GG-DCE-15304 ECOLOGY AND ENVIRONMENT

Credit-I:

1. Ecosystem concept and components
2. Ecosystem form and functions
3. Tropical levels, ecological niche, ecological pyramid
4. Energy flow models (U shaped and Y shaped energy flow model)
5. Food chain and food web
6. Ecological adaptations

Credit-II:

6. Major biomes of the World –
   i. Forests, ii. Deserts, iii. Grassland, iv. Monsoon.
2. Carbon cycle and nitrogen cycle
3. Biodiversity loss and its conservation
4. Preservation and conservation of ecosystem through resource management
5. Ecological footprint and concept of green economy

Credit-III:

1. Structure and Types of environment
2. Components of environment
3. Man induced environmental and ecological changes
4. Degradation of slopes, b. Simplification of ecosystem c. Eutrophication , d. Introduction of alien species
4. Ozone depletion
5. Air and water pollution

GG-DCE-15305 NATURAL RESOURCE MANAGEMENT

Credit-I

1. Need of Natural Resource Management
2. Approaches of Natural Resource Management (Classic, Neo Liberal and Populistic approach).
3. Classification of Natural Resource
4. Resource Creating Factors: Their Utilization and Development
5. Natural Hazards and their impact on Resources

Credit-II

1. Meaning and Principles of Conservation and Management
2. Methods of Conservation of Natural Resources:-(i) Water (ii) Forests (iii) Soils (iv) Minerals
3. Integrated Surveys of Natural Resource Management
4. Integrated Resource Management and its applications with special Reference to J&K (IWDP)
5. Uses and misuses of resources: global and Indian scenario
6. Natural resources and world conflicts

Credit-III

1. Resource appraisal and development
2. Appraisal of land resources
3. Principles of land evaluation
4. Concept of sustainable development
5. Use of GIS and Remote Sensing in resource appraisal

GG-DCE-15306 Soil Geography

Credit-I:

1. Nature of Soil Geography
2. Factors influencing Soil formation
3. Processes of Soil formation and development
4. Characteristics of soil profile
5. Components of soil
6. Physical properties of soil Texture and structure
7. Chemical properties of soil

Credit-II:

1. Soil classification- Zonal/(USDA System)
2. Soil erosion Types – Geological soil erosion, accelerated soil erosion
3. Soil loss models USLE
4. Soil conservation and its significance
5. Soil conservation –Biological, mechanical
6. Application of remote sensing in soil resource mapping and conservation

Credit-III

1. Principles and rules of biogeography; components of geographic template (climate, soil, aquatic environment)

2. Phyto-geographic and zoog-eographic realms

3. Biotic succession

4. Speciation, diversification and extinction; dispersal (mechanisms, routes and barriers)

5. Biogeographic patterns: cosmopolitanism and endemism

6. Theory of Island Biogeography

7. Gradients in biodiversity (latitudinal, elevational and depth)

GG-DCE-15404 DISSERTATION

Total Credits - 04

The student has to prepare the dissertation on any of the topics selected in consultation with the concerned supervisor/guide. The dissertation shall cover the following components

1. Statement of the Problem
2. Conceptual Framework
3. Objectives
4. Hypothesis/ Research Questions
5. Literature Survey
6. Methodology
7. Data Sources(based on primary sources, laboratory work and secondary sources of information)
8. Results and Discussion
9. Conclusion
10. References

GG- DCE-15405 POLITICAL GEOGRAPHY

Credit-I:

1. Developments in political geography
2. Political Geography and Geopolitics
3. Approaches to the study of political geography
4. Major schools of thought in political geography (German, British and American)
5. Global strategic views of Heartland and Rim land theories
6. Federalism and other forms of governance
7. Concept of Boundaries , Frontier and Buffer zones

Credit-II:

1. Geopolitical significance of Indian Ocean
2. Political geography of SAARC Region
3. Reorganization of Indian States
4. International boundary of India and related issues
5. Historical and geopolitical importance of silk rout
6. Disputes of sharing of water resources- Brahmaputra and Indus water disputes

Credit-I:

1. Nature of applied Geomorphology
2. Application of Geomorphic Knowledge to:
   a. Hydrology
   b. Mineral exploration
   c. Petroleum exploration
   d. Urbanization
   e. Civil Engineering Project

Credit-II:

1. Geochronology-
   a. Determination by: Salinity
   b. Rate of erosion
   c. Rate of deposition
   d. Fossils
   e. Radioactivity
2. Morphometry of Drainage Basins- Linear and Relief Aspects:
   a. Stream Ordering
   b. Bifurcation Ratio
   c. Law of Stream Numbers
   d. Dissection Index
   e. Hypsometric Analysis

GG-DCE-15104 GEOGRAPHY OF TOURISM

Credit-I:

1. Definition and Scope of Tourism Geography
2. Components of tourism
3. The use of Geographical Resources for Tourism
4. Theories of Tourist development
5. Sustainable Tourism; Carrying Capacity

Credit-II:

1. Tourism Motivation
2. Types and Forms of Tourism
3. Infrastructure and Support System
4. Accommodation and Supplementary Accommodation
5. Tourism planning and its approaches

Credit-III:

1. Indian Tourism ; Regional Dimension of Tourist attraction
2. National Tourism Policy
3. Tourism in J&K: Tourist Resources; Tourist Flow and Distribution pattern; Tourism accommodation
4. Impact of Tourism: Environmental; Economic; Social and Cultural
5. GIS and Tourism; Tool for Applied Geography Research

Credit-I:

1. Relevance of Medical Geography in contemporary world
2. Paradigm shift in Medical Geography
3. World Health Organization and its mandate
4. Medical Pluralism
5. Disease Diffusion and types

Credit-II:

1. Geo- ecological factors on human health
2. Socio – cultural and Economic factors affecting human health - Customs, traditions and Housing, Urbanization and industrialization
3. Geo-ecology and spatial pattern of Cardiovascular and AIDS diseases at Global level
4. Geo-ecology and spatial pattern of Malaria, and Cancer, diseases at National level
5. Geo-etiology of diseases like Tuberculosis, and goiter in Jammu and Kashmir

Credit-III:

1. Geography of Nutrition at National level and health status
2. Health and healthcare behavior in developing countries
3. Climate change and human health
4. Regional inequalities in healthcare in Jammu and Kashmir
5. Role of GIS in health care services

GG-DCE-15106 HYDROLOGY & OCEANOGRAPHY

Credit-I:

1. Introduction to Hydrology

2. Hydrological Cycle and Global water balance

3. Groundwater: Origin, Occurrence, Quality and Movement

4. Aquifers and their types

5. Rain water harvesting: models and feasibility

6. National water policy and Water Crisis in India

Credit-II:

1. Introduction to Oceanography

2. Evolution of Continents and Ocean Basins

3. Marine biological environment

4. Waves and their types

5. Ocean currents and their significance

6. Ocean Conveyer Belts

Credit-III:

1. Coral reefs: theories of formation (Darwin and Dally)

2. Oceans as store houses of Non-conventional sources of energy.

3. Food resources & Mineral resources of the Oceans

4. Law of the Sea & Exclusive Economic Zone

5. Climate change and oceans; Sea level change and its implications

6. Role of oceans in regulating green house effect/Marine Biological Pump

GG-DCE-15204 URBAN GEOGRAPHY

Credit-I:

1. Nature trends and recent approaches in Urban Geography
2. Urbanization growth-global trends and patterns
3 Emerging Patterns of Urbanization in India
4. Urbanization Policy & programmes
5. Concept of Green Belts Satellite towns, Urban renewal and Urban sprawl

Credit-II:

1. Primate city and Rank size rule
2. Central place theory of Christaller & Losch
3. Central Business District ; Delimitation and Characteristics
4. Rural Urban Fringe ; Delimitation and Characteristics
5. City Region; Delimitation and Characteristics

Credit-III:

1. Urban Poverty
2. Problem of Housing and Slums
3. Urban Environmental Problems; Air Pollution ,Water Pollution & Solid Waste Pollution
4. Urban Environment and Problems of Health
5. Urban Development Through master plans- Case Studies of Chandigarh & Srinagar Cities

GG-CR-15102 EVOLUTION OF GEOGRAPHICAL THOUGHT

Credit-I:

1. Changing nature of geography
2. Paradigm shift in Geography from modern to postmodern period
3. Development of Geography in India
4. Quantitative revolution in geography

Credit-II:

1. Development of Scientific Geography. (Immanuel Kant, Bernhard Varineus, Humboldt, and Carl Ritter)
2. German school of Thought- Contribution of Ratzel, Alfred Hettner and Penk
3. French school of Thought- Contribution of Vidal-de-la Blache, Jean Brunches, De Morton

Credit-III:

1. British school of Thought- J.H. Mackinder, Geddes, Stamp
2. Soviet Union school of Thought- V.V. Dokuchaiev, Voeikov and Anuchin
3. American school of Thought- Davis, Churchill Semple , Huntington and Hartshorne

Credit-IV:

1. Recent concepts- Areal differentiation, spatial organization, spatial diffusion
2. Concept of Wellbeing , space and place
3. Concept of positivism, pragmatism, idealism, realism
4. Recent approaches- radical approach, Humanistic approach, Behavioral approach
5. Darwin's impact on geography

GG-DCE-15206 AGRICULTURAL GEOGRAPHY

Credit-I:

1. Development of Agricultural Geography
2. Approaches to the study of agricultural geography: Commodity, systematic and regional approaches
3. Origin and dispersal of agriculture
4. Role of Physical and socio-economic factors in Agriculture
5. Influence of institutional and technological factors on agriculture

Credit-II:

1. Concept of location of agricultural activities-von Thunen's Model
2. Whittlesey's classification of agricultural systems of world
3. Delimitation of Agricultural Regions
4. Crop combinations and crop diversification in India
5. Agricultural land classification and land capability survey

Credit-III:

1. Cropping intensity with special reference to Jammu and Kashmir
2. National agricultural policy
3. White revolution in India
4. Problems and prospects of Indian Agriculture
5. Use of RS and GIS in agricultural studies

GG-GE-15307 Watershed Management

Credit-I:

1. Watershed: meaning and concept
2. Watershed as a planning unit
3. Watershed characteristics
4. Watershed Delineation
5. Watershed codifications

Credit-II

1. Watershed management: Concept and Approaches, integrative and consortium Approach
2. Watershed management strategies. Preventive and restorative
3. Watershed Modeling
4. Application of remote sensing and GIS in watershed studies
5. Two case studies

GG-GE-15407 SUSTAINABLE DEVELOPMENT

Credit-I:

1. Concept and strategies of sustainable development
2. Principles of ecological and environmental economics-scope and usefulness
3. Natural resources accounting and valuation of ecosystem services
4. Landmark events in sustainability (Agenda 21)
5. Moving towards sustainability: An Indian Perspective

Credit – lI:

1. Rural Development – An overview, Importance and objectives
2. Development and Growth
3. Indicators of Development
4. Models of Development: Rostows, Myrdal, Growth Pole theory
5. Gandhian approach for Community Development

GG-GE- 15107 FUNDAMENTALS OF DISASTER MANAGEMENT

Credit-I:

1. Disaster Management: Meaning and scope
2. Approaches Scope and Significance
3. Elements of disaster management
4. Disaster Management Cycle
5. Yokohama Declaration, Objectives of International Decade for Natural Disaster Reduction (IDNDR)

Credit-II:

1. Disaster Management Policy and its Significance
2. Principles of disaster management policy
3. Hyogo Framework of action
4. Policy options and approaches in disaster management, Essential components of disaster management policy
5. Formulation and execution of disaster management policy, Command and coordination in disaster management

GG-GE-15207 Fluvial Geomorphology

Credit-I

1. Fluvial Geomorphology and Geography
2. Fluvial processes and related landforms
3. Drainage Basin – a fundamental geomorphic unit
4. Drainage pattern, Evolution and types

Credit-II

1. Mechanics of Fluvial Erosion : Overland , Through & Groundwater Flow
2. Sediment Transport : Dissolved, Suspended & Bed Load
3. Channel Geometry & Flow: Geometry
4. Sources of Stream Flow & Flow Velocity
5. Stream Gradation: Modern Theories, Graded Stream

GG- GE-15308 Geo-Politics of Indian Subcontinent.

Credit-I:

1. Concept of Geopolitics, Origin and Evolution of Geopolitics.
2. Approaches to the study of Geopolitics: German and French.
3. Global strategic views of Heartland and Rim land theories
4. Current issues in Geopolitics.
5. Concept of Boundaries , Frontier and Buffer zones

Credit-II:

1. Geopolitical significance of Indian Ocean
2. Geopolitics of SAARC Region
3. Reorganization of Indian States
4. International boundary of India and Pakistan.
5. International boundary of India and China.

Credit-III:

1. Disputes of sharing of water resources- Brahmaputra and Indus water disputes.
2. Historical and geopolitical importance of silk rout.
3. Fedralism and other forms of Governance.
4. Changing pattern of World powers and Alliances.
5. Conflict and Peace resolutions.

GG-GE-15408 Agricultural Geography of India

Credit-I

1. Role of Physical and socio- economic factors affecting Indian Agriculture.
2. Influence of institutional and technological factors.
3. Delimitation of Agricultural Regions.
4. Crop Combination regions.
5. Land use classification of India.

Credit-II

1. National Agricultural Policy.
2. White Revolution.
3. Problems and prospects of Indian Agriculture.
4. Whittlesey's classification
5. Land capability classification of India.

Credit-III

1. Green revolution.
2. Major crops.
3. Agricultural Productivity.
4. Agro- climatic regions of India.
5. Agricultural landuse Model (Von-Thunen)

GG-GE-15208 Disaster Vulnerability in India

Credit I

1. Vulnerability: Meaning and Concept
2. Perception of Vulnerability
3. Physical, Social and Economic Vulnerability
4. Vulnerability Analysis
5. Indicators of Vulnerability

Credit II

1. Hazard and Vulnerability Profile of India
2. Earthquake & Floods
3. Landslides & Droughts
4. Cyclones & GLOF
5. Multi Hazard Zones of India

GG-OE-15310 DISASTER PROFILE OF INDIA

Credit-I **Geological and Mountain Disasters in India**

1. Historical overview of Earthquake in India
2. Earthquake distribution and zonation
3. Earthquake vulnerability scenario of Himalayan cities
4. Land slides: implications and zonation in northern India
5. Snow avalanche- causes and implications

Credit-II **Wind and Water Related Natural Disaster in India**

1. Floods- distribution causes and consequences
2. Cloudburst- causes and consequences
3. Drought scenario of India
4. Cyclones and their implications in coastal India.
5. Tsunami vulnerability scenario of India

Credit-III **Man Made Disasters in India**

1. Understanding Man-Made Disasters
2. Fires and Forest Fires
3. Nuclear, Biological and Chemical disaster
4. Road Accidents and Building collapses
5. Ecological imbalances- Aravallis

GG-OE- 15410 Environmental Impact Assessment in Disaster Management

Credit-I

Environmental impact assessment (EIA)- Concept and historical development of EIA, EIA capability and limitations.

Credit-II

Methodologies of EIA- Measurement of environmental impact, Matrices, Networks, Cost-benefit analysis, overlay maps, EIA report and its contents.

Credit-III

Plan for mitigation of adverse impact on environment – options for mitigation of impact on water, air and land, flora and fauna; addressing the issues related to the Project Affected People,, Legal provisions on EIA.

GG-OE-15110 REMOTE SENSING

Credit-I:

1. Concepts and Overview of Remote Sensing
2. Remote Sensing and Electromagnetic Spectrum
3. Concept of Resolution- spatial, spectral, temporal and radiometric
4. Sensors and Sensor types
5. Remote Sensing Satellites; LANDSAT, IRS and Cartosat

Credit-II

1. Aerial Photographs and their types
2. Stages of Remote Sensing data acquisition
3. Interaction of EMR with the atmosphere (Refraction, Scattering, Absorption and transmission)
4. Interaction of EMR with earth surface features (water, vegetation, soil & snow)
5. Fundamentals of Image Interpretation and its elements

GG-OE-15210 GEOGRAPHY OF HIMALAYAS

Credit-I:

1. Evolution of Himalayas
2. Geology of Himalayas
3. Physical Divisions of Himalayas
4. Climate of Himalayas
5. Drainage systems in Himalayas

Credit-II:

1. Himalayan states of India- demography and economy
2. Linguistic and ethnic diversity of Himalayas
3. Himalayan agriculture
4. Importance of Himalaya in biodiversity conservation
5. Emerging environmental issues in Himalayas

Credit-III:

1. Mineral Resources of Himalayas
2. Hydel Power Resources of Himalayas
3. Tourism in Himalayas
4. Wildlife in Himalayas
5. Forest Resources of Himalayas

GG-GE-15108-GEOGRAPHY OF JAMMU AND KASHMIR

Credit-I:

1. Jammu and Kashmir State – its space relationships
2. Geo-Political significance of Jammu and Kashmir
3. Relief and Physiography
4. Climate and natural vegetation
5. Drainage System
6. Soil: Types and distribution

Credit-II:

1. Population: distribution, density and growth
2. Population structure and composition
3. Agriculture of Jammu and Kashmir
4. Horticulture of J&K with respect to apple and saffron
5. Tourism in Jammu and Kashmir
6. Energy resources of Jammu and Kashmir (hydal and geothermal)

GG-OE-15309 WORLD GEOGRAPHY

Credit-I: Geography of North America

1. Salient features
2. Relief and Drainage
3. Climate
4. Mineral Resources
5. Industry
6. Population distribution density and growth

Credit-II: Geography of Europe

1. Salient features
2. Political framework
3. European union
4. Relief and Drainage and climate
5. Industrial Setup
6. Demography

Credit-III: Geography of Africa

1. Salient features
2. Political framework
3. Climate and Drainage system
4. Mineral resources
5. Wildlife
6. Population distribution and ethnic groups

GG-OE-15109 DISASTER MANAGEMENT IN INDIA

Credit-I:

1. Disaster Management structure in India,
2. Disaster Management Act, 2005).
3. National Disaster Management Authority (NDMA),
4. National Institute of Disaster Management (NIDM)
5. National Disaster Response Force (NDRF)
6. Indian Meteorological Department (IMD),

Credit-II

1. National Forecasting and early warning System,
2. Hazard, Exposure and Vulnerability Scenario of India,
3. Historical Extreme Events of India,
4. Guideline for Management of various Disasters.
5. Constitutional Provision, Evolution of the Legal Framework

GG-OE-15209 GEOGRAPHY OF INDIA

Credit-I:

1. India – its space relationships
2. Environmental Framework of India
    a. Physiography and relief (b) drainage
3. Climate and natural vegetation
4. Biogeographic zones of India
5. Geo-Political linkages of India
6. Boundary issues of India and its neighbors

Credit-II:

1. Population dynamics & distribution
2. Racial and ethnic composition
3. Agro-climatic regions of India based on Planning Commission of India
4. Food security scenario in India
5. Mineral resource of India – iron ore and coal
6. Major Industrial regions of India

Credit-II:

1. Emerging environmental issues in India: causes and consequences
2. Ecological concerns in Aravali hills
3. Environmental issues of Western Ghats
4. Emerging environmental issues in Himalayas
5. Sardar Sarover Dam project: merits and demerits

GG-CR-15303 FIELD STUDIES (GEOMORPHIC AND SOCIO-ECONOMIC)

Credit-I:

1. Identification and mapping of major Geomorphic features and associated process
2. Use of Topographic maps and satellite imageries for geomorphic mapping
3. Identification of relationship between physical setting and landuse pattern
4. Identify the landforms on the surface, while in the field. Also note the agents of erosion, transportation and deposition associated with the landforms

Credit-II:

1. Observe the relationship of various landforms, with land-use, settlement structure and life style of people
2. Based on observations of the above characteristics, prepare a field survey report. The report need to be supplemented with maps, sketches, photographs etc

Credit-III:

1. Procure a topographic map of 1:50,000 or 1:25,000 scale of study the settlements selected in its regional setting
2. Collect demographic, social and economic data of the village/town from census reports to study the temporal changes in the profile of such characteristics
3. Procure a cadastral map of the village/town for field mapping of the features of land-use and land quality. Procure/ prepare the settlement –site map through rapid survey to map the residential, commercial, recreational (parks, playgrounds), educational, religious and other prominent features

Credit-IV:

1. Conduct a socio-economic survey of the households with as structured questionnaire. Supplement the information by personal observations and perceptions
2. Based on results of the Geomorphic, land-use and socio-economic field Survey of the study area, prepare a critical field –survey report. Photographs and sketches, in addition to maps and diagrams, may supplement the report

GG-CR-15402 ECONOMIC GEOGRAPHY

Credit-I:

1. Relation of Economic Geography with other Branches of Social Science
2. Factors of Location of Economic Activities: Physical, Social, Economic
3. Theories of Industrial Location- Weber
4. Role of Iron & Steel industries in the economic development of India
5. Growing Role of tertiary and quaternary economic activities in the economic development of India

Credit-II:

1. Classification of economic activities
2. Concept of Knowledge economy
3. Globalization and its Impact on Indian Economy
4. Economic Development of India- Since Independence

Credit-III:

1. Impact of Green Revolution on Indian Economy and recent developments
2. Regional Disparities in the levels of Economic development
3. Globalization and its Impact on Indian Economy
4. Role of infrastructure (energy) in the economic Development of India

Credit-IV:

1. Occupational structure of the people of Jammu and Kashmir
2. Role of Horticulture in the economic development of J&K State
3. Contribution of small scale industry in the employment generation of J&K state
4. Role of Trade & Commerce in the economic development of country

GG-DCE-15205 GLACIAL GEOMORPHOLOGY

Credit-I

1. Glaciers: Origin and Classification
2. Glacial Ice Movement
    a. Basal flow
    b. Internal deformation
3. Ice Ages: Causes & Evidences
4. Pleistocene Glaciations in South Asia

Credit-II:

1. Glacial Erosion.
    a. Ice and melt water. b. Mechanical and Chemical processes of erosion.
2. Development of Erosional land forms.
3. Depositional processes;
    a. Stratified and non-stratified.
    b. Drifts –morphodynamics of moraines
4. Depositional Features
5. Hazards in Glacial Environment: Glacial Surges and Glacial Lake Out bursts**.**

Credit-III:

1. Himalayan Glaciers: Mass Balance and response to Climatic Changes
2. Case studies of glaciers:
    i) Gangotri glacier
    ii) Kolahai glacier
    iii) Drangdrung glacier
    iv) Nehnar glacier