

GDC Memorial College

Bahal (Bhiwani) – 127028

Affiliated to Ch. Bansi Lal University, Bhiwani

NAAC Accredited Grade “B” (Second Cycle)

Recognized under Sections 2(f) & 12B of the UGC Act, 1956

Department of Geography

Name of Programme: M.Sc. Geography

Session: 2025-26

Programme Learning Outcomes (PLO)

PLO 1	Demonstrate advanced knowledge about Geography with a critical understanding of the emerging developments and issues relating to the learner’s domain area.
PLO 2	Demonstrate advanced knowledge and understanding of principles, methods, and techniques applicable to the chosen field of study.
PLO 3	Demonstrate the capacity to extrapolate the acquired knowledge and skills to real-life situations and apply acquired competencies in new/unfamiliar contexts.
PLO 4	Demonstrate the ability to apply the acquired conceptual, operational or technical knowledge and a range of cognitive and practical skills to identify and address problems related to the chosen field of learning.
PLO 5	Demonstrate the apply advanced knowledge relating to research methods to carryout research and investigations to formulate evidence- based solutions to complex and unpredictable problems in the field of Geography.
PLO 6	Demonstrate the ability to communicate, in a well-structured manner the findings/ results of the research studies undertaken in the field of Geography.
PLO 7	Pursue self-paced and self- directed learning to upgrade knowledge and skills, including research-related skills avoiding unethical practices.

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Programme Specific Outcomes (PSO)

- **Advanced Theoretical & Methodological Competence**
Students will gain in-depth understanding of theoretical frameworks and research methodologies in both physical and human geography, enabling them to critically engage with contemporary geographic issues.
- **Research & Analytical Skills**
Students will be able to design, execute and evaluate independent research projects, employing quantitative, qualitative, field-based and geospatial (GIS / Remote Sensing) tools.
- **Application to Real-World Problems**
Graduates will apply geographic knowledge to address local, regional, and global challenges, such as environmental degradation, climate change, urbanization, resource management, disaster risk reduction and planning.
- **Interdisciplinary Integration & Sustainability**
Students will appreciate the interconnections between natural processes, human societies, and the environment to propose sustainable solutions.
- **Communication, Ethics & Professional Skills**
Students will develop skills in scientific writing, oral presentations, data visualization, map interpretation, and adhere to ethical norms in research and reporting.
- **Global & Local Perspective**
Students will be aware of global geographic trends as well as local/regional geographic particularities, and will be able to compare, critique and contribute to policy and planning.
- **Use of Technology & Tools**
Proficiency in geospatial technologies like GIS, Remote Sensing, spatial modelling, cartographic and statistical tools for geographic data.

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Course Learning Outcomes (CLO)

Name of the Course: Principles of Geomorphology

Course Code: 25PG-GEO-101

CLO 1. Understand and explain the fundamental concepts and processes in geomorphology.

CLO 2. Analyse the evolution of landforms in relation to structure, process, and time.

CLO 3. Evaluate different geomorphic theories and apply them in interpreting landscapes.

CLO 4. Use topographic maps, field techniques, and GIS tools to identify and map landforms.

Name of the Course: Advance Climatology

Course Code: 25PG-GEO-102

CLO 1. Explain advanced atmospheric processes and global climate systems using theoretical and empirical perspectives.

CLO 2. Analyse spatial and temporal patterns of climate variability using climatological datasets.

CLO 3. Evaluate the science and evidence of climate change and its regional and global impacts.

CLO 4. Apply remote sensing, GIS, and statistical tools for climatic data analysis and visualization.

Name of the Course: Population and Development

Course Code: 25PG-GEO-103

CLO 1. Explain demographic theories, transitions, and spatial population structures in developed and developing regions.

CLO 2. Analyze the relationships between population growth, human development, resources, and environmental sustainability.

CLO 3. Evaluate contemporary population issues such as migration, ageing, urbanization, and gender disparities.

CLO 4. Apply demographic data, GIS tools, and statistical techniques to population mapping and regional analysis.

Name of the Course: Statistical Methods in Geography

Course Code: 25PG-GEO-104

CLO 1. Explain the fundamental concepts of statistical analysis and demonstrate their relevance and applications in geographical research and spatial data interpretation.

CLO 2. Apply appropriate statistical methods, including correlation, regression, and hypothesis testing, to analyze spatial and non-spatial geographical data.

CLO 3. Evaluate and interpret complex geographical phenomena using multivariate and spatial statistical techniques, supporting evidence-based geographic inquiry.

CLO 4. Utilize advanced analytical tools and software such as QGIS, ArcGIS, SPSS, and R to visualize, analyze, and represent geographical data effectively.

Name of the Course: Digital Cartography & Morphometric Analysis (Practical)

Course Code: 25PG-GEO-105

CLO 1. Develop proficiency in digital mapping using GIS tools and cartographic principles.

CLO 2. Analyse terrain features using morphometric techniques with spatial datasets.

CLO 3. Apply GIS-based tools and DEMs to interpret surface processes and watershed dynamics.

CLO 4. Design high-quality cartographic outputs and quantitative morphometric reports.

Name of the Course: Principles and Practices of Disaster Risk Reduction

Course Code: 25PG-GEO-108

CLO 1. Understand theoretical foundations, terminologies, and paradigms in disaster risk reduction (DRR).

CLO 2. Critically examine natural and anthropogenic disasters and their spatial dimensions.

CLO 3. Apply geographic methods and geospatial technologies for hazard mapping and vulnerability assessment.

CLO 4. Evaluate disaster mitigation, preparedness, and policy frameworks with a focus on the Sendai Framework and SDGs.

Name of the Course: Oceanography

Course Code: 25PG-GEO-201

CLO 1. Describe the origin, structure, and relief features of ocean basins and explain the physical and chemical properties of seawater.

CLO 2. Analyse oceanic processes such as waves, tides, currents, and ocean–atmosphere interactions influencing climate and monsoon systems.

CLO 3. Evaluate marine ecosystems, resources, and environmental challenges with special reference to the Indian Ocean and Indian coastal regions.

CLO 4. Interpret oceanographic data, charts, and geospatial outputs to analyze marine processes, resources, and coastal hazards in India.

Name of the Course: Theories and Models in Human Geography

Course Code: 25PG-GEO-202

CLO 1. Understand the philosophical foundations, evolution, and major theoretical perspectives in Human Geography.

CLO 2. Critically evaluate key spatial, economic, social, and behavioural models used in human geographical analysis.

CLO 3. Apply theories and models to interpret patterns of population, settlements, economic activities, and regional development.

CLO 4. Use quantitative, cartographic, and geospatial techniques to apply and test human geography models with Indian examples.

Name of the Course: Regional Geography of India

Course Code: 25PG-GEO-203

CLO 1. Understand the physical, cultural, and economic diversity of India using a regional framework.

CLO 2. Analyze the interrelationships between physical environment, resources, population, and economic activities across Indian regions.

CLO 3. Critically evaluate regional disparities, development issues, and planning regions in India.

CLO 4. Apply regional analysis techniques using maps, statistical data, and geospatial tools to interpret Indian regions.

Name of the Course: Remote Sensing & GIS (Theory)

Course Code: 25PG-GEO-204

CLO 1. Understand the principles, platforms, sensors, and data characteristics of remote sensing systems.

CLO 2. Understand the concepts, data structures, and analytical techniques of Geographic Information Systems.

CLO 3. Analyze spatial data using digital image processing and GIS-based analytical methods.

CLO 4. Apply Remote Sensing and GIS techniques for resource assessment, environmental analysis, and regional planning.

Name of the Course: Remote Sensing & GIS (Practical)

Course Code: 25PG-GEO-205

CLO 1. Handle and preprocess satellite data using standard remote sensing software.

CLO2. Perform visual and digital image interpretation for thematic mapping.

CLO 3. Create, manage, and analyze spatial databases using GIS tools.

CLO 4. Integrate Remote Sensing and GIS techniques for applied geographical problem-solving.

Name of the Course: Political Geography and Geopolitics

Course Code: 25PG-GEO-207

CLO 1. Understand the concepts, scope, and evolution of Political Geography and Geopolitics.

CLO 2. Analyse the spatial dimensions of state, territory, boundaries, power, and political processes.

CLO 3. Critically evaluate classical and contemporary geopolitical theories in a global and Indian context.

CLO 4. Apply cartographic, spatial, and analytical techniques to interpret geopolitical patterns, conflicts, and strategic regions.

Name of the Course: Sacred Geography

Course Code: 25PG-GEO-212

CLO 1. Explain the concept, philosophy, and significance of sacred geography in Indian Knowledge Systems.

CLO 2. Interpret sacred landscapes, rivers, mountains, and pilgrimage networks as cultural-spiritual spaces.

CLO 3. Analyse the role of sacred geography in environmental ethics, sustainability, and cultural continuity.

CLO 4. Understand India's sacred spatial traditions as living heritage contributing to national identity and well-being.