

# GOUR MAHAVIDYALAYA

## DEPARTMENT OF GEOGRAPHY

**Program name: CBCS**

### PROGRAMME OUTCOMES

**PO01:** Acquire knowledge of geomorphological and geotectonic processes and their formation to understand various landforms, their origin, and the processes through which landforms have gone or are going.

**PO02:** Gain proficiency in surveying and levelling fields using a prismatic compass, dumpy level, and theodolite, along with map projection skills to become adept cartographers.

**PO03:** Explore different types of thematic mapping with statistical techniques to enhance students' higher learning and research abilities.

**PO04:** Provide a brief overview of ancient and contemporary geographical thought and its impact on the evolution of modern geography.

**PO05:** Create a map using Quantum GIS and modern geographical map-making techniques.

**PO06:** Conduct tests on soil samples and determine the nutritional status of the identified soil, aiding in future agricultural practices.

**PO07:** Conduct tests on water samples to determine water quality, contributing to the assessment of drinking water quality and other types of water, and facilitating future research.

### COURSE OUTCOMES

#### **SEM-1**

##### **DC1: Geotectonic and Geomorphology (Course as Discipline Core)**

- Understanding the tectonics, structural stability and the earth interior.
- Major events in the Geological time scale.
- Understanding the fundamentals in Geotectonic and Geomorphology.
- Study geomorphic processes and resultant landforms from the traditional concept to the contemporary development in Geomorphology.
- Develop the practical skill in topographical mapping, in-depth analysis of geological mapping and megascopic identification of rocks and minerals.
- In depth understanding the earth dynamics in terms of internal and external processes on the earth's surface.

##### **DC2: Cartographic Techniques (Course as Discipline Core)**

- Develop the knowledge about the scale, types, importance and to construct.
- Gain knowledge about the theoretical perspective, derivation, properties and construction of various types of map projections with the in-depth studies on Coordinate reference system.
- Acquire knowledge about the various ground survey instruments, e.g., Prismatic compass, Transit Theodolite, Dumpy level, Plane table and their practical application on field.
- Build ideas about topographical maps and apply this knowledge in ground surface.

### **GE1: Geotectonic and Geomorphology (Course for Generic Elective)**

- Develop an idea on origin of the earth, different hypothesis, and earth's interior.
- Acquire knowledge on various rocks and importance in landform development.
- Study geomorphic processes and resultant landforms from the traditional concept to the contemporary development in Geomorphology. Concept on weathering and Mass-wasting processes.

## **SEM-II**

### **DC3: Population and Settlement Geography (Course as Discipline Core)**

#### **PART 1: Population Geography**

- Understand the scope, content, demography and various data sources of Population Geography.
- Acquire clear concepts on population dynamics and its components.
- Understand the concepts on population density and distribution.
- Get Knowledge about the population policies in India.

#### **PART 2: Settlement Geography**

- Understand the scope and contents of Settlement Geography
- A detailed understanding of the nature and characteristics of rural settlements.
- Greater understanding of the Morphology of rural settlements along with the concept of site and situation, rural house types with reference to India,
- Inculcate the knowledge of urban morphology including the classical models of Models-Burgess, Homer Hoyt, Harris and Ullman.
- To gain in-depth knowledge on census definitions of rural and urban centres, Metropolis, City-region, Conurbation and Smart city; Functional classification of cities.

### **DC3: Cartograms and Thematic Mapping (Course as Discipline Core)**

- Detailed understanding of the concepts of rounding, scientific notation, logarithm and anti-logarithm, natural and log scales.
- Develop knowledge on the representation of geographical data with special emphasis to Line, Bar, Dot and Sphere, Proportional circles, Isopleths and choropleth.
- Preparation and interpretation of large-scale thematic maps: Geomorphological maps, climatological maps, Land use/land cover maps and Thematic Maps.
- Learn about the application of GIS in thematic mapping and to understand concept of Cadastral Map.

### **GE2: Climatology, Soil & Biogeography (Course for Generic Elective)**

- Understand the concepts of weather and climate, controlling factors of climate, Atmospheric layers, Atmospheric Temperature, Planetary and periodic winds, Monsoon, local winds. Insolation and heat budget
- To know about the atmospheric moisture, including humidity, types of precipitation, evaporation, condensation,
- Detailed understanding on the burning issue of Greenhouse effect and its impact.
- *Apart from climatological knowledge development the course also targets to develop some basic knowledge on soil and bio- geography as follows;*
- To learn about the factors of soil formation, Soil profiles, soil erosion and conservation.

### **SEM-III**

#### **DC5: Climatology (Course as Discipline Core)**

- Develop a knowledge on Structure and composition of the atmosphere, Insolation and heat budget, Horizontal and vertical distribution of temperature and to study the concept and types of inversion of temperature: its causes and consequences,
- Detailed discussion on the very current day issue of Ozone layer and greenhouse effects.
- Make learners to know about the Condensation and precipitation process, forms and mechanism including the Bergeron- Findeisen theory and Collision and coalescence theory of precipitation.
- Acquire knowledge on Air mass: typology, origin, characteristics and modification; Fronts: warm and cold; frontogenesis and frontolysis; weather: stability and instability; barotropic and baroclinic conditions
- Develop the knowledge about the Circulation in the atmosphere with special emphasis on Planetary winds and monsoon circulation and mechanism with reference to India
- To know about the Climatic classification after Köppen and Thornthwaite.

#### **DC6: Statistical Methods in Geography (Course as Discipline Core)**

- To develop the basics of Statistics including data concept, sources and methods of data collection, data types, population and samples and scales of measurement.
- A detailed knowledge on Sampling: Need, types, and significance and methods of random sampling
- Develop knowledge about the Theoretical distribution, Central tendency, Measures of dispersion, coefficient of variation and coefficient of quartile deviation
- To study the Correlation, Regression (linear and non-linear), and time series analysis (moving average).

#### **DC7: Geography of India (Course as Discipline Core)**

- Acquire knowledge about the Tectonic and stratigraphic provinces, physiographic divisions, Climate, soil and vegetation.
- To make a holistic knowledge on Indian Agricultural regions, green revolution, mineral and power resources distribution and utilization.
- Detailed understanding on the Industrial development and Regionalisation of India considering the Physiographic (R. L. Singh), Socio-cultural (Sopher) and Economic (Sengupta) segment.
- To develop knowledge on the contemporary population issues especially on Poverty, Illiteracy, Malnutrition and unemployment.

#### **GE3: Social and Cultural Geography (Course for Generic Elective)**

- To make an understanding on the concept of Social Geography, its Scope and content, concept of class and caste with reference to India.
- To understand in detail the factors affecting growth and development of human habitat and to know about man's adaptation to the environment in different environmental conditions.
- Detailed understanding on the concept of culture, cultural groups, cultural region, cultural hearth, Cultural landscape, Language, religion.

#### **SEM-IV**

##### **DC8: Regional Planning and Development (Course as Discipline Core)**

- To build an introductory concept on regions, types and delineation of regions, types of planning, tools and techniques of planning, principles, needs and objectives of regional planning and multi-level planning in India,
- Detailed concept ON metropolitan areas and urban agglomerations.
- Build knowledge on Development, its meaning, regional development with reference to India, and various Indicators of development, growth versus development.
- Build detailed knowledge on Growth pole model of Perroux, growth centre model and Cumulative causation y Myrdal and core periphery (Hirschman, Rostov and Friedman) theories for regional development, Strategies of regional development with reference to India.
- To understand the need and measures for balanced development in India, Regional inequality, disparity and diversity.

##### **DC9: Economic Geography (Course as Discipline Core)**

- To get a clear view on Economic Geography, approaches of Economic Geography, concepts of goods, services, production, exchange and consumption.
- To build knowledge on the concept of economic man, theories of choices, Economic distance, transport costs, Transnational sea-routes, railways and highways with reference to India.
- To acquire knowledge on the economic activities, types, locational factors with special reference to Von Thunen model of agricultural location and industrial location theory by Weber.
- To understand the primary activities, secondary activities and tertiary activities with specific key studies of respective activities and to get knowledge on few specific important concepts including Special economic zones (SEZ) and technology parks (India), trade (e-commerce) etc.
- Detailed understanding of the Liberalization, privatization, globalization and Indian economy.

##### **DC10: Environmental Geography (Course as Discipline Core)**

- To know about the surrounding environment, importance of environmental study, the role of geographers etc.
- To understand the changing perception of environment in different stages of civilization
- To understand the concept, structure and functions of ecosystem.
- To get detailed knowledge on Environmental pollution and degradation in rural and urban areas, and their management.
- To know about the Environmental programmes and policies in Global, national and local levels.

##### **GE4: Economic Geography (Course for Generic Elective)**

- To make a holistic knowledge on economic activities and its various sectors.
- Detailed understanding on Resource, classification, conservation with special reference to Forest Resource, Agriculture, and Power resources.
- To know about the two major Industries in India including Iron and Steel and Cotton Textile.

## **SEM-V**

### **DC11: Soil & Bio Geography (Course as Discipline Core)**

#### **Part 1: Soil Geography**

- To get a detailed knowledge on soil, its classification, Factors of formation, Physical and chemical soil properties.
- Detailed knowledge on the Lateritic, Podzol and Chernozem soils.
- To get the scientific view on the factors and processes of Soil erosion, degradation and mitigation measures.

#### **Part 2: Bio-geography**

- To acquire detailed holistic view on the different approaches, components and characteristics and important terminologies of Biogeography.
- To know the scientific understanding on the energy flow in ecosystems, Bio-geochemical cycles.
- To understand the concept of biomes.
- To know about the causes, consequences of deforestation and management and discussion on Wetland.

### **DC12: Hydrology and Oceanography (Course as Discipline Core)**

#### **Part 1: Hydrology**

- Understanding the concepts regarding hydrology and Hydrological Cycles
- To get a scientific knowledge on Precipitation, Evaporation, Evapo-Transpiration, Infiltration, Rainfall Recharge Relationship and Runoff Characteristics.
- To learn about the flood Analysis of a drainage basin, Micro Watershed Planning, Water Management in Tropical Cities and Rainwater Harvesting.

#### **Part 2: Oceanography**

- To get knowledge about Origin, Characteristics of major Structural and Morphological features of Pacific, Atlantic and Indian Ocean.
- To build knowledge on coral reefs, atolls, and oceanic sediments.
- To get knowledge about the temperature and salinity characteristics of ocean water and marine resources.

### **DSE1: Remote Sensing and GIS (Discipline Specific Elective Course)**

#### **Part 1: Remote Sensing**

- To acquire knowledge on Remote Sensing (RS), RS satellites and sensors, resolutions and their applications with reference to IRS and Landsat missions, image referencing schemes and data acquisition, False Colour Composites.
- To get an overall view on LISS-3 and Landsat TM and OLI data.
- To know about the principles of image interpretation. Preparation of inventories of land use/land cover (LULC) features from satellite images.

#### **Part 2: Geographic Information System**

- To build knowledge on GIS including components, developments, functions and advantages, raster and vector data structure.
- To know about the principles of preparing attribute tables, data manipulation and overlay analysis.
- To get the scientific knowledge on GNSS/GPS.

#### **DSE1: Political Geography**

- To understand the nature and scope Political Geography
- To acquire knowledge on various important terminologies including State, Nation and Nation State, Frontiers and Boundaries, Enclave and exclave, Territory and Sovereignty and Emergence of new states
- To know about the Geopolitics and geopolitical theories.
- Understanding the geography of voting, geographic Influences on voting pattern.
- To know about the Conflicts of resources in National and international scale.
- To know about the Issues of relief, compensation and rehabilitation with reference to Dams of India.

#### **DSE2: Fluvial Geomorphology (Discipline Specific Elective Course)**

- To get a holistic view on Fluvial Geomorphology, Rivers as a hydro system, Models of channel initiation and network development.
- To know about the Flow measurement and characteristics assessment.
- Acquire knowledge on Fluvial processes and forms; tectonic and modification, interruptions and adjustment with altered state.
- To understand and develop the skill of applying Morphometric techniques including Stream ordering, bifurcation ratio, Sinuosity indices, Hypsometry.
- To know about the Consequences of Human interventions on fluvial systems, River bank erosion and river degeneration.
- Detailed understanding on the principles and significance of Integrated watershed management.

#### **DSE2: Social and Cultural Geography**

##### **Part 1: Social Geography**

- To know about the Nature and Scope of Social Geography and various important concepts, e.g., Space, Social differentiation and stratification, social processes.
- To understand the Social Categories including Caste, Class, Religion, Race and Gender and their Spatial distribution,
- Acquire knowledge on the social region formation, Evolution of social-cultural regions of India, Social groups, social behaviour and contemporary social issues with special reference to India.

##### **Part 2: Cultural Geography**

- To get a holistic view on Scope and content of Cultural Geography.
- To understand the Concepts of Cultural Hearth and Realm, Cultural diffusion, Cultural segregation, cultural Diversity.
- Acquire knowledge on Races and racial groups of the world, Cultural regions of India.

#### **SEC1: Geography of Tourism (Course for Skill Enhancement)**

- To understand the Concept, scope and nature of Geography of Tourism, types, Recreation and Leisure.
- To know about the factors influencing tourism, Spatial pattern of tourism, physical, economic and social impacts of tourism.
- To acquire knowledge about the environmental laws and tourism: current trends, spatial patterns, Recent Trends.
- To know about the Sustainable Tourism, Meeting Incentives Conventions and Exhibitions (MICE), Role of foreign capital and impact of globalization on tourism.
- Acquire knowledge on tourism infrastructure, regional dimensions of tourist attraction in India, National Tourism Policy.

### **SEM-VI**

#### **DC13: Disaster Management (Course as Discipline Core)**

- Acquire knowledge on hazards and disasters, classification and approaches to hazard study.
- To know about the Risk perception and vulnerability assessment and hazard paradigms
- To acquire knowledge on responses to hazards, Preparedness, Resilience and capacity building.

- To know about the factors, vulnerability, consequences and management of hydrologic disasters, Geologic disaster and Atmospheric disasters.

#### **DC14: Evolution of Geographical Thought (Course as Discipline Core)**

- To acquire a holistic knowledge on nature, scope and contents of Geography, Development of Geography and contributions of Greek, Roman and Indian geographers.
- To know about the Transition from Cosmography to Scientific Geography, Dualism and Dichotomies.
- Acquire knowledge about the evolution of geographical thoughts after pre-modern phase, contribution of German, French, British and America school of thought.
- Detailed understanding on Quantitative Revolution, behaviouralism, systems approach, radicalism, feminism in geography
- To understand the concept of hypothesis, theory, law and model, changing concept of space in geography and to get idea on Geography in the 21st Century.

#### **DSE3: Applied Geomorphology (Discipline Specific Elective Course)**

- To understand the concept of Anthropogenic Geomorphology.
- Acquire knowledge on human impact in a systems approach, Physical Systems, impacts of human activities on Geomorphology (processes and forms), Geomorphic impacts of human society.
- To know about the Anthropogenic landforms, Stages of Intensifying Human Impact on the Landscape, Formation of alien landscape over natural landscape and anthropogenic landscapes.
- To know about the Societal problems and benefits associated with rivers and modification of rivers; damming, water diversion for irrigation purposes, embankment effects and river linking
- Acquire knowledge on Geomorphic impacts on urbanization, resource concentration, resource mining and cropping practices.

#### **DSE3: Human Geography**

- To get a holistic idea on Nature, scope, approaches and recent trends of Human Geography, Evolution of humans, concept of race and ethnicity
- Detailed understanding on the Space, society and cultural regions, evolution of human societies-hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies.
- To know about the human adaptation to environment with reference to Eskimo, Masai, Jarwa, Gaddi, Santhals.
- To know about the Population–Resource regions.
- Detailed understanding the Human population and environment with special reference to development–environment conflict.

#### **DP4: Field Report**

- The field surveys enhance the understanding about patterns of spatial distributions regarding natural and human behavior, actions and responses, their associations and relationships in local level. It facilitates collection, documentation, analysis and presentation local level data to address the local issues.

#### **SEC2: Climate Change: Vulnerability and Adaptations (Course for Skill Enhancement)**

- To get an overview on scope and trends of subject, Understanding Climate Change with reference to the Geological
- Time Scale.

- Detailed understanding on the Evidences and factors of climate change, Green House Gases and Global Warming
- To know about the Electromagnetic spectrum, Atmospheric window, heat balance of the earth.
- Understanding the Economic and social impact of climate Change, impacts on Agriculture and Water; Flora and Fauna; Human Health and morbidity
- To know about the Global initiatives to climate change mitigation and important terminologies like Kyoto Protocol, Carbon trading, Clean development mechanism, COP, Climate fund
- Acquire knowledge on Climate change vulnerability assessment and adaptive strategies with particular reference to South Asia, IPCC reports, National Action Plan (of India) on Climate Change.