Syllabus for Bachelor of Science (B.Sc.) Honours

Session 2013-2014

The B.Sc. Honours Course in Geography and Environmental Studies shall spread over 4 (four) academic years and the total marks is 4000 (40 units, 160 credits). Theory courses will comprise of major, minor and non credit courses. Major courses carry 100 marks each and will be of four credit hours. The minor courses carry 75 marks each and will be of three credit hours. Year wise distribution of marks and credits including practical and viva voce are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Theory Major</th>
<th>Theory Minor</th>
<th>English (Non Credit)</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit</td>
<td>Marks</td>
<td>Credit</td>
<td>Unit</td>
</tr>
<tr>
<td>1st</td>
<td>4.0</td>
<td>400</td>
<td>16</td>
<td>3.0</td>
</tr>
<tr>
<td>2nd</td>
<td>4.0</td>
<td>400</td>
<td>16</td>
<td>3.0</td>
</tr>
<tr>
<td>3rd</td>
<td>7.0</td>
<td>700</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td>4th</td>
<td>7.0</td>
<td>700</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>22.0</td>
<td>2200</td>
<td>88</td>
<td>6.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Viva voice</th>
<th>*Class Assessment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit</td>
<td>Marks</td>
<td>Credit</td>
</tr>
<tr>
<td>1st</td>
<td>0.5</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>2nd</td>
<td>0.5</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>3rd</td>
<td>0.5</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>4th</td>
<td>0.5</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2.0</td>
<td>200</td>
<td>8</td>
</tr>
</tbody>
</table>

*Details of Class Assessment | Marks
--- | ---
Class Attendance – | 10
Laboratory & Field attendance- | 10
Tutorial Test - | 15
Terminal Test - | 15
Total = 50

Required GPA & Credit Point (CP) for Class Promotion

| Grade Improvement/ Course Improvement |
|---|---|---|
| GPA | 2.00 | 2.25 | 2.50 |
| GP Practical | 2.00 | 2.00 | 2.00 |
| CP | 30 | 30 | 34 |

Award of Degree

<table>
<thead>
<tr>
<th>CGPA-2.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP 144 (90% of total CP)</td>
</tr>
</tbody>
</table>

Result Improvement Pass Degree

<table>
<thead>
<tr>
<th>CGPA-2.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP-128 (80% of total CP)</td>
</tr>
</tbody>
</table>

(a) Number of Course Maximum-2, including F/I (if any) in part-I, Part-II and Part-III Examination.

(b) Grade Improvement of GP less than 2.75 in the following year/next available batch.

(a) Number of Course Maximum -4 in Part-IV Examination.

(b) GP less than 2.75

(c) Must be within 6 academic years.
### Course-101 Major: Introduction to Geography and Environment

**Unit-1, Credit Hours: 4; Marks: 100**

1. Basic terms: Spheres/realms, Location, connectivity, Scale, Organisation, Movement.
2. The nature of geography as a dynamic academic discipline and applied science, development of methodological concepts with special reference to regional, spatial/locational, and ecological approaches, objectives and scope of modern geography.
3. Properties of geographical data, levels of measurement, problems and methods of data classification. Measures of spatial distributions and analysis of structure and processes, spatial pattern regularity, spatial system.
4. Tools in Geography: Maps and other simple models, problems of scale, size and shape in mapping, terrestrial space, absolute and relative location in spatial distribution; types of map and their use, remote sensing and field work in geography and environment.
5. The concepts and types of region.
7. Man-environment Relationships: Approaches to the study, environment and man, man’s interaction with the environment; man and the environmental processes.
8. Relevance of geography to current problems of environment and ecology, issues of regional contrasts and inequalities in human development.

## Course-102 Major: Astronomical Elements in Geography

**Unit: 1, Credit Hours: 4; Marks: 100**


Honours Syllabus-6
2. Universe: Big Bang-Creation of primary elements, formation of galaxy; Stars- Polaris, Pole Star and Cassiopeia.


7. Time - longitude and time. Local and standard time, division of the earth according to standard time. Standard time of USA, India and Bangladesh. International date line, Month-different types. Calendar-astronomical, Jewish, Mohammedan, Roman, Julian, Gregorian and World.

Course-103 Major: Introduction to Physical Environment
Unit: 1, Credit Hours: 4; Marks: 100

2. The nature and position of physical geography. Explanation in physical Geography. The systems approach to physical geography; morphologic, cascading, process response, control systems, open, closed and isolated systems, positive and negative feedback in systems and ecosystems.

Honours Syllabus-7

Course-104 Major: Historical Geography of Bangladesh
Unit: 1, Credit Hours: 4, Marks: 100


4. Political Movement and Partition of India: Bengal Pact, the Simon Commission, Demand for a separate homeland for the Muslims, Lahore resolution, two nation theory, Cripps after Quit India movement, Cabinet mission, Direct action day.

Honours Syllabus-8


Course-105 Minor: Plant Geography
Unit: 0.75, Credit Hour: 3; Marks: 75

1. Plant Geography: Definition and elements of plant geography.


4. Plant Adaptation, Plant Association, Communities and Succession:
   (a) Forest communities- types of forests and their characteristics.
   (b) Grassland and scrubland-temperate grassland and tropical scrubland.
   (c) Desert communities.
   (d) Plants of hills and mountains-factors and distribution.
   (e) Flood Plain Vegetation.
   (f) Brackish water Vegetation.
   (g) Homestead Vegetation.

5. Vegetation and Plants of Bangladesh.

Course-106 Minor:
Statistical Techniques in Geography
Unit: 0.75, Credit Hour: 3; Marks: 75


3. The normal frequency distribution curve and its characteristics.


Course-107 Minor: Economic Elements in Geography
Unit: 0.75, Credit Hour: 3; Marks: 75


2. Production Cost: The production function-least cost factor combination for given output. Equal product and equal cost contours. Least cost conditions. The long run total, average and
marginal cost curves- the profit maximizing outputs, short run cost, fixed and variable cost.

3. Market Structure: Types of market condition, competition and equilibrium under different types of competition. How imperfect competition affects resource allocation markets as spatial units.

4. Theory of income determination; macro-economic concepts like savings, investment, employment GDP, GNP, national income and per capita income.


6. Concept and types of economies.

Course-108 Minor: Elements of Geology and Soil
Unit: 0.75, Credit Hour: 3; Marks: 75

1. Introduction to Geology: Definition, geo-internal structure, composition of earth and geological time scale.
2. Structural Geology: A short study of major structural features, such as folds, faults, cleavage and unconformities.
3. Mineralogy and petrology: Definition of rocks and minerals, characteristics and composition of rocks and minerals and classification of rocks.
4. Soil: Definition, forming factors, formation processes, composition and profile development.
5. Soil Properties: Physical, chemical and biological properties.

N.C. 109 (E): English Language (non credit)

This is a non-credit course particularly designed for the 1st Year B.Sc. Honours students of the Department of geography to help improve understanding, reading, writing and speaking capability of English.

A. Vocabulary: Word-form and function (these items are to be taught as both discrete ones and in contexts using examples.)

B. Structure: Basic grammar of sentence structure.

C. Comprehension and Translation.

Based on sections A, B and C: A variety of questions chosen from the following types are to be used for reading, writing and speaking tests.

Reading:

Texts are to be taken from magazines, journals, books, and newspapers. All the topics are of general and subject interest.

- Identification of writer's views/claims. yes, no or not given
- Identification of information in the text. yes, no or not Given/true, false or not given

Writing:

- Multiple choices
- Short-answer questions
- Sentence completion
- Notes/summary.
- Paragraphs for translation

It is suggested that the students describe some information (geographical graph/table/chart/diagram), and to present the description in their own words. Depending on the type of input and the task suggested, students are assessed on their ability to:

- organize, present and possibly compare data
- describe the stages of a process or procedure
- describe an object or event or sequence of events
- explain how something works

Speaking:

Assessment of how effectively candidates can communicate in English.

- Introduction and interview
- Examiner introduces him/herself
- Examine students using verbal questions selected from familiar geographic topics.
Practicals:
Unit: 1.5, Credit Hours: 6; Marks: 150

A: Principles of Cartography

2. Maps: Definition, classification and characteristics and uses; isopleths choropleth and chorochromatic maps.
5. Map Scale: Methods of showing and drawing graphic scale; scale factor, change of scale, combination of scale, measurement of area: graphical and instrumental.
6. Definition and the principles of computer cartography:

The benefits of computer cartographic method over conventional cartographic method, computer cartographic hardware, computer cartographic software and the application of computer cartography.

B: Analysis and Interpretation of Relief and Maps.

1. Various techniques of representing relief and landform features with their merits and demerits, contour, hachure, shading, layer tint. Form lines: Construction of form lines and contours, contour interpolation; conversion of gradient into angle of slope, finding slope from contours, vertical exaggeration of the scale and intervisibility study.
2. Perspective and pictorial maps.

C: Field Work: Resource Survey of an Area. (Not more than 2 days)

Important: Students have to submit their records of practical works and report of field work before the commencement of practical examination.

Honours Syllabus-13
Course-201 Major: Geomorphology and Oceanography  
Unit-1, Credit Hours-4; Marks-100

A. Geomorphology:

1. Definition of geomorphology; its scope, history of development and recent trends. Some fundamental concepts.

2. Geomorphic processes-Exogenetic & Endogenetic Processes; Eperogenic; gradation-degradation and aggradation processes-erosion, transportation and deposition.


4. Concept of erosion cycle; interrupted cycle of erosion, change in base level.

5. Agents of gradational processes & associated land forms.
   a) River, its pattern, drainage system, landform characteristics, rejuvenation and profile of equilibrium.
   b) Glaciers, its types, landform characteristics. periglacial landforms.
   c) Action of wind-landform characteristics;
   d) Coastal process and landforms.


B. Oceanography:

Definition; distribution of world land and water bodies. Oceans-nomenclature; shape, size and volume. Elementary knowledge on the origin of oceans and ocean water. Composition of ocean water.

Relief of the ocean floor-continental shelf, continental slope, Mid-ocean ridge, gyot, sea mount, deep sea plain and trenches. Temperature and salinity of ocean water- horizontal and vertical distribution of temperature and salinity in different oceans, Wave and currents-causes and effects. Movement of water-horizontal and vertical. Distribution and characteristics of ocean currents, tide-origin; tidal waves-spring and neap tides. Oceanic deposits-classification, characteristics of different types. Distribution of deposits in different oceans. Coral reefs-origin, classification-characteristics of different types.

Course-202 Major: Climatology  
Unit: 1, Credit Hours: 4; Marks: 100

1. Introduction to Climatology: Scope and methodology.

2. Atmosphere: Composition and structure of the atmosphere.


5. Atmospheric Motion: Laws of horizontal movement, the pressure gradient, the earth’s rotational deflective and frictional forces, the geostrophic wind, divergence and convergence. Air stability and instability, air mass and air fronts. Adiabatic process.

6. Extreme weather phenomena: Tornado, thunderstorm, formation of tropical cyclone, characteristics of tropical cyclone, formation basin, cyclone climatology in the North Indian Ocean basin.


8. Climate change: Causes, evidences and examples of climate change

9. Weather and climate forecast: Models and techniques of weather and climate forecast. Weather variable measurement and weather forecast in Bangladesh.

Honours Syllabus-15
Course-203 Major: Human and Economic Geography
Unit: 1, Credit Hours: 4; Marks: 100

1. Human Geography: Definition, scope and methodology, basic concepts, different branches of human geography.
2. Human occupancy of the earth, man-environment interaction; man and the ecosystem.
5. Economic Geography- its definition, scope and methodology.
6. Economic activities - Its classification. Agriculture- its classification, characteristics, major agricultural crops and its physical and socio-cultural determinants. Structural and locational attributes of agriculture in the developed and developing countries. Forest and marine resources including fishing.

Course-204 Major: World Regional Pattern
Unit: 1, Credit Hours: 4; Marks: 100

1. The Concept of Region: Definition, Objective and Subjective Approaches; The Concept of Region in Geographic Analysis; Hierarchy and Types of Region; Purposes and Objectives of Regionalization; Methods of Delineating Regions.
2. World Regional Pattern (Natural): Concepts and Definition of Natural Region; Major Natural Regions of the World: Thermal, Climatic, Vegetational and Soil Regions; Distribution of Mineral Resources.
3. World Regional Pattern (Human): World Population Region: Distribution, Density and Characteristics; Concepts and Characteristics of Culture, Race, Religion and Language; Major Cultural Regions of the World; World Urbanization.
4. World Regional Pattern (Economic): Agricultural; Industrial and Trade.
5. Regionalization on the Basis of Development Levels: Definition of Development; Rostow's Stages of Economic Growth; Measures of Development Levels; Identifying the Development Gap; Characteristics of Developed, Underdeveloped, Less Developed and Underdevelopment; First, Second and Third World.
6. Regionalization on Different Perspective: Basic Data and Information for Country Profile (Shape, Size, Location, Population, Settlement, Literacy, Resources, Economic activities, GDP); Grouping of Countries; Political Regionalization; Economic Regionalization and Globalization.

Course-205 Minor: Zoogeography
Unit: 0.75, Credit Hours: 3; Marks: 75

1. Concept and scope of Zoogeography
3. Factors and barrier of animal distribution.
5. Gondwanaland concept and Pangea. Discontinuous distribution of animals on the light of plate tectonics and continental drift theory.

Honours Syllabus-17
7. Bio-ecological Regions of the world and Bangladesh; Distribution of wild animals in Bangladesh.

**Course-206 Minor: Computer Techniques in Geography**

**Unit: 0.75, Credit Hours: 3; Marks: 75**

2. Number Systems and Codes: Decimal and Binary, Conversion: Binary to decimal, decimal to binary. Number codes, ASCII code.
3. Computer softwares: Classification, operating system software – Dos, Windows, Application softwares- Excel, FoxPro, Arc GIS, Arc view, Idrisi and SPSS.
4. Data Structure and Data Theory: Common data elements, classification of data elements. The database concept, types of tables, normalization of tables, database and database management system (DBMS).
5. Computer Programming Languages: Definition, types. Programming languages for geographers: statements, sample FoxPro Programs.

**Course-207 Minor: Mathematics in Geography**

**Unit: 0.75, Credit Hours: 3; Marks: 75**

1. Definition, scope, development and approaches.
2. Basic mathematical concepts- set, van diagram, set theory combination and permutation, logarithm and indices and their application in geographical studies.
3. Matrix and vector analysis.
4. Trigonometrical elements and its Sine, Cosine, Tangent uses in geography.
5. Co-ordinate geometry. Two dimensions: co-ordinates, the straight lines, and circles Three dimension: rectangular co-ordinates, the plane, the straight line.

**Course-208 Minor: Social Geography**

**Unit: 0.75, Credit Hours: 3; Marks-75**

1. Social Geography: Definition, nature, scope, and development.
2. Society: Definition, concept, value and norms. Origin, development, types and factors influencing society.
Practicals:
Unit: 1.5, Credit Hours: 6; Marks: 150

A. Map Projection.
   b) Major criteria for the construction of projections—latitude, longitude, Central Meridian, standard parallel, scale of the projection.
   c) Construction of projections—mathematical and graphical, merits and demerits. Conical group of projections; Cylindrical group of projections; Zenithal group projections: Polar, equatorial and oblique; Conventional projections.

B. Construction, Reproduction and Transformation of Maps.
   A.
      ii) Techniques of Statistical Mapping: Qualitative and quantitative distribution maps, dot maps, graduated symbol maps, circle ratio size maps; square, cubes, spheres and other point symbol maps, gradient maps, flow maps.
      iii) Map reproductions, printing and non-printing processes.
   B. Study of topographical and weather maps.
   C. World regional maps.

C: Surveying-I
1. The Shape and Size of the Earth: Geoid and geodesy; geographical co-ordinate system, plane, spherical and rectangular co-ordinates, military grids, state plane co-ordinates. Direction and distance.
2. Definition of Surveying: Types of surveying, geodetic, plane table.
3. Surveying as the basis of large scale maps: The framework of topographical maps; Principles of triangulation; Types of triangulation, topographical principles—major and minor.
4. Methods of surveying: Chain and tape surveying; Plane table surveying.

D: Field Work: Landscape and Resource Mapping (Not more than 2 days)

Important: Students have to submit their records of practical works and report of field work before the commencement of practical examination.
### B.Sc. Honours Part-3 Examination - 2016

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title of the Course</th>
<th>Unit</th>
<th>Full Marks</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geo-301 Major:</td>
<td>Geography: Concepts and Methodology</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Geo-302 Major:</td>
<td>Hydrology and Fluvial Morphology</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Geo-303 Major:</td>
<td>Advanced Economic Geography</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Geo-304 Major:</td>
<td>Bangladesh: Physical Environment</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Geo-305 Major:</td>
<td>Quantitative Techniques in Geography</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Geo-306 Major:</td>
<td>Environmental Geography</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Geo-307 Major:</td>
<td>Research Methodology</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
</tbody>
</table>

**Practicals:** *[Practical Examination shall be 24 hours (6 hours per day)]*

- A: Aerial Photographs
- B: Remote Sensing.
- C: Surveying-II
- E: Micro Region Survey: Places of Geographical Interest
  - Viva-voce: 0.5 50 2
  - Class Records etc: 0.5 50 2

**Total Credit**: 10.5 1050 42

**Details of Practicals**

<table>
<thead>
<tr>
<th>Details of Practicals</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical Examination –</td>
<td>180</td>
</tr>
<tr>
<td>Record of Practical Works-</td>
<td>20</td>
</tr>
<tr>
<td>Field Work Report-</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>= 250</td>
</tr>
</tbody>
</table>

Honours Syllabus-23

---

**Course-301 Major: Geography: Concepts and Methodology**

**Unit-1, Credit Hour: 4; Marks-100**

1. Definitions of Geography:
   - 3.1 Geography as a science
   - 3.2 Geography as an environmental science
   - 3.3 Geography as a social science.
   - Nature and trends in contemporary geography, scope of contemporary geography and its subject matters.

2. A Brief History of the Development of Geographical Knowledge and Concepts (including personalities) in all Ages:
   - 1.1 Ancient period
   - 1.2 Greek and Roman classical period
   - 1.3 Dark age of Europe and medieval Muslim periods
   - 1.4 Age of exploration and its impact

3. A short history of the development of modern geography in Europe, Russia and the USA in the mid 19th and 20th century (upto World War-II). Introduction to the major thoughts and concepts developed in the period with reference to their personalities.

4. Introduction to the Major Approaches in Geography:
   - 4.1 Earth-Science approach
   - 4.2 Regional approach
   - 4.3 Systems approach
   - 4.4 Ecological approach
   - 4.5 Landscape approach
   - 4.6 Spatial and locational approach
   - 4.7 Behavioural approach
   - 4.8 Welfare approach

5. Theories, laws and models in geography and its relevance to environmental studies.

6. The status of geography today and its relevance to society and state.
   - Honours Syllabus-24
Course-302 Major: Hydrology and Fluvial Morphology
Unit: 1, Credit Hours: 4; Marks: 100

1. Hydrology: definition, evolution and importance, properties of water and its global distribution.
2. World hydrological cycle, characteristics and elements.
5. Fluvial Morphology: Definition, evolution and importance in geomorphology, Flood plain management & river restoration.
6. Stream channels and their characteristics, Channel evolution of floodplain genesis.
7. Hydraulics of flow-types of flow, velocity and discharge, their measurement and distribution
8. Processes in a channel erosion, transportation and deposition; load its types and characteristics land forms produced and their characteristics.

Course-303 Major: Advanced Economic Geography
Unit: 1, Credit Hours: 4; Marks: 100

1. Concept, scope and methods.
2. Economic system, theories and models in economic geography, the concept of 'system' and systems in economic geography, factors of production.

Course-304 Major: Bangladesh: Physical Environment
Unit: 1, Credit Hours: 4; Marks: 100

1. Introduction: Location of Bangladesh in the region and the world community; characteristics and importance.
2. The Natural Environment: Geologic background; Relief and Physiography; Climate and Soils.
4. River system and wetland.
6. Climate Change its impact and adaptation in Bangladesh. NAPA.
Course-305 Major: Quantitative Techniques in Geography
Unit: 1, Credit Hours: 4; Marks: 100

1. Index number and analysis of time series.
2. Measures of Spatial Distribution: Types of spatial data; point distribution, line distribution-networks, discrete areal distribution (choropleth) and continuous area distribution (isopleth).
4. Samples and Estimates: Populations and samples; sampling frame, sampling types, types of sampling used in the geographical research. Population parameters and sample statistics, sampling distribution and the standard error. Sample size, estimates from sample measurement and sample counts.
5. Hypothesis testing: General consideration; The $\chi^2$ test, binomial test, t-test, the Mann-Whitney U test, the Wilcoxon test for paired samples. Type I and Type II error; the analysis of variance.
6. Test for distribution in space: Concept of spatial randomness, the nearest neighbour index and simple randomization test.
7. Models: The gravity model; diffusion model, slope model and computer operated simulation model.

Course-306 Major: Environmental Geography
Unit: 1, Credit Hours: 4; Marks: 100


3. Ecosystem: Definition and meaning of ecosystem, ecosystem structure, functioning of ecosystem, ecosystem productivity. Types of ecosystem: territorial and aquatic ecosystem.
6. Environmental problems and sustainable livelihood: Global, Regional and local Issues and management: Degradation of soil and hydrosphere, atmospheric changes, loss of biodiversity, the process of a major paradigm shift, agenda 21 and other environmental problems, legal and economic strategies.
7. Environment and Development: Political ecology- Theoretical and conceptual frameworks and post structural political ecology, social capital.

Geo-307 Major: Research Methodology
Unit: 1, Credit Hours: 4; Marks: 100

1. Scientific Methods in Geography:
   1.1 Concept, definition and elements in scientific method in geography, its philosophy and the general principles of geographical inquiry and the development of scientific method;
   1.2 Theory and Techniques of Spatial Analysis: A Review of the Development of different Research Paradigms and the Role of Geographical Schools of thought in Formulation of Theory, Model building;
   1.3 The research process- The cyclic process of research projects and steps in research.
2. Honours Syllabus-27

Honours Syllabus-28
2.1 Preparing research proposals and research designs (Sample research designing of social research.

2.2 Research questions and objectives: Strategies for answering research questions, concepts, theories, hypothesis and models. Methods for answering research questions.

2.3 Modes of operations: Experiments, survey research, qualitative field research. Quantitative Methods, survey research, correlational research, causal-comparative research, Experimental research, Qualitative research, mixed the method, Action research.

2.4 Literature review: Multiple purposes of literature review, Sources of information and conducting research, reading and note taking strategies, structuring literature review and text citation and plagiarism.

2.5 Analysis of data: Qualitative data Analysis, quantitative date analysis, elaboration model, statistical analysis, reading and writing social research.

3. Format of Geographical Research:
   3.1 Format and Styles of a Geographical Research Thesis/Project;
   3.2 Bibliography, Endnotes, Footnotes, Abstract, Appendixes.

4. Project based Policy Research-
   a) Characteristics of Policy Research and Research Environment;
   c) Implications for the Research Process;
   d) Some Contributions of Policy Research.

5. Utilization of Research Findings.

Reference:
Norman Blaikie (2000). Designing Social Research, Polity Press:
Uk.
Honours Syllabus-29

Practicals:
Unit:2.5, Credit hour: 10; Marks: 250

A: Aerial Photographs

1. Aerial photograph as a tool in geography.
   a) Nature, types and importance of aerial photographs.
   b) Acquisition and Coverage
   c) Interpretation techniques and equipment
   d) Interpretation of aerial photograph-determination of base-line, orientation, determination of scale, scale displacement, relief displacement.

3. Application of aerial photographs in the study of geography and environment.
4. Landuse & Landcover classification & change detection.

B: Remote Sensing

1. Introduction to satellite Remote Sensing: Fundamental considerations; sensors/platform systems, satellite imagery, technical specification of satellite data.
2. Digital image processing, satellite data correction, data restoration, data enhancement, data classification and feature recognition techniques
3. Interpretation of remote sensing data from hardcopies.
4. Application exercise: Land cover and land use mapping and change detection, environment monitoring, geologic feature identification and environmental management.

C: Surveying-II

Honours Syllabus-30
1. Prismatic compass survey
2. Leveling
3. Theodolite survey
4. DGPS and total station surveying.
5. GPS & its linkage with others spatial data.

D: Study of Geological Maps and Identification of Rocks and Minerals

E: Micro Region Survey:
   Places of Geographical Interest

**Important:** Students have to submit their records of practical works and report of field work before the commencement of practical examination.
Course-401 Major: Geography of Resource Management  
Unit-1, Credit Hour: 4; Marks-100

2. Resource Classification: Resource ecosystem; basic terms; Marine resources, natural resources; renewable and non-renewable resources. Nature of resources.
4. Concepts of sustainability, carrying capacity, perception, attitude and adjustment in resource management.
5. Resource Conservation: Meaning; strategies and techniques. Important resources and their conservation strategies with particular reference to Bangladesh.
6. Resource Planning and Management: Concept and approaches. The planning cycle; Models in planning.
7. Perspectives on the Future Resources: salient trends; social order; institutional reforms; policy making; international order and co-operation.

Course-402 Major: Population Geography  
Unit-1, Credit Hour: 4; Marks-100

1. Population geography, definition, scope and methodology.
2. Sources of population data.
3. Population distribution and density, measures of spatial variations, determinants of such variations.
5. Population growth and development.

Honours Syllabus-33

8. Impact of urbanization on population, population growth and structure.

Course-403 Major: Political Geography  
Unit-1, Credit Hour: 4; Marks-100

1. Political Geography: Definition, scope, methodology, historical growth, major approaches and importance.
2. Fundamental Elements of State: The State, the Nation, the Nation State, Federalism, United Field concept. Location, shape, size and area of States. Concepts of Boundaries, Classification of Boundaries. Human rights, Freedom and the concept of sovereignty, Colonialism.
4. International Relation and dispute: concept of development of under development, political control of international trade, Role of WTO, trade route and use of international canal, free ports, multinational company. Trade embargo political dispute among the countries, dispute over resources, sharing of international rivers.
emergence of NAM, the role of UNO. Concept of globalization, economic and political dimension of globalization.

6. Bangladesh in International Politics: Political emergence of Bangladesh, Dissatisfaction with Pakistan, Inter-wing disparity of power and economy, Mass movement against Pakistan, 6 points demand, Bangladesh relation with other countries, Bangladesh foreign policy.

**Course-404 Major: Bangladesh: Human and Economic Environment**  
**Unit: 1, Credit Hours: 4; Marks: 100**

1. Human resources of Bangladesh: characteristics and constraints of development.
3. Population and settlement: Spatial patterns of distribution and density; Population dynamics; Settlement patterns and Urbanization.
4. Major economic activities: Agriculture; growth and change, major crops, agro-ecological zones and Crop Association Units; Land use and Land Degradation. Manufacturing; growth, development, constraints and spatial distribution; Service activities: formal and informal.
5. Problems and issues of development: Regional inequality and regional development; Poverty: progress in reduction and spatial patterns; Food Security.
6. Major issues of environmental concern: Pollution: land, water, air and noise; Issues of Arsenic contamination of groundwater and its impact on health; Impact of major engineering projects on the environment with special reference to FCD/FCDI projects; Major regions of environmental concern.

**Course-405 Major: Cultural Geography**  
**Unit: 1, Credit hour: 4; Marks: 100**

1. Cultural Geography: Definition, meaning, scope and significance.
2. Culture: Definition, meaning, elements, cultural development acculturation.
3. Origin of Man
5. World Civilization: Greek, Egyptian, Mesopotamian, Indus Valley, and Chinese.
6. Culture of ethnic minorities in Bangladesh.
7. Significance of the preservation of archaeological heritage of Bangladesh.

**Course-406 Major:**  
**Regional Geography: South-Asia (excluding Bangladesh.)**  
**Unit: 1 Credit Hours: 4; Marks: 100**

**Course-407 Major: Project:**  
**Unit: 1 Credit Hours: 4; Marks: 100**

**Practical:**  
**Unit:2.5, Credit hour: 10; Marks: 250**  
**A: Morphometric Analysis**

1. Fieldwork on physical landscape study.
2. Study and interpretation of various types of landforms using toposheets (by cross profiles), aerial, composite, superimposition and projected mapping, hypsographic curve and long valley curve (Thalweg).
4. Slope aspects, spatial distribution and methods of slope analysis (Henry, Raisz, Robinson and Strahler), Preparation of slope profile.

Honours Syllabus-35
5. Geomorphological mapping

**B: Environmental Analysis**

1. **Geographical Exercise:**
   1.1. Topographical and hydrological change detection on the basis of old and current topographical maps and also on existing field situation (visual comparison).
   1.2. Preparation of geomorphological maps of a given village on the basis of field survey, using chain and tape and topographic survey using DGPS & Total Station.
   1.3. Field work

2. **Hydrological Exercise:**
   2.1. Preparation of stage hydrography/flood frequency curves on the basis of hydrological data of a river station (BWDB data).
   2.2. Analysis of stream flow and drainage characteristics of a river using conventional tools and techniques as well as using remotely sensed images. Study features include fluvial-geomorphic profiles of the stream.

3. **Sedimentological Tests:**
   3.1. Identification of sand, silt and clay by manual techniques and instrumental techniques.
   3.2. Studies on the texture, structure, colour, organic matter and composition. pH physical (pH meter) and chemical tests on the basis of conventional, traditional and modern scientific techniques.
   3.3. Measurement/extent of the sedimentary horizons
   3.4. Identification of sedimentary characteristics.

4. **Floral and Faunal environmental tests:**
   4.1. Species identification with reference to different land levels (viz: high, medium, low etc.) and physiographic units, like (a) species of hills or terrace lands, (b) species of plain alluvial lands (c) species of marshes/swamps or other low lying surfaces.
   4.2. Study the relationship between occurrence of vegetation species and soil types of specific study areas viz. loamy, secondary and salty-clay regions.

**C: Geographical Information System and Its Applications**

1. Familiarity with basic GIS techniques and approaches
2. Data Management in GIS: Identification of data sources, data types, data input, storage, manipulation and output.
4. Preparation of paper map, map digitization, correction, attributes data attachment, preparation and reproduction of simple thematic maps.
6. Decision support system.
7. Data input manipulation & integration technique.

**D: Field Techniques in Geography**

1. Field Techniques in Geography-including field observation, sketches, drawing, measurement, interviewing, photo taking, surveying- preliminary and detailed.

**E: Micro Region Survey:**

Environmental and Spatial Perspective

**Important:** Students have to submit their records of practical works and report of field work before the commencement of practical examination.

Honours Syllabus-37

Honours Syllabus-38
Books recommended:
A resourceful site for bibliographic references: http://www.questia.com/SM.qst
Ahmad, Nafis (1976): A New Economic Geography of Bangladesh, Vikas, New Delhi.
Ahmed, K.S.: Simple Map Projection
Ahmed, Nafis: Muslim Contributions to Geography.
Aime Vincent Perpillon: Human Geography, Longman.
Ambrose, Peter: Analytical Human Geography.
Arms, Karen (1996): Environmental Science; Holt, Rinehart and Winston Inc. N.Y.
Banglapedia: National Encyclopedia of Bangladesh. It can be most easily accessed on: http://www.search.com.bd/banglapedia

Honours Syllabus-39

Berry & Chorley: Atmosphere, Weather and climate
Bungee, William: Theoretical Geography.
Bygott, John: An Introduction to Mapwork and Practical Geography
Chorley, R.J. and Haggett, Peter: Frontiers in Geographical Teaching.

Covering aspects of society and culture: http://www.virtualbangladesh.com
Darlington: Zoogeography.
Dickinson, R.E.: City and Region.
Dickinson, Robert E.: The Makers of Modern Geography.

Honours Syllabus-40
Estall, R.C. & Buchanan, (1977) Industrial Activity and Economic Geography
Gregory et.al: Drainage basin: forms & Process.
Haggett, P.: Locational Analysis in Human Geography.
Haroun-er-Rashid: Geography of Bangladesh, UPL, Dhaka.
Hartshorne, R.: Perspective on the Nature of Geography.
Harvey, David: Explanation in Geography.
History of Bangladesh and Ancient World Civilizations: National Curriculum & Textbook Board; Dhaka; Second Edition 2002
Historical Atlas of South Asia.
http://www.blss.portsmouth.sch.uk/hsc/cultural/bangladesh.html
Information, from maps to music, about Bangladesh; see mainly for cultural aspects: http://www.bangladesh.com
Interesting reading of Bangladeshi festivals:
Islam, M. Aminul: Government, Landuse & Natural Hazards in Bangladesh, University of Dhaka.
Honours Syllabus-41

Islam, Mustafa Nurul (ed), Bangaleer Attayaparicha y.
Islam, Sirajul (1997) History of Bangladesh: 1704-1971 (3 volumes);
J.O.M. Brock & Webb: A Geography of Mankind, New York.
Johnston, R.J.: Multivariate Statistical Analysis in Geography, Longman, USA.
Kamran, K.: Fundamentals of Environmental Pollution.
Karim, Abdul (1977) Banglar Itihas: Sultani Amal: (History of Bengal During Sultanate Period); Bangla Academy; Dhaka; (in Bengali)
Karim, Abdul (1977) Banglar Itihas: Sultani Amal: (History of Bengal During Sultanate Period); Bangla Academy; Dhaka; (in Bengali)
Koromonedy, E.J.: Concept of Ecology.
Lockwook: World Climatology: An Environmental Approach.
Marbat, C.F.: Soils: Their Genesis and Classification, USA.

Honours Syllabus-42
Mather, P.M.: *Computer Applications in Geography*, Chichester: John Wiley & Sons.


Michael Borok and Greg. O.Hare: *The Third World: Conceptual Frameworks in Geography*, Oliver and Boyd.

Minshull, Roger M.: *The Changing Nature of Geography*

Mitchel, B.: *Geography and Resource Analysis*.

Monkhouse, F.J.: *Maps and Diagrams*


Muslim Society and Politics in Bengal A.D. 1757-1947; Muhammad Abdur Rahim; University of ‘Dacca’.

National Academy of Sciences USA: *The Science of Geography*.


Omara-Ojungu, P.H.: *Resource Management in Developing Countries*.


Patric, J.Mc. Bridge: *Human Geography*, Principles, Processes and Patterns, Blackie and Sons Ltd.


Honours Syllabus-43


Raize, E.: *General Cartography*

Ray Atul Chandra (1968) History of Bengal: (Mughal Period 1526-1765) Nababharat Publishers; Calcutta.

Ray Atul Chandra (1968) History of Bengal: (Mughal Period 1526-1765) Nababharat Publishers; Calcutta.


Rice, R.J. *Fundamentals of Geomorphology*.

S. Gregory: *Statistical Methods and the Geographer*, Methuen, New York, USA.


Singh, R.L.: *Elements of Practical Geography*.


Honours Syllabus-44
Strahler, A.N. *Principles of Physical Geography.*
Strahler: *Physical Geography.*
Taylor, Griffith: *Geography in the Twentieth Century.*
Trewartha, G.T.: *An Introduction to Climate.*

**Web support:**
Zimmerman, E.W.: *World Resources and Industries.*

রহমান, ড. হাসিনু বিভাগ বিদ্যালয়, চাঁদপুর।
রহমান, মুক্তবীর অধ্যাদেশ এবং অন্যান্য (২০০৩) বাংলাদেশের ইতিহাস, নওরোজ কিলিকিন্ড, ঢাকা।
করিম, মো. রেজাউল। সামাজিক ও রাজনৈতিক তথ্য ব্যবহার প্রচুর।
সালাউদ্দিন, এম। (১৯৯৪)। বাংলাদেশের দুর্গত সভ্যতার ইতিহাস; ১৬৪৭-৭১।
হুদোক, মোহাম্মদ সুন্দরীল এবং রহমান, মোঘলিফুর (১৯৯৪): অগ্রুন্থ অর্থনীতি, বাংলাদেশ বুক কার্পোরেশন, ঢাকা।
হাসান, মুক্তবীর এবং অন্যান্য, বাংলাদেশ প্রকৃতিকর্ত্তার কৃষি ও পরিশেষ, বাংলা একাডেমী, ঢাকা।
জবার, মোহাম্মদ আব্দুল: তথ্য পরিচিতি, বাংলাদেশ অ্যাস্ট্রোনামিক্যাল আয়োগস্যীরন।
হুসেন, মকবুলা: সম্মাননা।
তাছা এম.এ: পূর্ববর্তী আর্থনীতিক ধর্মী-২০০০
তাছা, এম.এ, আঞ্চলিক মানচিত্র ও নেতৃত্ব বিশেষদ, রা.বি., প্রকাশনা দপ্তর।
তাছা, এম.এ: রাজনৈতিক কৃষি, রাজশাহী, ১৯৮৬
তাছা, এম.এ: মানবিক মুক্তি।

Honours Syllabus-45

Honours Syllabus-46