

CBCS-based U.G. Course in Geography, 2019
Syllabus of Regular Course (Discipline specific elective)
Course Name: Environmental Geography and Disaster Management

Paper Code: GGY-RE-5016

Total Credit: 6 (4+2)

Total Marks: 100

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

Course Objectives:

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

Course Outcomes:

- The paper will be useful for students in developing ideas on environmental issues including disasters that geographers usually address.
- The paper will also be useful for students preparing for different competitive exams including the civil services.

Part I: Theory

Credit: 4 (60 Marks)

(40 Classes of 1 hour each)

- PN
DP
MS
HD
PKS
DP
JKB
1. Environmental Geography: Nature, Scope and Significance. (4 Classes)
 2. Human-Environment Relationships – Historical progression; Adaptation in different Biomes. (6 Classes)
 3. Major Global Environmental Problems: Pollution, Deforestation, Desertification, Global Warming and Bio-Depletion. (10 Classes)
 4. Meaning of Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster (Natural and Manmade). (4 Classes)
 5. Disaster Management Cycle and Phases: Prevention, Preparedness, Response, Rehabilitation, Reconstruction and Mitigation, (4 Classes)
 6. Major Hazards and Disasters, and their Management: Flood, Earthquake, Wildfire, and Chemical and Nuclear explosions. (6 Classes)
 7. National Environmental Policy and National Disaster Management Plan: Environmental Protection Act 1986 and Disaster Management Act 2005. (6 Classes)

Part II: Practical
Credit: 2 (20 Marks)

(20 classes of 2 hour duration each)

Unit I: Practical Works (16 Marks)

(Two questions of 8 marks each)

1. Exploring satellite imageries and toposheets to observe bank line change of the Brahmaputra river from any selected stretch in three different time periods and preparation of map therefrom. **(1 exercise)**

(Goalpara, Palasbari, Nimatighat, etc.)

Satellite images can be downloaded from <https://earthexplorer.usgs.gov/>

Survey of India toposheets can be downloaded freely from <https://soinakshe.uk.gov.in/mtr/>

2. Mapping of major wetlands in a district and computation of shape and size (area) for their classification. **(1 exercise)**

3. Preparation of a map of a nearby wetland and to identify the changes in dimension, water level and encroachment it faced during the last one decade. Presentation of data in tabular form along with the map (field-based). **(1 exercise)**

4. Preparation of a long-term precipitation time series curve for any selected station of N.E. India using moving average method by downloading the annual rainfall data for any district/station of Assam for at least 30 years from the portal https://www.indiawaterportal.org/met_data/. Students can also explore the web portal <https://mausam.imd.gov.in/> to get an idea of different types of weather data in India and their historical and present distribution. **(1 exercise)**

5. Drawing of a diagram of disaster management cycle with reference to some disasters (flood and earthquake) in North-East India and to indicate the activities associated with each step. **(2 exercise)**

6. Drawing of a map of Assam showing the major fault lines thereon. Also to plot at least 50 epicentres in last few years and to explain the areas of their concentration with the help of Bhookamp app. **(1 exercise)**

7. Preparation of a disaster vulnerability map of Assam/ N.E. India based on data of natural disasters (Flood/earthquake/landslide/bank erosion) with respect to their occurrence and frequency in different areas. **(1 exercise)**

Unit II: Practical Note-Book and Viva-voce (4 Marks)

1. Evaluation of Practical Note-Book (2 Marks)
2. Viva-voce (2 Marks)

Reading List:

1. Chandna R. C., 2002: Environmental Geography, Kalyani, Ludhiana.
2. Cunningham W. P. and Cunningham M. A., 2004: Principles of Environmental Science: Inquiry and Applications, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: The Nature of the Environment, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity. Rawat Publication, Jaipur
5. Miller G. T., 2004: Environmental Science: Working with the Earth, Thomson BrooksCole, Singapore.
6. MoEF, 2006: National Environmental Policy-2006, Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer
8. Odum, E. P. et al, 2005: Fundamentals of Ecology, Ceneage Learning India.
9. Singh S., 1997: Environmental Geography, PrayagPustakBhawan. 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. Alcántara-Ayala, I. (2002). Geomorphology, natural hazards, vulnerability and prevention of natural disasters in developing countries. *Geomorphology*, 47(2-4), 107-124.
14. Goudie, A., & Ayala, I. A. (2010). *Geomorphological hazards and disaster prevention*. Cambridge University Press.
15. <https://www.undrr.org/publications>
16. <http://sdmassam.nic.in/dmp.html#ddmp>
17. https://ndma.gov.in/sites/default/files/PDF/DM_act2005.pdf
18. http://sdmassam.nic.in/pdf/publication/undp/disaster_management_in_india.pdf.

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

Syllabus of Regular Elective Course

Course Name: Population and Settlement Geography
Paper Code: GGY-RG-5036

Total Credit: 6 (4+2)

Total Marks: 100

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

Course objectives

- This paper is a generic paper that intends to introduce students to the basic concepts of population and settlement geography and how the differential characteristics of population and settlement influence the overall development process of an area.
- It seeks to develop understanding among students about the significance of population geography and settlement geography and their inter-relationship.

Course outcomes

- The paper will be useful for students in developing ideas about spatio-temporal changes in the characteristics of population and settlement and the factors associated with them.
- The paper will be useful for students preparing for various competitive exams including the civil services.

Part I: Theory

Credit: 4 (60 Marks)

(40 classes of 1 hour duration each)

Unit I: Population Geography (40 Marks)

26

Classes

1. Defining the field of population geography: meaning and scope; its relation with demography. (3 Classes)
2. Sources of population data; Perspectives on Census of India publications – Primary Census Abstract, District Census Hand-Book, Sample Registration System, etc. (2 Classes)
3. Distribution and density of population: Factors influencing population distribution and density; global pattern of population distribution. (4 Classes)
4. Population Growth: Trend of global population growth; components of population growth–fertility, mortality and migration; push and pull factors of migration; spatial variations in population growth in the world. (8 Classes)

5. Theories of population growth: Malthusian Theory and Demographic Transition Theory. (3 Classes)
6. Population composition and associated characteristic patterns in global contexts: Age-Sex Composition; Rural-Urban Composition; Population ageing. (6 Classes)

Unit II: Settlement Geography (20 Marks)

14 Classes

1. Defining the field of settlement of geography: Meaning and scope. (3 Classes)
2. Rural and urban settlements: Factors influencing distribution pattern of settlements; Types of rural settlements; Morphology and Characteristics of rural and urban settlements. (7 Classes)
3. Concept of settlement hierarchy and urban fringe; Christaller's Central Place Theory. (4 Classes)

Part II: Practical

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

Unit I: Practical Works (16 Marks)

(Two questions of 8 marks each)

1. Trend of population growth in Assam/N.E. India through line graph; Calculation and graphical representation of trend of decadal growth rates of population in Assam/N.E. India/India. (2 Exercises)
2. Choropleth map to show spatial pattern of decadal variation in population growth in Assam/N.E. India/India. (1 Exercise)
3. Choropleth map showing spatial pattern of population density in Assam/India. (1 Exercise)
4. Map showing spatial variation in social/religious/rural-urban composition of population in Assam/N.E. India using pie-graph. (1 Exercise)
5. Choropleth map showing spatial pattern of level of urbanization in Assam/N.E. India. (1 Exercise)
6. Flow cartogram showing direction and volume of migration into Assam/N.E. India from different parts of India. (1 Exercise)
7. Map showing distribution of towns and their varied population size with spheres in Assam/N.E. India. (1 Exercise)