

Department of Geography

Bhairab Ganguly College

Course Outcomes – P.G. Geography

- Systematic, extensive and coherent knowledge and understanding of geoscience as a whole and its applications and links to disciplinary areas of the study; including critical understanding of the established theories, principles and concepts of a number of advanced and emerging issues in the field of geography.
- Procedural knowledge that creates different types of professionals in the field of Geography like in research and development, teaching government and public services e.g., geomorphologist, hydrologist, environmental geographer, biogeographer, pedologist, cultural geographer, economic geographer, historical geographer, population geographer, political geographer, settlement geographer, health geographer.
- Developing skills and ability to use knowledge efficiently in areas related to specializations and current updates in Geography.
- Knowledge about current research, scholarly and professional literature of advanced learning areas of geography.
- Application of knowledge for understanding and developing skills for critical assessment of wide range of ideas and problems in the field of geography.
- Communication of the results of studies in the academic field of geography using main concepts, constructs and techniques.
- Application of knowledge and understanding of geography to new/unfamiliar contexts and to identify problems and solutions in daily life.

SEMESTER - I

GEOPCOR01T: GEOTECTONICS AND GEOMORPHOLOGY

- Making the students' aware about the basic concepts of Geomorphology with background knowledge of geology and environmental sciences.
- Understanding crustal mobility and tectonics; with special emphasis on their role in landform development. Establishing the relationships between landforms, processes and underlying structure CO 4 – Overview and critical appraisal of landform development models
- Exploring how landforms and geomorphic processes vary under different climatic regimes.
- Students will be introduced to geomorphic features that are not found on Earth. As geomorphologists they will know how to use landforms on Earth to understand those on other solar system bodies.
- Develop understanding of fluvial and other geomorphic processes together with emphasis upon the applied aspect of Geomorphology and hazard management.

GEOPCOR02T: SOIL AND PLANT GEOGRAPHY

- To familiarize the students with the basic and fundamental concepts of soil geography

and discuss the processes of soil formation.

- Students will know the concept, causes and controlling factors of soil erosion, soil degradation and conservation of soils
- Students should know the concept, need and methods soil of management
- To introduce the concept of Phytogeography
- Assess the adaptation of plants in relation to light, temperature, water, wind and fire.
- To provide thorough knowledge about the conditions of plant growth
- Students will be able to understand adaptation, development and behaviour of different plant groups.
- Evaluate energy sources of ecological system

GEOPCOR03T: POPULATION AND WELFARE GEOGRAPHY

- Objective of the course is to make the students aware about the basic concepts and theories of human population and their development.
- To give a proper and efficient insight of population and welfare.
- Address the geographical dimensions of inequality through the Constitutional imperatives

GEOPCOR04T: GEOGRAPHY OF ECONOMIC ACTIVITIES

- The objectives of this course are to integrate the various factors of economic development and acquaint the students about the dynamic aspects of Economic Geography.
- To familiarise the students with the concept, origin, and development of agriculture to analyze its' relation with geography.
- To examine the role of agricultural determinants towards changing cropping patterns, intensity, productivity, diversification and specialisation.
- To familiarise students to understand the location of major manufacturing activities with the support of various industrial location theories and models.
- The changing industrial scenario and its impact on the Indian economy along with the economics of global trade.

GEOPCOR05P: STATISTICAL TECHNIQUES AND COMPUTER APPLICATION

- Using statistical techniques in order to summarise, represent, analyse and interpret data.
- Introduce basic statistical procedures and train the students to apply these procedures towards analysing the geographical problems.
- The course also aims to provide training in application of computers in analysis and synthesis of a variety of quantitative data.

GEOPAEC01M: COMMUNICATION SKILLS

- Communication skills of the students will be enhanced.
- To understand the skills of communication as an essential part of research and development.
- To increase the grammatical and vocabulary skills of students.
- To develop a scientific approach towards the learning process.

SEMESTER - II

GEOPCOR06T: HYDROLOGY AND OCEANOGRAPHY

- Understanding the various components of global hydrological cycle, their variations and impact on the biotic world.
- Introducing students to the different catchment processes, storage and distribution of fresh water resources and highlighting the significance of groundwater circulation and quality.
- Emphasizing various techniques and approaches towards sustainable utilization of water resources and also realizing the essentiality of rainwater harvesting.
- Students are introduced to the fundamental properties of ocean water, the linkage between atmosphere and ocean and their dynamics.
- Developing a knowhow about ocean basin morphology, variation in marine sediments and understanding the significant threat on the coral islands.
- Notifying the students about important national and international laws that are governing the coastal areas and territorial seas.
- Therefore providing an exposure to get engaged into various practices regarding monitoring, managing and preserving domestic as well as natural water resources.

GEOPCOR07T: SYNOPTIC AND APPLIED CLIMATOLOGY

- Developing a holistic knowledge about Earth's atmospheric dynamics and variation of global climatic system.
- Introducing students to tropical climatic phenomenon, monsoon mechanism and different weather disturbances.
- Comprehending the concept of climate change, its trend and impact and assessing the role of man as an active agent of climate change.
- Various branches of Applied Climatology provide significant idea about man-climate relationship, pollution and urban heat island.
- Students are exposed to various approaches and techniques of weather forecasting practiced in India.
- Developing a capability to analyze map, data, charts, reports and photographs in order to predict weather pattern.

GEOPCOR08T: HUMAN CULTURE AND SOCIETY:

- Comprehensive understanding of the concept of Cultural Geography and the prevalent socio-cultural relations with changing human adaptations.
- Students are informed about the several elements of Indian society and their various aspects and transformations.
- Identifying the disadvantageous communities and their problems, also understanding the notion of social justice.
- Assessing the changing paradigm of environment-culture-technology relation.
- Understanding different social problems and solutions to them with disseminate knowledge of social planning.

GEOPCOR09T: INDIA: RESOURCE APPRAISAL AND MANAGEMENT

- Students are provided an insight to the diversity of regions in India, their delineation and integration.
- Understanding the concept of natural resource, their management, conservation and sustainable utilization.
- Analyzing population endowment, disparity in human development, various problems associated with urban dwellers.
- Students develop an outlook on the different development issues and policies designed to solve them.
- Acquire knowledge about geography of West Bengal so that the students are aware the problems and prospects of the state.

GEOPCOR10P: MAP INTERPRETATION AND MAPPING TECHNIQUES

- A clear concept of different types of map projection, their properties, limitations and applicability is provided to the students.
- Developing an understanding of geological and topographical maps, thereby identifying and interpreting various attributes.
- Students are skilled to perform drainage basin morphometric analysis and mapping of cultural attributes.
- Emphasizing different methods of analyzing socio-economic data in order to map spatial pattern and inequalities.

GEOPSEC01M: INTRODUCTION TO COMPUTER PROGRAMMING

- Students are introduced to computer hardware and software system, also an insight to logic, algorithm and methods of programming is provided.
- Developing basic programming skills using the Python programming language.
- Python helps to reduce software development cost by applying those skills to solve various problems related to quantitative geography. As it is supported by many operating systems it is suitable for creating prototype of the software applications.
- The course provides hands-on with Python whereby students perform plotting of data with Python using Matplotlib and Plotly.

SEMESTER - III

GEOPCOR11T: PHILOSOPHIES OF GEOGRAPHY AND GEOPOLITICS

- Develop an idea about evolution of geographical thinking and disciplinary trends in different parts of the world.
- Build an idea about the dichotomous nature of Geography.
- Establishing relationship of Geography with other disciplines and man-

environment relationships

- Analysing modern and contemporary philosophies of Post-colonialism, Post-structuralism, Modernism and Post-modernism in Geography
- Main objective of the course on Geopolitics is to provide insight into the complex relationship between geographical factors that have a strong bearing on the political scenario at global, regional and local level.
- To sensitise the students to geopolitical understanding of conflicts and regional cooperation with respect to borders.

GEOPCOR12T: MULTIVARIATE STATISTICS IN GEOGRAPHY

- Students should have the understanding of basic concepts associated with matrix algebra, multivariate normal distributions and their properties with special emphasis on bivariate normal distribution.
- To develop the capability of analysing multivariate data using techniques like Principal Component Analysis, Factor Analysis.
- Familiarising students to Classification and Clustering methods.

GEOPDSE01T: FLUVIAL PROCESSES AND MANAGEMENT

- The rivers being the major geomorphic agent of erosion, the course assumes significance as it mainly deals with an understanding of the fluvial system.
- The students will understand the driving flow of water.
- The students are introduced to the forces resisting and driving the flow of water which has its resultant effect on the flow patterns and sediment load.
- The course also emphasises on anthropogenic disturbance of channel, floodplain and the various management options.
- The impacts of dams, river training structures are also dealt with.
- The students will be familiarised with the various Management Action Plans adopted in India for river restoration and management.
- The course also highlights the necessity of watershed management and the application of geomorphological knowledge in environmental management.

GEOPDSE01T: RURAL INSTITUTIONAL MANAGEMENT AND DEVELOPMENT IN INDIA

- The course intends to focus on Rural Institutional Management and Development in India at the micro-regional level.
- Evolution of decentralisation process has led to Community Development Programmes and the Institutional set-up of the Panchayati Raj Institutions.
- The students will be aware of the various facets of rural development through the various approaches to rural development, rural reconstruction and the changing rurality as a consequence.
- The conceptual background and its sound knowledge will guide them in seeking employment in several of the schemes launched by the government and implemented by it along with the NGOs. This is an added advantage as most of the students are from the rural background

GEOPCOR13P: REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM

- The objective of the course is to introduce to the students the basic principles of remote sensing and the methods of digital interpretations of satellite images.
- The course provides hands-on-training on the basic elements of GIS and its areas of application.
- Geospatial analysis is a growing field of employment. The role includes analysis of data, design and use of this database.
- The work of a geospatial analyst varies greatly depending on which sector the student wants to work

GEOPCOR14P: GROUND SURVEY AND FIELD METHODS

- Main objective of field method is to provide the students the understanding of ground reality; mapping of land use and to enhance the skill of the students during field survey.
- On completion of this course students shall be able to understand the advantages of electronic surveying over conventional surveying methods.
- Students completing this course would have acquired practical knowledge on handling survey instruments like Theodolite and Total station and have adequate knowledge to carryout Triangulation surveying including general field marking for various projects.
- The course aims to give hands-on-training in preparation of maps with application of GPS.
- The students should be able to take decisions regarding what measurements to take, and which instruments to use.
- The skill to carry out surveying with Theodolites and Total Station will make the students eligible for securing jobs as surveyors in various Government and Non-government organization.

GEOPGEC01M: GEOSPATIAL ANALYSIS

- Comprehend fundamental concepts and practices of Geographic Information Systems (GIS) and advances in Geospatial Information Science and Technology.
- Apply basic graphic and data visualization concepts, demonstrate skills in file and database management. – Give examples of interdisciplinary applications of Geospatial Analysis.
- Apply GIS analysis to address geospatial problems and/or research questions.
- Demonstrate proficiency in the use of maps, satellite images and GIS tools to create maps that effectively convey the information they are intended to.

SEMESTER - IV

GEOPCOR15T: ENVIRONMENTAL GEOGRAPHY AND SUSTAINABLE URBAN DEVELOPMENT

- Developing an insight about the concept of environment, its diversity and homeostatic mechanism to attain stability.
- Understanding contemporary environmental problems, degradation and various scientific, technological, economic and political solutions to resolve them.
- Emphasizing pollution control and solid waste management and the necessity of resource conservation to sustain ecological balance.
- Students are made aware of various protests, movements and policies to do away with the implications of human-induced social and ecological changes.
- Understanding India's urban environment and thereby highlighting the necessity for sustainable urbanization.
- Students learn about the different national level policies of urban development and the failure and success stories of practices in socio-economic, political and environmental sustainability.
- Students thus find career opportunities as a sustainability consultant in government agencies and private sector organizations.

GEOPDSE02T: COASTAL PROCESSES AND MANAGEMENT

- Understanding coastal morpho - dynamicity, its significance as an ecological unit and various risks associated with coastal environment with suitable management approaches.
- Introducing students to the significance of mangrove vegetation in coastal areas and the constant threat to them which should be managed.
- Emphasizing estuarine morphology and hydrodynamics and impact and management of various human alterations.
- Students get an insight of wind generated wave mechanism and coastal processes and various engineering structures used for protection against coastal erosion.
- Understanding of coastal resources management, legislation, zoning and regulations.
- Students can find career opportunities as environmental consultant in consulting firms and government ministries.

GEOPDSE02T: RURAL RESOURCE ECONOMICS AND DEVELOPMENT IN INDIA

- Understanding the role of rural resources and focusing on various sustainable development policies on primary, secondary economy and tertiary services in rural sections.
- Highlighting the indigenous knowledge of village people regarding various economic activities in order to bring about sustainable resource management through community participation.
- Emphasizing the need to generate livelihoods in the rural areas itself, making use of the present resources so that people do not migrate to the urban counter parts.
- Students are informed about the local experiences that shape the local craft and other industrial products and the significance of age old marketing traditions.
- Understanding the value of rural tourism in India and its impact on the rural economy, as once tourists are attracted, local initiative along with governmental support can ensure further enhancement of facilities and activities like development of social welfare.

GEOPDSE03T: MANAGEMENT OF NATURAL AND MAN-MADE HAZARDS

- This course introduces to various natural and anthropogenic hazards and disasters and their management techniques and mitigation strategies.

- Students assess problems of soil erosion and degradation and their impact on productivity and economy thereby understanding the management practices to do away with the problems.
- Developing an idea of lateritic badland formation and measures to revive rills and gullies and other minor landforms of badland topography.
- Understanding groundwater system, water table fluctuations and deterioration in its quality which requires monitoring and managing.
- Students are made aware of urban geomorphic issues that are gaining relevance in sustainable hazard management strategies.
- Emphasizing crisis management through planning, assessment, vulnerability analysis and preparedness with various case studies.

GEOPDSE03T: RURAL CULTURE AND HERITAGE AND DEVELOPMENT

- Generating moral values in students regarding religious facets and practices, community customs and rituals, folk culture and heritage that have sustained India's peace and development.
- Understanding the heritage and skill of rural India through different level of integration like art of terracotta, mask making, handloom, boat making etc.
- Learning about the welfare measures undertaken by the state government to empower the artisan community.
- Highlighting the importance rural tourism as a tool capable to boost local economy, community mobilization, conservation and sustainable renewal of rural resources.
- Students are also aware of the various problems that arise when disaster hits tourist area and its impact on the local community.
- The course includes case studies of different tourist spots from West Bengal in order to understand the tourism policies and planning.

GEOPDSE04P: PRACTICAL ON APPLIED GEOMORPHOLOGY

- Students are trained to quantify and interpret fluvial forms and processes using different techniques.
- Developing knowledge on water and sediment analysis methods as indicators of geomorphic processes.
- Providing hands-on training on monitoring, identification, quantification and interpretation of coastal forms and processes.
- Emphasis on field data collection will train the students to correlate their textual knowledge with real life scenario and identify the problem areas and their suitable management procedure.

GEOPDSE04P: PRACTICAL ON REGIONAL PLANNING AND RURAL DEVELOPMENT

- Students learn about various rural research methods, research design, techniques to collect primary and secondary data, and ways to organize process and analyze that data.
- In-depth discussion on research ethics, various stages and phases of research, different field research related issues.
- Developing students' perception through field based studies of rural communities and natural resource management and disaster resilience, rural marketing.
- Students are skilled in various data analysis techniques as a means to formulate rural development planning.
- The course outcome is very promising as students can help in formulating rural plans required for Regional Planning and rural development as little focus is on this sphere in our country.

GEOPDSE05M: PROJECT BASED ON APPLIED GEOMORPHOLOGY

GEOPDSE05M: PROJECT BASED ON REGIONAL PLANNING AND RURAL DEVELOPMENT

- The project on optional paper (A or B) will be based any contemporary problem or issue.
- Students will apply different techniques to collect primary data from field and analyze and discuss them.

