

GEOGRAPHY HONOURS/MAJOR (NEP)

GRADUATE ATTRIBUTES IN GEOGRAPHY

Some of the Graduate attributes of a graduate in Geography are: -

Disciplinary knowledge base-

- **Comprehensive Understanding of Geography:**
 - Develop in-depth knowledge of physical, human, and regional geography.
 - Grasp concepts of geospatial sciences, climatology, geomorphology, biogeography, and urban planning.
- **Interdisciplinary Awareness:**
 - Recognize the interconnectedness between geography, environmental science, economics, sociology, and technology.

Acquiring sound knowledge to understand the major concepts, theoretical principles and practical applicability in core Geography and its different sub -fields like Geomorphology, Climatology and climate change, changing perspectives of Human Geography, Pedology, Ecology and Bio- geography, Environmental geography, etc.

Skilled Interpreter- Ability to explain complex geographical information in a clear and concise manner in writing as well as ability to express complicated concepts in a simple language for better understanding of the subject.

Critical Observer and Analyzer - Ability to observe, understand and analyse geographical phenomena critically.

• Critical Thinking:

- Analyse complex geographical phenomena and global challenges, such as climate change, urbanization, and resource management.
- **Data Analysis:**
 - Apply quantitative, qualitative, and statistical methods to interpret spatial and temporal data.

Attitude of Investigation - Ability to ask relevant questions relating to the geographical issues and problems so that the problem area may be developed properly.

Efficient Planner-Capable of formulating proper regional plans on the basis of resource inventory to solve the problem in question with appropriate planning, implementation and regular monitoring.

Practical and Technical Proficiency-

- **Geospatial Skills:**

- Proficient in GIS (Geographic Information Systems), remote sensing, and cartographic techniques.

- **Fieldwork Competence:**

- Conduct surveys, collect data using scientific methods, and prepare comprehensive reports.

- **Use of Technology:**

- Employ software tools and digital platforms for mapping, data visualization, and spatial analysis.

Team activity- Capable of working efficiently in diverse teams in classroom as well as field-based situations.

Trained Professional – Ability to deal with problems related with changing climatic scenario as well as hazard and disaster management as a skilled professional.

Expert Field investigator- Capable of conducting the Field work, the key activity of Geography by collecting proper primary data to understand and resolve the actual problem for the overall development of the area.

Digitally efficient – Capable of using computers for GIS and GNSS studies as well as developing ability to utilize appropriate numerical and statistical methods related to Geography.

Ethical awareness - Development of demonstrating ability to think and analyse rationally with modern and scientific outlook and identify ethical issues to avoid unethical practices like falsification, committing plagiarism etc. Promote sustainable practices and conservation of natural resources.

Lifelong learners- Capable of self- paced and self- directed learning for personal development as well as to improve skill and knowledge leading to reskilling in all spheres of geography.

National and International perspective — The graduates should prepare themselves during their most formative years for their appropriate role to contribute towards the national development by reducing regional disparities as well as to highlight our national priorities internationally pertaining to their field of interest and future proficiency.

Nature is the Laboratory of Geography- Ability to relate with the nature as well as with the environment appropriately for the essential issue of maintaining nature- human co-existence following the measures of Sustainable development oriented towards nurturing the balance of ecology and biosphere.

Maintenance of sustainability- Ability to apply the measures of sustainability in all spheres of life with genuine dedication.

Career Preparedness-

- Equipped for roles such as urban planners, environmental consultants, GIS analysts, disaster managers, educators, or researchers.
- Develop transferable skills for non-geographical fields such as policy-making, business analysis, and international relations.

PROGRAM LEARNING OUTCOMES (POs) IN B.SC. (HONOURS) GEOGRAPHY (NEP)

The graduate students with the Degree of B. A/B.Sc. (Honours) in Geography should be able to: -

- Acquiring a structured understanding of the academic field of Geography.
- Linkages with related disciplines and various types of related professional fields.
- Application of geographical concepts in most recent and emerging developments.
- Demonstrate the systematic geographical knowledge towards current problems along with their solutions.
- Design and conduct geographic research projects, integrating qualitative and quantitative methods.
- Specific skills in Map making to analyse various problems on the space.
- Collect, analyse and interpret spatial data using geospatial technologies such as GIS, remote sensing, and cartography.
- Ability to evaluate critically the spatial aspects in all levels on different time scales.
- Career oriented skill development.
- Application of acquired knowledge in daily life focusing the changing scenario.
- Communication skill towards utilizing acquired knowledge both theoretically and practically.
- Developing analytical skill to evaluate geographical problems.
- Appropriate skill in the proper application of most recent geographical research tools.
- Pertinent skill in the identification and explanation of physico- cultural characteristics and processes.
- Understanding man-environment and nature-society interactions along with global environmental challenges.

- Responding to the global and national challenges.
- Utilization of Field experience-based knowledge towards recent real world geographical problems such as urbanization, disaster management and resource depletion.
- Communicate geographical knowledge through reports, essays, research papers, oral presentations and discussions. Adapt communication styles to academic, professional and public audiences.
- Respect cultural diversity and foster inclusive practices in research and planning.
- Prepared to contribute to public policy, sustainable development, and community-based initiatives.
- Equipped for roles in urban planning, environmental consultancy, GIS analysis, disaster management, teaching, and research.

Programme Outcomes (POs) in Geography (Major):

PO 1: Basic concept

PO 2: Linkage with other disciplines

PO 3: Application of geographical concepts

PO 4: Problem identification and solution making approach

PO 5: Map making skill

PO 6: Critical Evaluation

PO 7: Skill Development

PO 8: Applied dimension

PO 9: Communication skills

PO 10: Analytical Skill

PO 11: Use of research tools

PO 12: Identification of geographical characteristic and processes

PO 13: Understanding man-environment relation

PO 14: Application of geo-spatial technologies

PO 15: Response to challenges

PO 16: Field based knowledge

Course Outcomes (COs)

Discipline-specific Course: Honours (H – CC)

CC1: PHYSICAL GEOGRAPHY

(Credits: 04; Theory-03, Practical: 01)

Course Learning Outcome (CLOs):

The students will acquire knowledge about-

CO 1: Develop a thorough understanding of scales and projections and their applications.

Learn the components and classification of maps, enabling effective map reading and analysis.

CO 2: Gain insights into seismic waves and the earth's internal structure, fostering a deeper comprehension of tectonic activity.

CO 3: Understand the classification of weathering processes and their role in shaping the earth's surface. Analyse fluvial processes and landforms to interpret landscape evolution.

CO 4: Explore the nature, composition, and structure of the atmosphere. Comprehend atmospheric circulation, including planetary winds, jet streams, and the index cycle, to understand global climatic systems.

CO 5: Study the factors influencing soil formation and the development of an ideal soil profile, contributing to knowledge in agriculture and ecology.

CO 6: Investigate how plant adaptation and distribution are linked to water availability, aiding in understanding ecological sustainability.

CO 7: Recognize the nature, classification, and management of hazards and disasters, with a focus on the Indian context, to support disaster preparedness and mitigation.

CO 8: In the Laboratory course students learn first-hand-

- i) Graphical Construction of different types of scale

- ii) Delineation of drainage basins on Survey of India 1:50000 topographical map to determine Stream Ordering and Bifurcation Ratio
- iii) Identification of drainage and channel patterns from Survey of India :50000 topographical maps.
- iv) Construction and Interpretation of wind rose diagram.

Course Outcomes (COs)

Skill Enhancement Course (SEC)

GEOH-SEC-01: METHODS IN GEOGRAPHY

(Credits:04)

Course Learning Outcome (CLOs):

After completion of the course, the students will have ability to: -

CO 1: Gain the ability to design primary surveys addressing diverse research problems. Understand the relevance and role of pilot surveys in research planning.

CO 2: Learn various sampling types and strategies applicable to geographical research problems. Data compilation into master table with special regard to computer assisted field data entry as well as data tabulation into frequency distribution tables coupled with cognizance about statistical analysis of data focusing measures of central tendency and dispersion.

CO 3: Acquire skills to prepare structured questionnaires and interview schedules for field research. Use minor survey instruments like Brunton Compass, Distometer and Smartphone levelling applications with accurate skill and will also be able to analyse the texture of grains by using sieves following proper process.

CO 4: Develop the capability to organize field data into master tables for analysis. Collect skill to prepare maps and extract flooded areas from satellite images and digital elevation models.

CO 5: Master the use of computer tools for data entry and tabulation into frequency distribution tables. Secure comprehensible knowledge with special reference to methods of preparing maps about areal and linear extents of river bank and coastline shift from Survey of India 1:50,000 topographical map.

CO 6: Understand and apply statistical methods, such as measures of central tendency and dispersion, to analyse field data.

CO 7: Learn the use of minor survey instruments such as the Brunton compass, distometer, and smartphone levelling applications.

CO 8: Gain expertise in the textural analysis of grains using sieves for physical geography research.

CO 9: Develop skills to map and extract flooded areas using satellite images and digital elevation models (DEMs).

CO 10: Learn to map areal and linear extents of riverbanks and coastlines using topographical maps and satellite images.

CO 11: Understand and analyse dominant and distinctive functions in human geography.

CO 12: Learn to create and interpret ternary diagrams for occupational patterns (e.g., after Ashok Mitra's model).

CO 13: Develop skills in creating accessibility maps to evaluate transport and location dynamics.

CO 14: Gain the ability to prepare flowcharts using transportation data for analysis and presentation.

Overall Outcomes:

- Equip students with practical and analytical skills for fieldwork in physical and human geography.
- Foster proficiency in data collection, organization, and statistical analysis.
- Enable application of geospatial tools and techniques for environmental and societal studies.
- Develop interdisciplinary skills to analyse and present geographical data effectively.

Course Outcomes (COs)

CC 2- Human Geography

(Credits:03)

This course explores the nature, scope, and schools of thought in human geography, examining the evolution of societies, human-environment interactions, and settlement patterns. It covers population dynamics, including demographic transitions and the demographic dividend, with a focus on India's distribution and growth. Students gain insights into rural and urban settlements and post-industrial urban societies.

Course Outcomes (COs)

CC 2- Human Geography Lab

(Credits:01)

This course develops skills in analyzing population growth, representing population density using choropleth maps, identifying settlement types from topographical maps, and constructing proportional diagrams for spatial data visualization. It fosters practical understanding of human geography and cartographic techniques.

Course Outcomes (COs)

CC 3- Geotectonics

(Credits:03)

This course provides a comprehensive understanding of geotectonic processes, including the formation, structure, and differentiation of the Earth. It covers concepts like relative and absolute dating, isostasy models, plate tectonics, and the genetic classification of mountains and volcanic activity. Students will analyze oceanic relief features, tectonic landforms, and morphometric indices to assess tectonic activity, with a focus on geological events like those of the Pleistocene epoch.

Course Outcomes (COs)

CC 3- Geotectonics Lab

(Credits:01)

This course equips students with practical skills in geological analysis, including measuring dip and strike, identifying minerals and rocks, and interpreting geological maps. It also introduces techniques for analyzing tectonic activity using topographical maps and morphometric indices.

Course Outcomes (COs)

CC 4- Economic Geography

(Credits:03)

This course provides an in-depth understanding of economic geography, focusing on its scope, concepts, and approaches. Students will explore the classification and location of economic activities across primary, secondary, tertiary, quaternary, and quinary sectors. It examines agricultural and industrial location theories, globalization, international trade, and the role of WTO. The course also analyzes the emergence of economic blocs like BRICS and their significance in the global economy.

Course Outcomes (COs)

CC 4- Economic Geography Lab

(Credits:01)

This course develops skills in constructing and interpreting visual representations of economic data, such as gender-wise work participation rates, occupational structures, and crop calendars. Students also learn time series analysis techniques for evaluating industrial production trends in India.

Course Outcomes (COs)

SEC EIA EMP

(Credits:04)

This course provides a thorough understanding of Environmental Impact Assessment (EIA) and Environmental Management Planning (EMP), including their definitions, scope, and methodologies. Students will learn the legal and policy framework for environmental management, stages of EIA, stakeholder participation, and strategies for mitigation and monitoring. Practical case studies on metro rail and highway projects enhance the ability to analyze and implement EIA/EMP processes effectively, promoting sustainable development practices.