Methodology is of pedagogical importance as it lets students acquire the first hand experience about the geography of a particular region. It also help to gather required information so as the problem under investigation is studied in depth as per the predefined objectives.

Course outcomes

- This course will help students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed which doing quality research.
- Students perceive fieldwork to be beneficial to their learning because through it they experience ‘geographical reality’, have deeper understanding of the subject,
- The students will have a chance to interact with respondents and collect data through questionnaire directly from the field.
- Develop understanding about designing and writing a field report.

Field Work and Research Methodology (Practical)

1. Field Work In Geographical Studies – Role, Value, Data and Ethics of Field-Work
2. Defining the Field and Identifying the Case Study – Rural / Urban / Physical / Human / Environmental.
3. Field Tools and Techniques – Merits, Demerits and Selection of the Appropriate Technique; Observation (Participant / Non Participant), Questionnaires (Open/ Closed / Structured / Non-Structured); Interview with Special Focus on Focused Group Discussions; Space Survey (Transects and Quadrants, Constructing a Sketch)
4. Surveying: Concept of ground surveying, Plane and Geodetic Surveying, Conduct of Surveying using Plane Table (Radial Method and Intersection Method) and Prismatic Compass (Open Traverse and Closed Traverse).

5. Field study (within the country/neighbouring countries) and preparation of field report – Aims and Objectives, Methodology, Analysis, Interpretation.

Practical Record

1. Each student will prepare an individual report based on primary and secondary data collected during field work.
2. The duration of the field work should not exceed 10 days.
3. The word count of the report should be about 8000 to 12,000 excluding figures, tables, photographs, maps, references and appendices.
4. One copy of the report on A 4 size paper should be submitted in soft binding.

Reading List

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. *The Art and Science of Geography: Integrated Readings*. Prentice-Hall of India, New Delhi.
3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Mukherjee, Neela 1993. *Participatory Rural Appraisal: Methodology and Application*. Concept Pubs. Co., New Delhi.
5. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Pubs. Co., New Delhi
6. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
7. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
8. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
10. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.

Syllabus for
BA/B.Sc.(Honours) Geography
Choice Based Credit System (CBCS)
Course effective from the academic year 2019-20

6th Semester

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GAUHATI UNIVERSITY

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September 2019

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CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Evolution of Geographical Thought

Paper Code: GGY - HC - 6016

Course objectives

- This paper is a core paper that intends to introduce students to philosophical and methodological issues in the development of the discipline of geography.
- To assess the nature and trend of ancient, modern and post-modern trends in the field of geography

Course outcomes

- The paper will be useful for students in understanding perspectives on the development and contemporary trends in geography and its systematic study.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Evolution of Geographical Thought

1. Paradigms in Geography
2. Pre-Modern – Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies.
3. Modern – Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America.
4. Debates – Environmental Determinism and Possibilism, Systematic and Regional, Ideographic and Nomeothetic.
5. Trends – Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Changing Concept of Space in Geography, Future of Geography.

Reading List

1. Arentsen M., Stam R. and Thuijjs R., 2000: *Post-modern Approaches to Space*, ebook.
2. Bhat, L.S. (2009) *Geography in India (Selected Themes)*. Pearson
3. Bonnett A., 2008: *What is Geography?* Sage.

4. Dikshit R. D., 1997: *Geographical Thought: A Contextual History of Ideas*, Prentice– Hall India.
5. Hartshorne R., 1959: *Perspectives of Nature of Geography*, Rand MacNally and Co.
6. Holt-Jensen A., 2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
7. Johnston R. J., (Ed.): *Dictionary of Human Geography*, Routledge.
8. Johnston R. J., 1997: *Geography and Geographers, Anglo-American Human Geography since 1945*, Arnold, London.
9. Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.
10. Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
11. Soja, Edward 1989. *Post-modern Geographies*, Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Disaster Management based Project Work (Practical)

Paper Code: GGY - HC - 6026

Course objectives

- To impart knowledge on different types of disasters to the students
- To provide practical knowledge in the field on the causes and impacts of disasters occurring in time and over space.
- To make the students learn about the disaster-specific management strategies to be adopted to reduce loss and damages.

Course outcomes

- The students will experience ground reality of destructive damage of disasters in the field.
- The students with their experience may extend all possible help and co-operation to the victims as well as authorities engaged in disaster management.
- The students will gain practical experience in the entire process of disaster management through their project work assigned on a specific problem.

Disaster Management based Project Work (Practical)

The Project Report based on any two field based case studies among following disasters and one disaster preparedness plan of respective college or locality:

1. Floods
2. Bank erosion
3. Drought
4. Cyclone and Hailstorms
5. Earthquake
6. Landslides
7. Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

Reading List

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007) "Disaster Management Future Challenges and Oppurtunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

Skill Enhancement Course

CBCS-based U.G. Course in Geography, 2019
Syllabus of Skill Enhancement Course

Course Name: Remote Sensing (Practical)
Paper Code: GGY - SE - 3044

Course objectives

- This is a practical paper that intends to introduce students to the art and science of remotely sensing data and the possible ways and means of interpreting spatial data
- It seeks to develop new insights among students on the use of remotely sensed data in a rapidly changing world.

Course outcomes

- The paper will equip students with technical skills in data interpretation and analysis when using remote sensing data.
- The paper will be useful for students seeking employment in the public/private sector in agencies using spatial/remote sensing datasets.

Remote Sensing (Practical)

1. Remote Sensing: Definition and Development; Platforms and Types; Photogrammetry.
2. Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS); Sensors
3. Image Processing (Digital and Manual): Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering); Classification (Supervised and Un-supervised)
4. Satellite Image Interpretation.
5. Application of Remote Sensing: Land Use Land Cover.

Practical Record: A project file consisting of 5 exercises on using any method on above mentioned themes.

Reading List

1. Bhatta , B. (2008) Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press

3. Chauniyal, D. (2010) *Sudur Samvedana Avam Bhaugolik Suchna Pranali*, Sharda Pustak Bhawan, Allahabad.
4. Jensen, J. R. (2005) *Introductory Digital Image Processing: A Remote Sensing Perspective*, Pearson Prentice-Hall.
5. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
6. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
7. Li, Z., Chen, J. and Batsavias, E. (2008) *Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences* CRC Press, Taylor and Francis, London
8. Mukherjee, S. (2004) *Textbook of Environmental Remote Sensing*, Macmillan, Delhi.
9. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.
10. Singh R. B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.

CBCS-based U.G. Course in Geography, 2019
Syllabus of Skill Enhancement Course

Course Name: Advanced Spatial Statistical Techniques (Practical)
Paper Code: GGY - SE - 3054

Course objectives

This practical course on Advanced Spatial Statistical Techniques basically deals with understanding the application of different statistical measures for analysing data relating to various geographical phenomena. It throws light on understanding the concept of probability, normal distributions and sampling. Besides, this course provides basic knowledge about handling various geographical data (spatial and non-spatial) for understanding spatial and temporal patterns by applying different statistical measures like variability/disparity index, index number, time series analysis, correlation analysis, regression analysis, etc.

Course outcomes

- It provides general understanding of geographical data and application of various statistical measures for their meaningful analysis
- Acquiring basic knowledge about probability and normal distributions and their applications for sample data collection and analysis
- Understanding the patterns and processes associated with various geographical phenomena through application of different statistical techniques.

Advanced Spatial Statistical Techniques (Practical)

1. Statistics and Statistical Data: Spatial and non-spatial; indices of inequality and disparity.
2. Probability theory-normal distributions; Index numbers.
3. Sampling: Sampling plans for spatial and non-spatial data, sampling distributions sampling estimates for large and small samples tests involving means and proportions.
4. Correlation and Regression Analysis: Rank order correlation and product moment correlation; linear regression, residuals from regression, and simple curvilinear regression; Introduction to multi-variate analysis.
5. Time Series Analysis: Smoothing time series; Time series components.

Note: Any Statistical Software Package (SPSS, MS Excel, R, etc.) may be used for practice.

Reading List

1. Bart James E and Gerld M.Barber, 1996: Elementary Statistics for Geographers, The Guieford Press, London.
2. Eldon, D., 1983: Statistics in Geography: A Practical Approach, Blackwell, London.
3. Cressie, N.A.C., 1991: Statistics for Spatial Analysis, Wiley, New York.
4. Gregory, S., 1978: Statistical Methods and the Geographer (4th Edition), Longman, London.
5. Haining, R.P., 1990: Spatial Data Analysis in the Social and Environmental Science, Cambridge University Press, Cambridge.
6. Mc Grew, Jr. and Cahrles, B. M., 1993: An Introduction to Statistical Problem Solving in Geography, W.C. Brocan Publishers, New Jersey.
7. Mathews, J.A., 1987: Quantitative and Statistical Approaches to Geography: A Practical Manual Pergamon, Oxford.
8. S.K., 1998: Statistics for Geoscientists : Techniques and Applications, Concept Publishing Company, New Delhi.
9. Wei, W.S.,1990: Time Series Analysis: Variate and Multivariate Methods , Addison Wesley Publishing.
10. Yeates, Mauris, 1974: An Introduction to Quantitative Analysis in Human Geography, Mc Grawhill, New York.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Skill Enhancement Course

Course Name: Geographical Information System (Practical)

Paper Code: GGY - SE - 4044

Course objectives

- This paper will introduce students to use geographic data within a GIS
- It seeks to develop new insights among students on the relevance of geo-spatial datasets in various studies and varied analyses.

Course outcomes

- The paper will equip students with technical skills in data interpretation and analysis when using geo-spatial data and databases.
- The paper will be useful for students seeking employment in the public/private sector in agencies using geo-spatial datasets and databases.

Geographical Information System (Practical)

1. Geographical Information System (GIS): Definition and Components.
2. Global Positioning System (GPS) – Principles and Uses; DGPS.
3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.
4. GIS Data Analysis: Input; Geo-Referencing; Editing, Output and Query; Overlays.
5. Application of GIS: Land Use Mapping; Urban Sprawl Analysis; Forests Monitoring.

Practical Record: A project file consisting of 5 exercises on using any GIS Software on above mentioned themes.

Reading List

1. Bhatta, B. (2010) Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.41
2. Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information System Spatial Information System and Geo-statistics. Oxford University Press

3. Chauniyal, D.D. (2010) Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad
4. Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Information system. Prentice Hall.
5. Jha, M.M. and Singh, R.B. (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
6. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
7. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
8. Singh, R.B. and Murai, S. (1998) Space Informatics for Sustainable Development, Oxford and IBH, New Delhi.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Skill Enhancement Course

Course Name: Research Methods (Practical)

Paper Code: GGY - SE - 4054

Course objectives

The paper Research Methods (Practical) is will enable students to:

- Understand how to approach a research problem and to formulate research objectives and research questions in proper perspective. In addition, knowledge of formulating of hypothesis and testing, framing of questionnaires, understand both qualitative and quantitative techniques of data collection and analyze the same
- Understand the basics and utility of review of literature and preparation of research report.

Course outcomes

- This course will help students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed which doing quality research.

Research Methods (Practical)

1. Geographic Enquiry: Definition and Ethics; Framing Research Questions, Objectives, Literature Review; Preparing Sample Questionnaire
2. Data Collection: Type and Sources of Data; Methods of Collection; Input and Editing
3. Data Analysis: Qualitative Data Analysis; Quantitative Data Analysis; Data Representation Techniques
4. Structure of a Research Report: Preliminaries; Text; References, Bibliography and Citations; Abstract
5. Preparation of a Research Report

Reading List

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. *The Art and Science of Geography: Integrated Readings*. Prentice-Hall of India, New Delhi.

3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Misra, R.P. (2002) *Research Methodology*, Concept Publications, New Delhi.
5. Mukherjee, Neela 1993. *Participatory Rural Appraisal: Methodology and Application*. Concept Publs. Co., New Delhi.
6. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Publs. Co., New Delhi
7. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
8. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
9. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
11. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.
12. Yadav, H. (2013) *Shodh Pravidhi Evam Matratamak Bhugol*, Raja Publications, Delhi.

Discipline Specific Elective Course for Honours

CBCS-based U.G. Course in Geography, 2019
Syllabus of Discipline Specific Elective

Course Name: Population Geography
Paper Code: GGY - HE - 5036

Course objectives

This theory course on Population Geography basically deals with its meaning and scope, sources of population data, factors and theories relating to population growth, and characteristics of population. It also highlights the components of population growth (fertility, mortality and migration) and salient characteristics of population like age composition, sex composition, rural-urban composition, literacy, ageing, etc.

Course outcomes

- This course provides basic understanding of population geography as a field of study including its significance.
- Acquiring basic knowledge about the population distribution in the world and growth patterns of population in different parts of the world with respect to the related theories and components of population growth.
- It helps understand the prevailing age-sex composition, rural-urban composition, literacy pattern, etc and also the issues like ageing, declining sex ratio, etc.

Population Geography

1. Defining the Field – Nature and Scope; Sources of Data with special reference to India (Census, Vital Statistics and NSS).
2. Population Size, Distribution and Growth – Determinants and Patterns; Theories of Growth – Malthusian Theory and Demographic Transition Theory.
3. Population Dynamics: Fertility, Mortality and Migration – Measures, Determinants and Implications.
4. Population Composition and Characteristics – Age-Sex Composition; Rural and Urban Composition; Literacy.
5. Contemporary Issues – Ageing of Population; Declining Sex Ratio; HIV/AIDS.

Reading List

1. Barrett H. R., 1995: *Population Geography*, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: *Principles of Population Studies*, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: *An Introduction to Population Geography*, Kalyani Publishers.
4. Clarke J. I., 1965: *Population Geography*, Pergamon Press, Oxford.
5. Jones, H. R., 2000: *Population Geography*, 3rd ed. Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004: *The End of the World Population Growth in the 21st Century*, Earthscan
7. Newbold K. B., 2009: *Population Geography: Tools and Issues*, Rowman and Littlefield Publishers.
8. Pacione M., 1986: *Population Geography: Progress and Prospect*, Taylor and Francis.
9. Wilson M. G. A., 1968: *Population Geography*, Nelson.
10. Panda B P (1988): *Janasankya Bhugol*, M P Hindi Granth Academy, Bhopal
11. Maurya S D (2009) *Jansankya Bhugol*, Sharda Putak Bhawan, Allahabad
12. Chandna, R C (2006), *Jansankhya Bhugol*, Kalyani Publishers, Delhi

CBCS-based U.G. Course in Geography, 2019

Syllabus of Discipline Specific Elective

Course Name: Resource Geography

Paper Code: GGY - HE - 5046

Course objectives

This theory course basically deals with concept of resource and its classification, and the distribution, utilization and management of land, water, forest and energy resources. It also focuses on the natural resource base of North-East India and its problems of conservation and management. Besides, it also provides basic idea about sustainable development of resources.

Course outcomes

- Understanding the basic concept of resource and its various types and their utilities
- Acquiring basic information about potentials and management of resources like land, water, forest and power in global context.
- Understanding the prevailing natural resource potential of North-East India and problems of management.

Resource Geography

1. Natural Resource: Concept and Classification
2. Distribution, Utilisation, Problems and Management of Land Resources and Water Resources
3. Distribution, Utilisation, Problems and Management of Forests and Energy Resources
4. Appraisal and Conservation of Natural Resources in North-East India
5. Sustainable Resource Development

Reading List

1. Cutter S. N., Renwick H. L. and Renwick W., 1991: *Exploitation, Conservation, Preservation: A Geographical Perspective on Natural Resources Use*, John Wiley and Sons, New York.
2. Gadgil M. and Guha R., 2005: *The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity*, Oxford University Press. USA.

3. Holechek J. L. C., Richard A., Fisher J. T. and Valdez R., 2003: *Natural Resources: Ecology, Economics and Policy*, Prentice Hall, New Jersey.
4. Jones G. and Hollier G., 1997: *Resources, Society and Environmental Management*, Paul Chapman, London.
5. Klee G., 1991: *Conservation of Natural Resources*, Prentice Hall, Englewood.
6. Mather A. S. and Chapman K., 1995: *Environmental Resources*, John Wiley and Sons, New York.
7. Mitchell B., 1997: *Resource and Environmental Management*, Longman Harlow, England.
8. Owen S. and Owen P. L., 1991: *Environment, Resources and Conservation*, Cambridge University Press, New York.
9. Rees J., 1990: *Natural Resources: Allocation, Economics and Policy*, Routledge.London.

CBCS-based U.G. Course in Geography, 2019
Syllabus of Discipline Specific Elective

Course Name: Urban Geography
Paper Code: GGY - HE - 5056

Course objectives

- This paper introduces students to the field of urban geography and its specificities
- It seeks to develop new insights among students on the relevance of an urban economy and geography and associated problems in a rapidly urbanizing world.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical factors organize urban spaces and how geographers seek to address city specific problems and issues.
- It will build skills for students seeking to enrol in a research programme and/or provide openings for them with urban/city planning agencies.

Urban Geography

1. Urban geography: Introduction, nature and scope
2. Patterns of Urbanisation in developed and developing countries
3. Functional classification of cities: Quantitative and Qualitative Methods
4. Urban Issues: problems of housing, slums, civic amenities (water and transport)
5. Case studies of Delhi, Mumbai, Kolkata, Guwahati and Chandigarh with reference to Land use and Urban Issues

Reading List

1. Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
2. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
3. Hall T., 2006: *Urban Geography*, Taylor and Francis.
4. Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: *Urban Geography*, John Wiley.
5. Knox P. L. and McCarthy L., 2005: *Urbanization: An Introduction to Urban Geography*, Pearson Prentice Hall New York.
6. Knox P. L. and Pinch S., 2006: *Urban Social Geography: An Introduction*, Prentice-Hall.
7. Pacione M., 2009: *Urban Geography: A Global Perspective*, Taylor and Francis.

8. Sassen S., 2001: *The Global City: New York, London and Tokyo*, Princeton University Press.
9. Ramachandran R (1989): *Urbanisation and Urban Systems of India*, Oxford University Press, New Delhi
10. Ramachandran, R., 1992: *The Study of Urbanisation*, Oxford University Press, Delhi
11. Singh, R.B. (Eds.) (2001) *Urban Sustainability in the Context of Global Change*, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
12. Singh, R.B. (Ed.) (2015) *Urban development, challenges, risks and resilience in Asian megacities* *Advances in Geographical and Environmental Studies*, Springer

CBCS-based U.G. Course in Geography, 2019
Syllabus of Discipline Specific Elective

Course Name: Agricultural Geography
Paper Code: GGY - HE - 5066

Course objectives

- This paper introduces students to the field of agricultural geography and its specificities
- It seeks to develop new insights among students on the relevance of agriculture and allied activities shape the economy and geography of an area, region, country or the globe.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical factors tangent on agricultural activities and how geographers seek to address issues of agricultural development and agricultural disparities.
- It will build skills for students seeking to enrol in a research programme and/or provide openings for them with agricultural /rural planning agencies

Agricultural Geography

1. Defining the Field: Introduction, nature and scope; Land use/ land cover definition and classification.
2. Determinants of Agriculture: Physical, Technological and Institutional
3. Agricultural Regions of India: Agro-climatic, Agro-ecological & Crop Combination Regions.
4. Agricultural Systems of the World (Whittlesey's classification) and Agricultural Land use model (Von Thuenen, modification and relevance).
5. Agricultural Revolutions in India: Green, White, Blue, Pink

Reading List

1. Basu, D.N., and Guha, G.S., 1996: *Agro-Climatic Regional Planning in India*, Vol.I & II, Concept Publication, New Delhi.
2. Bryant, C.R., Johnston, T.R, 1992: *Agriculture in the City Countryside*, Belhaven Press, London.
3. Burger, A., 1994: *Agriculture of the World*, Aldershot, Avebury.
4. Grigg, D.B., 1984: *Introduction to Agricultural Geography*, Hutchinson, London.
5. Ilbery B. W., 1985: *Agricultural Geography: A Social and Economic Analysis*, Oxford University Press.
6. Mohammad, N., 1992: *New Dimension in Agriculture Geography*, Vol. I to VIII, Concept Pub., New Delhi.
7. Roling, N.G., and Wageruters, M.A.E.,(ed.) 1998: *Facilitating Sustainable Agriculture*, Cambridge University Press, Cambridge.
8. Shafi, M., 2006: *Agricultural Geography*, Doring Kindersley India Pvt. Ltd., New Delhi
9. Singh, J., and Dhillon, S.S., 1984: *Agricultural Geography*, Tata McGraw Hill, New Delhi.
10. Tarrant J. R., 1973: *Agricultural Geography*, David and Charles, Devon.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Discipline Specific Elective

Course Name: Geography of Health and Wellbeing

Paper Code: GGY - HE - 6036

Course objectives

This theory course basically deals with understanding the concept of health and geography of health as a field of study. It throws light on the factors determining human health and occurrence of various types of diseases in relation to ecology. It also provides information about human health in relation to global climate change in general and disease pattern in relation to varying environmental contexts in India in particular.

Course outcomes

- Understanding of the concept of human health in the context of geography of health.
- Acquiring knowledge about factors influencing human health and occurrence of diseases in varying ecological settings.
- Providing useful information about the impact of global climate change on human health and occurrence of various diseases in different ecological settings in India.

Geography of Health and Wellbeing

1. Perspectives on Health: Definition; linkages with environment, development and health; Dualism between medical and health geography; Driving forces in health and environmental trends - population dynamics, urbanization, poverty and inequality.
2. Disease and Ecology: Ecologies and causes of infectious disease; Diffusion of diseases in geographical context; Classification: Communicable and non communicable diseases.
3. Exposure and Health Risks: Air pollution; household wastes; water; housing; workplace.
4. Health and Disease Pattern in Environmental Context with special reference to India, Types of Diseases and their regional pattern (Communicable and Lifestyle related diseases).
5. Climate Change and Human Health: Changes in climate system – heat and cold; Biological disease agents; food production and nutrition.

Reading List:

1. Akhtar Rais (Ed.), 1990 : Environment and Health Themes in Medical Geography, Ashish Publishing House, New Delhi.
2. Avon Joan L. and Jonathan A Patzed.2001 : Ecosystem Changes and Public Health,Baltimin, John Hopling Unit Press(ed).
3. Bradley,D.,1977: Water, Wastes and Health in Hot Climates, John Wiley Chichesten.
4. Brown, T., McLafferty, S., Moon, G. (2010): A Companion to Health and Medical Geography, Wiley Blackwell, UK
5. Christaler George and Hristopoles Dionissios, 1998: Spatio Temporal Environment Health Modelling , Boston Kluwer Academic Press.
6. Cliff, A.D. and Peter,H., 1988 : Atlas of Disease Distributions, Blackwell Publishers, Oxford.
7. Curtis, S. (2004): Health and Inequality: Geographical Perspectives, Sage Publications, London
8. Gatrell, A.,and Loytonen, 1998 : GIS and Health, Taylor and Francis Ltd, London.
9. Hardham T. and Tannav M.,(eds): Urban Health in Developing Countries; Progress, Projects, Earthgoan, London.
10. Murray C. and A. Lopez, 1996 : The Global Burden of Disease, Harvard University Press.
11. Moeller Dade wed., 1993: Environmental Health, Cambridge, Harward Univ. Press.
12. Phillips, D.and Verhasselt, Y., 1994: Health and Development, Routledge, London.
13. Tromp, S., 1980: Biometeorology: The Impact of Weather and Climate on Humans and their Environment, Heydon and Son.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Discipline Specific Elective

Course Name: Political Geography

Paper Code: GGY - HE - 6046

Course objectives

- This paper seeks to introduce students to the geographical aspects behind political phenomena
- It seeks to develop new insights among students on the relevance of political geographical studies in a changing global scenario.

Course outcomes

- The paper remains useful for students in developing ideas on geopolitics and allied phenomena and will aid students that may pursue a research programme.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Political Geography

1. Introduction: Concepts, Nature and Scope.
2. State, Nation and Nation State – Concept of Nation and State, Attributes of State – Frontiers, Boundaries, Shape, Size, Territory and Sovereignty, Concept of Nation State; Geopolitics; Theories (Heartland and Rimland)
3. Electoral Geography – Geography of Voting, Geographic Influences on Voting pattern, Geography of Representation, Gerrymandering.
4. Political Geography of Resource Conflicts – Water Sharing Disputes, Disputes and Conflicts Related to Forest Rights and Minerals.
5. Politics of Displacement: Issues of relief, compensation and rehabilitation: with reference to Dams and Special Economic Zones

Reading List

1. Agnew J., 2002: *Making Political Geography*, Arnold.
2. Agnew J., Mitchell K. and Toal G., 2003: *A Companion to Political Geography*, Blackwell.
3. Cox K. R., Low M. and Robinson J., 2008: *The Sage Handbook of Political Geography*, Sage Publications.

4. Cox K., 2002: *Political Geography: Territory, State and Society*, Wiley-Blackwell
5. Gallaher C., et al, 2009: *Key Concepts in Political Geography*, Sage Publications.
6. Glassner M., 1993: *Political Geography*, Wiley.
7. Jones M., 2004: *An Introduction to Political Geography: Space, Place and Politics*, Routledg .
8. Mathur H M and M M Cernea (eds.) *Development, Displacement and Resettlement – Focus on Asian Experience*, Vikas, Delhi
9. Painter J. and Jeffrey A., 2009: *Political Geography*, Sage Publications.
10. Taylor P. and Flint C., 2000: *Political Geography*, Pearson Education.
11. Verma M K (2004): *Development, Displacement and Resettlement*, Rawat Publications, Delhi
12. Hodder Dick, Sarah J Llyod and Keith S McLachlan (1998), *Land Locked States of Africa and Asia* (vo.2), Frank Cass

CBCS-based U.G. Course in Geography, 2019

Syllabus of Discipline Specific Elective

Course Name: Hydrology and Oceanography

Paper Code: GGY - HE - 6056

Course objectives

- To provide knowledge on the principles, concepts and scope of hydrology and oceanography
- To make the students understand about the importance and relevance of the study of hydrology and oceanography as branches of physical geographic study.

Course outcomes

- The students will learn to analyse the hydrology of any area, even his/her local area and identify the components of the hydrological cycle operating in the area.
- (ii) The students will learn the dynamic processes associated with the oceans and also the importance and values of the ocean resources.

Hydrology and Oceanography

1. Hydrological Cycle: Systems approach in hydrology, human impact on the hydrological cycle; Precipitation, interception, evaporation, evapo-transpiration, infiltration, ground-water, run off and over land flow; Hydrological input and output.
2. River Basin Characteristics & Problems (Flood & Drought)
3. Ocean Floor Topography and Oceanic Movements – Waves, Currents and Tides.
4. Ocean Salinity and Temperature – Distribution and Determinants.
5. Coral Reefs and Marine Deposits and Ocean Resources: Types and Theories of Origin; Biotic, Mineral.

Reading List

1. Andrew. D. ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
2. Karanth, K.R., 1988 : Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.

3. Ramaswamy, C. (1985): Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.
4. Rao, K.L., 1982 : India's Water Wealth 2nd edition, Orient Longman, Delhi,.
5. Singh, Vijay P. (1995): Environmental Hydrology. Kluwar Academic Publications, The Netherlands.
6. Anikouchine W. A. and Sternberg R. W., 1973: *The World Oceans: An Introduction to Oceanography*, Prentice-Hall.
7. Garrison T., 1998: *Oceanography*, Wordsworth Company, Belmont.
8. Kershaw S., 2000: *Oceanography: An Earth Science Perspective*, Stanley Thornes, UK.
9. Pinet P. R., 2008: *Invitation to Oceanography* (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
10. Sharma R. C. and Vatal M., 1980: *Oceanography for Geographers*, Chaitanya Publishing House, Allahabad.
11. Sverdrup K. A. and Armbrust, E. V., 2008: *An Introduction to the World Ocean*, McGraw Hill, Boston.
12. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Landscape ecology and water management. Proceedings of IGU Rohtak Conference, Volume 2. Advances in Geographical and Environmental Studies, Springer

CBCS-based U.G. Course in Geography, 2019
Syllabus of Discipline Specific Elective

Course Name: Social Geography
Paper Code: GGY - HE - 6066

Course objectives

To course will enable the student to understand:

- the basics of social geography, peopling of India, social categories, welfare and well-being including communal conflicts and crime

Course outcomes

- deeper understanding of the social problems including social pathological problems.
- clear understanding of social class, race and gender including geographies of welfare and well being.

Social Geography

1. Social Geography: Concept, Origin, Nature and Scope.
2. Peopling Process of India: Technology and Occupational Change; Migration.
3. Social Categories: Caste, Class, Religion, Ethnicity and Gender and their Spatial distribution
4. Geographies of Welfare and Well being: Concept and Components – Healthcare, Housing and Education.
5. Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts and Crime.

Reading List

1. Ahmed A., 1999: *Social Geography*, Rawat Publications.
2. Casino V. J. D., Jr., 2009) *Social Geography: A Critical Introduction*, Wiley Blackwell.
3. Cater J. and Jones T., 2000: *Social Geography: An Introduction to Contemporary Issues*, Hodder Arnold.
4. Holt L., 2011: *Geographies of Children, Youth and Families: An International Perspective*, Taylor & Francis.
5. Panelli R., 2004: *Social Geographies: From Difference to Action*, Sage.

6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: *Introducing Social Geographies*, Oxford University Press.
7. Smith D. M., 1977: *Human geography: A Welfare Approach*, Edward Arnold, London.
8. Smith D. M., 1994: *Geography and Social Justice*, Blackwell, Oxford.
9. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: *The SAGE Handbook of Social Geographies*, Sage Publications.
10. Sopher, David (1980): *An Exploration of India*, Cornell University Press, Ithaca
11. Valentine G., 2001: *Social Geographies: Space and Society*, Prentice Hall.

Generic Elective Course for Honours

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Physical Geography

Paper Code: GGY-HG-1036

Course objectives

- a) To provide a general idea about the topographic and surficial characteristics of the earth's surface to the students.
- b) To make the students aware about the dynamic geomorphic processes responsible for development of landforms of varied types and nature.
- c) To impart applied scientific knowledge on landform development based on geomorphic concepts, principles and theories.

Specific outcomes

- (i) The students will learn that the earth is unstable and it is undergoing constant changes due to dynamic earth's processes.
- (ii) The students will come to know about the meaning and scope of geomorphology, which a major branch of Physical Geography.
- (iii) After gaining knowledge based on the contents embodied in this paper, the students will be able to realize the importance of geomorphological knowledge as applied in various developmental activities executed on the land and over the earth's surface.

Physical Geography

1. Physical Geography – Definition and Scope, Components of Earth System.
2. Atmosphere – , Composition and vertical structure, Heat Balance, Global Circulation Pattern, Monsoon, Climatic Classification (Koppen).
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence,
4. Endogenetic and Exogenetic processes, Works of River, Fluvial Cycle of Erosion – Davis
5. Hydrosphere – Hydrological Cycle, Ocean Bottom Relief Features, Tides and Currents.

Reading List

1. Conserva H. T., 2004: Illustrated Dictionary of Physical Geography, Author House, USA.
2. Gabler R. E., Petersen J. F. and Trapasso, L. M., 2007: Essentials of Physical Geography (8th Edition), Thompson, Brooks/Cole, USA.
3. Garrett N., 2000: Advanced Geography, Oxford University Press.
4. Goudie, A., 1984: The Nature of the Environment: An Advanced Physical Geography, Basil Blackwell Publishers, Oxford.
5. Hamblin, W. K., 1995: Earth's Dynamic System, Prentice Hall, N.J.
6. Husain M., 2002: Fundamentals of Physical Geography, Rawat Publications, Jaipur.
7. Monkhouse, F. J. 2009: Principles of Physical Geography, Platinum Publishers, Kolkata.
8. Strahler A. N. and Strahler A. H., 2008: Modern Physical Geography, John Wiley & Sons, New York.

Course Name: Disaster Management

Paper Code: GGY - HG - 1046

Course objectives

- To make the students aware about the types and nature of disasters on spatio-temporal dimensions.
- To provide information and knowledge about how disasters can be checked and managed.

Course outcomes

- The students will be able to analyse the causes and management issues related to disasters taking place in students' own localities.
- (ii) The students will be well versed with the various disaster management strategies and their applicability in different situations.

Disaster Management

1. Hazard and Disasters: Concept, Definition, and types
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping
3. Disasters in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping.
4. Manmade disasters: Causes, Impact, Distribution and Mapping
5. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disasters

Reading List

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007) "Disaster Management Future Challenges and Oppurtunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Geography of Tourism

Paper Code: GGY - HG - 1056

Course objectives

- This paper introduces students to the field of tourism from the lens of a geographer and its specificities
- It seeks to develop new insights among students on how tourism and allied activities shape the economy and geography of an area, region, country or the globe.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical factors tangent on tourism activities and how geographers seek to address issues of development and carrying capacities of varied environments.
- It will build skills for students seeking to enrol in a research programme and/or provide openings for them with tourism/eco-tourism planning agencies.

Geography of Tourism

1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism by Robinson.
2. Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage
3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings Incentives Conventions and Exhibitions (MICE)
4. Impact of Tourism: Economy; Environment; Society
5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert, North East India and Coastal Areas; National Tourism Policy

Reading List

1. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi.

2. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
3. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
4. Page, S. J. (2011) Tourism Management: An Introduction, Butterworth-Heinemann-USA. Chapter 2.
5. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
6. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
7. Singh Jagbir (2014) “Eco-Tourism” Published by - I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Human Geography

Paper Code: GGY-HG-2036

Course Objectives

- a) This paper is a core paper that intends to introduce students to human geography and how humankind transforms and gets transformed by geographic space.
- b) It seeks to develop new insights among students on the relevance of human-environmental relationships and how a spatial perspective shapes these relationships.

Course Outcomes

- The paper will be useful for students in developing ideas on human-environment issues that geographers usually address in the anthropocene

Human Geography

1. Definition, Nature, Major Subfields and Contemporary Relevance.
2. Space and Society: Race; Religion and Language
3. Population: Population Growth, Demographic Transition Theory
4. World Population Distribution, and Density, factors associated and Composition (Age and Gender)
5. Migration: Causes and consequences.
6. Settlements: Types and Patterns of Rural Settlements; Classification of Urban Settlements, morphology and functional classification;

Reading List

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.

2. Daniel, P.A. and Hopkinson, M.F. (1989) *The Geography of Settlement*, Oliver & Boyd, London.
3. Johnston R; Gregory D, Pratt G. et al. (2008) *The Dictionary of Human Geography*, Blackwell Publication.
4. Jordan-Bychkov et al. (2006) *The Human Mosaic: A Thematic Introduction to Cultural Geography*. W. H. Freeman and Company, New York.
5. Kaushik, S.D. (2010) *Manav Bhugol*, Rastogi Publication, Meerut.
6. Maurya, S.D. (2012) *Manav Bhugol*, Sharda Pustak Bhawan. Allahabad.
7. Ghosh, S. (2015) *Introduction to settlement geography*. Orient Black Swan Private Ltd., Kolkata
8. Hussain, Majid (2012) *Manav Bhugol*. Rawat Publications, Jaipur

Course Name: Spatial Information Technology

Paper Code: GGY - HG - 2046

Course objectives

1. This paper seeks to introduce students to use of spatial information as a methodology
2. It seeks to develop new insights among students on the relevance of geo-spatial data using specific software, tools and techniques.

Course outcomes

1. The paper will be helpful for students in developing ideas on possible applications to solving geo-referenced data in research.
2. The paper will be useful for students seeking openings/entry in public/private sector organisations using spatial data.

Spatial Information Technology

1. Introduction: Definitions, Concept and Historical Development
2. Spatial Information/Data: Web data sources; Registration and projection; Data structures; Data interpolation and modeling.
3. Working of spatial information system
4. Functions of Spatial information system: Information retrieval; Topological modeling; Networks; Overlay; Data output.
5. Application of Spatial Information Technology

Reading List

1. C. Esperança and H. Samet, An overview of the SAND spatial database system, to appear in Communications of the ACM, 1997. <http://www.cs.umd.edu/~hjs/pubs/sandprog.ps.gz>
2. G. Hjaltason and H. Samet, Ranking in Spatial Databases in Advances in Spatial Databases —4th Symposium, SSD'95, M. J. Egenhofer and J. R. Herring, Eds., Lecture Notes in Computer Science 951, Springer-Verlag, Berlin, 1995, 83-95. <http://www.cs.umd.edu/~hjs/pubs/incnear.ps>
3. H. Samet, Spatial Data Structures in Modern Database Systems: The Object Model, Interoperability, and Beyond, W. Kim, Ed., Addison-Wesley/ACM Press, 1995, 361-385. <http://www.cs.umd.edu/~hjs/pubs/kim.ps>

4. H. Samet, Applications of Spatial Data Structures: Computer Graphics, Image Processing, and GIS, Addison-Wesley, Reading, MA, 1990. ISBN 0-201- 50300-0.
6. H. Samet, The Design and Analysis of Spatial Data Structures, Addison-Wesley, Reading, MA, 1990. ISBN 0-201-50255-0.
7. H. Samet and W. G. Aref, Spatial Data Models and Query Processing in Modern Database Systems: The Object Model, Interoperability, and Beyond, W. Kim, Ed., Addison-Wesley/ACM Press, 1995, 338-360. <http://www.cs.umd.edu/~hjs/pubs/kim2.ps>
8. C. D. Tomlin, Geographic Information Systems and Cartographic Modeling, Prentice-Hall, Englewood Cliffs, NJ, 1990. ISBN 0-13-350927-3.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Regional Development

Paper Code: GGY - HG - 2056

Course objectives: The paper Regional Development throws light on the importance and need for regional development and planning. It also focuses on the subject matter of evolution and types of region. It deals on the various factors which are responsible for regional imbalances and also the various problems associated with functional regions. This paper also gives emphasis on how to choose an ideal region for planning and how to delineate it. A focus on various models for effective regional planning has also been made.

Course outcomes

- Thorough understanding of the concept of region, its evolution and types;
- Understanding of different problems of functional regions;
- Deeper knowledge of various models and strategies for regional planning.

Regional Development

1. Definition of Region, Evolution, Types and Need of Regional planning: Formal, Functional, and Planning Regions and Regional Development.
2. Regional Imbalances and Problems of Functional Regions.
3. Choice of a Region for Planning: Characteristics of an Ideal Planning Region; Delineation of Planning Region; Regionalization of India for Planning (Agro Ecological Zones)
4. Strategies/Models for Regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian Context; Act East Policy
5. Problem Regions and Regional Planning: DVC, National Capital Region and North East India

Reading List

1. Adell, Germán (1999) Literature Review: Theories and Models Of The Peri-Urban Interface: A Changing Conceptual Landscape, Peri-urban Research Project Team, Development Planning Unit, University College London at
2. Bhatt, L.S. (1976) Micro Level Planning in India. KB Publication, Delhi
3. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
4. Dreze J. and A. Sen, Indian Development: Select Regional Perspectives (Oxford: Oxford University Press, 1996).
5. Ses, Amratya (2000) Development as Freedom. Random House, Toronto
6. Raza, M., Ed. (1988). Regional Development. Contributions to Indian Geography. New Delhi, Heritage Publishers.
7. Rapley, John (2007) Understanding Development: Theory and Practice in the 3rd World. Lynne Rienner, London.
8. Schmidt-Kallert, Einhard (2005) A Short Introduction to Micro-Regional Planning, Food and Agriculture Organization of the United Nations (FAO) at
9. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India*, Census of India

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: General cartography (Practical)

Paper Code: GGY-HG-3066

Course objectives:

This practical course on Cartographic Techniques provides a general understanding of the field of cartography including its modern developments and importance in geographic study. It more particularly focuses on various types of map scale and their construction; map projection and construction of selected few; and interpretation of topographical maps. It also deals with various cartographic techniques associated with understanding of topography through construction of different types of profiles, transect chart and slope map.

Course outcome:

- Understanding the importance of various cartographic techniques in geographical study
- General understanding of map scale and map content for topographical map interpretation
- Acquaintance of different cartographic techniques for measurement and representation of various facets of topography or terrain condition of any area.

General Cartography (Practical)

1. Maps – Types, Elements and Uses
2. Map Scale – Types and Application, Reading Distances on a Map.
3. Representation of Geographical phenomena with symbols, weather map preparation
3. Map Projections – Criteria for Choice of Projections; Attributes and Properties of:
Zenithal Gnomonic Polar Case, Zenithal Stereographic Polar Case, Cylindrical Equal Area, Mercator's Projection
4. Representation of Data – Symbols, Dots, Choropleth, Isopleth and Flow Diagrams, Interpretation of Thematic Maps

Note: This paper is not a practical paper, and the objective is to give basic information about various tools and techniques used in making maps. Students will not be involved in any

laboratory work or hands on exercises, though a few demonstrations in the laboratories by teachers are recommended.

Reading List

1. Dent B. D., 1999: *Cartography: Thematic Map Design*, (Vol. 1), McGraw Hill.
2. Gupta K. K and Tyagi V. C., 1992: *Working with Maps*, Survey of India, DST, New Delhi.
3. Mishra R. P. and Ramesh A., 1989: *Fundamentals of Cartography*, Concept Publishing.
4. Robinson A., 1953: *Elements of Cartography*, John Wiley.
5. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers.
6. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers
7. Singh R. L., 1998: *Prayogic Bhoogol Rooprekha*, Kalyani Publications.
8. Steers J. A., 1965: *An Introduction to the Study of Map Projections*, University of London.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Climate Change: Vulnerability and Adaptation

Paper Code: GGY - HG - 3076

Course objectives

- To make the students understand that climate change is a continuous process in both global and regional environments.
- To impart information and knowledge about the impacts of climate change and the different modes of human adaptation to climate change.
- To educate the students that climate change is a global issue and its management needs global concern and co-operation.

Course outcomes

- The students will acquire knowledge and skill to detect the noticeable impacts of climate change in their vicinity.
- (ii) The students may join various govt. and non-govt. agencies dealing with climate change study and mitigation.
- (iii) The students will be able to know the extent to which the people and their economic activities are vulnerable to climatic changes and may suggest some adaptation strategies to the affected people, especially in the agricultural sector.

Climate Change: Vulnerability and Adaptation

1. Science of Climate Change: Understanding Climate Change; Green House Gases and Global Warming; Global Climatic Assessment- IPCC
2. Climate Change and Vulnerability: Physical Vulnerability; Economic Vulnerability; Social Vulnerability
3. Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health
4. Adaptation and Mitigation: Global Initiatives with Particular Reference to South Asia.
5. National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats)

Further Readings

1. IPCC. (2007) *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.
2. IPCC (2014) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
3. IPCC (2014) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
4. Palutikof, J. P., van der Linden, P. J. and Hanson, C. E. (eds.), Cambridge University Press, Cambridge, UK.
5. OECD. (2008) *Climate Change Mitigation: What Do we Do? Organisation and Economic Cooperation and Development*.
6. UNEP. (2007) *Global Environment Outlook: GEO4: Environment for Development*, United Nations Environment Programme.
7. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies*, Springer
8. Sen Roy, S. and Singh, R.B. (2002) *Climate Variability, Extreme Events and Agricultural Productivity in Mountain Regions*, Oxford & IBH Pub., New Delhi.

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Rural Development

Paper Code: GGY - HG - 3086

Course objectives

- This paper introduces students to the field of rural geography and its specificities
- It seeks to develop new insights among students on the relevance of rural areas and human activities therein and how these shape the economy and geography of an area, region or country.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical factors tangent on rural activities and how geographers seek to address issues of rural development and disparities/uplift of such areas.
- It will build skills for students seeking to enrol in a research programme and/or provide openings for them with rural planning agencies

Rural Development

1. Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy; Need for Rural Development, Gandhian Approach of Rural Development.
2. Rural Economic Base: Panchayatiraj System, Agriculture and Allied Sectors, Seasonality and Need for Expanding Non-Farm Activities, Co-operatives, PURA.
3. Area Based Approach to Rural Development: Drought Prone Area Programmes, PMGSY.
4. Target Group Approach to Rural Development: SJSY, MNREGA, Jan Dhan Yojana and Rural Connectivity.
5. Provision of Services – Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro credit

Reading List

1. Gilg A. W., 1985: *An Introduction to Rural Geography*, Edwin Arnold, London.

2. Krishnamurthy, J. 2000: *Rural Development - Problems and Prospects*, Rawat Publs., Jaipur
3. Lee D. A. and Chaudhri D. P. (eds.), 1983: *Rural Development and State*, Methuen, London.
4. Misra R. P. and Sundaram, K. V. (eds.), 1979: *Rural Area Development: Perspectives and Approaches*, Sterling, New Delhi.
5. Misra, R. P. (ed.), 1985: *Rural Development: Capitalist and Socialist Paths*, Vol. 1, Concept, New Delhi.
6. Palione M., 1984: *Rural Geography*, Harper and Row, London.
7. Ramachandran H. and Guimaraes J.P.C., 1991: *Integrated Rural Development in Asia – Learning from Recent Experience*, Concept Publishing, New Delhi.
8. Robb P. (ed.), 1983: *Rural South Asia: Linkages, Change and Development*, Curzon Press.
9. UNAPDI 1986: *Local Level Planning and Rural Development: Alternative Strategies*. (United Nations Asian & Pacific Development Institute, Bangkok), Concept Publs. Co., New Delhi.
10. Wanmali S., 1992: *Rural Infrastructure Settlement Systems and Development of the Regional Economy in South India*, International Food Policy Research Institute, Washington, D.C.
11. Yugandhar, B. N. and Mukherjee, Neela (eds.) 1991: *Studies in Village India: Issues in Rural Development*, Concept Publs. Co., New Delhi.

CBCS-based U.G. Course in Geography, 2019
Syllabus of Generic Elective Papers

Course Name: Environmental Geography

Paper Code: GGY-HG-4066

Course Objectives

- (a) This paper is a core paper that intends to introduce students to geography and environment interface
- (b) It seeks to develop new insights among students on the relevance of environmental studies from a spatial perspective.

Course Outcomes

- The paper will be useful for students in developing ideas on environmental issues that geographers usually address

Environmental Geography

1. Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure and functions
2. Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions.
 1. Environmental Problems and Management: Flood and Earthquake Hazard, Air Pollution; Biodiversity Loss; Solid and Liquid Waste.
 2. Environmental Programmes and Policies: Developed Countries; Developing Countries.
 3. New Environmental Policy of India; Government Initiatives.
 4. Concept of sustainable development.

Reading List

1. Casper J.K. (2010) Changing Ecosystems: Effects of Global Warming. Infobase Pub. New York.
2. Hudson, T. (2011) Living with Earth: An Introduction to Environmental Geology, PHI Learning Private Limited, New Delhi.

3. Miller, G.T. (2007) *Living in the Environment: Principles, Connections, and Solutions*, Brooks/ Cole Cengage Learning, Belmont.
4. Singh, R.B. (1993) *Environmental Geography*, Heritage Publishers, New Delhi.
5. UNEP (2007) *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme. University Press, Cambridge.
6. Wright R. T. and Boorse, D. F. (2010) *Toward a Sustainable Future*, PHI Learning Pvt Ltd, New Delhi.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies*, Springer
8. Singh, Savindra 2001. *Paryavaran Bhugol*, Prayag Pustak Bhawan, Allahabad. (in Hindi)

CBCS-based U.G. Course in Geography, 2019

Syllabus of Generic Elective Papers

Course Name: Industrial Geography

Paper Code: GGY - HG - 4076

Course objectives

- This paper introduces students to the field of industrial geography and its specificities
- It seeks to develop new insights among students on how industrial and allied activities shape the economy and geography of an area, region, country or the globe.

Course outcomes

- The paper will be useful for students in developing ideas on how geographical factors tangent on industrial activities and how geographers seek to address issues of industrial development/disparities in different geographical contexts.
- It will build skills for students seeking to enrol in a research programme and/or provide openings for them with agricultural /rural planning agencies.

Industrial Geography

1. Nature and Scope of Industrial Geography
2. Types, Geographical Characteristics and Location of Industries (Weber's Theory): Small and Medium Industries, Heavy Industries: Coal and Iron based industries, Rural based Industries, Footloose Industry.
3. Industrial regions of India: National Capital Region, Mumbai-Pune, Chota Nagpur and North East India.
4. Impact of Industrialisation in India: Environmental; Social and Economic
5. Industrial Policy of India and North East India.

Reading List

1. Alexander J.W. (1979). *Economic Geography*, Printice Hall of India Pvt. Ltd., New Delhi.
2. Goh Cheng Leong (1997). "Human and economic geography", Oxford University Press, New York.
3. Thoman, R.S., Conkling E.C. and Yeates, M.H. (1968). *Geography of Economic Activity*, McGraw Hill Book Company, 1968.
4. Miller, E. (1962) *Geography of Manufacturing* Printice Hall - Englewood Cliff, New Jersey
5. Gunnar Alexandersson (1967). "Geography of Manufacturing, Prentice Hall, New Jersey
Truman, A. Harishorn, John W. Alexander (2000) " *Economic Geography*", Prentice Hall of India Ltd., New Delhi.
6. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
7. Tirtha, Ranjit 2002: *Geography of India*, Rawat Publs., Jaipur & New Delhi.
8. Pathak, C. R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
9. Tiwari, R.C. (2007) *Geography of India*. Prayag Pustak Bhawan, Allahabad
10. Sharma, T.C. (2013) *Economic Geography of India*. Rawat Publication, Jaipur

CBCS-based U.G. Course in Geography, 2019
Syllabus of Generic Elective Papers

Course Name: Sustainable Development

Paper Code: GGY - HG - 4086

Course objectives

The paper highlights on the basics of sustainability including the millennium development goals. It also focuses on sustainable and inclusive development along with environmental management. Sustainable development policies and programmes including the principles of good governance are also discussed in the paper.

Course outcomes

- Thorough understanding about the concept of sustainability, sustainable development and inclusive development;
- Knowledge of sustainable development policies and programmes;
- Deeper knowledge of the national environmental policy, and the principles of good governance.

Sustainable Development

1. Sustainable Development: Definition, Components, Limitations and Historical Background.
2. The Millennium Development Goals: National Strategies and International Experiences
3. Sustainable Regional Development: Need and examples from different Ecosystems.
4. Inclusive Development: Education, Health; Climate Change: The role of higher education in sustainable development; The human right to health; Poverty and disease; The Challenges of Universal Health Coverage;
5. Sustainable Development Policies and Programmes: The proposal for SDGs at Rio+20; Illustrative SDGs; Goal-Based Development; Financing for Sustainable Development; Principles of Good Governance; National Environmental Policy, CDM.

Reading List

1. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) *Just Sustainabilities: Development in an Unequal World*. London: Earthscan. (Introduction and conclusion.).
2. Ayers, Jessica and David Dodman (2010) "Climate change adaptation and development I: the state of the debate". *Progress in Development Studies* 10 (2): 161-168.
3. Baker, Susan (2006) *Sustainable Development*. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, "The concept of sustainable development").
4. Brosius, Peter (1997) "Endangered forest, endangered people: Environmentalist representations of indigenous knowledge", *Human Ecology* 25: 47-69.
5. Lohman, Larry (2003) "Re-imagining the population debate". *Corner House Briefing* 28.
6. Martínez-Alier, Joan et al (2010) "Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm" *Ecological Economics* 69: 1741-1747.
7. Merchant, Carolyn (Ed.) (1994) *Ecology*. Atlantic Highlands, N.J: Humanities Press. (Introduction, pp 1-25.)
8. Osorio, Leonardo et al (2005) "Debates on sustainable development: towards a holistic view of reality". *Environment, Development and Sustainability* 7: 501-518.
9. Robbins, Paul (2004) *Political Ecology: A Critical Introduction*. Blackwell Publishing.
10. Singh, R.B. (Eds.) (2001) *Urban Sustainability in the Context of Global Change*, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.



The End