B.A. / B.Sc. (General/ Program) Course in Geography

SEMESTER-I

CORE COURSE (CC):

CC/01: Geotectonics and Geomorphology and Scale and Cartography 6 Credits

GEO/G/CC/T/01: (Theory): Geotectonics and Geomorphology 4 Credits

1. Lithosphere – Internal Structure of Earth based on Seismic Evidence
2. Weathering: Types and Related Landforms
3. Plate Tectonics and its Associated Landforms
4. Landform Development in Arid Regions
5. Landform Development in Glaciated Regions
6. Development of Fluvial Landforms
7. Fluvial Cycle of Erosion – Davis and Penck
8. Hydrosphere: Hydrological Cycle, Ocean Bottom Relief Features, Tides and Ocean Currents

GEO/G/CC/P/01: (Practical): Scale and Cartography 2 Credits

1. Map Scale: Types and Application
2. Linear and Comparative Scale
3. Representation of Data: Dot, Proportional Circles, Choropleth, Flow Diagram
4. Taylor's Climograph and Hythergraph

SEMESTER-II

CC/02: Climatology, Soil and Biogeography and Surveying and Levelling 6 Credits

GEO/G/CC/T/02: (Theory): Climatology, Soil and Biogeography 4 Credits

1. Elements of Weather and Climate; Thermal and Chemical Composition and Layering of the Atmosphere
2. Heat Balance, Pressure Belt and Planetary Wind Circulation System
3. Forms of Precipitation and Types of Rainfall
4. Tropical and Temperate Cyclones, Climatic Classification (Koppen)
5. Definition of Soil; Physical and Chemical Properties of Soil (Soil Texture, Colour and pH)
6. Soil Forming Factors; Soil Formation (Podzol and Laterite)
7. Definition of Biosphere and Biogeography; Meaning of Ecology, Ecosystem, Environment, Ecotone, Communities, Habitats and Biotopes
8. Environmental Problems and Management: Air Pollution, Bio-diversity Loss, Solid and Liquid Waste

GEO/G/CC/P/02: (Practical): Surveying and Levelling 2 Credits

1. Definition and Classification of Surveying
2. Open and Close Traversing by Prismatic Compass
3. Drawing of Longitudinal Profile by Dumpy Level

SEMESTER-III

CC/03: Human Geography and Map Projection and Map Interpretation 6 Credits

GEO/G/CC/T/03: (Theory): Human Geography 4 Credits

1. Definition, Nature, Major Subfields, Contemporary Relevance
2. Space and Society: Cultural Regions; Race; Religion and Language
3. Population: Population Growth and Demographic Transition Theory
4. Types of Population Migration with Reference to India
5. World Population Distribution and Composition (Age, Gender and Literacy)
6. Settlements: Types and Patterns of Rural Settlements
7. Classification of Urban Settlements; Functional Classification of Towns

GEO/G/CC/P/03: (Practical): Map Projection and Map Interpretation 2 Credits

1. Simple Conical Projection with One Standard Parallel
2. Cylindrical Equal Area Projection
3. Interpretation of Topographical Maps: relation between Physiography, Drainage and Settlement
4. Interpretation of Weather Maps (Pre-Monsoon, Monsoon and Post Monsoon)

SKILL ENHANCEMENT COURSE (SEC):

SEC/01: Computer Basics and Computer Applications OR Remote Sensing 2 Credits

GEO/G/SEC/P/01/A: (Practical): Computer Basics and Computer Applications 2 Credits

1. Numbering Systems; Binary Arithmetic
2. Data Computation, Storing and Formatting in Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation, Moving Averages, Derivation of Correlation, Coefficient of Variation , Regression
3. Preparation of Annoted Diagrams and its Interpretation: Scatter Diagram and Histogram
4. Internet Surfing: Generation and Extraction of Information

OR

GEO/G/SEC/P/01/B: (Practical): Remote Sensing 2 Credits

1. Concepts and Principles of Remote Sensing (RS): Classification of RS Satellites and Sensors
2. Sensor Resolutions and Their Application with reference to IRS and Landsat Missions, Image Referencing Schemes and Data Acquisition
3. Preparation of False Colour Composites (FCC) from IRS LISS-III and Landsat TM, Landsat ETM; Principles of Image Rectification and Enhancement
4. Principles of Image Interpretation and Feature Extraction, Preparation of Inventories of Landuse/ landcover Features from Satellite Images

*A Project File consisting of four exercises on the above themes is to be submitted

SEMESTER-IV

CC/04: Environmental Geography and Field Work **6 Credits**

GEO/G/CC/T/04: (Theory): Environmental Geography **4 Credits**

1. Concepts and approaches of Environmental Geography
2. Concept, Structure and Functions of Ecosystem
3. Definition of Biosphere, Meaning of Ecology, Econtone, Habitat, Community, Ecological Niche, Biotopics and Biomes
4. Enviromental Problems and Management: Air and Water Pollution
5. Environmental Programmes and Policies: MAB
6. Wetlands: Ramsar Sites in India
7. Human-Environment Relationship in Mountain and Coastal Regions

GEO/G/CC/P/04: (Practical): Field Work **2 Credits**

1. Preparation of Survey Schedule or Questionnaire for Air Pollution and Health Perception Survey
2. Mapping of Wetlands from Topographical Sheet
3. Mapping of Forest from Topographical Sheet

SEC/02: (Practical): Advance Spatial Statistical Techniques or Field Work **2 Credits**

GEO/G/SEC/P/02/A: (Practical): Advance Spatial Statistical Techniques **2 Credits**

1. Differences between Spatial and Non-spatial data, Nearest Neighbour Analysis
2. Concept of probability and Normal Distribution and their geographical application, Skewness (Pearson's Method)
3. Sampling: Sampling plans for spatial and non-spatial data, sampling distributions, sampling estimates for large and small samples tests involving means and proportions
4. Correlation and Regression Analysis: Rank order correlation and product moment correlation; linear regression, residuals from regression
5. Time Series Analysis: Least Squares, Moving mean method, Time series components

Note: Any Statistical Software Package (e.g. SPSS, MS Excel, R, etc.) may be used for practice.
*A project file consisting of five exercises on the above themes is to be submitted.

OR

GEO/G/SEC/P/02/B: (Practical): Field Work **2 Credits**

Students are required to carry out a comprehensive field work in a village/mouza/town/C.D.Block/ drainage basin selecting a particular **research problem**. There should be a clear-cut **Problem background, major Objectives, Methodology and Findings**. The Field Report should be written within 4000 words and the total number of pages in the Field Report should not exceed 30 pages ((A4 Pages) including texts, figures, tables, photographs, maps, references (APA) and appendices.

The fieldwork along with the diagrams and illustrations should be prepared in computer using the standard (Using MS-Word for typing and Excel for calculation and graphs). The cartographic and statistical techniques used in the fieldwork should be at par with the syllabus of the UG Course.

Guidelines for Fieldwork:

The following methods are to be followed for framework:

1. Preparation of questionnaire for assessing the physical/cultural/environment/socio-economic components. A filled-in questionnaire used in the survey should be attached with the report signed by the concerned teacher and the student.
2. Preparation of maps (hand-drawn) with suitable scale and latitude and longitude.
3. Preparation of charts/graphs in MS-Excel and duly labelled.
4. The report should be typed in MS-Word. The font size is fixed at 12 in Times New Roman and the line spacing 1.5.
5. Each field work should have a certificate of authenticity duly signed by the project supervisor.

SEMESTER-V

DSE/01: Geography of India or Economic Geography 6 Credits

GEO/G/DSE/T/01/A: (Theory): Geography of India 6 Credits

1. Physical Setting – Location, Structure and Relief, Drainage, Climate.
2. Population – Size and Growth since 1901, Population Distribution, Literacy, Sex Ratio.
3. Settlement System - Rural Settlement Types and Patterns, Urban Pattern.
4. Resource Base – Livestock (cattle and fisheries), Power (coal, and hydroelectricity), Minerals (iron ore and bauxite).
5. Economy – Agriculture (Rice, Wheat, Sugarcane, Groundnut, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile), Transportation Modes (Road and Rail).

OR

GEO/G/DSE/T/01/B: (Theory): Economic Geography 6 Credits

1. Definition, Approaches and Fundamental Concepts of Economic Geography; Patterns of Development.
2. Locational Theories – Agriculture (Von Thunen) and Industrial (Weber).
3. Primary Activities – Intensive Subsistence Farming, Commercial Grain Farming, Plantation, Commercial Dairy Farming, Commercial Fishing, and Mining (iron ore, coal and petroleum).
4. Secondary Activities – Cotton Textile Industry, Petro-Chemical Industry, Major Manufacturing Regions.
5. Tertiary and Quaternary Activities – Modes of Transportation, Patterns of International Trade, and Information and Communication Technology Industry.

SEC/03: Field Techniques and Survey Based Project Report or Collection, Mapping and Interpretation of Climatic Data 2Credits

GEO/G/SEC/P/03/A: (Practical): Field Techniques and Survey Based Project 2 Credits

1. Students will prepare a survey based field report in a rural area or an urban area to study specific problems
2. The report should be hand written in candidate's own words (within 2000 words)
3. The total number of pages in the Field Report should not exceed 30 pages including texts, figures, tables, photographs, maps, references (APA) and appendices
4. Preparation of maps (hand-drawn) with suitable scale and latitude-longitude
5. A copy of the bound report, duly signed by the concerned teacher, should be submitted

OR

GEO/G/SEC/P/03/B: (Practical): Collection, Mapping and Interpretation of Climatic Data 2 Credits

1. Sources of climatic data
2. Instruments used for measuring weather elements: Thermometer, Barometer, Hydrometer, Rain gauge and Wind vane
3. Drawing of Temperature-Rainfall Graphs
4. Drawing of Isotherm and Isohyet
5. Preparation of Climograph (Taylor's), Hythergraph and Windrose diagram
6. Interpretation of Indian Daily Weather Map

*A Project File consisting of exercises on the above themes is to be submitted

SEMESTER-VI

DSE/02: Disaster Management or Geography of Tourism **6 Credits**

GEO/G/DSE/T/02/A: (Theory): Disaster Management **6 Credits**

1. Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification of hazards
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping
3. Disasters in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping.
4. Manmade disasters: Causes, Impact, Distribution and Mapping of Soil erosion and Accidental release of toxic chemicals
5. Response and Mitigation to Disasters: Institutional set up, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disasters

OR

GEO/G/DSE/T/02/B: (Theory): Geography of Tourism **6 Credits**

1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism by Robinson
2. Types of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage
3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions (MICE)
4. Impact of Tourism: Economy; Environment; Society
5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal Areas; National Tourism Policy

SEC/04: Collection, Mapping and Interpretation of Pedological Data or Rocks and Minerals and their Megascopic Identification **2 Credits**

GEO/G/SEC/P/04/A: (Practical): Collection, Mapping and Interpretation of Pedological Data **2 Credits**

1. Procedure of soil sample collection
2. Preparation of Ternary diagram by using soil texture data
3. Estimation of Soil pH using soil kit
4. Estimation of Soil organic carbon using soil kit
5. Estimation of available of NPK using soil kit
6. Mapping and interpretation: pH , NPK and organic carbon

*A Project File consisting of exercises on the above themes is to be submitted

OR

GEO/G/SEC/P/04/B: (Practical): Rocks and Minerals and their Megascopic Identification **2 Credits**

1. Types and characteristics of rocks and minerals
2. Megascopic identification of the following rocks and minerals mentioning their identifying characteristics.

Rocks: Granite, Basalt, Dolerite, Shale, Limestone, Sandstone, Gneiss, Slate, Quartzite, Marble
Minerals: Quartz, Feldspar, Mica (Muscovite and Biotite), Calcite, Bauxite, Magnetite, Haematite, Galena, Chalcopyrite