

GEOGRAPHY

1. RATIONALE

The discipline of Geography promotes systematic studies of interaction between man and environment. The studies are undertaken on both the micro and macro levels. These studies at global, regional and local levels are taken up within the spatial and temporal frame work.

The contents of Geography become highly fascinating even to the beginner. Man has a reason to feel excited over the fact that his is a living planet pulsating with life and constant change of every possible description. As far as his knowledge goes this is the only celestial body of its kind inhabited with intelligent life which he can think of.

Interplay between man and environment being the focal point of geographic study, its contents have become very exciting because of man's ingenuity and ability to adapt himself to the environmental variations spread over time and space. Since man and environment are equally dynamic, their interrelationship has been growing and becoming more and more complex day by day. A student of Geography is bound to be thrilled by the new insight into the exciting partnership between two.

Since Geography deals with both man and environment, it acts as a natural bridge between humanities and sciences. The former includes the contents from economics, history, political science, sociology, anthropology and commerce. The latter include earth sciences such as geophysics, geology, geomorphology, oceanography, climatology and meteorology. Astronomy and space sciences also provide a meaningful back drop.

It is against this broad perspective that the course in Geography has been drawn up for the Senior Secondary Stage. It is hoped that it would be dealt with accordingly.

Previously, the courses of study was divided in to two categories i.e. foundation and certification units. In the revised syllabus, all the lessons are compulsory and questions will be asked from each lessons according to the weightages of marks assigned to each module.

To the extent possible, the practicals should be dovetailed to the theoretical portions. The theoretical knowledge can be better assimilated and reinforced through its practical application. Practical problems can be quickly grasped only through the mastery over theory and basic principles. Thus theory and practicals must be seen in their complementary and reinforcing role instead of dealing with them in compartments in a routine or mechanical fashion.

2. OBJECTIVES

The main objectives of this course are as follows:

- To provide spatial (i.e. areal and locational) and temporal (i.e. time) dimensions to the patterns of interactions between man and environment for their proper appreciation.
- To help in appreciating different and changing social perceptions of environments as seen by different groups of people from place to place and by the same people from time to time.
- To help in understanding that man everywhere tries to make the best possible use of natural resources commensurate with his social and technological level of development.
- To help in realizing that man must use his environment and natural resource base on a continuing basis avoiding their destruction and wastage.
- To help in understanding that the study of Geography of India should lead to emotional integration of her diverse people and removal of regional imbalances in its economic growth and developments.
- To help in appreciating the spirit and structure of Geography as discipline.

3. DISTRIBUTION OF MARKS

Module	Marks
1. The Earth – A Living Planet	03
2. The Domain of Air on the Planet Earth	08
3. The Domain of Water on the Planet Earth	04
4. Changing Face of the Planet Earth	12
5. Life on the Earth	08
6. Physical Setting in India	08
7. Natural Resources and their Development in India	07
8. Man-made Resources and their development in India	12
9. Human Resource and their Development in India	08
10. Optional Module	
A. Teaching of Geography at Primary Level	OR
B. Geography of Tourism in India	10
OR	
C. Field Work in Geography	
11. Map and its Elements	05

12. Map Interpretation	05
13. Statistical Diagram	05
14. Practical Record Book & Viva Voce	05
Total	100

4. COURSE DESCRIPTION

4.1 THE EARTH-A LIVING PLANET

Approach: The module is designed to give an idea of the vastness of the Universe and almost insignificant position of the earth in space. The uniqueness of the Earth sustaining intelligent life as we know it today in an endless expanse of the Universe needs to be brought out.

1. The Sun in the Universe:
 - (1) The Sun – our star;
 - (2) The Sun in Milkyway – our Galaxy
 - (3) Galaxy and the Universe
2. The Sun's Family and Planet Earth –
 - (1) Planets, Satellites, Asteroids, Comets;
 - (2) Uniqueness of the Planet Earth
 - (3) Moon-Earth's satellite.
 - (4) Artificial satellites of the earth and the services they render.

4.2 THE DOMAINS OF AIR AND WATER ON THE PLANET EARTH

Approach: The module is designed to highlight important atmospheric phenomena and their direct bearing on man. The emphasis is on understanding the weather phenomena and its impact on day to day life.

4.2.1 Insolation and Temperature

1. Composition and structure of atmosphere
2. Insolation and heat budget
3. Global warming – its causes and effects.
4. Horizontal distribution of temperature; Factors affecting – (January and July temperature distribution.)
5. Vertical distribution of temperature and inversion of temperature.

4.2.2 Pressure and Winds

1. Atmospheric pressure and its measurement
2. Horizontal distribution of pressure (January and July pressure distribution)
3. Vertical distribution of pressure
4. Winds and their types: planetary, periodic and local winds.
5. Cyclones and anti cyclones

4.2.3 Humidity and Precipitation

1. Humidity and its measurement – absolute and relative humidity.
2. Evaporation and condensation, forms of condensation
3. Precipitation – forms and types
4. Distribution of precipitation in the world.

4.2.4 Weather and Climate

1. Weather and climate
2. Elements of weather and climate
3. Factors affecting climate

4.3 THE DOMAIN OF WATER ON THE PLANET EARTH

Approach: The module is also designed to acquaint the learner with the various submarine relief features, deposits and oceanic circulations along with their significance for man.

4.3.1 Oceans, Submarine Relief and Circulation of Ocean Waters

1. Ocean basins and continents; submarine relief.
2. Temperature – process of heating and cooling vertical and horizontal distribution of temperature.
3. Salinity and its distribution
4. Motion of ocean waters.
 - (a) Waves;
 - (b) Tides-causes, types and effects.
 - (c) Currents-types; cause and effects. (warm and cold currents – Gulf stream and labradore current).
5. Importance of ocean for man.
 - (a) moderators of temperature;
 - (b) bridge between landmasses;
 - (c) marine resource – fisheries, mineral, desalination of water for human use and
 - (d) oceans as source of energy.

4.4 CHANGING FACE OF THE PLANET EARTH

Approach: The module is designed to understand the natural forces both internal and external responsible for the evolution of land forms around us. Significance of key land forms and processes of their development needs to be highlighted.

4.4.1 Earth's Interior and Materials of its Crust

1. Conditions inside the earth;
2. Materials of the earth's crust;
3. Rocks and minerals;
4. Types of rocks and their economic significance.

4.4.2 Major Landforms and their Economic Significance

1. Major landforms – mountains, plateaus and plains and their economic significance.

4.4.3 Evolution of landforms due to Internal Forces

1. Earth movements
2. Sudden and slow movements.
3. Vertical and horizontal movements.
4. Folding and faulting.
5. Volcanoes – causes and distribution.
6. Earthquakes-causes and distribution.

4.4.4 Evolution of Landforms due to External Forces.

1. Process of gradation.
2. Weathering – its types;
3. Formation of soils;
4. Agents of gradation – Work of running water, Underground water, moving ice, wind and sea waves.

4.5 LIFE ON THE EARTH

Approach: The module is designed to highlight the varied responses of man in different bio-physical conditions. Biosphere is the biotic realm of the earth, where man is the most effective component both as a constructive as well as destructive agent.

4.5.1 Significance of Biosphere

1. Three basic realms of the earth.
2. Biosphere – its limits and the main elements.
3. Ecology, ecosystem and energy flow.
4. Role of human being in the ecosystem and their varying responses.

4.5.2 Life in the Low Latitudes

1. Concept of natural region.
2. Environmental and human responses in the
 - (a) Equatorial lowlands, (b) Monsoon lands and (c) Hot Deserts.

4.5.3 Life in the Mid-Latitudes

1. Environmental and human responses in the
(a) Mediterranean lands and (b) Temperate grass lands.

4.5.4 Life in the High Latitude

1. Environmental and human responses in (a) Lands of Taiga and (b) Tundra.

GEOGRAPHY OF INDIA

4.6 PHYSICAL SETTING IN INDIA

Approach: The module is designed to give general acquaintance about physical environment of our country in terms of its physiographic, climatic characteristics and their combined impact on soil and natural vegetation.

4.6.1 Physiographic

1. Location, extent and size.
2. Structure and physiographic divisions-Northern Mountains, Northern plains, Peninsular plateau, Coastal plains and Islands.
3. Drainage Systems – the Himalayan and the Peninsular rivers.

4.6.2 Climate and Natural Vegetation

1. Climate – factors influencing the climate of India, cycle of seasons, concept of monsoon.
2. Natural vegetation – major natural vegetation regions and their characteristics.

4.7 NATURAL RESOURCE AND THEIR DEVELOPMENT IN INDIA

Approach: The module is designed to acquaint the learner with the variety of natural resource available in our country and their utilization for the economic development.

4.7.1 Natural Resources

1. Land resource – Land as a resource and its major uses.
2. Soil Resources – Major soil types; soil conservation.
3. Water Resources – Water budget, utilization and management of river waters for irrigation and hydroelectricity, (only example of major dams for explaining the idea of damming, diversion and canalization), ground water tapping, overuse and the need for conservation; The benefits of major river valley projects.
4. Forest Resource – Distribution of major forest types; forest produce, problems of deforestation, strategies of conservation and development with a few examples from specific areas.

5. Wild life Resources – Bio-reserves, national parks, wild life sanctuaries, impact of deforestation on wild life.
6. Mineral Resources: Distribution of mineral fuels, petroleum, natural gas and atomic minerals; Distribution of the minerals as industrial raw material – iron ore, bauxite, manganese, limestone, mica; Mineral rich zones; Production, consumption and trade of important minerals; Wastage and need for conservation.

4.8 MAN-MADE RESOURCES AND THEIR DEVELOPMENT IN INDIA

Approach: The module is designed to acquaint learner with the variety of man-made resources in India and their development.

4.8.1 Agricultural Development

1. Land use patterns and its significance for agriculture.
2. Scope for expansion/reclamation of cultivable land for raising agricultural productivity. Changing agricultural scenario as a result of induction of new technology and its significance in horticulture, sericulture, pisciculture and livestock rearing.
3. Kharif and Rabi crops & Zaid (short season crops); Areas and production of food crops-rice, wheat, millets; Areas and production of industrial crops – sugarcane, cotton, jute, coffee, oilseeds.
4. Prevailing agriculture practices – with examples from different regions.
5. Areas where horticulture, sericulture and livestock development has taken place.

4.8.2 Industrial Development

1. Existing patterns and newly emerging characteristics of agro-based and mineral based industries.
2. Locational factors in the distribution and development of (a) agro-based industries (i) Sugar, (ii) paper, (iii) cotton, jute, textiles and vegetable oil; (b) minerals-based industries (i) Iron and steel, (ii) transport equipment industries, (iii) cement; (iv) fertilizers, and (v) petrochemicals,
3. Industrial growth and its impact on environment and the required remedial measures.

3.8.3 Infrastructural resources.

1. Role of Infrastructure for development.
2. Production and distribution of energy in India-Thermal, hydel, nuclear and non-conventional sources of energy; National power grid, Inter-state problems.
3. Railways, influence of terrain; complementarity with railways.
4. Roadways – influence of terrain; complementarity with roadways.
5. Water ways and airways – benefits and development.
6. International Trade – Changing scenario, ports and airports.

3.9 HUMAN RESOURCE AND THEIR DEVELOPMENT IN INDIA

Approach: The module is designed to acquaint the learner with the importance of population as a resource. Relationship between economic prosperity and quality of life is highlighted.

4.9.1 Distribution of Population.

1. Density and distribution of population
2. Factors influencing density and distribution of population.

4.9.2 Growth of Population

1. Components of population Growth – Birth rate, Death rate, and Migration.
2. Regional trend in population growth.

4.9.3 Population Composition

1. Characteristics of the composition of population in India.
 - (a) Rural – urban composition,
 - (b) Sex-age composition,
 - (c) Linguistic composition,
 - (d) Religious composition,
 - (e) Scheduled Castes, Schedule Tribes, composition and distribution.
 - (f) Literacy
2. Conclusion

4.10 OPTIONAL MODULES

A. TEACHING OF GEOGRAPHY AT PRIMARY LEVEL

Approach: This module would reflect two fold approach containing pedagogical inputs on one hand and enrichment of basic knowledge needed to develop competencies to teach the subject with interest.

4.10.1 Nature and Scope of Geography Teaching.

1. Aims and objectives of teaching Geography as a part of Environmental studies or social studies.
2. Correlating geography with their school subjects.

4.10.2 Introducing Elementary Concepts in Geography.

1. Methods of teaching geographical concepts and skills (a) Promotion of observational skills, (b) playway and activity methods and (c) use and preparation of teaching aids.

4.10.3 Specimen content units with lesson plan.

1. Specimen content units : (a) different way of living in India, (b) Many ways of living in the world, (c) story of transport and communication and (d) Story of Trade – local, national and international.

B. GEOGRAPHY OF TOURISM IN INDIA

Approach: The module is designed to acquaint the learner with the concept and development of tourism and its relevance for India. It will also highlight various aspects related to it.

4.10.1 Concept of Tourism.

1. Meaning of Tourism, brief history of tourism (reference of famous early traveler)
2. Types of tourism.
3. Classification of resorts.

4.10.2 Development of Tourism in India.

1. Causes and factors of growth.
2. India's unique wealth for tourism.
3. Planning for organization of tour activities.

4.10.3 Impact of Tourism

1. Development of under developed areas.
2. Development of invisible exports.
3. Planning for organization of tour activities.

4.10.4 Problems of mass tourism

1. Profile of Indian tourism.
2. Undue pressure on local people and price rise.
3. Pollution of environment.
4. Alienation of local people from their culture.
5. Strategies for travel promotion.

C. FIELD WORK IN GEOGRAPHY

Approach: The module has been shaped to acquaint the learner with processes involved in socio-economic survey of an area to study its various aspects.

4.10.1 Field And Its Purpose

1. Role of Fieldwork in Geography.
2. Aim and Formulation of Hypothesis.
3. The Different Approaches to Fieldwork.

4.10.2 Design and Methodology of Field Work.

1. Design: Importance, Components and Types.
2. Selection of samples and sample size.
3. Formulation of Questionnaires and Schedules; Field Sketches etc.
4. Collection of Information:
 - (a) Methods of administering the questionnaires and survey schedule;
 - (b) Identification of samples;
 - (c) Use of Field Sketches;
 - (d) Precautions in collecting the information.
5. Processing and Presentation of Information:
 - (a) Processing of primary data.
 - (b) Presentation of data: tabular and cartographic
6. Preparation of Field Work
 1. Land-use survey of a village
 2. Survey of a Market/Weekly market
 3. Survey of Civic Amenities in an area.
 4. Survey of Landforms of an area.

PRACTICAL GEOGRAPHY

4.11 ELEMENTS OF MAP

Approach: The module is designed to acquaint the learner with the essential component of a map in order to develop map reading skills.

4.11.1 Directions and Scale

1. Definition of a map; types of maps
2. Directions- True North and Magnetic North.
3. Scale – Representation of scales on map.
 - (i) Statement of scale,
 - (ii) Representative Fraction (R.F.)
 - (iii) Linear scale and its construction.
4. Latitude and longitudes.

Important latitudes;
Longitude and time, IST and date line and
Grid of latitudes and longitudes and location of places on maps.

4.11.2 Map Projections

1. Maps – grids of latitude and longitudes.
2. The globe and maps – their merits and demerits.
3. Developable and non-developable surfaces.
4. Classification of map projections.
5. Map projection –basis, identification and uses:
 - (a) Cylindrical Equal – Area Projection
 - (b) Mercator's Projection
 - (c) Simple Conical Projection with one standard parallel.
 - (d) Zenithal Equi-distant Project and
6. Choice of map projection for India.

4.12 MAP INTERPETATION

Approach: This module is designed to acquaint the learner with various types of maps, their characteristics and the interpretation.

4.12.1 Maps and their Interpretation

A. Interpretation of Topographical Map.

- a. Marginal Information
- b. Use of conventional signs and symbols;
- c. Methods of representing relief on map contours level colouring spot heights, benchmarks.
- d. Identification of relief features on a map through contours –conical hill, plateau, ridge, v-shaped valley, escarpment, cliff, waterfall, types of slopes (uniform, undulating, convex and concave, gentle and steep);
- e. Drawing of a cross-section or a profile from a contour map;
- f. Interpretation of topographical sheets.

4.12.2 Weather Instruments and Interpretation of Weather Maps

1. Weather instruments, uses and the data collected from them.
2. Significance of weather maps.
3. Weather Symbols.
4. Study of January and July Indian weather maps in respect of temperature, pressure, wind direction, velocity, cloud cover and precipitation.

4.13 STATISTICAL DIAGRAMS

Approach : The module is designed to acquaint the learner with various methods of interpreting data for drawing meaning but inferences and converting them into visual and more comprehensible forms.

4.13.1 Representation of Statistics Data through Diagrams.

1. Line-graph
2. Pie-diagram
3. Bar-diagram
4. Star diagram
5. Distribution maps.