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

Syllabus of Core Course

Course Name: Geographical Thought

Paper Code: GGY-HC-6016

Total Credit: 6 (4+2)

Total Marks: 100

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

Course objectives:

- This course introduces the students to the theoretical development of geography over time.
- This course presents contemporary and post-modern perspectives, along with the models that act as a guiding force of the discipline to understand various geographical phenomena in proper perspectives.

Course outcomes:

- This course develops a comprehensive understanding of the discipline;
- This course helps the students to apply the historic and contemporary perspective to explain and approach the real world geographic problems.

Part 1: Theory

Credit: 4 (60 Marks)

(40 classes of 1 hour duration each)

1. Early development of Geography: Ancient,dark age, medieval, and age of exploration and discoveries. **(8 classes)**
2. Foundation of modern geography: Contribution of the German, French, British and American geographers. **(6 classes)**
3. Evolution of geographical thought: Determinism, possibilism, neo-determinism, human ecology, cultural landscape and areal differentiation. **(8 classes)**
4. Recent trends in geography: Quantitative revolution and its impact, logical positivism, locational school of thought, behaviouralism, humanistic geographyand post-modernism. **(10 classes)**
5. Geographical debates: Regional and systematic; ideographic and nomothetic. **(4 classes)**
6. Models in geography:Meaning, types and significance; basic concepts of Gravity Model, Spatial Diffusion Model and Distance Decay Model. **(4 classes)**

Part II: Practical

Credit: 2 (20 Marks)

(20 classes of 2 hour duration each)

Unit 1: Practical Works (16 Marks)

(Two questions of 8 marks each)

1. Mapping of routes of exploration and discoveries (Marco Polo, Christopher Columbus, Vasco-da gama, and James Cook) **(1 Exercise)**
2. Intensity of spatial interactionof Guwahati city with neighbouring urban centres. **(1 Exercise)**

3. Mapping of population potential surfaces in Assam using the gravitymodel. **(1 Exercise)**

4. Demarcation of urban influence zone by using Reily's breaking point formula. **(1 Exercise)**

5. Population Density gradient analysis of Guwahati or any other city. **(1 Exercise)**

6. Trend of development of paradigms in geography (from Environmental Determinism to Post Modernism) through time-scale graph indicating advocates, tentative time of emergence and overriding theme. **(1 Exercise)**

7. Preparation of a world map highlighting the major developments of geography (Greek, Arab, France, Germany, Russia, UK and USA) indicating the contribution, name of the contributor and year of contribution. **(1 Exercise)**

8. Greek and Arabian contributions to the development of Geography in different ages (Name of contributor and name of contribution at different points of time) through time-scale graph.

(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. 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. Hussain, M., 1989: Evolution of Geographic Thought, Rawat Publications, Jaipur.
8. Johnston R. J., (Ed.): Dictionary of Human Geography, Routledge.
9. Johnston R. J., 1997: Geography and Geographers, Anglo-American Human Geography since 1945, Arnold, London.
10. Kapur A., 2001: Indian Geography Voice of Concern, Concept Publications.
11. Martin Geoffrey J., 2005: All Possible Worlds: A History of Geographical Ideas, Oxford.
12. Soja, Edward 1989. Post-modern Geographies, Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.

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CBCS-basedU.G. Course in Geography, 2019

Syllabus of Honours Core Course

Course Name: Research Methods in Geography and Project Work

Paper Code: GGY-HC-6026

Total Credit: 6 (4+2)

Total Marks: 100

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

Course Objectives:

The paper on Research Methods will enable the students:

- To understand how to approach a research problem and to formulate research objectives and research questions in proper perspective. In addition, knowledge of formulation of hypothesis and testing, framing of questionnaires, techniques of collection of both qualitative and quantitative data and their analysis.
- To develop understanding of the basics and utility of review of literature and preparation of research report.

Course Outcomes:

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

Part I: Theory

Credit: 4 (60 Marks)

(40 Classes of 1 hour each)

1. Meaning and significance of research; types of research; Basics of research methodology; Review of literature and its need; Ethics of research. (6 Classes)

2. Geographic Research: Meaning and Characteristics; Formulation of research problem. (4 Classes)

3. Research Design: Statement of the problem, Review of research works, Objectives, Research questions, Hypotheses, Database and methodology, Significance, Organization of the Work and Referencing. (10 Classes)

4. Data Collection: Types and Sources of Data; Methods of primary data collection (both qualitative and quantitative, and physical and human geographic data); Concept of sample survey; Pilot survey; Data processing (Manual and computerised). (10 Classes)

5. Statistical Analysis of Data: Qualitative data analysis; Quantitative data analysis; Data representation (Manual and computerised). (5 Classes)

6. Structure of a Research Report: Preliminaries; Text; Tables, Figures and Appendices; Citations, References and Bibliography; Research/Project Report Writing; Executive Summary.

(5 Classes)

Part II: Project Report

Credit: 2 (20 Marks)

(21 classes of two hour duration each)

Project Report Preparation and Evaluation (20 Marks)

1. Each student will have to prepare a Project Report on a suitable geographical problem under the guidance of respective teacher following appropriate methodology, data base and literature review.
2. Length of the Report: 30-40 printed A4 size pages (font size 12 in Times New Roman with 1.5 spacing) including text, tables, figures, references, etc.
3. The project report in binding form (Kutcha or Spiral binding) duly signed by the guide concerned has to be submitted to the department at least 3 days before the scheduled date of examination.
4. The marks distribution of the Project Report in the final semester examination is as follows:
   (i) Total marks: 20
   (ii) Evaluation of Content: 15 (average between external examiner and internal teacher guide)
   (iii) Viva-voce: 5 (exclusively by the external examiner)

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. Kothari, C. R., 1993: *Research Methodology: Methods and Techniques*, 2nd ed., Wiley Eastern Ltd., New Delhi.
5. Misra, H.N. and Singh, V.P., 1998: *Research Methodology in Geography*, Concept Publishing Company, New Delhi.
6. Misra, R.P. (2002) Research Methodology, Concept Publications, New Delhi.
7. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Publs. Co., New Delhi.
8. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi

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

Syllabus of Discipline Specific Elective

Course Name: Hydrology

Paper Code: GGY-HE-~~6046~~ 6026

Total Credit: 6 (4+2)

Total Marks: 100

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

Course Objectives:

- To create knowledge base about basic hydrological concepts.
- To know about the hydrological concepts and their applications in river basin studies.

Course outcomes:

After completion of this course the students will be able to speak on the basic concepts of hydrology and its application in river basin studies. Students will also have a practical orientation of the concepts both in laboratory and in the field.

Part I: Theory

Credit: 4 (60 Marks)

(40 classes of 1 hour duration each)

Unit I: Principles of Hydrology (30 Marks) **(20 classes)**

1. Meaning and Scope of hydrology; Importance of hydrological studies in geography with special reference to physical geography. (4 classes)

2. Hydrological cycle: Components and water flow pathways- precipitation, infiltration, evaporation, transpiration, surface runoff, storage, through flow, ground water flow; Water distribution on the earth and the water budget; Concept of rainfall intensity and duration, rainfall frequency. (8 classes)

3. Runoff characteristics: Concept of surface runoff, Generation of surface runoff and Effects of soil, vegetation and ground slope; Concept of runoff hydrographs.(4 classes)

4. Ground water hydrology: Concept of water table and the aquifer, Fluctuation of ground water table, Ground water movements and recharge. (4 classes)

Unit II: River and Basin Hydrology (30 Marks) **(20 classes)**

1. Basin or catchment hydrology: Precipitation characteristics/types and pattern in relation to basin physiographic units; Concept of basin runoff; Factors affecting basin runoff: Geology and soils, vegetation and land use, physiographic characteristics, meteorological agents and channel and floodplain morphology. (6 classes)

2. River Hydrology: Sources of river flow, Types of flow, Factors causing river flow variation; Concepts of water discharge, Effects of water discharge on channel morphology; Concepts of discharge hydrographs and the stage-discharge hydrographs. (6 classes)

3. Flood hydrology: Definition of flood; Flood occurrence pattern- seasonality and frequency; Flood types- single and multiple event floods, seasonal floods, flash floods, snowmelt flood. (4 classes)

4. Anthropogenic activities and river basin hydrology: Human impacts and factors causing anomalies in river and basin hydrological regimes, Human induced hydrological hazards. (4 classes)

Part II: Practical

Credit: 2 (20 Marks)

(20 classes of 2 hour duration each)

Unit 1: Practical Works (16 Marks)

(Two questions of 8 marks each)

1. To estimate runoff from daily water discharge data and to compare the seasonal variation patterns of basin runoff taking
   i. Two major tributaries of Brahmaputra river, one north bank and one south bank tributary and also taking
   ii. Two months -one winter and one summer months (December and July) **(2 Exercises)**
2. To prepare discharge hydrographs of Brahmaputra and any one of its major tributaries atleast for three years taking a gap of five years and to analyse the trend of discharge pattern in the rivers. **(2 Exercises)**
3. To prepare a stage-discharge hydrograph of Brahmaputra at any two gauge sites for a particular year and to compare the patterns in discharge and stage variations in the river. **(2 Exercises)**
4. To construct stage-discharge rating curves separately for all months of the year, for monsoon months (may to October) and for non-monsoon months (November to April taking monthly average data of a period of 5/10 years for Brahmaputra or one of its major tributaries and to analyse the seasonal relationship pattern between stage and discharge . **(2 Exercises)**
5. To prepare a rainfall variability map of Assam/Brahmaputra Valley based on relevant necessary data and to analyse the rainfall variability pattern. **(1 Exercise)**
6. Collection and mapping of monthly /seasonal fluctuation data of ground water level of selected wells (at least 10) in a locality (village/ward). **(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).

CBCS-based U.G. Course in Geography, 2019
Syllabus of Discipline Specific Elective (Honours Course)
Course Name: Geography of Resources and Development
Paper Code: GGY-HE-6066 (6046)
Total Credit: 6 (4+2)
Total Marks: 100

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

Course Objectives:

- This paper intends to introduce the students about basic concepts of resource and resource management, and its relevance to sustainable development.
- To get acquainted with different concepts of development with special focus on economic development.

Course Outcomes:

- This paper will be useful to students in developing ideas on different aspects of resources, and the linkages with development issues that geographers usually address.
- This paper will also be useful for students preparing for different competitive examinations including the civil services.

Part I: Theory
Credit: 4 (60 Marks)

(40 classes of 1 hour duration each)

1. **Geography of Resources and Development**: Concept of resource; Relationship between resource- base and development; Significance of resource and development studies in geography; Classification and characteristics of resources. **(6 classes)**

2. **Natural Resources for Development**: Distribution, utilisation, and management of land (soil), water, forests, minerals and energy resources in the World and their contribution to development. **(8 classes)**

3. **Development and Environment**: Concept of Development; Urban and Rural Development; Rationale use of resources and the concept of Sustainable Development; Environment and development, Sustainable Development Goals, natural resources management for sustainable rural livelihood. **(8 classes)**

4. **Global issues of Natural Resources and Development**: Sustainable Natural Resource Management; United Nations Framework of Classification for Resources (UNFC); Applications of geospatial technology in sustainable natural resource management; Resource and development planning: Conservation of resources , and integrated environment and resource management. **(10 classes)**

5. **Pattern of Economic Development and Resource use**: Patterns of development between developed and developing countries; Resource management in developed countries (USA, Israel and Japan) and resource management in developing countries (Nepal, Bangladesh and Ethiopia); Concept of equity in resource use; Green technology.

(8 classes)

Part II: Practical

Credit: 2 (20 Marks)

(20 classes of 2 hour duration each)

Unit 1: Practical Works (16 Marks)

(Two questions of 8 marks each)

1. Determination of levels of development in India/North-East India/Assam based on few development indicators using simple composite index and ranking method. **(2 Assignments)**

2. Mapping of physiological density of population in Assam at district level or North-East India at state level. **(1 Assignment)**

3. Mapping of spatial variation of category-wise forest cover (very dense, moderate dense and open forest) in Assam/ North-East India using Pie diagram for two points of time based on data from the recent Forest Survey of India's report *(available at: https://fsi.nic.in/forest-report-2019)*. **(2 Assignments)**

4. Identification of important natural resources/resource sites (e.g. Reserve Forests/Wildlife sanctuaries/national parks, mineral resources, Rivers, Grasslands, Wetlands, etc.) within 100km radius around the state capitals of North-East India using Google Earth Platform. **(1 Assignment)**

5. Preparation of resource potential map of North-East India at state level showing spatial variation in production of selected commodities (rice, maize, coal, petroleum, hydro power, tea, etc.) using simple composite index. **(1 Assignment)**

6. Correlation and regression analysis of irrigation and intensity of cropping in Assam/North-East India. **(1 Assignment)**

7. Time series analysis of the trend of Coal/Crude oil/Natural gas production in India using moving average method and least squares method. **(2 Assignments)**

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. Cutter S. N., Renwich H. L. and Renwick W., 1991: Exploitation, Conservation and 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.
10. Gilg A. W., 1985: An Introduction to Rural Geography, Edwin Arnold, London.
11. Krishnamurthy, J. 2000: Rural Development - Problems and Prospects, RawatPubls., Jaipur
12. Lee D. A. and Chaudhri D. P. (eds.), 1983: Rural Development and State, Methuen, London.
13. Misra R. P. and Sundaram, K. V. (eds.), 1979: Rural Area Development: Perspectives and Approaches, Sterling, New Delhi.
14. 7. Ramachandran H. and Guimaraes J.P.C., 1991: Integrated Rural Development in Asia – Leaning from Recent Experience, Concept Publishing, New Delhi.
15. Robb P. (ed.), 1983: Rural South Asia: Linkages, Change and Development, Curzon Press.