Syllabus for

BA/B.Sc.(Honours) Geography

Choice Based Credit System (CBCS)

Course effective from the academic year 2019-20

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

GAUHATI UNIVERSITY

Guwahati-781014

September 2019

CBCS-UG Geography Syllabus, 2019

Credit and Marks distribution scheme for CBCS Curriculum: Honours Course

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	4+2=6	100
		GGY - HG – 1036	Geography of Tourism	4+2=6	100
Semester II Marks 400 Credit 22	Ability enhancement Course	ENV-AE-2014	Environmental Science	4	100
	Honours Core	GGY - HC - 2016:	Human Geography	4+2	100
		GGY - HC - 2026:	Climatology and Biogeography	4+2	100
	Generic Elective paper (Any one)*	GGY-HG-2036	Human Geography	4+2=6	100
		GGY - HG - 2046:	Disaster management	4+2=6	100
		GGY - HG - 2056:	Resources and Sustainable Development	4=2=6	100

Semester III Marks 500 Credit 28	Honours Core	GGY - HC - 3016:	Economic Geography	4+2	100
		GGY - HC - 3026:	Geography of India with special reference to North-East India	4+2	100
		GGY - HC - 3036:	Quantitative Methods in Geography	4+2	100
	Skill Enhancement Course (Any one)	GGY - SE - 3014:	River Basin Studies	2+2	100
		GGY - SE - 3024:	Thematic Cartography	2+2	100
	Generic Elective paper (Any one)*	GGY - HG - 3016:	Economic Geography	4+2=6	100
		GGY - HG - 3026:	Cartographic Methods	4+2=6	100
Semester IV Marks 500 Credit 28	Honours Core	GGY - HC - 4016:	Environmental Geography and Disaster Management	4+2	100
		GGY - HC - 4026:	Population and Settlement Geography	4+2	100
		GGY - HC - 4036:	Remote Sensing Techniques and GIS	4+2	100
	Skill Enhancement Course (Any one)	GGY - SE - 4014:	Advanced Statistical Techniques for Spatial Analysis	2+2	100
		GGY - SE - 4024:	Surveying Techniques	2+2	100
	Generic Elective paper (Any one)*	GGY - HG - 4016:	Regional Geography of India with special reference to N.E. India	4+2=6	100
		GGY - HG - 4026:	Population and settlement Geography	4+2=6	100

Semester V Marks 400 Credit 24	Honours Core	GGY - HC - 5016	Social and Political Geography	4+2	100
		GGY - HC - 5026	Field Techniques in Geography	4+2	100
	Discipline Specific Elective (Any two)	GGY - HE - 5036:	Climate Change: Vulnerability and Adaptation	4+2=6	100
		GGY - HE - 5046:	Regional Development and Planning	4+2=6	100
		GGY - HE - 5056:	Urban Geography	4=2=6	100
		GGY - HE - 5066:	Agricultural Geography	4+2=6	100
Semester VI Marks 400 Credit 24	Honours Core	GGY - HC - 6016	Geographical Thought	4+2	100
		GGY - HC - 6026	Geography of Resources and Development	4+2	100
	Discipline Specific Elective (Any two)	GGY - HE - 6036:	Geography of Health	4+2=6	100
		GGY - HE - 6046:	Hydrology and Oceanography	4+2=6	100
		GGY - HE - 6056:	Sustainable Development	4=2=6	100
		GGY - HE - 6066:	Research Methods and Project Work	4+2=6	100

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	4+2	100
		GGY - HG – 1026	Geography of Tourism	4+2	100

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

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

NB: The examinations for the practicals for couse 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.

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 (4 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. (4 classes) **(6 Assignments)**
5. Interpretation of Geological map and Construction of cross –section (Two geological maps including one with interruptions) showing different sedimentary beds. (3 classes) **(2 assignments)**
6. Practical Note book 2 marks
7. Viva-voce 2 marks

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 Name: 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 geographic data. (6 classes) **(6 Assignments)**
4. Practical Note book 2 marks
5. Viva-voce 2 marks

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

- 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 impact applied 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, which 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 on the land and over the earth's surface.

Physical Geography - Part A (Theory)

Credit 4 (40 Classes)

1. Physical Geography – Definition and Scope, Components of Earth System. **(4 classes)**
2. Atmosphere – Composition and the vertical structure, Heat Balance, Global Circulation Pattern, Monsoon, Koppen's Climatic Classification. **(10 classes)**
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence **(8 classes)**
4. Endogenetic and Exogenetic processes, Works of River, Fluvial Cycle of Erosion – Davis **(8 classes)**
5. Hydrosphere: hydrological cycle, ocean bottom relief features, oceaninc deposits, tides and currents. **(10 classes)**

Physical Geography - Part B (Practical)

Credit 2 (20 Classes of two-hour duration each)

1.	Relief representation from the topographical sheet (v-shaped valley, u-shaped valley, conical hill, cliff, uniform slope)	(10 Classes)	**(12 Assignments)**
2.	Profile Drawing (Serial and superimposed)	(4 Classes)	**(4 Assignments)**
3.	Rainfall-Temperature Graph, Climograph and Hythergraph		(4 Classes) **(6 Assignments)**
4.	Hypsometric and bathymetric curve	(2 Classes)	**(2 Assignments)**
5.	Practical Note book		2 marks
6.	Viva-voce		2 marks

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: Geography of Tourism
Paper Code: GGY - HG - 1026

Course Objectives

- This paper introduces the students with the field of tourism from the lens of geography.

- It seeks to develop new insights among students on how tourism and allied activities are shaped by geography of an area and also how such activities are responsible in shaping economic, social and environmental context from global to local levels.

Course Outcomes

- The paper will be useful for students in developing ideas on how geographical factors determine tourism activities and how geographers seek to address issues of development and carrying capacities of varied environments. It will also build skills among students to engage them to work with tourism/eco-tourism planning exercises.

Geography of Tourism - Part A (Theory)

Credit 4 (40 classes)

1. Nature and Scope: Concept of tourism; Issues relating to recreation and leisure inter-relations; Geographical parameters of tourism as postulated by Robinson **(4 classes)**
2. Types of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage **(6 classes)**
3. Recent Trends of Tourism: International and Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings Incentives Conventions and Exhibitions (MICE) **(12 classes)**
4. Impact of Tourism on Economy, Environment and Society **(6 classes)**
5. Tourism development in India: Tourism Infrastructure; Case Studies of tourism development in different geographical contexts: Himalayas, Desert, North-East India and Coastal Areas; National Tourism Policy. **(12 classes)**

Geography of Tourism - Part B (Practical)

Credit: 2 (20 classes of two-hour duration each)

1. Trend of growth of tourist arrivals (International and domestic) in the India/ Assam since 1960 using moving average method. (4 Classes) **(2 Assignments)**

2. Trend of tourist arrivals in the north-eastern states of India since 1980 in comparison to a top ranking tourist arriving state of India using Band-graph. (4 Classes) **(2 Assignments)**
3. Representation of relationship among the rainfall, temperature and tourist arrival for any year or a specific period for Assam and Meghalaya by using appropriate carto-statistical technique. (3 Classes) **(2 Assignments)**
4. Preparation of a map of Assam to show important tourist destinations along with their road, railway and air connectivity. (3 Classes) **(2 Assignments)**
5. Preparation of a tourist map of NE India showing inflow of tourists (domestic and international) to major national parks and wildlife sanctuaries.(3 Classes) **(2Assignments)**
6. Preparation of a trekking map using GPS with the help of appropriate conventional symbols. (3 Classes) **(1 Assignments)**

7. Practical Note book 2 marks
8. Viva-voce 2 marks

Reading List

1. Bhattacharya, P. (2011): Tourism in Assam: Trend and Potentialities, Bani mandia, Guwahati
2. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi.
3. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
4. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
5. Page, S. J. (2011) Tourism Management: An Introduction, Butterworth-Heinemann- USA. Chapter 2.
6. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
7. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
8. 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).
9. Market Research Division, Dept. of Tourism, Govt. of India, India Tourist Statistics (available in PDF form), New Delhi
10. UNWTO: Tourism Barometer (available in their web portal to have a fresh glimpse of global tourism statistics/ other relevant sites may also be consulted)

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

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 (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 (any one)	GGY- HG- 2016	Human Geography (Theory + Practical)	4+2=6	100
		GGY - HG - 2026:	Disaster Management	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	IInd	Honours Core	GGY-HC-2016	Human Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IInd	Honours Core	GGY-HC-2026	Climatology and Biogeography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IInd	Generic Elective (Any one)	GGY-HG-2016	Human Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6
			GGY-HG-2026	Dusaster management (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 couse GGY-HC 2016 and GGY-HC-2026 and GGY-HC-2036 will be held on two separate days. 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 three parts for paper GGY-HC-2016 and GGY-HC-2026 GGY-HC-2036. Examiners will submit marks in three separate marks folio.

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

Course Name : Human Geography
Paper Code : GGY HC – 2016

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

1. Defining the field of human geography: Meaning and Scope; Nature of human geography and its relation with other social sciences. **(5 classes)**
2. Schools of human geography: Human Ecology, Landscape and Locational. **(5 classes)**
3. Paradigms of man-environment relationship study: Determinism, Possibilism, Neodeterminism, and Cultural Determinism. **(8 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. **(8 classes)**
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. **(7 classes)**
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. **(7 classes)**

Human Geography - Part B (Practical)

Credit 2 (20 classes of two-hour duration each)

1. Traditional house types of selected ethnic groups of N.E. India and India. (3 classes) **(2 Assignments)**
2. Trend of population growth in the world in relation to five most populous countries of the world using line graph. (3 classes) **(2 Assignments)**
3. Religious and Linguistic composition of population in the world and five most populous countries of the world using pie-graph. (3 classes) **(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). (3 classes) **(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. (5 classes) **(4 Assignments)**
6. Mapping of distribution of major racial and linguistic groups of population in the world. (3 classes) **(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

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 A (Theory)
Credit 4 (40 Classes)

Group A: Climatology (35 marks) **(25 classes)**

1. Atmospheric Composition and Structure; Variation with Altitude, Latitude and Season. **(4 Classes)**
2. Insolation and Temperature; Factors and Distribution and Heat Budget. **(3 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. **(3 Classes)**
5. Climatic classification of Koppen and Trewartha. **(4 Classes)**
6. Cyclones and anticlyclones; Tropical Cyclones, Extra Tropical Cyclone, **(3 Classes)**
7. Monsoon - Origin and Mechanism. **(3 Classes)**

Group B: Biogeography (25 marks) **(15 classes)**

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

Part B (Practical)

Credit 2 (20 classes of two-hour duration each)

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 classes) **(2 Assignments)**
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#. (4 classes) **(3 Assignments)**
3. Preparation of rainfall-temperature graphs; hythergraph, climograph and ergograph taking data from India/ N.E.India/Assam (3 classes) **(3 Assignments)**
4. Calculation of average annual rainfall and variability of annual rainfall and preparation of rainfall distribution and variability maps (using isopleths). (2 classes) **(2 Assignments)**

Biogeography (one question of 8 marks)

5. Mapping of protected areas (National park, biosphere researve and wildlife sanctuary) of Assam/ N.E. India/ India. (3 classes) **(3 Assignments)**
6. Mapping of phytogeographic and zoogeographic regions of the world. (2 classes) **(2 Assignments)**
7. Mapping of Biodiversity hotspots of the world. (2 classes) **(1 Assignment)**
8. Mapping of Soil types of Assam/N.E. India and Soil horizons. (2 classes) **(2 Assignments)**
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.

Generic Elective Course for Honours

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

Course Name: Human Geography
Paper Code: GGY-HG-2016

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

1. Field of human geography: meaning, scope and importance. **(8 classes)**
2. Concepts of man-environment relationship: Determinism and Possibilism. **(8 classes)**
3. Impact of environment on man; impact of man on environment; population growth and environmental changes; house types in different environmental conditions. **(10 classes)**
4. Global patterns of racial, religious and linguistic composition of population. **(7 classes)**
5. Origin, growth and characteristics of rural and urban settlements; Patterns of rural settlements; Patterns of urbanization in India and N.E. India. **(7 classes)**

Human Geography - Part B (Practical)

Credit 2 (20 classes of two-hour duration each)

1. Traditional house types of selected ethnic groups of North-East India. (4 classes) **(1 assignment)**
2. Trend of population growth in the world in relation to five most populous countries of the world using line graph. . (4 classes) **(1 assignment)**

3. Religious composition of population in the world and three most populous countries of the world using pie-graph. (4 classes) **(2 assignments)**
4. Spatial patterns of urban population in Assam and N.E. India at state level through choropleth map. (4 classes) **(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). (4 classes) **(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,
5. Blackwell Publication.
6. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
7. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
8. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
9. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

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

Syllabus of Generic Elective Course

Disatser Manamement

Paper Code: GGY - HG - 2026

Course objectives

- To provide students an exposure to disasters, their significance and types on Spatio-temporal dimensions.
- To develop basic ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity
- 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.
- The students will be able to differentiate the types of disasters, causes and their impact on environment and society along with various disaster management strategies and their applicability in different situations.

Disaster Management **Part-A (Theory)** **Credit -4 (40 Classes)**

1. Meaning and Definition: Hazard, Disaster and Vulnerability; Types of Disasters- Flood, Land Slide and Mass Movement, Cyclone, Drought, Earthquake and Tsunami, Volcanic eruptions, Avalanche, Famines (10 Classes)
2. Classification of Disaster: Manmade and Natural disasters; Their Causes, Processes and impact on land and People (8 Classes)
3. Disasters in India: Types and Geographical Dimensions with special reference to Assam
   (8 Classes)
4. Approaches to Disaster Risk Reduction: Mitigation and Preparedness, Role of UNDP, NDMA, NIDM and ADMA; Do's and Don'ts Pre During and Post Disasters Indigenous Knowledge and Community-Based Disaster Management; (8 Classes)
5. Reciprocal Relationship of Development and Disaster ; Sustainable Disaster Management (6 Classes)

Disaster Management Part-B (Practical) Credit -2

(20 Classes of 2 hours Duration Each)

1. Mapping of world and India Distributions of Disaster (2 Assignments)
2. Cartographic representation of major disasters India and Assam at least 30 years (2 Assignments)
3. Preparation of flood hazard zonation map of India/Assam (2 Assignments)
4. Representation of fault, thrusts and earth quake zonation map of North East India (1 Assignment)
5. Preparation of Potential Tsunamigenic map of World/India (2 Assignments)
6. Mapping of world Major and Minor Plates (1 Assignment)

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 GeologicalDisasters, 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).

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

GAUHATI UNIVERSITY
Guwahati-781014
September 2019

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

Semester	Course Type	Paper Code	Paper Name	Credits	Full Marks
Semester III Marks 500 Credit 28	Honours Core	GGY - HC - 3016:	Economic Geography (Theory + Practical)	4+2=6	100
		GGY - HC - 3026:	Geography of India with special reference to North-East India (Theory + Practical)	4+2=6	100
		GGY - HC - 3036:	Quantitative Methods in Geography (Theory + Practical)	4+2=6	100
	Skill Enhancement Course (any one)	GGY - SE - 3014:	River Basin Studies (Theory + Practical)	2+2=4	100
		GGY - SE - 3024:	Thematic Cartography (Theory + Practical)	2+2=4	100
	Generic Elective paper (any one)	GGY - HG - 3016:	Economic Geography (Theory + Practical)	4+2=6	100
		GGY - HG - 3026:	Cartographic Methods (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	IIIrd	Honours Core	GGY-HC-3016	Economic Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IIIrd	Honours Core	GGY-HC-3026	Geography of India with special reference to North-East India (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IIIrd	Honours Core	GGY-HC-3036	Quantitative Methods in Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IIIrd	Skill Enhancement Course	GGY - SE - 3014	River Basin Studies (Theory + Practical)	100	60	20	10	6	4	2+2=4
Geography	IIIrd	Skill Enhancement Course	GGY - SE - 3024	Thematic Cartography (Theory + Practical)	100	60	20	10	6	4	2+2=4
Geography	IIIrd	Generic Elective*	GGY-HG-3016	Economic Geography (Theory + Practical)	100	60	20	10	6	4	4+2=6
Geography	IIIrd	Generic Elective*	GGY-HG-3026	Cartographic Methods (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 couse GGY-HC 3016, GGY-HC-3026 and GGY-HC-3036 will be held on two days. 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 three parts for paper GGY-HC-3016, GGY-HC-3026 and GGY-HC-3036. Examiners will submit marks in three separate marks folio.

Core Course

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

Course Name: Economic Geography
Paper Code: GGY-HC-3016

***Course Objectives**:*

- This is a core paper that intends to introduce students to the principles of economic geography and associated patterns and processes of major economic activities in the world.
- It seeks to develop new insights among students on the relevance of economy 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 - Part A (Theory)

Credit: 4 (40 classes)

1. Meaning, scope and approaches of Economic Geography. **(3 classes)**
2. Economic activity: meaning and classification; Production system: Role of land, labour and capital. **(3 classes)**
3. Agriculture: Factors influencing agriculture; types of agriculture; Von Thunen's model of agricultural location; Factors influencing cultivation of wheat, rice, coffee and tea, and their distribution and production in different parts of the world. **(10 classes)**
4. Manufacturing: Factors influencing industrial location; Classification of industry; Weber's theory of industrial location; Factors, distribution and production of iron and steel, cotton textile and IT industries in the world; Special economic zones and technology parks. **(10 classes)**
5. Transport system: Modes of transport, factors influencing transport development and role of transport in resource mobilization and economic development. **(7 classes)**
6. Trade: Factors influencing trade in different countries of the world; Trade relations of India with the countries like USA, Russia and Japan. **(7 classes)**

Economic Geography - Part B (Practical)

Credit 2 (20 classes of two hour duration each)

1. Trend of rice, wheat and iron & steel production in the world/USA/India since 1960 using moving average and least squares methods. (8 classes) **(4 assignments)**

2. Trend of production of wheat, rice, maize and barley in the world/USA since 1960 using Band-graph. (3 classes) **(2 assignments)**

3. Trend of balance of trade relations (export and import value) of India with USA, China and Japan in respect of major commodities since 1990 using Bar-graph. (3 classes) **(2 assignments)**

4. Regional variation in fertilizer consumption and agricultural productivity in rice, wheat and barley in selected countries of the world using Bar-graph. (3 classes) **(1 assignment)**

5. Inter-state/Inter-nation volume of movement of selected commodities and Inter-city movement of traffic/bus in N.E. India through flow cartogram. (3 classes) **(2 assignments)**

6. Practical Note book 2 marks

7. Viva-voce 2 marks

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
10. Saxena, H.M., 2013: Economic Geography, Rawat Publications, Jaipur.

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

Course Name: Geography of India with special reference to N.E. India
Paper Code: GGY-HC-3026

Course objectives

- This is a core paper which intends to introduce students to India as a geographical entity.
- It seeks to develop new insights among students on significant geographical dimensions of the country along with its north-eastern part.
- A field study is incorporated to make the students understand regional diversity of India with respect to its land, people and economy.

Course outcome

- The paper will be useful for students in developing understanding on Indian geography and its various dimensions.
- It will also be useful for students preparing for UGC NET/SLET examinations along with civil services and other competitive examinations.

Geography of India with special reference to N.E. India - Part A (Theory)

Credit 4 (40 classes)

1. India's location and its significance; administrative divisions. **(2 classes)**
2. Physical setting: Physiographic divisions and their characteristics; Climate and its seasonal and regional characteristics; vegetation; soil types and its distribution. **(8 classes)**
3. Population: Trend of growth, spatial variation in growth and distribution; Age and sex composition; Linguistic and religious composition. **(6 classes)**
4. Agriculture: Regional distribution and production patterns of rice, wheat and millet. **(4 classes)**
5. Industry: Distribution and production patterns of iron and steel, cotton textile and fertilizers; Role of transport system in industrial development. **(6 classes)**
6. North-East India: Land of seven sisters and its locational significance; physiographic framework; forest cover; agricultural practices including shifting cultivation; industrial development scenario; population growth, distribution and ethnic composition. **(14 classes)**

Geography of India with special reference to N.E. India - Part B (Practical)
Credit: 2 (20 classes of two hour duration each)

Unit 1: 10 marks (2 Questions of 5 marks each)

1. Trend of population growth and growth rates in India and N.E. India since 1901 using Census data (Source: censusindia.gov.in) (3 classes) **(2 assignments)**
2. Choropleth mapping to show spatial variation in decennial population growth rate in India. (3 classes) **(1 assignment)**
3. Spatial variation in the patterns of religious composition of population in India and Social composition of population (SC, ST and General) in N.E. India using pie-graph. (3 classes) **(2 assignments)**
4. Trend of foodgrains production (rice, wheat, maize, barley, jowar and bajra) in India since 1950-51 using band-graph. (3 classes) **(1 assignment)**
5. Map showing distribution of major tribal groups in North-East India (3 classes) **(1 assignment)**

Unit 2: (5 classes) 6 Marks (4+2)

6. Preparation of field report based on field study of observational knowledge about the geographical personality of any part of India/N.E. India under the guidance of teacher(s).

Unit 3:

7. Practical Note book 2 marks

8. Viva-voce 2 marks

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 Intenational 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
13. Bhagabati, A.K., Bora, A. K. and Kar, B.K.: Geography of Assam, Rajesh Publications, New Delhi.
14. Taher, M and Ahmed, P.: Geography of North East India, Mani Manik Prakash, Guwahati.
15. Das, M..M.: Peasant Agriculture in Assam, Inter – India Publications, New Delhi.
16. Gopal Krishnan, R : Geography of North East India
17. Bhattacharya, P.2006 : Trend in Tourism Potentiality, Bani Mandir, Guwahati
18. Bhagabati, A.K. (ed) : Biodiversity of Assam, Eastern Book House, Guwahati
19. Bhattacharyya, N.N. : North East India, Rajesh Publication, New Delhi
20. Srivastava, S.C., : Demographic Profile of N.E. India, Mittal Publications

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

Course Name: Quantitative Methods in Geography
Paper Code: GGY-HC-3036

Course Objectives

The paper Quantitative Methods in Geography 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 through the application of some basic statistical measures. 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 geographical studies;
- Understanding of tabulation, analysis and interpretation of geographical data.

Quantitative Methods in Geography - Part A (Theory)

Credit 4 (40 classes)

1. Quantification and its significance in geographical study; advantages and limitations of quantitative methods in geography. **(4 classes)**
2. Geographical Data: Nature, types and sources; scale of measurement (nominal, ordinal, interval and ratio). **(4 classes)**
3. Measures of central tendency (mean, median and mode) and dispersion (range, quartile deviation, mean deviation, standard deviation and coefficient of variation) and their applications in geographical data analysis. **(8 classes)**
4. Sampling techniques: meaning of sampling and its need; types of sampling (simple random and stratified random). **(6 classes)**
5. Time series analysis and its applications in geographical studies; Basic techniques of time series data analysis (semi-average, moving average and least squares). **(6 classes)**
6. Correlation and Regression Analysis: Meaning of correlation; Bi-variate coefficient of correlation (Spearman's rank correlation and Pearson's product-moment correlation); linear regression analysis; and their applications in geographical data analysis. **(12 classes)**

Quantitative Methods in Geography - Part B (Practical)
Credit 2 (20 classes of two-hour duration each)

1. Tabulation/Grouping of geographical data for making frequency distribution table; Preparation of Histogram, Frequency Polygon and Frequency Curve. (4 classes) **(1+1assignments)**
2. Computation of mean, median and mode for ungrouped and grouped geographical data; Determination of median and mode using graphical methods; Determination of the location of spatial mean centre of settlements (using centrographic measure). (5 classes) **(2+1+1 assignments)**
3. Computation of the values of standard deviation and coefficient of variation of ungrouped and grouped data relating to some geographical phenomena (rainfall, landholding, income, production, etc) for comparison of distribution patterns. (4 classes) **(1+1 assignments)**

4. Analysis of time series data of some geographical phenomena (rainfall, production, export value, import value, etc) using moving average and least squares methods. (3 classes) **(2 assignments)**

5. Computation of coefficient of correlation between two logically associated geographical phenomena using Spearman's rank correlation and Pearson's product-moment correlation formulae; Preparation of scatter diagram and fitting the line of linear regression of Y on X for any set of bi-variate data relating to meaningful geographical phenomena. (4 classes) **(2+1 assignments)**

6. Practical Note book 2 marks

7. Viva-voce 2 marks

Reading List

1. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction*, Oxford University Press.
2. Sarkar, A. (2013) *Quantitative Geography: techniques and presentations*. Orient Black Swan Private Ltd., New Delhi.
3. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.
4. Mathews, J.A., 1987: *Quantitative and Statistical Approaches to Geography: A Practical Manual* Pergamon, Oxford.
5. Mahmood, A., 1999: *Statistical Methods in Geographical Studies*, Rajesh Publications, New Delhi.
6. Elhance, D.N., 1972: *Fundamentals of Statistics*, Kitab Mahal, Allahabad
7. Monkhouse, F.J. & Wilkinson, H.R., 1989: *Maps & Diagrams*, B.I. Publications, New Delhi
8. Gregory, S., 1963: *Statistical Methods and Geographers*, Longman, London

Skill Enhancement Course for Honours

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

Course Name: River Basin Studies
Paper Code: GGY – SE-3014

Course Objectives:

- The main objective of this course is to develop understanding among the honours students about the river basin and the functioning of its elements.
- To train the students for acquiring necessary skill for understanding geomorphology in the field.

Course Outcomes:

- At the end of the course, the students will be able to learn use of a few instruments like rotameter, planimeter, Dumpy Level, etc.
- To learn the basics of morphometric analysis techniques.
- To acquaint with the field methods of river studies in a cross-section.

River Basin Studies - Part A (Theory)
Credit: 2 (20 classes)

1. Concept of river basin, catchment area and watershed. **(3 classes)**
2. Concept of fluvial system operating in a river basin; Input-output components in relation to the hydrological cycle; River basin as a fundamental geomorphic unit. **(5 classes)**
3. Understanding the linear, areal and relief aspects of a river basin. **(4 classes)**
4. Concept of sediment production zone, sediment transfer zone and sediment deposition zone and associated processes. **(4 classes)**
5. Sources of water flow in a river basin; Concept of basin runoff and channel discharge; factors affecting basin runoff. **(4 classes)**

River Basin Studies - Part B (Practical)
Credit 2 (20 Classes of two-hour duration each)

1. Delineation of a river basin along with drainage network from topographical sheet and preparation of a basin physiography map; conduct of morphometric analysis: Computation of bifurcation ratio, length ratio and basin circulatory ratio. (6 classes)

(4 assignments)

2. Relationship analysis using semi-log graph paper between stream order and stream number; stream order and average stream length; stream order and drainage area. (4 classes) **(3 assignments)**

3. Cross-sectional survey of a river and construction of profiles at least at three points (Field-based assignment) (3 classes) **(1 assignment)**
4. Preparation of stream frequency and drainage density maps of a river basin. (4 classes) **(2 assignments)**
5. Estimation of basin runoff for winter and summer months taking monthly water discharge data and preparation of a hydrograph. (3 classes) **(1 assignment)**

6. Practical Note book 2 marks
7. Viva-voce 2 marks

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.

Skill Enhancement Course for Honours

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

Course Name: Thematic Cartography
Paper Code: GGY – SE-3024

Course objectives

This course on thematic cartography provides a general understanding of methods and techniques and importance in geographic study. It more particularly focuses on various themes of cartographic techniques; principles of different types of symbols, methods for preparation of maps or plan in different environment and representation of various features of the earth's surface using different cartographic techniques.

Course outcomes

- Understanding the importance of various techniques of preparation of maps in geographical study
- General understanding of preparation of different types of plan and maps.
- An acquaintance of different cartographic techniques for representation of various facets of earth's surface

Thematic Cartography - Part A (Theory)

Credit: 2 (20 classes)

1. Thematic cartography: meaning and importance **(3 classes)**
2. Thematic Mapping: Principles and techniques of representation of physical and human geographic data (point, line, polygon) **(4 classes)**
3. Concepts and principles of cartographic overlay and mapping **(4 classes)**
4. Concept of base map; map types; map reading; map design, layout and typography **(5 classes)**
5. Techniques of interpretation of Topographical maps, satellite imageries and aerial photographs for thematic mapping. **(4 classes)**

Thematic Cartography - Part B (Practical)

Credit 2 (20 classes of two-hour duration each)

1. Preparation of an administrative/physical map of India containing necessary map elements using appropriate typography. (3 classes) **(1 Assignment)**

2. Preparation of thematic maps for representing human geographic data using choropleth, isopleth, dot, sphere and proportionate circle techniques. (7 classes) **(5 Assignments)**
3. Interpretation of topographical maps for preparation of thematic maps through overlay method (taking point, line and area layers) to show relationship between relief and agriculture; and relief, drainage and settlements**.** (4 classes) **(2 Assignments)**
4. Locational accessibility mapping based on travel time through isochronic cartogram. (3 classes) **(1 Assignment)**
5. Preparation of landuse/landcover map through visual interpretation of satellite imagery using appropriate classification scheme. (3 classes) **(1 Assignment)**
6. Practical Note book 2 marks
7. Viva-voce 2 marks

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: Economic Geography
Paper Code: GGY-HG-3016

***Course Objectives**:*

- This is a generic elective paper with a view to make the students of other honours subjects understand the basic principles of economic geography and associated patterns and processes of major economic activities in the world.
- It seeks to develop insights among the students about the relevance of studying economic geography and understanding contemporary economic problems from geographical perspective.

***Course Outcomes**:*
This paper will be useful for the students in developing understanding on how geographical factors organize economic space, and to acquire knowledge about spatial patterns of various economic activities on the earth.

Economic Geography - Part A (Theory)

Credit 4 (40 classes)

1. Meaning and scope of Economic Geography. **(3 classes)**
2. Economic activity: meaning and classification; Production system: Role of land, labour and capital; Resource: Concept and classification. **(6 classes)**
3. Agriculture: Factors influencing agriculture; types of agriculture; Factors influencing cultivation of wheat, rice and tea, and their distribution and production in the world. **(10 classes)**
4. Manufacturing: Factors influencing industrial location; types of industry; Factors, distribution and production of iron and steel and cotton textile industry in the world. **(10 classes)**
5. Transport system: Modes of transport, factors influencing transport development and role of transport in resource mobilization and industrial development. **(6 classes)**
6. Trade: Factors influencing trade; Trade relations of India with the countries like Bhutan, Nepal and Bangladesh. **(5 classes)**

Economic Geography - Part B (Practical)

Credit 2 (20 classes of two hour duration each)

1. Trend of rice, wheat and iron & steel production in the world/India since 1960 using moving average method. (5 classes) **(3 assignments)**
2. Trend of production of wheat, rice, maize and barley in the world/India since 1960 using Band-graph. (4 classes) **(2 assignments)**
3. Trend of balance of trade relations (export and import value) of India with Bangladesh, Nepal and Bhutan in respect of major commodities since 1990 using Bar-graph. (4 classes) **(2 assignments)**

4. Regional variation in fertilizer consumption and agricultural productivity in rice, wheat and barley in selected countries of the world using Bar-graph. (3 classes) **(1 assignment)**

5. Inter-state and Inter-nation volume of movement of selected commodities through flow cartogram. (4 classes) **(2 assignments)**

6. Practical Note book 2 marks

7. Viva-voce 2 marks

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.
10. Saxena, H.M., 2013: Economic Geography, Rawat Publications, Jaipur.

Generic Elective Course for Honours

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

Course Name: Cartographic Methods
Paper Code: GGY-HG-3026

***Course Objectives**:*

This course on Cartographic Methods 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 and methods.

***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 Methods - Part A (Theory)

Credit: 4 (40 classes)

1. Meaning of cartography and its need in geography; Traditional versus Digital cartography. **(6 classes)**
2. Shape and size of the earth; Coordinate system (latitude and longitude). **(4 classes)**
3. Map: Meaning, scale and classification; map as a tool in spatial analysis. **(6 classes)**
4. Map Projection: meaning and classification (zenithal, conical and cylindrical); choice of map projection. **(16 classes)**
5. Thematic map: meaning and types; Choropleth and Isopleth mapping. **(8 classes)**

Cartographic Methods – Part B (Practical)

Credit: 2 (20 classes of two hour duration each)

1. Construction of graphical scale; Computation work for conversion of map scale (6 classes) **(2+4 Assignments)**
2. Construction of graticule of map projection along with properties and uses: Zenithal polar gnomonic, Simple conical with one standard parallel, simple cylindrical and Gall's stereographic cylindrical. (8 classes) **(4 Assignments)**
3. Representation of physical and human geographic data through Choropleth and Isopleth mapping and Pie cartogram. (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.

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

GAUHATI UNIVERSITY
Guwahati-781014
September 2019

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

Syllabus of Core Course

Course Name: Environmental Geography and Disaster management
Paper Code: GGY - HC - 4016

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. Cunninghum W. P. and Cunninghum M. A., 2004: *Principals of EnvironmentalScience: 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: Population and Settlement Geography
Paper Code: GGY - HC - 4026

Credit: 6
Total Marks 100
(Theory: 60, Practical: 20 and Internal Assessment: 20)

Unit I

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.

UNIT II: Settlement Geography

6 Definition, Nature and scope, Criteria for delimitation.

7. Urban Settlements: Census categories, Metropolitan concept, City-region and Conurbation, Urban Landuse .

8. Urban Landuse and Morphology: Classical models - Burgess, Homer-Hoyt, Harris and Ullman

9. Rural Settlements: Site and situation, nature and characteristics, Types and patterns of rural settlement * Classification of rural settlements, Morphology of rural settlement in the Indian context

10.Regional Settlement Hierarchy: Primate City, Rank-Size Rule, Central Place Theory

11. Settlement Classification based on situation and functions *, Method of functional classification by Harris and Nelson

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 Core Course

Course Name: Remote Sensing Techniques and GIS
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

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

Course Name: Advanced Statistical Techniques for Spatial Analysis
Paper Code: GGY - SE - 4014

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: Surveying Techniques
Paper Code: GGY – SE-4024
Total Credit: 4
Total Marks 100
(Theory: 60, Practical: 20 and Internal Assessment: 20)

Course objectives

This course on Surveying Techniques provides a general understanding of the field of survey including its modern tools and importance in geographic study. It more particularly focuses on various types of survey instruments; principles of different types of surveying, methods of carrying out survey for preparation of plan in different environment and representation of various objects in the plan.

Course outcomes

- Understanding the importance of various surveying techniques in geographical study.
- General understanding of preparation of different types of plan and map.
- An acquaintance of different surveying techniques for representation of various objects of earth's surface.

Surveying techniques

Part A: (Theory) Credit 2 (40 classes)

1. Surveying: Meaning and importance; Principles of surveying - plane and geodetic surveying; Principles of triangulation.
2. Principles and techniques of surveying by Plane Table, Prismatic Compass and Dumpy Level.
3. Principles of radiation, intersection, traversing, contouring and leveling.
4. GPS: Basic concept, principles and utilities.
5. Total Station and its utilities in surveying.

Surveying Techniques

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

1. Preparation of a plan or a map of an area within the college campus or any suitable area using plane table (Radiation & Intersection methods) (2 Assignments)
2. Traverse Surveying with Prismatic Compass: Open and Closed Traverse and preparation of plan (adjustment of closing errors using Bowditch's rule) (2 Assignments)

3. Closed Traverse Surveying with Theodolite: Plotting of data for preparation of a plan through computation of Reduced Bearing, Consecutive Co-ordinates and Independent Co-ordinates.
   (1 Assignment)
4. Profile levelling and contouring in a selected area by Dumpy Level
   (2 Assignments)

Reading List:

1. Campbell, J., 1984: Introductory Cartography, Prentice Hall Inc., Englewood Cliff
2. Misra, R.P. and Ramesh, A., 1995: Fundamentals of Cartography, Concept Publishing Company, New Delhi
3. Robinson, A.H., et al: Elements of Cartography, John Wiley & Sons, New York
4. Raisz, E. : Principles of Cartography, McGraw Hills, London
5. Kenetkar, T.P. and Kulkarni, S.U.: Surveying and Levelling, Vol. I & II, VidyarthiGrithaPrakashan, Pune

Course Name: Geography of India and N.E. India
(Generic Elective Course)
Paper Code: GGY-HG-4016
Credit: 6
Total Marks 100
(Theory: 60, Practical: 20 and Internal Assessment: 20)

Course objectives

- This is a core paper which intends to introduce students to India as a geographical entity.
- It seeks to develop new insights among students on significant geographical dimensions of the country along with its north-eastern part.
- A field study is incorporated to make the students understand regional diversity of India with respect to its land, people and economy.

Course outcome

- The paper will be useful for students in developing understanding on Indian geography and its various dimensions.
- It will also be useful for students preparing for UGC NET/SLET examinations along with civil services and other competitive examinations.

Part A: Theory
Credit: 4
(40 classes of 1 hour duration each)

7. India's location and its significance; administrative divisions. **(2 classes)**
8. Physical setting: Physiographic divisions and their characteristics; Climate and its seasonal and regional characteristics; vegetation; soil types and its distribution. **(8 classes)**
9. Population: Trend of growth, spatial variation in growth and distribution; Age and sex composition; Linguistic and religious composition. **(6 classes)**
10. Agriculture: Regional distribution and production patterns of rice, wheat and millet. **(4 classes)**
11. Industry: Distribution and production patterns of iron and steel, cotton textile and fertilizers; Role of transport system in industrial development. **(6 classes)**
12. North-East India: Land of seven sisters and its locational significance; physiographic framework; forest cover; agricultural practices including shifting cultivation; industrial development scenario; population growth, distribution and ethnic composition. **(14 classes)**

Part B: Practical
Credit: 2
(20 classes of 2 hour duration each)

Unit 1: 10 marks (2 Questions of 5 marks each)

1. Trend of population growth and growth rates in India and N.E. India since 1901 using Census data (Source: censusindia.gov.in) **(2 assignments)**
2. Choropleth mapping to show spatial variation in decennial population growth rate in India. **(1 assignment)**
3. Spatial variation in the patterns of religious composition of population in India and Social composition of population (SC, ST and General) in N.E. India using pie-graph. **(2 assignments)**
4. Trend of foodgrains production (rice, wheat, maize, barley, jowar and bajra) in India since 1950-51 using band-graph. **(1 assignment)**
5. Map showing distribution of major tribal groups in North-East India **(1 assignment)**

Unit 2: 6 Marks (4+2)

6. Preparation of field report based on field study of observational knowledge about the geographical personality of any part of India/N.E. India under the guidance of teacher(s).

Unit 3: 4 Marks (2+2)

7. Practical Note-book and viva-voce.

Reading List:

21. Deshpande C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi.
22. Johnson, B. L. C., ed. 2001. Geographical Dictionary of India. Vision Books, New Delhi.
23. Mandal R. B. (ed.), 1990: Patterns of Regional Geography – An Intenational Perspective. Vol. 3 –Indian Perspective.
24. Sdyasuk Galina and P Sengupta (1967): Economic Regionalisation of India, Census of India
25. Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.
26. Singh R. L., 1971: India: A Regional Geography, National Geographical Society of India.
27. Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
28. Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
29. Tirtha, Ranjit 2002: Geography of India, Rawat Publs., Jaipur & New Delhi.
30. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.
31. Tiwari, R.C. (2007) Geography of India. Prayag Pustak Bhawan, Allahabad
32. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur

33. Bhagabati, A.K., Bora, A. K. and Kar, B.K.: Geography of Assam, Rajesh Publications, New Delhi.
34. Taher, M and Ahmed, P.: Geography of North East India, Mani Manik Prakash, Guwahati.
35. Das, M..M.: Peasant Agriculture in Assam, Inter – India Publications, New Delhi.
36. Gopal Krishnan, R : Geography of North East India
37. Bhattacharya, P.2006 : Trend in Tourism Potentiality, Bani Mandir, Guwahati
38. Bhagabati, A.K. (ed) : Biodiversity of Assam, Eastern Book House, Guwahati
39. Bhattacharyya, N.N. : North East India, Rajesh Publication, New Delhi
40. Srivastava, S.C., : Demographic Profile of N.E. India, Mittal Publications

Course Name: Population and Settlement Geography
(Generic Elective Course)
Paper Code: GGY-HG-4026
Credit: 6
Total Marks 100
(Theory: 60, Practical: 20 and Internal Assessment: 20)

Unit I

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.

UNIT II: Settlement Geography

6 Definition, Nature and scope, Criteria for delimitation.

7. Urban Settlements: Census categories, Metropolitan concept, City-region and Conurbation, Urban Landuse .

8. Urban Landuse and Morphology: Classical models - Burgess, Homer-Hoyt, Harris and Ullman

9. Rural Settlements: Site and situation, nature and characteristics, Types and patterns of rural settlement * Classification of rural settlements, Morphology of rural settlement in the Indian context

10.Regional Settlement Hierarchy: Primate City, Rank-Size Rule, Central Place Theory

11. Settlement Classification based on situation and functions *, Method of functional classification by Harris and Nelson

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

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

GAUHATI UNIVERSITY
Guwahati-781014
September 2019

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CBCS-based U.G. Course in Geography, 2018
Syllabus of Core Course

Course Name: Regional Development and Planning
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.l, 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 Techniques in Geography
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 Publs. Co., New Delhi.
5. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. 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.

Discipline Specific Elective

Course Name: Climate Change: Vulnerability and Adaptation

Paper Code: GGY-HE-5016

Credit: 6

Total Marks 100

(Theory: 60, Practical: 20 and Internal Assessment: 20)

Course objectives

- To make the students understand that climate change is a continuous process in both global and regional environments.
- To impact 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.

Discipline Specific Elective
Course Name: Social and Political Geography
Paper Code: GGY-HG-5026
Credit: 6
Total Marks 100
(Theory: 60, Practical: 20 and Internal Assessment: 20)

Unit I : 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.

Unit II
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

Ahmed A., 1999: *Social Geography*, Rawat Publications.

Casino V. J. D., Jr., 2009) *Social Geography: A Critical Introduction*, Wiley Blackwell.

Cater J. and Jones T., 2000: *Social Geography: An Introduction to Contemporary Issues*, Hodder Arnold.

Holt L., 2011: *Geographies of Children, Youth and Families: An International Perspective,* Taylor & Francis.

Panelli R., 2004: *Social Geographies: From Difference to Action*, Sage.

Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: *Introducing Social Geographies,* Oxford University Press.

Smith D. M., 1977: *Human geography: A Welfare Approach*, Edward Arnold, London.

Smith D. M., 1994: *Geography and Social Justice*, Blackwell, Oxford.

Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: *The SAGE Handbook of Social Geographies*, Sage Publications.

Sopher, David (1980): *An Exploration of India*, Cornell University Press, Ithasa

Valentine G., 2001: *Social Geographies: Space and Society*, Prentice Hall.

Agnew J., 2002: *Making Political Geography,* Arnold.

Agnew J., Mitchell K. and Toal G., 2003: *A Companion to Political Geography*, Blackwell.

Cox K. R., Low M. and Robinson J., 2008: *The Sage Handbook of Political Geography*, Sage Publications.

Cox K., 2002: *Political Geography: Territory, State and Society*, Wiley-Blackwell

Gallaher C., et al, 2009: *Key Concepts in Political Geography*, Sage Publications.

Glassner M., 1993: *Political Geography*, Wiley.

Jones M., 2004: *An Introduction to Political Geography: Space, Place and Politics*, Routledg
.

Mathur H M and M M Cernea (eds.) Development, Displacement and Resettlement – Focus on Asian Experience, Vikas, Delhi

Painter J. and Jeffrey A., 2009: *Political Geography*, Sage Publications.

Taylor P. and Flint C., 2000: *Political Geography*, Pearson Education.

Verma M K (2004): Development, Displacement and Resettlement, Rawat Publications, Delhi

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: 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 andresilience 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.

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

Course effective from the academic year 2019-20

6th Semester

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

GAUHATI UNIVERSITY
Guwahati-781014
September 2019

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

Syllabus of Core Course

Course Name: 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 Thuijis 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. Hartshone 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: Geography of Resources and Development
Paper Code: GGY - HC - 6026

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., Renwich 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: Geography of Health and Wellbeing
Paper Code: GGY - HE - 6016

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: Hydrology and Oceanography
Paper Code: GGY - HE - 6026

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
Discipline Specific Elective
Course Name: Sustainable Development
Paper Code: GGY - HE - 6036

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.

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

Course Name: Research Methods and Project Work
Paper Code: GGY - HE - 6044

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.

Unit I: Research Methods

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

Unit II: Disaster Management based Project Work

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

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3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
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2. Dikshit, R. D. 2003. The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
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5. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Publs. Co., New Delhi.
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