B.Sc. Geography
(Choice Based Credit System)

Syllabus

2017-18 onwards
Proposed Scheme for Choice Based Credit System in B.Sc. Geography

<table>
<thead>
<tr>
<th>Semester</th>
<th>Core Course (C) (8)</th>
<th>Ability Enhancement Compulsory Courses (AECC) (4)</th>
<th>Skill Enhancement Courses (SEC) (4)</th>
<th>Elective Discipline Specific (DSSE) (6)</th>
<th>Elective: Generic (GE) (2)</th>
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<tbody>
<tr>
<td>I</td>
<td>DSC-1A(111)</td>
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1. Core paper (8)  Lecture 32  Theory 8  Practical 8
i) Theory 16  Theory 8  Practical
ii) Practical 16  -  8
2. AECC (4)  Lecture 28  -  -
3. SEC (4)  Lecture 08  -  -
4. DSE (6)  Lecture 24  Theory 6  Practical
5. GE (2)  Lecture 6  -  -
TOTAL  Lecture 98  Theory 14  Practical 8  120 Credits
SCHEME FOR CHOICE BASED CREDIT SYSTEM IN

B.Sc. Geography programme to be implemented from 2017-18 Onwards

<table>
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<th>Course</th>
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**Total Number of Credits 120**
B.Sc. Geography

Note:
1. Practical paper will not have tutorials.

Core Courses

Semester I
1. DSC-1A (111) Physical Geography
2. DSC-2A (112) Cartographic Techniques (Practical)

Semester II
3. DSC-1B (121) Human Geography
4. DSC-2B (122) Map Projection (Practical)

Semester III
5. DSC-IC (231) Economic Geography
6. DSC-2C (232) Thematic Mapping techniques (Practical)

Semester IV
7. DSC-ID (241) Climatology
8. DSC-2D (242) Statistical Methods in Geography (Practical)

Skill Enhancement Course

Semester III
1. SEC-I (233) Geographic Information System (Practical)

Semester IV
2. SEC-2 (243) Field Study and Surveying (Practical)

Semester V
3. SEC-3 (351) Remote Sensing and GPS Based project Report (Practical)

Semester VI
4. SEC-4 (361) Research method (Practical)

Elective Discipline Specific (any Three)

Semester V
1. DSE-1A (352) Population Geography
2. DSE-2A (353) Urban Geography
3. DSE-3A (354) Geography of Health and Wellbeing
4. DSE-4A (355) Island Studies
5. DSE-5A (356) geography of Tourism

Semester VI
DSE-3
1. DSE-1B (362) Resource Development
2. DSE-2B (363) Agriculture Geography
3. DSE-3B (364) Political Geography
4. DSE-4B (365) Water resource Management
5. DSE-5B (366) Climatic Change: Vulnerability and Adaptation

Elective Generic Papers

Semester V
1. GE-1 (357) Disaster Risk Reduction

Semester VI
2. GE-2 (367) Sustainability and Development
B.Sc. Geography

Note:
1. Practical paper will not have tutorials.

Core Courses

Semester I
1. DSC-1A (111) Physical Geography
2. DSC-2A (112) Cartographic Techniques (Practical)

Semester II
3. DSC-1B (121) Human Geography
4. DSC-2B (122) Map Projection (Practical)

Semester III
5. DSC-IC (231) Economic Geography
6. DSC-2C (232) Thematic Mapping techniques (Practical)

Semester IV
7. DSC-ID (241) Climatology
8. DSC-2D (242) Statistical Methods in Geography (Practical)

Skill Enhancement Course

Semester III
1. SEC-I (233) Geographic Information System (Practical)

Semester IV
2. SEC-2 (243) Field Study and Surveying (Practical)

Semester V
3. SEC-3 (351) Remote Sensing and GPS Based project Report (Practical)

Semester VI
4. SEC-4 (361) Research method (Practical)

Elective Discipline Specific (any Three)

Semester V
1. DSE-1A (352) Population Geography
2. DSE-2A (353) Urban Geography
3. DSE-3A (354) Geography of Health and Wellbeing
4. DSE-4A (355) Island Studies
5. DSE-5A (356) geography of Tourism

Semester VI
DSE-3
1. DSE-1B (362) Resource Development
2. DSE-2B (363) Agriculture Geography
3. DSE-3B (364) Political Geography
4. DSE-4B (365) Water resource Management
5. DSE-5B (366) Climatic Change: Vulnerability and Adaptation

Elective Generic Papers

Semester V
1. GE-1 (357) Disaster Risk Reduction

Semester VI
2. GE-2 (367) Sustainability and Development
**DSC-1A (111)**

1. **PHYSICAL GEOGRAPHY (C5)**

2. Earth Movements: Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes. (Types and Distribution)

**Reading List**


**DSC-2A (112)**

2. **CARTOGRAPHIC TECHNIQUES (PRACTICAL) (C2)**

1. Cartography – History and Importance of cartography
2. Scales – Concept and application; Graphical Construction of Plain, Comparative and Diagonal Scales.
4. Topographical Map – Interpretation of a Mountain area with the help of Cross and Longitudinal Profiles.
5. Slope Analysis – Wentworth’s method.

**Practical Record:** A Project File in pencil, comprising one exercise each, on scale, map projection, interpretation of topographic sheet and slope analysis.

**Reading List**

DSC-1B (121)
3. HUMAN GEOGRAPHY (C3)
1. Introduction: Defining Human Geography; Major Themes, (Determinism, Possibilism, Neo determinism), emergence of man, Race of Mankind,
2. Population: Population Growth and Distribution; Population Composition; Demographic Transition Theory
3. Settlements: Types of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization
4. Population-Resource Relationship (Population problems of developed & developing countries,
**Reading List**

DSC-2B (122)
12. MAP PROJECTIONS (C12)

2. Construction, properties, merits, demerits and uses of Conical Projections : Conical Projection with two standard parallels, Polyconic Projection and Bonne’s Projection.

3. Construction, properties, merits, demerits and uses of Zenithal Projections : Gnomonic, Stereographic, Orthographic, Equidistant and Equal Area Projection.


**Reading List:**
DSC-1C (231)
5. ECONOMIC GEOGRAPHY (C1)
1. Introduction: Concept and classification of economic activity
2. Factors Affecting location of Economic Activity with special reference to Agriculture (Von Thunen theory), Industry (Weber’s theory).
3. Primary Activities: Subsistence and Commercial agriculture, forestry, fishing and mining.
4. Secondary Activities: Manufacturing (Cotton Textile, Iron and Steel), Concept of Manufacturing Regions, Special Economic Zones and Technology Parks.
5. Tertiary Activities: Transport, Trade and Services, & Quaternary activities

Reading List

DSC-2C (232)
6. THEMATIC MAPPING TECHNIQUES (PRACTICAL) (C7)
1. Map Scale, Types
2. Map classification and Types; Principles of Map Design.

Practical Record: A Thematic Atlas should be prepared on a specific theme with five plates of any state in India.

Reading List
1. Cuff J. D. and Mattson M. T., 1982: Thematic Maps: Their Design and Production, Methuen Young Books
7. CLIMATOLOGY (C8)

1. Composition and Structure of atmosphere – Variation with Altitude, Latitude and Season.
4. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Air Mass, Climatic Regions (Koppen)

Reading List

8. STATISTICAL METHODS IN GEOGRAPHY (PRACTICAL) (C4)

1. Use of Data in Geography: Geographical Data Matrix, Significance of Statistical Methods in Geography; Sources of Data.
2. Tabulation and Descriptive Statistics: Frequencies (Deciles, Quartiles), Cross Tabulation, Central Tendency (Mean, Median and Mode, Dispersion (Standard Deviation, Variance and Coefficient of Variation).
5. Association and Correlation: Rank Correlation, Product Moment Correlation, and Simple Regression.

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

Reading List

**Skill Enhancement Course**

**SEC-1(233)**

1. **GEOGRAPHICAL INFORMATION SYSTEM (PRACTICAL)**

2. Global Positioning System (GPS) – Principles and Uses; DGPS.
3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.
4. GIS Data Analysis: Input; Geo-Referencing; Editing, Output and Query; Overlays.

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

**Reading List**


**SEC-2 (243)**

2. **FIELD STUDY AND SURVEYING (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 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. Use of Field Tools – Collection of Material for Physical and Socio-Economic Surveys.
5. Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.

**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 A4 size paper should be submitted in soft binding.

Reading List

SEC-3 (351)
3. REMOTE SENSING AND GPS BASED PROJECT REPORT (PRACTICAL)
4. Interpretation and Application of Remote Sensing: Land Use /Land Cover
5. Global Positioning System( GPS) principles and Uses.

Practical Record: A project file consisting of 5 exercises will be done from aerial photos, satellite images interpretation and GPS Field Survey.

Reading List

SEC-4 (361)
4. RESEARCH METHODS (PRACTICAL)
1. Geographic Enquiry: Definition and Ethics; Framing Research Questions, Objectives and Hypothesis; 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 Research Report
**Reading List**


**Elective Discipline Specific**

**DSE-1A (352) (Any Three)**

1. **Population Geography**
   1. Defining the Field – Nature and Scope; Sources of Data with special reference to India (Census, Vital Statistics and NSS).
   4. Population Composition and Characteristics – Age-Sex Composition; Rural and Urban Composition; Literacy.
   5. Contemporary Issues – Ageing of Population; Declining Sex Ratio; HIV/AIDS.

**Reading List**


**DSE-2A (353)**

2. **URBAN GEOGRAPHY**

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, Chennai, Chandigarh and Port Blair with reference to Land use and Urban Issues
Reading List

DSE-3A (354)
3. GEOGRAPHY OF HEALTH AND WELLBEING
1. Perspectives on Health: Definition; linkages with environment, development and health; driving forces in health and environmental trends - population dynamics, urbanization, poverty and inequality.
2. Pressure on Environmental Quality and Health: Human activities and environmental pressure land use and agricultural development; industrialisation; transport and energy.
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:

DSE-4A (355)
4. ISLAND STUDIES
1. Introduction of Island studies: emerging interdisciplinary and comparative study of island and
carchipelagos-cultures-geography of islands and island states-historical development- environment
issues.
2. Island biogeography-physical features-climate-ecosystem, biodiversity-flora and fauna ecosystem
processes-island vulnerability-managing beach resource-coastal resource and island tourism-is
sustainability possible?
3. Island migration dependency and in equality- globalisation, new labour migration and development
of islands-government policy to support migrant workers-promoting sustainable rural coastal and
island communities.
4. Island Issues: Social-political-economic issues-island urbanisation-poverty, climate change and
social issues-strategic importance, environmental changes and challenges of the Andaman and
Nicobar Islands.
5. Integrated Coastal zone management plan for India islands-existing management regulations and
local level policy, coastal erosion and shore protection, conflicts and perceptions of the stakeholders
in Islands.

(A field trip to any place in Andaman and Nicobar Islands and to submit a report of 25 marks)

References
1. Peter M. Vitousek Lloyd L. Loope Henning Adsersen, Islands Biological Diversity and Ecosystem
2. T.N Prakash L. Sheela Nair T.S. Shahul Hameed Geomorphology and Physical Oceanography of
Lakshedweep Coaral Islands in the Indian ocean, Springer Cham Heidelberg New York Dordrecht
3. Stewart Firth, Globalisation and governance in the pacific Island University printing Services.
ANU-2006.Geography of Islands, geography, 74,2, 106-116 A selsction of essays from: Baldacchino
G., Niles D. (eds), 2011, Island Futures. Conservation and development across the Asia-Pacific

DSE-5A (356)
5. GEOGRAPHY OF TOURISM
1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations;
Geographical Parameters of Tourism by Robinson.
2. Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage
3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism,
Sustainable Tourism, Meetings Incentives Conventions and Exhibitions (MICE)
4. Impact of Tourism: Economy; Environment; Society
5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal
Areas; National Tourism Policy, Andaman Islands: Factor influencing tourism, Structure,
Mode of transport, Major tourist spots.

Reading List
Kanishka, New Delhi.
1. RESOURCE GEOGRAPHY

1. Natural Resource: Concept, Classification and Techniques
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
5. Sustainable Resource Development

Reading List

DSE-2B (363)

2. 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 Thünen, modification and relevance).
5. Agricultural Revolutions in India: Green, White, Blue, Pink

Reading List

**DSE-3B (364)**

**3. POLITICAL GEOGRAPHY**
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.
5. Politics of Displacement: Issues of relief, compensation and rehabilitation: with reference to Dams and Special Economic Zones

**Reading List**

**DSE-4B (365)**

**4. WATER RESOURCES MANAGEMENT**
1. Sources of water, Atmospheric relationship of water: rainfall and temperature, evopo- transpiration, rainfall and runoff relationship, hydrological cycle. Rain harvesting as strategies of water resource conservation, other strategies of water conservation; water recycling.
3. Watershed management; concept of watershed; morphological units, morphogenetic classification, morphometric analysis, importance of watershed protection and approaches to watershed protection, watershed management.

**Reading List:**

DSE-5B (366)

5. 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
5. National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats)

Further Readings

Elective Generic Papers

GE-1 (357)

1. DISASTER RISK REDUCTION
1. Disasters: Hazards, Risk, Vulnerability; and Disasters: Definition and Concepts.
2. Disasters in India: (a) Causes, Impact, Distribution and Mapping; Flood and Drought.
3. Disasters in India: (b) Causes, Impact, Distribution and Mapping; Earthquake and Cyclone
5. Disaster Risk Reduction : Mitigation and Preparedness, NDMA and NIDM; Community – Based Disaster Management; Do’s and Don’ts during disasters.

Reading List
GE-2 (367)

2. SUSTAINABILITY AND 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; Policies and Global Cooperation for Climate Change
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

Environment, Development and Sustainability 7: 501-518.