

**SYLLABUS STRUCTURE FOR CHOICE BASED CREDIT SYSTEM IN  
UNDER GRADUATE**

Semester	Core Course (CC)	Ability Enhancement Compulsory Course (AECC)	Skill Enhancement Course (SEC)	Elective Discipline Specific (DSE)	Elective Generic (GE)
I	CC 1: 6	Com. Lang Envsc: 4			GE 1: 6
	CC 2: 6				
II	CC 3: 6	Com. Lang Envsc: 4			GE 2: 6
	CC 4: 6				
III	CC 5: 6		SEC 1: 4		GE 3: 6
	CC 6: 6				
	CC 7: 6				
IV	CC 8: 6		SEC 2: 4		GE 4: 6
	CC 9: 6				
	CC 10: 6				
V	CC 11: 6			DSE 1: 6	
	CC 12: 6			DSE 2: 6	
VI	CC 13: 6			DSE 3: 6	
	CC 14: 6			DSE 4: 6	

**SYLLABUS CONTENT FOR CHOICE BASED CREDIT SYSTEM IN UNDER  
GRADUATE IN GEOGRAPHY**

<b>Semester</b>	<b>Core Course (CC)</b>	<b>Ability Enhancement Compulsory Course (AECC)</b>	<b>Skill Enhancement Course (SEC)</b>	<b>Elective Discipline Specific (DSE)</b>	<b>Elective Generic (GE)</b>
I	CC1: Geotectonics and Geomorphology	Com. Lang Envsc: 4			GE 1: Disaster Management
	CC2: (Practical) Cartographic and Geological Exercises				
II	CC3: Human Geography	Com. Lang Envsc: 4			GE 2: Climate Change: Vulnerability and Adaptation
	CC4: (Practical) Map Projection and Topographical Map				
III	CC5: Climatology		SEC 1: Computer Basics and Computer Applications (Practical)		GE 3: Regional Development
	CC6: Geography of India				
	CC7 (Practical) Statistical Methods in Geography				
IV	CC8: Economic Geography		SEC 2: Geographical Information System (Practical)		GE 4: Geography of Tourism
	CC9: Environmental Geography				
	CC10: (Practical) Field Work				
V	CC11: Regional Planning and Development			DSE 1: Hydrology and Oceanography	
	CC12: (Practical) Remote Sensing and GIS			DSE 2: Agricultural Geography	
VI	CC13: Evolution of Geographical Thought			DSE 3: Population Geography	
	CC14: (Practical) Disaster Management Based Project Work			DSE 4: Urban Geography	

**B.A. / B.Sc. (Honours) in Geography**

**CORE COURSE**

**SEMESTER-I**

**CC1: Geotectonics and Geomorphology**

**6 Credits**

**UNIT 1.0 GEOTECTONICS**

1.1 Geological Time Scale and geological history of the Earth, Rocks and Minerals: Origin, Classification and Characteristics

1.2 Structure of Earth: Thermal and physical state of the Earth's interior with special reference to seismology, Origin of Continent and Oceans

1.3 Isostasy: Concept, models and applicability

1.4 Plate Tectonics: Theory of global tectonics and resultant landforms

**UNIT 2.0 GEOMORPHOLOGY: CONCEPT AND PROCESSES**

2.1 Nature, scope and content of Geomorphology

2.2 Cyclic and Non-Cyclic Concepts of Landscape Evolution: W.M. Davis, W. Penck, L.C. King and J.T. Hack

2.3 Degradational processes: Weathering, Mass Wasting and resultant landforms

2.4 Fluvial Processes: river network adjustment on Uniclinal, Faulted and Folded structures

**UNIT 3.0 SURFACE EXPRESSIONS OF PROCESSES**

3.1 Karst landforms: Surface and sub-surface

3.2 Glacial and Periglacial Process and Landforms

3.3 Aeolian Process and Landforms

3.4 Coastal Process and Landforms

**CC2: (Practical) Cartographic and Geological Exercises**

**6 Credits**

1. Construction of Scale: Linear, Diagonal & Vernier
2. Cartograms: Circles, Pies & Squares
3. Preparation of Thematic Maps using (a) Point symbol: Dot map (b) Line symbol: Traffic flow map (c) Area symbol: Choropleth map (d) Volume symbol: Spheres
4. Megascopic identification of Rocks and Minerals
5. Interpretation of Geological Maps & drawing of sections (fold & fault)

**SEMESTER-II**

**CC3: (Theory) Human Geography**

**6 Credits**

**UNIT 1.0 BASICS OF HUMAN GEOGRAPHY**

- 1.1 Nature, Scope and Branches of Human Geography
- 1.2 Human geography verses Human Ecology
- 1.3 Evolution of man-environment relationship and culture
- 1.4 Human Resource Regions of the World

**UNIT 2.0 DYNAMICS OF HUMAN GEOGRAPHY**

- 2.1 Divisions of Mankind: Racial and Ethnic
- 2.2 Spatial distribution of major languages
- 2.3 Food gathering and Hunting Economy
- 2.4 Changing Tribal Life: India and World

**UNIT 3.0 ASPECTS OF HABITAT AND SOCIETY**

- 3.1 Rural Settlement, Site, Situation an Patterns
- 3.2 Origin and growth of urbanization

3.3 Rural-Urban and gender disparities

3.4 Human Development and Gender Development

**CC4: (Practical) Map Projection and Topographical Map**

**6 Credits**

1. Map projection: Classification, properties and use; Construction of graticules (i) Simple conical projection with one standard parallel (ii) Bonne's (iii) Polyconic (iv) Cylindrical equal area projection (v) Sinusoidal (vi) Mercators (vii) Polar Zenithal Stereographic
2. Interpretation of Weather Map: Monsoon, Pre-Monsoon, Post-Monsoon
3. Introduction to Topographical sheets: Dimensional Scale, Identification of physical features and drawing profiles
4. Interpretation of Topographical map: Relationship between relief, drainage, vegetation, settlement, transport and communication system
5. Preparation of Transect charts and Scatter diagram

**SEMESTER-III**

**CC5: (Theory) Climatology**

**6 Credits**

**UNIT 1.0 ELEMENTS OF ATMOSPHERE**

- 1.1 Elements of Weather and Climate; Composition and Structure of Atmosphere
- 1.2 Insolation: Controlling factors and Global Energy Budget
- 1.3 Atmospheric Temperature: Vertical and Horizontal distribution of Temperature, Inversion of Temperature
- 1.4. Weather: Stability and instability: Barotropic and Baroclinic conditions

## UNIT 2.0 ATMOSPHERIC PHENOMENA

2.1 Atmospheric Pressure and Global circulation of winds: Planetary, Periodical and Local Winds, Jet Stream and Monsoon

2.2 Air Masses: Origin, Characteristics and Modification

2.3 Atmospheric moisture: Humidity, Evaporation, Condensation, Fog, Clouds and Precipitation

2.4 Fronts and Temperate and Tropical Cyclones

## UNIT 3.0 CLIMATIC CLASSIFICATION AND CLIMATE CHANGE

3.1 Climatic Classification: World and special reference to India after Köppen and Thornthwaite

3.2 Green House Effect and Importance of Ozone Layer

3.3 Evidences of Climate Change

3.4 Climate Change: causes and consequences

## **CC6: (Theory) Geography of India**

**6 Credits**

### UNIT 1.0 PHYSICAL ASPECTS

1.1 Structure and relief

1.2 River systems

1.3 Climate

1.4 Soil and natural vegetation

### UNIT 2.0 ECONOMIC ASPECTS

2.1 Agricultural growth, regionalization and policy for development

2.2 Resource base: livestock, mineral and power

2.3 Industrial regions and trend of industrialization

2.4 Transportation system: network and mode

### UNIT 3.0 SOCIO-CULTURAL ASPECTS

3.1 Population distribution, density, literacy, sex-ratio, growth, problems and policy measures

3.2 Rural and Urban settlement: Types and pattern

3.3 Scheduled casts and tribes: Distribution and concentration

3.4 Regionalisation of India: Physiographic, Socio-Cultural, Economic

### **CC7: (Practical) Statistical Methods in Geography**

**6 Credits**

1. Significance of Statistical Methods in Geography; Sources of Statistical Data and scales of their measurement (Nominal, Ordinal, Interval and Ratio); Tabulation and Classification of Data

2. Frequency Distribution: Frequency Curve and Polygon; Histogram and Ogives

3. Measure of Central Tendency and Dispersion: Mean, Median and Mode. Mean Deviation and Standard Deviation. Co-efficient of variation and their applications

4. Concepts of Sampling Techniques (Purposive, Random, Systematic and Stratified) and Test of Significance: Students' t-test; Data Distribution: Probability and Normal

5. Association and Correlation: Rank Correlation, Product Moment Correlation, Simple Regression, Residuals from Regression

### **SEMESTER-IV**

### **CC8: (Theory) Economic Geography**

**6 Credits**

### UNIT 1.0 BASICS OF ECONOMIC GEOGRAPHY

1.1 Definition, Nature, Scope and recent trends of Economic Geography

1.2 Concept, Classification and recent trends of Economic Activities.

1.3 Factors affecting location of Economic activities with special reference to Agriculture (Von Thonen's Theory)

1.4 Factors affecting location of Industries (Weber's Theory)

## UNIT 2.0 EVOLVING ECONOMIC ACTIVITIES

2.1 Primary Activities: Agriculture, Fishing, Forestry and Mining- Distribution and Geographical Factors

2.2 Global production and International trade of major food (paddy /Wheat) and cash crops (Tea/ Coffee) of the world

2.3 Secondary activities: Iron and Steel, Textile- Distribution and Geographical Factors

2.4 Tertiary activities: Trade and Transport- Geographical factors in their development

## UNIT 3.0 MAJOR ISSUES AND CHALLENGES

3.1 Concept of Manufacturing Regions

3.2 Special Economic Zones and technology parks

3.3 Role of World Trade Organization (WTO)

3.4 Globalization and Crisis in Resource Management

## **CC9: (Theory) Environmental Geography**

**6 Credit**

### UNIT 1.0 BASICS OF ENVIRONMENTAL GEOGRAPHY

1.1 Environmental Geography – Concept and Scope

1.2 Man-environment relationship – Historical Progression and Adaptations

1.3 Concepts of Bio-Climatic Zones

1.4 Environmental Conservation Programme and Policies- Global, National and Local



## UNIT 2.0 SOIL

2.1 Physical and Chemical properties of Soil with special reference to structure, texture, colour, soil reaction and organic matter

2.2 Soil forming factors, processes, classification, Soil Horizons and their characteristics

2.3 Soil types: Zonal, Azonal and Intrazonal

2.4 Soil Erosion and Conservation – Thrust Areas and Emerging issues in India

## UNIT 3.0 BIO-GEOGRAPHY

3.1 Concepts of Biosphere and Biomes: Definition and subdivisions and importance

3.2 Concept of Ecosystem: Concept, Structure and Functions, Concept of Ecotone

3.3 Concept of Energy: forms, sources, mechanism through Trophic Level- Food Chain and Food Web

3.4 Environmental control on: global distribution of Forest, Grassland and Desert shrubs

### **CC10: (Practical) Field Work**

**6 Credits**

1. Field Work in Physical Geographical Studies
2. Field survey with Instruments: Use of Prismatic Compass and Dumpy Level
3. Field Techniques in Social and Cultural Geographical Studies
4. Use of Field Tools- Collection of data and material. .
5. Preparation of a Field Report on Physical and Cultural Landscape of a Rural/Urban Unit

## **SEMESTER-V**

### **CC11: (Theory) Regional Planning and Development**

**6 Credits**

#### UNIT 1.0 CONCEPTS AND MODELS

1.1 Region- Definition and Types

1.2 Regionalisation and delineation of regions- Formal and Functional

1.3 Concept of Regionalism, Planning region and Regional planning

1.4 Theories and Models for regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian Context

#### UNIT 2.0 PLANNING REGIONS: ISSUES AND CHALLENGES

2.1 Planning and Developmental issues- need and objectives

2.2 Planning Region: Characteristics and Delineation

2.3 Physical Planning Regions of India: Water shade Region, Agro Ecological Region

2.4 Social Planning Regions of India: Hill area development and Tribal area development

#### UNIT 3.0 ISSUES ON REGIONAL DEVELOPMENT: THEORIES AND PRACTICES

3.1 Concept of Development and Underdevelopment; Efficiency-Equity Debate

3.2 Theories for developmental planning: Myrdal, Hirschman, Rostow and Friedmann

3.3 Indicators of Development – Economic, Social and Environmental

3.4 Human Development Index: Concepts and Methods

#### **CC12: (Practical) Remote Sensing and GIS**

**6 Credits**

1. Remote Sensing: Definition and Components, Development, Platforms and Types

2. Aerial Photography: Principles, Types and Geometry of Aerial Photograph, Stereo Test, Orientation of Stereo-model under Mirror Stereoscope, Study of the Aerial Photograph under Stereoscope and Identify Various Objects Appearing in the Stereopair with the Help of photo Interpretation Keys, Determination of Photo Scale.

3. Introduction to Satellites and their Sensors, Image Interpretation: Visual and Preparation of Landuse Map using Satellite Images.

4. Global Positioning System (GPS) Application

5. GIS in Digital Cartography

## **SEMESTER-VI**

### **CC13: (Theory) Evolution of Geographical Thought**

**6 Credits**

#### **UNIT 1.0 APPROACHES TO GEOGRAPHY**

- 1.1 The nature of Geography: Objectives and Relevance
- 1.2 Contributions of Humboldt and Ritter to the discipline of Geography
- 1.3 Concepts of Determinism, Possibilism and Neo-Determinism
- 1.4 Ecology and Ecosystem as Geographical principle and method

#### **UNIT 2.0 EVOLUTIONARY CONCEPT IN GEOGRAPHICAL THOUGHT**

- 2.1 Changing Concept of Space in Geography
- 2.2 Early Geographical Thinking with Reference to the Classical and Medieval Philosophies
- 2.3 Modern Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America
- 2.4 Post Modernism

#### **UNIT 3.0 CONTEMPORARY DEBATES AND TRENDS**

- 3.1 Quantitative Revolution and its Impacts
- 3.2 Dichotomies: Systematic and Regional, Ideographic and Nomenothetic
- 3.3 Behavioural Geography and Humanistic Geography
- 3.4 Radicalism, Feminism and Welfare Geography

### **CC14: (Practical) Disaster Management Based Project Work**

**6 Credits**

The Project Report based on any two field based case studies among following disasters and one disaster preparedness plan of respective collage or locality:

1. Flood
2. Drought

3. Cyclone and Hailstorms
  4. Earthquake
  5. Landslides
  6. Human Induced Hazards/Disasters
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### **SKILL ENHANCEMENT COURSE**

#### **SEC 1: Computer Basics and Computer Applications (Practical) 4 Credits**

1. Numbering Systems; Binary Arithmetic
2. Data Computation, Storing and Formatting in Spread sheets: Computation of rank, Mean, Median, Mode, standard Deviation, Moving Averages, Derivation of Correlation, Covariance and Regression; Selection of Technique and Interpretation
3. Preparation of Annotated Diagrams and its Interpretation: Scatter Diagram and Histogram
4. Internet Surfing: Generation and Extraction of Information

#### **SEC 2: Geographical Information System (Practical) 4 Credits**

1. Geographical Information system (GIS): Definition and Components
  2. GIS Data Structures: Types (Spatial and Non-spatial), Raster and Vector Data Structure
  3. GIS data Analysis: Input; Geo-Referencing; Editing, Output and Query; Overlays
  4. Application of GIS in Land Use Mapping
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## **DISCIPLINE SPECIFIC ELECTIVE**

### **DSE 1: Hydrology and Oceanography**

**6 Credits**

#### UNIT 1: FUNDAMENTAL CONCEPTS

- 1.1 Hydrology: Definition, Scope, System Approach and Interruption to Hydrological Behaviour
- 1.2 Hydrological Cycle: Components and Processes (Precipitation, Evapo-transpiration, Infiltration)
- 1.3 Surface Hydrology: Runoff, Overland Flow- Components, factors and estimation.
- 1.4 Sub-surface Hydrology: Aquifer- Types and Processes of Flow, Controlling movements

#### UNIT 2: APPLIED HYDROLOGY

- 2.1 River basin: Characteristics, Components, Processes of Flow. River Regime, Stream Rises, Hydrological Problems.
- 2.2 Measurement Techniques of River Discharge, Floods and Droughts
- 2.3 Principles of Integrated Basin management with Reference to Micro Watershed Planning
- 2.4 Water Management in Tropical Cities and Rainwater Harvesting

#### UNIT 3: MORPHOLOGY AND PROPERTIES OF OCEAN

- 3.1 Ocean Floor Topography and Oceanic Movements- Waves, Currents and Tides.
- 3.2 Ocean Salinity and Temperature- Distribution and determinants
- 3.3 Coral Reefs and Submarine Canyons- Causes of Formation and Evolution
- 3.4 Ocean Resources and Oceanic Laws

### **DSE 2: Agricultural Geography**

**6 Credits**

#### UNIT 1: CONCEPTS AND METHODS

- 1.1 Nature, Scope and Approaches of Agricultural Geography: Empirical and Non-empirical, Regional and Systematic
- 1.2 Determinants of Agriculture: Physical, Technological and Institutional
- 1.3 Land Use/ Land Cover definition and Classification

1.4 Methods/Techniques of Delineation of Agricultural Region, Agricultural Productivity and Efficiency

## UNIT 2: DETERMINANTS AND SYSTEM OF AGRICULTURE

2.1 Agricultural System of The World: Whittlesey's Classification

2.2 Agricultural Land use Model: Von Thuenen- Modification and Relevance

2.3 Socio-Economic Determinant of Agriculture: Land Tenure System, Land Reform with Reference to India

2.4 World Farming System: Traditional and Modern

## UNIT 3: AGRICULTURAL REGIONS AND MANAGEMENT POLICIES

3.1 Agricultural Regions of India: Agro-climatic, Agro-ecological and Crop Combination Regions

3.2 Food Deficit and Food Surplus Regions of India

3.3 Agricultural Revolution in India: Green, White, Blue and Pink

3.4 Planning Policies in Indian Agriculture

## **DSE 3: Population Geography**

**6 Credits**

### UNIT 1 BASICS OF POPULATION GEOGRAPHY

1.1 Nature, Scope and Content of Population Geography

1.2 Database and Sources with Special Reference to the Census of India, Sample Survey (NSS data)

1.3 Concept of Overpopulation, Under population and Optimum Population

1.4 Population Composition and Characteristics- Age-sex Composition, Occupational Structure, Dependency Ratio, Rural and Urban Composition and Literacy

### UNIT 2 GROWTH AND DYNAMICS

2.1 Population Growth in Developed and Developing Countries: Determinants and Patterns

2.2 Theories of Population Growth- Malthusian, Marx, Neo-Malthusian and Sen's Approach; Demographic Transition

2.3 Population Dynamics- Fertility, Morbidity and Mortality

## 2.4 Migration and Migration Theories

### UNIT 3 PROBLEM AND PLANNING POLICIES

#### 3.1 Population Explosion and Contemporary Social and Environmental Issues

#### 3.2 Immerging Problems – Ageing of Population; Declining Sex Ratio; HIV/AIDS

#### 3.3 Population Planning/Policies- World Scenario

#### 3.4 Population Policies of India.

## **DSE 4: Urban Geography**

**6 Credits**

### UNIT 1 CONCEPT AND APPROACHES

#### 1.1 Urban Geography: Introduction, Nature and Scope

#### 1.2 Emergence and Characteristics of Urban Settlement

#### 1.3 Functional Classification of Cities

#### 1.4 Concept of Urbanism and Urban Ecology

### UNIT 2 URBAN PROCESSES AND DEVELOPMENT

#### 2.1 Urbanization as a Multi-dimensional Process

#### 2.2 Urban Economic Base Basic and Non-basic Functions

#### 2.3 Urban Morphology: Concentric Zone, Sector and Multiple-Nuclei Theories

#### 2.4 City region and Urban Field

### UNIT 3 SPATIAL RELATIONS AND URBAN PLANNING

#### 3.1 Hierarchies of Urban Settlements

#### 3.2 Primate City Development

#### 3.3 Urban Issues: Problems of Indian Mega Cities

#### 3.4 Urban Planning in India

## **GENERIC ELECTIVE**

**(For Students other Than Geography Honours)**

### **GE 1: Disaster Management**

**6 Credits**

1. Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Draught: Causes, Impact, Distribution and Mapping
3. Disaster 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
5. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disaster

### **GE 2: Climate Change: Vulnerability and Adaptation**

**6 Credits**

1. Science of Climate Change: Understanding Climate Change; Green House Gases and Global warming; Global Climatic Assessment- IPCC
2. Climate Change and Vulnerability: Physical Vulnerability; Economic Vulnerability; Social Vulnerability
3. Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health
4. Adaptation and Mitigation: Global Initiatives with Particular Reference to South Asia.
5. National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats)

### **GE 3: Regional Development**

**6 Credits**

1. Definition of Region, Evolution, Types and Need of Regional Planning: Formal, Functional, and Planning Regions and Regional Development



2. Regional Imbalances and problems of Functional Region
3. Choice of a Region for Planning: Characteristics of an Ideal Planning Region; Delineation of planning Region; Regionalization of India for Planning (Agro Ecological Zones)
4. Strategies/Models for Regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian context; Village Centre
5. Problem Regions and Regional Planning: Backward Regions and Regional Plans- Special Area Development Plans in India; DVC- The Success Story and the Failures.

**GE 4: Geography of Tourism**

**6 Credits**

1. Scope and Nature: Concept and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism
  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 on Economy, Environment and Society
  5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Deserts and Coastal Areas; National Tourism Policy
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