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Department of Geography
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

Course Code: GEOACOR01T
Course Title: Geotectonic and Geomorphology
4 Credits, 50 Marks [60 classes]
Semester-I (75+75 Marks)

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Geotectonics	
1. Earth's tectonic and structural evolution with reference to geological time scale	CO-1: Comprehend the theories of Geotectonic and Geomorphology. [BT level-1-Remember] CO-2: Understand fundamental concepts of Geotectonic and Geomorphology. [BT level-2-Understanding] CO-3: Comprehend earth's tectonic and structural evolution. [BT level-2-Understanding] CO-4: Gain knowledge about earth's interior. [BT level-1-Remember] CO-5: Understand the concept of plate tectonics, and resultant landforms. [BT level-2-Understanding] CO-6: Analyze critical appraisal
2. Earth's interior with special reference to seismology. Isostasy: Models of Airy and Pratt	
3. Plate Tectonics as a unified theory of global tectonics: Processes and landforms at plate margins and hotspots	
4. Folds and Faults—origin and types	
Unit II: Geomorphology	
5. Degradational processes: Weathering, mass wasting and resultant landforms	
6. Development of river network and landforms	

on uniclinal and folded structures	of landform development models. [BT level-4-Analyze] CO-7: To have a detailed understanding geo-tectonic process, plate tectonics, vulcanicity and other tectonic activity. [BT level-2-Understanding] CO-8: Apply the geo-tectonic processes, plate tectonics, vulcanicity and other tectonic activity. [BT level-3-Apply]
7. Development of landforms on granites, basalts and limestone	
8. Coastal processes and landforms	
9. Glacial and Glacio-fluvial processes and landforms	
10. Aeolian and Fluvio-Aeolian processes and landforms	
11. Models on landscape evolution: Views of Davis, Penck and Hack	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR01P – Geotectonic and Geomorphology
2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Megascopic identification of **(a)** mineral samples: Bauxite, calcite, chalcopyrite, feldspar, galena, gypsum, hematite, magnetite, mica, quartz, talc, tourmaline; and **(b)** rock samples: Granite, basalt, dolerite, laterite, limestone, shale, sandstone, conglomerate, slate, phyllite, schist, gneiss, quartzite, marble	CO-1: Remember survey using appropriate techniques. [BT level-1-Remember] CO-2: Apply field survey using appropriate techniques. [BT level-3-Apply] CO-3: Understand identification of rocks and minerals specifying their characteristics. [BT level-2-Understanding] CO-4: Can be able to draw geological map with its geological history. [BT level-6-Create]
2. Interpretation of geological maps with unconformity and intrusions on uniclinal and folded structures	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR02T – Cartographic Techniques

4 Credit, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Maps: Classification and types. Components of a map	CO-1: Remember different kinds of maps. [BT level-1-Remember] CO-2: Understand different kinds of maps and diagram. [BT level-2-Understanding] CO-3: And able to draw scale and map projection. [BT level-6-Create] CO-4: Recognize basic themes of maps and diagram. [BT level-3-Apply] CO-5: Development of observation skills. [BT level-5-Evaluate] CO-6: May create new map as per the need. [BT level-6-Create]
2. Concept and application of scales: Plain, comparative, diagonal and vernier.	
3. Survey of India topographical maps: Reference scheme of old and open series. Information on the margin of maps.	
4. Coordinate systems: Polar and Rectangular	
5. Concept of generating globe and UTM projection	
6. Grids: angular and linear systems of measurement	
7. Map projections: Classification, properties and uses	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR02P – Cartographic Techniques (Lab)

2 Credits, 25 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Graphical construction of scales: Plain, Comparative, Diagonal and Vernier.	CO-1: Remember different kinds of maps. [BT level-1-Remember] CO-2: Understand different kinds of maps and diagram. [BT level-2-Understanding] CO-3: And able to draw scale and map projection. [BT level-6-Create] CO-4: Recognize basic themes of maps and diagram. [BT level-3-Apply] CO-5: Development of observation skills. [BT level-4-Analyze] CO-6: Create new map. [BT level-6-Create]
2. Construction of projections: Polar Zenithal Stereographic, Simple Conic with two standard parallels, Bonne's, Cylindrical Equal Area, and Mercator's.	
3. Delineation of drainage basin from Survey of India topographical map. Construction and interpretation of relief profiles (superimposed, projected and composite), relative relief map, slope map (Wentworth), and stream ordering (Strahler) on a drainage basin.	
4. Correlation between physical and cultural features from Survey of India topographical maps using transect chart.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

Semester -II
Course Code: GEOACOR03T
Course Title: Human Geography
Core Course: Credit–6, FM- 75, 90 Classes

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Nature, scope and recent trends. Elements of Human Geography	CO-1: Comprehend major themes of human Geography. [BT level-1-Remember] CO-2: Remember major themes of human Geography. [BT level-1-Remember] CO-3: Understand the history and evolution of humans. [BT level-2-Understanding] CO-4: Apply the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations. [BT level-3-Apply]
2. Approaches to Human Geography; Resource, Locational, Landscape, Environmental	
3. Concept and classification of race; ethnicity	
4. Space, society and cultural regions (language and religion)	
5. Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming and industrial society	
6. Human adaptation to environment: Eskimo, Masai and Maori	
7. Population growth and distribution, composition; demographic transition	
8. Population–Resource regions (Ackerman)	
9. Types and patterns of rural settlements	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR04T – Cartograms and Thematic Mapping
4 Credits, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
1. Concepts of rounding, scientific notation, logarithm and anti-logarithm, natural and log scales	CO-1: Comprehend and remember the concept of scales. [BT level-1-Remember] CO-2: May represent data through cartograms. [BT level-5-Evaluate] CO-3: Analyze geological and weather maps. [BT level-4-Analyze] CO-4: Acquire the knowledge of the usages of survey instruments like Dumpy level and Theodolite with environment. [BT level-1-Remember] CO-5: Develop creative ideas about different types of thematic mapping techniques. [BT level-6-Create]
2. Diagrammatic representation of data: Line, Bar, Isopleths	
3. Representation of area data: Dots and spheres, proportional circles and Choropleth	
4. Preparation and interpretation of land use land cover maps	
5. Preparation and interpretation of socio-economic maps	
6. Bearing: Magnetic and true, whole-circle and reduced	
7. Basic concepts of surveying and survey equipment: Prismatic Compass, Dumpy Level, Theodolite	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR04P – Cartograms and Thematic Mapping (Lab)

2 Credits, 25 Marks [60 classes] **Thematic maps:**

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
1. Choropleth showing density of population Dots and Spheres diagram showing distribution of rural and urban population. Proportional pie-diagrams representing economic data and land use data 2. Traverse survey using prismatic compass Profile survey using dumpy Level	CO-1: May draw scales and representation of data through cartograms. [BT level-6-Create] CO-2: Draw geological and weather maps. [BT level-6-Create] CO-3: Gather knowledge of the usages of survey instruments like Dumpy level and Theodolite with environment. [BT level-1-Remember] CO-4: Develop creative ideas about different types of thematic mapping techniques with proper use of instrumental survey. [BT level-6-Create]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

Semester -III
Course Code: GEOACOR05T
Course Title: Climatology
4 Credits, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Elements of the Atmosphere	
1. Nature, composition and layering of the atmosphere	CO-1: Understand the elements of weather and climate, different atmospheric phenomena. [BT level-2-Understanding] CO-2: May analyze climate change. [BT level-4-Analyze] CO-3: Understand the dynamics of the Earth's atmosphere and global climate. [BT level-2-Understanding] CO-4: Apply the role of man in global climate change. [BT level-3-Apply]
Insolation: controlling factors. Heat budget of the atmosphere	
2. Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences	
3.Greenhouse effect and importance of ozone layer	
Unit II: Atmospheric Phenomena and Climatic Classification	
Condensation: Process and forms. Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence. Forms of precipitation	
Air mass: Typology, origin, characteristics and modification	
Fronts: warm and cold; frontogenesis and frontolysis	
Weather: stability and instability; barotropic and baroclinic conditions	
Circulation in the atmosphere: Planetary winds, jet stream, index cycle	
Tropical and mid-latitude cyclones	
Monsoon circulation and mechanism with reference to India	
Climatic classification after Köppen, Thornthwaite (1955) and Oliver	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

GEOACOR05P – Climatology
2 Credits, 25 Marks [60 classes]

Course Content	**Course outcome**
1. Interpretation of daily weather map of India (any two): Pre-Monsoon, Monsoon and Post-Monsoon 2.Construction and interpretation of hythergraph and climograph (G. Taylor) 3. Construction and interpretation of Wind Rose	CO-1: Acquire knowledge about the process of interpreting Indian daily Weather map. [BT level-1-Remember] CO-2: Can draw climatic diagram. [BT level-6-Create] CO-3: Can interpret climatic diagram. [BT level-6-Create] CO-4: Understand the dynamics of the Earth's atmosphere and global climate. [BT level-2-Understanding] CO-5: Comprehend the role of man in global climate change. [BT level-1-Remember]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR06T – Geography of India
6 Credits, 75 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Geography of India	CO-1: Understand the Physical characteristics of India. [BT level-2-Understanding] CO-2: Understand the Physical characteristics of West Bengal. [BT level-2-Understanding] CO-3: They can relate physiographical characteristics of one place with other place. [BT level-3-Apply]
Tectonic and stratigraphic provinces, physiographic divisions	
Climate, soil and vegetation: Characteristics and classification	
Population: Distribution, growth, structure and policy	
Tribes of India with special reference to Gaddi, Toda, Santal and Jarwa	
Agricultural regions. Green revolution and its consequences	
Mineral and power resources distribution and utilization of iron ore, coal, petroleum and natural gas	
Industrial development: Automobile and Information Technology	
Regionalization of India: Physiographic (R.L. Singh) and economic (P. Sengupta)	
Unit II: Geography of West Bengal	
Physical perspectives: Physiographic divisions, forest and water resources	
Resources: Agriculture, mining, and industry	
Population: Growth, distribution and human development	
Regional Issues: Darjeeling Hills and Sundarban	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR07T – Statistical Methods in Geography

4 Credits, 40 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Frequency Distribution and Sampling	CO-1: Can signify the importance of statistics in geography. [BT level-3- Apply] CO-2: Acquire the knowledge of applications of Statistics in Geography. [BT level-1- Remember]
1. Importance and significance of statistics in Geography	
2. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio),	
3. Sources of geographical data for statistical analysis	
4. Collection of data and formation of statistical tables	
5. Sampling: Need, types, and significance and methods of random sampling	
6. Theoretical distribution: Frequency, cumulative frequency, normal and probability	
Unit II: Numerical Data Analysis	
7. Central tendency: Mean, median, mode, partition values	
8. Measures of dispersion range: mean deviation, standard deviation, coefficient of variation	
9. Association and correlation: Rank correlation, product moment correlation	
10. Regression: Linear and non-linear	
11. Time series analysis: Moving average	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR07P – Statistical Methods in Geography (Lab)

2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
1. Construction of data matrix with each row representing an areal unit (districts / blocks / mouzas/ towns) and corresponding columns of relevant attributes	CO-1: Can signify the importance of statistics in geography. [BT level-4-Analyze] CO-2: Acquire the knowledge of applications of Statistics in Geography. [BT level-1-Remember]
2. Based on the above, a frequency table, measures of central tendency and dispersion would be computed and interpreted using histogram and frequency curve.	
3. From the data matrix a sample set (20%) 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	
4. Based on the sample set and using two relevant attributes, a scatter diagram and linear regression line would be plotted and residual from regression would be mapped with a short interpretation.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

Semester -IV
Course Code: GEOACOR08T
Course Title: Regional Planning and Development

6 Credits, 75 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Regional Planning	CO-1: Understand and identify regions as an integral part of geographical study. [BT level-2-Understanding] CO-2: Compare the varied aspects of development and regional disparity and aspects for balanced development. [BT level-4-Analyze]
1. Concept of regions: Types of regions and their delineation	
2. Regional Planning: Types, principles, objectives, tools and techniques	
3. Need for regional planning in India, multi- level planning in India	
4. Metropolitan concept and urban agglomerations	
Unit I: Regional Development	
5. Concepts of growth and development, growth versus development	
6. Indicators of development: Economic, social and environmental	
7. Human development: Concept and measurement	
8. Theories and models for regional development: Cumulative causation (Myrdal)	
9. Theories and models for regional development: Stages of development (Rostow), growth pole model (Perroux).	
10. Concept and causes of underdevelopment	
11. Regional development in India: Disparity and diversity	
12. Need and measures for balanced development in India	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

GEOACOR09T — Economic Geography

6 Credits, 75 Marks [90 classes]

Course Content	**Course outcome**
Unit I: Concepts	CO-1: Remember various concepts in Economic Geography. [BT level-1-Remember] CO-2: May classify economic activities. [BT level-4-Analyze] CO-3: Compare different primary, secondary and tertiary economic activities. [BT level-5-Evaluate]
1. Meaning and approaches to Economic Geography.	
2. Concepts in Economic Geography: Goods and services, production, exchange and consumption	
3. Concept of economic man, theories of choices	
4. Economic distance and transport costs	
Unit II: Economic Activities	
5. Concept and classification of economic activities	
6. Factors affecting location of economic activity with special reference to agriculture (Von Thünen), and industry (Weber).	
7. Primary activities: Agriculture, forestry, fishing and mining	
8. Secondary activities: Manufacturing (cotton textile, iron and steel), concept of manufacturing regions, special economic zones and technology parks	
9. Tertiary activities: Transport, trade and services	
10. Agricultural systems: Case studies of tea plantation in India and mixed farming in Europe	
11. Transnational sea-routes, railways and highways with reference to India	
12. International trade and economic blocs: WTO, GATT and BRICS: Evolution, structure and functions	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR10T—Environmental Geography

4 Credits, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Geographers' approach to environmental studies	CO-1: Remember geographer's approach to environment study. [BT level-1-Remember] CO-2: Understand the structure and functions of ecosystem. [BT level-2-Understanding] CO-3: Analyze the roles of different Earth Summits. [BT level-4-Analyze] CO-4: Create proper waste management plan identifying different urban environmental issues. [BT level-6-Create]
2. Concept of holistic environment and systems approach	
3. Ecosystem: Concept, structure and functions	
4. Space–time hierarchy of Environmental problems: Local, regional and global	
Environmental problems and policies	
5. Environmental pollution and degradation: Land, water and air	
6. Urban environmental issues with special reference to waste management	
7. Environmental policies – National Environmental Policy, 2006, Earth Summits (Stockholm, Rio, Johannesburg)	
8. Global initiatives for environmental management (special reference to Montreal Protocol, Kyoto Protocol, Paris Climate Summit)	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR10P—Environmental Geography
2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Preparation of questionnaire for perception survey on environmental problems	CO-1: Remember EIA. [BT level-1-Remember] CO-2: Prepare questionnaire for perception survey. [BT level-3-Apply] CO-3: Evaluate air quality using CPCB/ WBPCB data. [BT level-5-Evaluate] CO-4: Create checklist for EIA. [BT level-6-Create]
2. Preparation of check-list for Environmental Impact Assessment of an urban / industrial project	
3. Interpretation of air quality using CPCB / WBPCB data	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOSSEC02M – Advanced Spatial Statistical Techniques

2 Credits, 25 Marks [30 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Probability theory, probability density functions with respect to Normal, Binomial and Poisson distributions and their geographical applications.	CO-1: Estimate linear regression. [BT level-4-Analyze] CO-2: Compute measures of central tendencies. [BT level-5-Evaluate] CO-3: Identify different types of sampling method. [BT level-3-Apply] CO-4: Construct data matrix. [BT level-3-Apply]
2. Sampling: Sampling plans for spatial and non-spatial data, sampling distributions. Sampling estimates for large and small samples tests involving means and proportions.	
3. Correlation and Regression Analysis: Rank order correlation and product moment correlation; linear regression, residuals from regression, and simple curvilinear regression. Introduction to multi-variate analysis.	
4. Time Series Analysis: Time Series processes; Smoothing time series; Time series components.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

Semester -V
Course Code: GEOACOR11T
Course Title: Fieldwork and Research Methodology
Core Course: Credit –6, FM - 75

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Research Methodology	
1. Research in Geography: Meaning, types and significance	CO-1: May define Quantitative Research. [BT level-1-Remember]
2. Literature review and formulation of research design	
3. Defining research problem, objectives and hypothesis.	
4. Research materials and methods	CO-2: Predict the Direct and Indirect Variables. [BT level-4-Analyze]
5. Techniques of writing scientific reports: Preparing notes, references, bibliography, abstract and keywords	
Unit II: Fieldwork	
Fieldwork in Geographical studies: Role and significance. Selection of study area and objectives. Pre-field academic preparations. Ethics of fieldwork	CO-3: Interpret Regression Results. [BT level-5-Evaluate]
Field techniques and tools: Observation (participant, non participant), questionnaires (open, closed, structured, non-structured). Interview	CO-4: Illustrate the Research Findings. [BT level-6-Create]
Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.	
Positioning and collection of samples. Preparation of inventory from field data.	
Post-field tabulation, processing and analysis of quantitative and qualitative data	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR11P – Fieldwork and Research Methodology (Lab)

2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
Each student will prepare a report based on primary data collected from field survey and secondary data collected from different sources.	CO-1: Describe the socio-economic condition of a place. [BT level-1-Remember] CO-2: May explain the physical and social factors. [BT level-3-Apply] CO-3: Prepare the objectives of survey applying field techniques. [BT level-3-Apply] CO-4: Analyze the primary data of survey. [BT level-4-Analyze]
Students will select either one rural area (*mouza*) or an urban area (municipal ward) for the study, with the primary objective of evaluating the relation between physical and cultural landscape.	
The fieldwork should be completed within seven days.	
The report should be handwritten in English on A4 size paper in candidate's own words within 5,000 words (Introductory Chapter: 1000 words; Physical Aspects: 1500 words; Socio-economic Aspects: 1500 words; Concluding Chapter: 500 words, approximately) excluding tables, photographs, maps, diagrams, references and appendices.	
Maps and diagrams should not exceed 15 pages.	
All sections of the report should contain relevant maps, diagrams and photographs using primary and secondary data, clearly citing sources.	
A copy of the bound report, duly signed by the concerned teacher, will be submitted during examination.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR12T – Remote Sensing and GIS

4 Credits, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Remote Sensing	CO-1: Remember and describe the RS satellites and sensors. [BT level-1-Remember] CO-2: Classify sensor resolutions of IRS and Landsat. [BT level-3-Apply] CO-3: Apply knowledge to interpret False colour composites. [BT level-3-Apply] CO-4: Analyze IRS LISS-3 and Landsat image. [BT level-4-Analyze]
1. Principles of Remote Sensing (RS): Types of RS satellites and sensors	
2. Sensor resolutions and their applications with reference to IRS and Landsat missions	
3. Preparation of False Colour Composites from IRS LISS-3 and Landsat TM and OLI data.	
4. Principles of image correction and interpretation. Preparation of inventories of landuse land cover (LULC) features from satellite images**.**	
Unit II: Geographical Information Systems and Global Navigation Satellite System	
5. Concept of GIS and its applicability; GIS data structures: types: spatial and non-spatial, raster and vector	
6. Principles of preparing attribute tables and data manipulation and overlay analysis	
7. Principles of GNSS positioning and waypoint collection	
8. Transferring waypoints to GIS. Area and length calculations from GNSS data.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
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Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR12P – Remote Sensing and GIS

2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Georeferencing of maps and images using Open Source software	CO-1: Arrange image using open source software. [BT level-3-Apply]
2. Preparation of FCC and identification of features using standard FCC and other band combinations	CO-2: Understand false colour composites. [BT level-2-Understanding]
3. Digitization of features. Data attachment, overlay and preparation of annotated thematic maps (Choropleth, Pie Chart and Bar Graphs).	CO-3: Apply knowledge and interpret features using FCC. [BT level-3-Apply] CO-4: Analyze thematic maps. [BT level-4-Analyze]
4. Note: All exercises to be done using QGIS (2.10 and above)	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography
GEOADSE01T– Soil and Biogeography

6 Credit, 75 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Soil Geography	CO-1: Describe factors of soil formation. [BT level-1-Remember] CO-2: Classify different types of soil. [BT level-3-Apply] CO-3: Demonstrate soil texture. [BT level-3-Apply] CO-4: Analyze genetic and USDA classification. [BT level-4-Analyze]
Factors of soil formation. Man as an active agent of soil transformation.	
Soil profile. Origin and profile characteristics of Lateritic, Podzol and Chernozem soils	
Definition and significance of soil properties: Texture, structure and moisture,	
Definition and significance of soil properties: pH, organic matter and NPK	
Soil erosion and degradation: Factors, processes and mitigation measures	
Principles of soil classification: Genetic and USDA. Concept of land capability and its classification.	
Unit II: Biogeography	
Concepts of biosphere, ecosystem, biome, ecotone, community, niche, succession and ecology	
Concepts of trophic structure, food chain and food web, Energy flow in ecosystems	
Geographical extent and characteristic features of: Tropical rain forest, Taiga and Grassland biomes	
Bio-geochemical cycles with special reference to carbon dioxide and nitrogen	
Spatial distribution of world fauna.	
Measures for conservation of bio-diversity in India: Man and Biosphere Programme	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOADSE03T –Population Geography

75 Marks 6 Credits

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Population Dynamics	CO-1: Remember Population Geography. [BT level-1-Remember]
Development of Population Geography as a field of specialization. Relation between population geography and demography. Sources of population data, their level of reliability and problems of mapping.	
Population distribution: density and growth. Classical and modern theories in population distribution and growth, Demographic transition model.	CO-2: Understand Population Density and Growth. [BT level-2-Understanding]
World patterns determinants of population distribution and growth. Concept of optimum population.	
Population distribution, density and growth profile in India.	CO-3: Illustrate causes, types and consequences of migration. [BT level-5-Evaluate]
Unit II: Population and Development	
Concepts of Age-Sex Composition; Rural and Urban Composition; Literacy and education	
Measurements of fertility and mortality. Concept of cohort and life table	
Population composition of India: Urbanization and Occupational structure.	CO-4: Explain population environment dichotomy. [BT level-3-Apply]
Migration: Causes and types	
National and international patterns of migration with reference to India.	

Population and development: population-resource regions. Concept of human development index and its components.	
Population policies in developed and less developed countries. India's population policies, population and environment, implication for the future.	
Contemporary Issues – Ageing of Population; Declining Sex Ratio; Population and environment dichotomy, HIV/AIDS.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

Semester -VI

Course Code: GEOACOR13T

Course Title: Evolution of Geographical Thought

Core Course: Credit –6, FM - 75

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
Unit I: Nature of Pre-Modern Geography	CO-1: Remember the Development of Geography. [BT level-1-Remember]
1. Development of Geography: Contributions of Greek and Chinese geographers	
2. Impact of 'Dark Age' in Geography and Arab contributions	
3. Geography during the age of 'Discovery' and 'Exploration' (contributions of Columbus, Vasco da Gama, Magellan, Thomas Cook)	CO-2: Understand the age of 'Discovery' and 'Exploration. [BT level-2-Understanding]
4. Transition from cosmography to scientific Geography (contributions of Bernard Varenius and Immanuel Kant). Dualism and Dichotomies (Ideographic vs. Nomothetic, Physical vs. Human, Regional vs. Systematic, Determinism vs. Possibilism)	
Unit II: Foundations of Modern Geography and Recent Trends	CO-3: Apply knowledge to illustrate the Transition from cosmography to scientific Geography. [BT level-3-Apply]
5. Evolution of Geographical thoughts in Germany, France, Britain and United States of America	
6. Contributions of Humboldt and Ritter	
7. Contributions of Richthofen, Hettner, Ratzel and Vidal deLaBlaché	
8. Trends of geography in the post-World War-II period: Quantitative Revolution, systems approach	CO-4: Analyze and explain Changing concept of time-space in geography in the 21st Century. [BT level-4-Analyze]
9. Evolution of Critical Geography: Behavioural, humanistic and radical.	
10. Changing concept of time-space in geography in the 21st Century	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR14T – Disaster Management

4 Credits, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Concepts	CO-1: Define hazards and disasters. [BT level-1-Remember] CO-2: Illustrate the Responses to hazards. [BT level-3-Apply] CO-3: Describe the nature of vulnerability, consequences and management of different hazards. [BT level-1-Remember] CO-4: Explain how Hazard map prepare. [BT level-4-Analyze]
1. Classification of hazards and disasters	
2. Approaches to hazard study: Risk perception and vulnerability assessment. Hazard paradigms.	
3. Responses to hazards: Preparedness, trauma and aftermath. Resilience and capacity building.	
4. Hazards mapping: Data and geospatial techniques (for hazards enlisted in Unit II and Core 14P)	
Unit II: Hazard-specific Study with focus on India	
Earthquake: Factors, vulnerability, consequences and management	
Landslide: Factors, vulnerability, consequences and management	
Tropical Cyclone: Factors, vulnerability, consequences and management	
Riverbank erosion: Factors, vulnerability, consequences and management	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOACOR14P – Disaster Management

2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
Cyclone/Thunderstorm	CO-1: Remember and Define Thunderstorm, Landslide, Flood, Coastal / riverbank erosion etc. [BT level-1-Remember] CO-2: Understand necessary preparedness Plan of Project. [BT level-2-Understanding] CO-3: Apply knowledge and illustrate Project Report. [BT level-3-Apply] CO-4: Evaluate and analyze Project Report. [BT level-5-Evaluate] CO-5: Create hazard map. [BT level-6-Create]
Landslide	
Flood	
Coastal/Riverbank erosion	
Fire	
Industrial Accident	
Structural Collapse	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. Honours in Geography

GEOADSE04T – Hydrology and Oceanography

6 Credits, 75 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit-I: Hydrology	CO-1: Define Hydrology. Global hydrological cycle and Major relief features of the ocean floor. [BT level-1-Remember] CO-2: Describe the runoff, Infiltration, evapo-transpiration and Physical and chemical properties of ocean water. [BT level-1-Remember] CO-3: Illustrate Drainage basin as a hydrological unit and T–S diagram. [BT level-4-Analyze] CO-4: Analyze recharge, discharge and movement and Sea level change. [BT level-4-Analyze]
1. Systems approach in hydrology. Global hydrological cycle: Its physical and biological role	
2. Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle	
3. Drainage basin as a hydrological unit. Principles of water harvesting and watershed management	
4. Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement	
Unit-II: Oceanography	
5. Major relief features of the ocean floor: characteristics and origin according to plate tectonics	
6. Physical and chemical properties of ocean water	
7. Water mass, T–S diagram	
8. Ocean temperature and salinity: Distribution and determinants	
9. Marine resources: Classification and sustainable utilisation	
10. Sea level change: Types and causes	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

GEOADSE06T – Resource Geography

75 Marks, 6 Credits [90 classes]

Course content	Course out come
1. Approaches to Resource Utilization: Utilitarian, Conservational, Community based adaptation	CO-1: Define different approaches of resource utilization. [BT level-1-Remember] CO-2: Signify the importance of resource in economic growth. [BT level-4-Analyse] CO-3: Explain different approaches of resource conservation. [BT level-2-Understand]
2. Significance of Resources: Backbone of Economic growth and development	
3. Problems of resource depletion—global scenario (forest, water, fossil fuels).	
4. Conservation of Natural Resources	

Course content	Course out come
5. Distribution, Utilization, Problems and Management of Mineral Resources: Bauxite and Iron Ore.	CO-4: Remember the distribution of resource. [BT level-1-Remember] CO-5: Remember the concept of resource sharing. [BT level-1-Remember]
6. Distribution, Utilization, Problems and Management of Energy Resources: Conventional and Non- Conventional	
7. Concept of Resource sharing: Water	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography
Department: GEOGRAPHY (GEN)
Semester -I
Course Code: GEOGCOR01T Course Title: Physical Geography
Core Course: Credit –6, FM -75

GEOGCOR01T– Physical Geography
Credit, 75 Marks [90 classes]

Course Content	**Course outcome**
Unit I: Geotectonics and Geomorphology	CO-1: Comprehend the theories and understand fundamental concepts of Geotectonic and Geomorphology. [BT level-1-Remember] CO-2: Comprehend earth's tectonic and structural evolution. [BT level-1-Remember] CO-3: Gain knowledge about earth's interior. Understand the concept of plate tectonics, and resultant landforms. [BT level-1-Remember] CO-4: Overview and analyze critical appraisal of landform development models. [BT level-4-Analyze] CO-5: May apply the geo-tectonic processes, plate tectonics, vulcanicity and other tectonic activity. [BT level-3-Apply]
1. Physical Geography – Definition and Scope, Components of Earth System.	
2. Internal Structure of Earth based on Seismic Evidence, Plate Tectonics and its associated Features.	
3..Influence of rocks on topography**:** Limestone and Granite	
4. Evolution of landforms under fluvial process, Normal Cycle of Erosion of Davis	
5.Formation of erosional and depositional landforms by coastal and Aeolian processes	
Unit II: Climatology and Oceanography	
Insolation and HeatBalance.	
Horizontal and Vertical distribution of temperature and pressure	
Planetary wind system, characteristics of Monsoon and Tropical Cyclone	
Climatic Classification: Köppen	
Hydrological Cycle, Ocean Bottom Relief Features, ocean currents.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

GEOGCOR02T–Human Geography

6 Credit, 75 Marks [90 Classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I-Population and Social Geography	CO-1: Comprehend and remember major themes of human Geography. [BT level-1-Remember] CO-2: Understand the history and evolution of humans. [BT level-2-Understanding]
1. Factors of Growth and Distribution of World Population. Demographic Transition Theory.	
2. World Population Composition: Age, Gender and Literacy.	
11. Migration**:** Types, Causes And Consequences.	
12. Space and Society: Cultural Regions; Race; Religion and Language	
13. Contemporary Social Issues: Illiteracy and Poverty	
Unit II-Economic and Settlement Geography	
14. Sectors of the Economy: Primary, Secondary, Tertiary and Quaternary	
15. Types of Agriculture**:** Intensive Subsistence Rice Farming, Plantation Agriculture (Tea and Coffee)	
16. Location, Problems and Prospects of Indian Industries—Cotton Textile, Petroleum Refining, Locomotive	CO-3: Apply the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations. [BT level-3-Apply]
17. Types and Patterns of Rural Settlements	
18. Classification of Urban Settlements; Trends and Patterns of World Urbanization	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

Semester -III

Course Code: GEOGCOR03T **Course Title:**General Cartography

Core Course: Credit –6, FM -75

GEOGCOR03T –General Cartography

4 Credits, 50 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Cartographic Techniques	CO-1: Understand different kinds of maps and diagram. [BT level-2-Understanding] CO-2: And able to draw scale and map projection. [BT level-6-Create] CO-3: Recognize basic themes of maps and diagram. [BT level-3-Apply] CO-4: Development of observation skills. [BT level-4-Analyze] **CO-5:** May create new map as per the need. [BT level-6-Create]
1. Concept of map scale: Types and Application. Reading distances on a map.	
2. Map Projections: Criteria for choice of projections. Attributes and properties of: Zenithal Gnomonic Polar Case, Zenithal Stereographic Polar Case, Cylindrical Equal Area, Mercator's Projection, Bonne's Projection. Concept of UTM projection	
3. Survey of India topographical maps: Reference scheme of old and open series. Information on the margin of maps.	
4. Representation of Data– Symbols, Dots, Choropleth, Isopleth and Flow Diagrams, Interpretation of Thematic Maps.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

GEOGCOR03P –General Cartography

2 Credits, 25 Marks [60 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Cartographic Techniques 1. Graphical construction of Scales: Plain ar Comparative. [10] 2. Construction of projections: Zenithal Gnomonic Polar Case, Zenithal Stereographic Polar Case, Cylindrical Equal Area, Mercator's Projection, Bonne's Projection. [30] 3. Construction and interpretation of relief profiles from Survey of India topographical map — superimposed, projected and composite, relative relief map, slope map (Wentworth), and Correlation between physical and cultural features from Survey of India topographical maps using transect chart.	CO-1: Draw scales and representation of data through cartograms. [BT level-6-Create] CO-2: Draw geological and weather maps and acquire the knowledge of the usages of survey instruments like Dumpy level and Theodolite with environment. [BT level-6-Create] CO-3: Develop creative ideas about different types of thematic mapping techniques with proper use of instrumental survey. [BT level-6-Create]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

Skill Enhancement Course Syllabus

(For both Honours and General courses)

GEOSSEC01M – Remote Sensing

2 Credits, 25 Marks [30 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	**Course outcome**
1. Principles of Remote Sensing (RS): Classification of RS satellites and sensors	CO-1: Remember and describe the RS satellites and sensors. [BT level-1-Remember] CO-2: Understand and classify sensor resolutions of IRS and Landsat. [BT level-1-Remember] CO-3: Apply knowledge to interpret false colour composites. [BT level-3-Apply] CO-4: Analyze IRS LISS-3 and Landsat image. [BT level-4-Analyze]
2. Sensor resolutions and their applications with reference to IRS and Landsat missions, image referencing schemes and data acquisition.	
1. Preparation of False Colour Composites from IRS LISS-3 and Landsat TM and OLI data. Principles of image rectification and enhancement.	
2. Principles of image interpretation and feature extraction. Preparation of inventories of land use land cover features from satellite images.	
A project file consisting of four exercises on the above themes is to be submitted	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

Semester.-IV
Core (DSC 1D) GEOGCOR04T Environmental Geography
GEOGCOR04T – Environmental Geography
5 Credits, 75 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit-I: Concepts	CO-1: Remember and outline geographer's approach to environment study . [BT level-1-Remember] CO-2: Understand the structure and functions of ecosystem. [BT level-2-Understanding] CO-3: Analyze the roles of different Earth Summits. [BT level-4-Analyze] CO-4: Create proper waste management plan identifying different urban environmental issues. [BT level-6-Create]
1. Environmental Geography: Concepts and Approaches	
2. Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions	
3. Concept of Holistic Environment and System Approach	
4. Ecosystem: Concept, Structure and Functions	
Environmental Problems and Policies	
5. Environmental Problems and Management: Air Pollution; Water pollution, Biodiversity Loss; Solid and Liquid Waste.	
6. Environmental problems and management: Desertification and Soil Erosion	
7. Environmental Programmes and Policies: Developed Countries; Developing Countries.	
8. New Environmental Policy of India.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

*** 90hrs lecture and 15 hrs tutorials**

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

GEOSSEC02M – Advanced Spatial Statistical Techniques

2 Credits, 25 Marks [30 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
1. Probability theory, probability density functions with respect to Normal, Binomial and Poisson distributions and their geographical applications.	CO-1: Can signify the importance of statistics in geography. [BT level-3-Apply] CO-2: Acquire the knowledge of applications of Statistics in Geography. [BT level-1-Remember]
2. Sampling: Sampling plans for spatial and non-spatial data, sampling distributions. Sampling estimates for large and small samples tests involving means and proportions.	
3. Correlation and Regression Analysis: Rank order correlation and product moment correlation; linear regression, residuals from regression, and simple curvilinear regression. Introduction to multi-variate analysis.	
4. Time Series Analysis: Time Series processes; Smoothing time series; Time series components.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Any Statistical Software Package (e.g., SPSS, MS Excel, R, etc.) may be used for Practice. A Project file consisting of four exercises on the above themes is to be submitted.

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

(2 Compulsory papers)

GEOGDSE01T – Soil and Biogeography

Credits, 75 Marks [90 classes]

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Unit I: Soil Geography	CO-1: Remember and describe factors of soil formation. [BT level-1-Remember] CO-2: Classify different types of soil. [BT level-3-Apply] CO-3: Demonstrate soil texture. [BT level-3-Apply] CO-4: Analyze genetic and USDA classification. [BT level-4-Analyze]
1. Factors of soil formation.	
2. Soil profile. Origin and profile characteristics of Lateritic and Chernozem soils.	
3. Definition and significance of soil properties: Texture, structure and moisture, pH and organic matter.	
4. Principles of soil classification: Genetic and USDA. Concept of land capability and its classification.	
Unit II: Biogeography	
5. Concepts of biosphere, ecosystem, biome, ecotone, community, niche and succession.	
6. Concepts of food chain and food web. Energy flow in ecosystems.	
7. Geographical extent and characteristic features of: Tropical rain forest and Grassland biomes.	
8. Bio-geochemical cycles with special reference to carbon dioxide and nitrogen.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya
Name of Academic Programme: B.A. /B.Sc. General in Geography

Semester-VI
DSE1B GEOGDSE04P Project Report Based on Field Work
GEOGDSE04P – Project Report Based on Field Work
30 Credits, 75 Marks

Course Outcome: After completion of this course successfully, the students will be able to-

Course Content	Course outcome
Project work is compulsory for completing B.Sc. Course in Geography. Project Work is intended to provide an opportunity to the candidate to field test the learning.	CO-1: Remember and describe the socio-economic condition of a place. [BT level-1-Remember] CO-2: Understand and explain the physical and social factors. [BT level-2-Understanding] CO-3: Prepare the objectives of survey applying field techniques. [BT level-3-Apply] CO-4: Analyze the primary data of survey. [BT level-4-Analyze]
The Project report should be based on field work on some specified topics as suggested by the Department.	
Each student will prepare an individual report based on primary and secondary data collected during field work.	
The duration of the field work should not exceed 10 days.	
The word count of the report should be about 8000 excluding figures, tables, photographs, maps, references and appendices.	
The report should include an introduction, literature review, project aims and objectives, methodology, results and discussion and references.	
It should not exceed 20 to 25 pages (A4 pages) including maps, diagrams, and photographs etc.	
One copy of the report on A 4 size paper should be submitted prior to examination.	
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

WBSU
Introductory Level Course 1
Discipline-Specific Major Courses for Geography
GEOADS01T – Physical Geography (Hons)
3 Credits [45 hours of teaching]

Unit	Course Outcome
Unit I: Geotectonic and Geomorphology Unit II: Climatology, Soil and Biogeography	CO-1: **Understand** the major themes of Geotectonic and Geomorphology. [BT level-2-Understanding] CO-2: May able **to analyze** the Influence of lithology on landforms: [BT level-4-Analyze] CO-3: Can **evaluate** the reasons behind the hazards that happening in India. [BT level-5-Evaluate] CO-4: Gain knowledge about fluvial processes and can **create** the model with river functions. [BT level-6-Create] CO-5: Gaining knowledge the students will be able to remember which factors formed the soil and its profile. CO-6: May able to understand the Distribution of pressure belts and planetary wind systems, jet streams, and index cycle CO-7: Acquiring knowledge students will be to able analyse ecosystems — basic ecological principles, ecotone, communities, niche, succession, and habitat. [BT level-1-Remember] CO-8: Building concrete ideas students will be able to evaluate the protected Biomes: Tropical rainforest, Taiga, Savannah, Desert, Tundra and Temperate grasslands. [BT level-5-Evaluate]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

GEOADS01P – Physical Geography (Lab)

2 Credits [60 hours of teaching]

Course	Course outcome
Practical on Physical Geography	CO-1: After hands-on practice students will have to understand the Graphical construction of linear scales. [BT level-2-Understanding] CO-2: They have to be able to remember its application. [BT level-1-Remember] CO-3: May able to apply the instrument Altimetric to measure the river frequency. [BT level-3-Apply] CO-4: Acquire knowledge, students will have to **Analyze** drainage and channel patterns. [BT level-1-Remember] CO-5: May able to **Evaluate** denoting drainage, geomorphic, settlement and transport attributes using sketches. [BT level-5-Evaluate] CO-6: May have to **create** a wind rose diagram. [BT level-6-Create]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Skill Enhancement Courses offered by Geography

(For both Major, Honours and 3 Years Multi-Disciplinary Programmes)

GEOSE-01M – Remote Sensing□ □

3 Credits [45 hours of teaching]

Course	Course outcome
Skill Enhancement Courses-Remote Sensing	CO-1: Students will be able to understand about Principles of Remote Sensing (RS): Classification of RS satellites and sensors. [BT level-2-Understanding] CO-2: Acquire knowledge students will be able to Analyze False Colour Composites. [BT level-1-Remember] CO-3: Students will be able to Evaluate land use land cover features from satellite images. [BT level-5-Evaluate] CO-4: Gaining knowledge Students will be able to create a model with Landsat missions. [BT level-1-Remember]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Minor Courses for Major/ Honours Students of Other Disciplines offered by Geography / Core Courses for the 3-year Multidisciplinary Undergraduate Programme offered by Geography (GEOHM/ GEOMC)

GEOHM01T/ GEOMC01T – Physical Geography(Gen) ✧

5 Credit [75 hours of teaching]

Unit	Course Outcome
Unit I: Geotectonic and Geomorphology	CO-1: Understand the major themes of Geotectonic and Geomorphology. [BT level-2-Understanding] CO-2: Students may able to analyze the Influence of lithology on landforms: [BT level-4-Analyze]
Unit II: Climatology, Soil and Biogeography	CO-3: Students can evaluate the reasons behind the hazards that happening in India. [BT level-5-Evaluate] CO-4: May students create the model with river functions. [BT level-6-Create] CO-5: They will be able to remember which factors formed the soil and its profile. [BT level-1-Remember] CO-6: May be able to understand the Distribution of pressure belts and planetary wind systems, jet streams, and index cycle. [BT level-2-Understanding] CO-7: May be to able analyse ecosystems — basic ecological principles, ecotone, communities, niche, succession, and habitat. [BT level-4-Analyze] CO-8: May be able to evaluate the protected Biomes: Tropical rainforest, Taiga, Savannah, Desert, Tundra and Temperate grasslands. [BT level-5-Evaluate]
BT: Level 1 – Remember, Level 2 – Understand, Level 3- Apply, Level 4- Analyze, Level 5- Evaluate, Level 6- Create	

Department of Geography
Nahata Jogendranath Mondal Smriti Mahavidyalaya

Name of Academic Programme:
B.A. /B.Sc. Honours/General in Geography

PROGRAMME SPECIFIC OUTCOMES (PSO)

- **PSO 1-** Student will gain the knowledge of physical geography. They will gather knowledge about the fundamental concepts of Geography and will have a general understanding about the geomorphologic and geotectonic process and formation. Imbibing knowledge, skills and holistic understanding of the Earth, atmosphere, oceans and the planet through analysis of landform development; crustal mobility and tectonics, climate change.

- **PSO 2** – Associating landforms with structure and process; establishing man-environment relationships; and exploring the place and role of Geography vis-a-sis other social and earth sciences. Students can easily correlate the knowledge of physical geography with the human geography. They will analyze the problems of physical as well as cultural environments of both rural and urban areas. Moreover they will try to find out the possible measures to solve those problems

- **PSO 3** – Understanding the functioning of global economies, geopolitics, global geostrategic views and functioning of political systems

- **PSO 4** – Developing a sustainable approach towards the ecosystem and the biosphere with a view to conserve natural systems and maintain ecological balance.

- **PSO 5** –The physical environment, human societies and local and/or global economic systems are integrated to the principles of sustainable development

- **PSO 6** – Inculcating a tolerant mindset and attitude towards the vast socio-cultural diversity of India by studying and discussing contemporary concepts of social and

cultural geography. Explaining and analyzing the regional diversity of India through interpretation of natural and planning regions

- **PSO 7** – Analyzing the differential patterns of the human habitation of the Earth, through studies of human settlements and population dynamics. Understanding and accounting for regional disparities, poverty, unemployment and the impacts of globalization

- **PSO 8** – Understanding the history of the subject; over viewing ancient and contemporary geographical thought and its relationship with modern concepts of empiricism, positivism, radicalism, behaviouralism, idealism etc.

- **PSO 9** – Sensitization and awareness about the hazards and disasters to which the subcontinent is vulnerable; and their management.

- **PSO 10** – As a student of the Course they will enrich their observation power through field experience and in future this will be helpful for identifying the socio-environmental problems of their community.

- **PSO 11** – Training in practical techniques of mapping, cartography, software, interpretation of maps, photographs and images etc. so as to understand the spatial variation of phenomena on the Earth's surface. They will learn how to prepare map based on GIS by using the modern geographical map making techniques