

COURSE & PROGRAM OUTCOMES OF GEOGRAPHY HONOURS (B.A. & B.SC.) UNDER CBCS and NEP*

Geography provides us with a comprehensive understanding of the world we live in. It is the study that involves the knowledge of the natural environment, the human population, and the relationship between the two. Geographers use various tools and techniques to explore different aspects of the Earth's surface, including maps, aerial photographs, and satellite imagery. Geography has been an important field of study since ancient times when early civilizations used geography to navigate the world, trade goods, and establish political boundaries.

Geography focuses on the examination of the earth's surface, encompassing the spatial analysis of physical, biological, and human occurrences on the planet. The subject matter of geography includes three types of areas on the earth's surface: the lithosphere, the atmosphere, and the hydrosphere. Based on the types of elements or phenomena and areas covered in geographical studies, the scope of geography is categorized as follows.

- 1. The Study of Physical Phenomena**
- 2. The Study of Biological Phenomena**
- 3. The Study of Human Phenomena**

The subject Geography seeks to answer the questions of why things are as they are and where they are. The modern academic discipline of geography is embedded in ancient practice, concerned with the characteristics of places, in particular their natural environments and peoples, as well as the relations between the two.

Choice Based Credit System (CBCS): Syllabus in Geography since 2018-2019 academic session

In compliance with recent directives from the University Grants Commission, the undergraduate syllabus for Geography is reframed by the Undergraduate Board of Studies of University of Calcutta into Choice Based Credit System largely following the model syllabus prepared by the West Bengal State Council of Higher Education. As an affiliated College under University of Calcutta, the college has also adopted the reframed prescribed syllabus of CBCS (Choice Based Credit System) curriculum at UG level for the subject since 2018-2019.

INTRODUCTION:

The main objective of this new curriculum is to give the students a holistic understanding of the subject, putting equal weightage to the core content and techniques used in Geography. The syllabus has tried to provide equal emphasis to the two main branches of Geography: Physical and Human.

The principal goal of the CBCS syllabus is to enable the students to secure a proper placement at the end of the undergraduate programme. Keeping this in mind and in tune with the changing nature of Geography, adequate emphasis is rendered on applied aspects of the subject such as emerging techniques of mapping and field-based data generation, especially in the honours course. The syllabus emphasis on development of basic skills of the subject, so that everyone need not go for higher studies in search of professional engagement or employment.

- NEP Course Outcome Provided Upto Semester III

LEARNING OUTCOMES: The CBCS syllabus is designed to impart basic knowledge on Geography as a spatial science and train the undergraduates to secure employment in the sectors of geospatial analysis, development and planning, mapping and surveying (Cartography).

Honours Course: Core Subjects

GEO-A-CC-1-01-TH/P – Geotectonic and Geomorphology
GEO-A-CC-1-02-TH/P – Cartographic Techniques
GEO-A-CC-2-03-TH/P – Human Geography
GEO-A-CC-2-04-TH/P – Cartograms, Thematic Mapping and Surveying
GEO-A-CC-3-05-TH/P – Climatology
GEO-A-CC-3-06-TH/P – Hydrology and Oceanography
GEO-A-CC-3-07-TH/P – Statistical Methods in Geography
GEO-A-CC-4-08-TH/P – Economic Geography
GEO-A-CC-4-09-TH/P – Regional Planning and Development
GEO-A-CC-4-10-TH/P – Soil and Biogeography
GEO-A-CC-5-11-TH/P – Research Methodology and Fieldwork
GEO-A-CC-5-12-TH/P – Remote Sensing, GIS and GNSS
GEO-A-CC-6-13-TH/P – Evolution of Geographical Thought
GEO-A-CC-6-14-TH/P – Disaster Management

Honours Course: Choices for Four Discipline Specific Electives

GEO-A-DSE-A-5-01-TH/P – Fluvial Geomorphology
GEO-A-DSE-A-5-02-TH/P – Climate Change: Vulnerability and Adaptations
GEO-A-DSE-A-5-03-TH/P – Environmental Issues in Geography
GEO-A-DSE-A-5-04-TH/P – Resource Geography
GEO-A-DSE-B-6-05-TH/P – Cultural and Settlement Geography
GEO-A-DSE-B-6-06-TH/P – Social Geography
GEO-A-DSE-B-6-07-TH/P – Urban Geography
GEO-B-DSE-B-6-08-TH/P – Geography of India

1.1 Honours Course: Choices for Two Skill Enhancement Courses

GEO-A-SEC-A-3-01-TH – Coastal Management
GEO-A-SEC-A-3-02-TH – Tourism Management
GEO-A-SEC-B-4-03-TH – Rural Development
GEO-A-SEC-B-4-04-TH – Sustainable Development

1.2 General Course: Core Subjects

GEO-G-CC-1-01-TH/P – Physical Geography
GEO-G-CC-2-02-TH/P – Environmental Geography
GEO-G-CC-3-03-TH/P – Human Geography
GEO-G-CC-4-04-TH/P – Cartography

1.3 General Course: Choices for Two Discipline Specific Electives

GEO-G-DSE-A-5-01-TH/P – Regional Development
GEO-G-DSE-A-5-02-TH/P – Geography of Tourism
GEO-G-DSE-B-6-03-TH/P – Agricultural Geography
GEO-G-DSE-B-6-04-TH/P – Population Geography

1.4 General Course: Choices for Two Skill Enhancement Courses

GEO-G-SEC-A-3/4-01-TH – Coastal Management
GEO-G-SEC-B-5/6-03-TH – Rural Development

COURSE OUTCOMES

[Honours]

The course outcomes of the different papers offered are presented below. After completion of the course the student will be able to:

| Course Code | Course Title | Credits | Course Outcomes |
|-----------------|--------------------------------|---------|---|
| CC-1-01 Th+P | Geotectonics and Geomorphology | 4+2=6 | <ul style="list-style-type: none"> • Understand the theories and fundamental concepts of Geotectonic and Geomorphology. Understand earth's tectonic and structural evolution. Gain knowledge about earth's interior. Develop an idea about concept of orogeny, mountain building , continental drift, plate tectonics, and resultant landforms. • Acquire knowledge about types of folds and faults and earthquakes, volcanoes and associated landforms. • Understanding crustal mobility and tectonics; with special emphasis on their role in landform development. • Overview and critical appraisal of landform development models. • Develop the skills of identification of features and correlation between them. • Do field surveys using appropriate techniques like clinometer compass . • Identification of rocks and minerals from hand specimens. |
| CC-1-02 Th+P | Cartographic Techniques | 4+2=6 | <ul style="list-style-type: none"> • Understand and prepare different kinds of maps using various cartographic techniques . • Recognize basic themes of map making. • Development of observation skills. |
| CC-2-03 Th+P | Human Geography | 4+2=6 | <ul style="list-style-type: none"> • Gain knowledge about major themes of human Geography. • Acquire knowledge on the history and evolution of humans and societies . • Understand the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations. • Develop an idea about space and society |

| CC-2-04 Th+P | Thematic Mapping and Surveying | 4+2=6 | <ul style="list-style-type: none"> • Conceptualize scales and representation of data through cartograms. • Interpret geological and weather maps. • Learn the usage of survey instruments like prismatic compass, dumpy level, theodolite etc. . • Develop an idea about different types of thematic mapping techniques. |
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| Course Code | Course Title | Credits | Course Outcomes |
| CC-3-05 Th+P | Climatology | 4+2=6 | <ul style="list-style-type: none"> • Understand the elements of weather and climate, different atmospheric phenomena and climate change. • Learn to associate climate with other environmental and human issues. Approaches to climate classification. • To analyze the dynamics of the Earth's atmosphere and global climate. Assessing the role of man in global climate change. • Prepare various climatic maps, weather maps and charts and interpretation of basic weather elements present . • Learn to use various meteorological instruments for recording maximum and minimum temperature air pressure, relative humidity recording and rainfall. • Learn the interaction between the atmosphere and the earth's surface. Understand the importance of the atmospheric pressure and winds. • Understand how atmospheric moisture works. |
| CC-3-06 Th+P | Hydrology and Oceanography | 4+2=6 | <ul style="list-style-type: none"> • Analyse the concepts of Hydrology and Oceanography • Emphasizing the significance of groundwater quality and its circulation • Evaluate the role of the global hydrological cycle. • Studying the behavior and characteristics of the global oceans. • Realize the importance of water conservation. • Identify marine resources and characteristics of ocean waters. • Interpret hydrological and rainfall dispersion graphs and diagrams. |

| CC-3-07 Th+P | Statistical Methods in Geography | 4+2=6 | <ul style="list-style-type: none"> Learn the significance and importance of statistical analysis in geography. Understand the concept of data handling in geography <p>Interpret statistical data for a holistic understanding of geographical phenomena and know about different types of sampling.</p> <ul style="list-style-type: none"> Develop an idea about theoretical distribution. Learn to use tabulation and arrangement of data. and Gain knowledge about association and correlation. |
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| Course Code | Course Title | Credits | Course Outcomes |
| CC-3- SEC 1 TH | Coastal Management | 2 | <ul style="list-style-type: none"> Can develop idea about the formation of coasts and different types of coasts and coastal features Can Understand the basis behind climate change and its effect on the coast. How to preserve, protect, develop, enhance, and restore where possible, the coastal resources. Concept of CRZ Zones in India Learn about the Principles of Integrated Coastal Zone Management .Can develop an idea related to different Coastal hazards and their management using structural and non-structural measures: Erosion, flood, sand encroachment, dune degeneration, estuarine sedimentation and pollution. Can learn about the Environmental impacts and management of mining, oil exploration, salt manufacturing, land reclamation and tourism in the coastal zones |
| CC-4-08 Th+P | Economic Geography | 4+2=6 | <ul style="list-style-type: none"> Understand the concept of economic activity, factors affecting location of economic activity. Gain knowledge about different types of Economic activities Assess the significance of Economic Geography, the concept of economic man and theories of choice. Analyze the factors of location of agriculture and industries. Map and interpret data on production, economic indices, transport network and flows. |
| CC-4-09 Th+P | Regional Planning and Development | 4+2=6 | <ul style="list-style-type: none"> Understand and identify regions as an integral part of geographical study. Appreciate the varied aspects of development and regional disparity, in order to formulate measures of balanced regional growth and development. Analyzing the concept of regions and regionalization. Studying typical physiographic, planning, arid and biotic regions of India. Understanding the detailed Geography of India. |

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| Course Code | Course Title | Credits | Course Outcomes |
| CC-4-10 Th+P | Soil and Biogeography | 4+2=6 | <ul style="list-style-type: none"> • Gain knowledge about the character and profile of different soil types on the basis of climatic differences. • Understand the impact of man as an active agent of soil transformation, erosion and degradation. • Recognize land capability and classify it. • Explaining the Pedological and Edaphological Approaches to Soil Studies - Processes of soil formation, types of soil, and principles of soil and land classification; and management. • Understand the varied ecosystems and classify them. • Recognize the significance of biogeochemical cycles and biodiversity. • Comprehend the devastating impact of deforestation. • Identify soil types and derive their pH and salinity by different measuring instruments . |
| CC-4- SEC 2 | Rural Development | 2 | <ul style="list-style-type: none"> • Can develop an idea on issues of Rural Development: basic elements and measures of level of rural development • Develop the concepts related to Paradigms of rural development: Gandhian approach to rural development; Lewis model of economic development, 'big push' theory of development, Myrdal's model of 'spread and backwash effects' • Can learn Area based approach to rural development: Drought prone area programmes, PMGSY, SJSY, MNREGA, JanDhan Yojana [• Gain knowledge on Rural Governance: Panchayati Raj System and rural development policies and Programmes in India |

| CC-5-11 Th+P | Research Methodology and Fieldwork | 4+2=6 | <ul style="list-style-type: none"> • Can develop expertise in selection of study area based on a specific problem, methodology for studying the area and its characters in detail , quantitative and quantitative analysis of data collected from the fields , and conclusions to be drawn about the area – fundamental to geographical research. • Handle logistics and other emergencies on field. • Develop skills in photography, surveying mapping and videorecording. |
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| Course Code | Course Title | Credits | Course Outcomes |
| CC-5-12 Th+P | Remote Sensing, GIS and GNSS | 4+2=6 | <ul style="list-style-type: none"> • Have knowledge on the principles of remote sensing, sensor resolutions and image referencing schemes. • Interpret satellite imagery and understand the preparation of false color composites from the satellite imageries. • Training in the use of Geographic Information System(GIS) software for contemporary mapping skills. • Analyze and interpret remotely sensed satellite images and aerial photographs in order to understand topographical and cultural variations on the Earth's surface. • Application of GIS techniques for the preparation of different thematic maps. • Use of GNSS. |
| CC-6-13 Th+P | Evolution of Geographical Thought | 4+2=6 | <ul style="list-style-type: none"> • Perceive the evolution of the philosophy of Geography. • Appreciate the contribution of the thinkers in Geography. • Develop idea on contributions of different schools of geographical thought. • Discussing the evolution of geographical thought from ancient to modern times. • Establishing relationship of Geography with other disciplines and man-environment relationships. • Analyzing modern and contemporary principles of Empiricism, Positivism, Structuralism, Human and Behavioral Approaches in Geography |

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| CC-6-14 Th+P | Hazard Management | 4+2=6 | <ul style="list-style-type: none"> • Understand the nature of hazards and disasters and their basic differences in their concepts. • Assess risk, perception and vulnerability with respect to hazards. • Prepare hazard zonation maps. • Assessing the nature, impact and management of major natural and man-made hazards affecting the Indian subcontinent. |
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COURSE OUTCOMES

[DISCIPLINE SPECIFIC ELECTIVES]

| Course Code | Course Title | Credits | Course Outcomes |
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| GEO-A-DSE-A-5-02-TH+P | Climate Change: Vulnerability and Adaptations | 4+2=6 | <ul style="list-style-type: none"> • Understand climate change with reference to the Geological time scale • Assess the Origin of Greenhouse gases and concept of global warming • Global climatic assessment and Impact of climate change: Agriculture and water; flora and fauna; human health and morbidity • Learn Global initiatives to climate change mitigation: Kyoto Protocol, carbon trading, clean development mechanism, COP, climate fund. • Analyse trends of change in temperature conditions globally • Analyze the rainfall variability of about three decades of climatic regions of India. • Understand Climate change vulnerability assessment and adaptive strategies with particular reference to South Asia • To analyse the Role of urban local bodies, panchayats and educational institutions on climate change mitigation: Awareness and action programmes • Develop concepts and skills regarding mitigation measures concerning climatic hazards. |

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| GEO-A-DSE-A-5-04 T+P | Resource Geography | 4+2=6 | <ul style="list-style-type: none"> • Understand the concept and classification of resources • Understand the approaches of resource utilization • Appreciate the significance and importance of resources • Assess the pressure on resources • Analyze the problems of resource depletion with special reference to forests, water and fossil fuels • Understand the concept of Sustainable Resource development • Understand the distribution, utilization, problems and management of metallic and non-metallic mineral resources • Analyze the contemporary energy crisis and assess the future scenario • Understand the concept of Limits to Growth, resource sharing and sustainable use of resources • Develop the skill of mapping forest cover and water bodies from satellite data • Learn to compute HDI |
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| Course Code | Course Title | Credits | Course Outcomes |
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| GEO-A-DSE-B-6-05-T+P | Cultural and Settlement Geography | 4+2=6 | <ul style="list-style-type: none"> • Understand the scope and content of cultural geography • Trace the development of cultural geography in relation to allied disciplines • Understand the concept of cultural hearth and realm, cultural diffusion, diffusion of religion • Develop an understanding of cultural segregation and cultural diversity, technology and development • Learn about the various races and racial groups of the world • Identify the cultural regions of India • Acquire knowledge about Rural settlements- Definition, nature and characteristics • Analyze the morphology of rural settlements • Learn the rural house types, census categories of rural settlements and idea of social segregation • Learn the census definition and categories of urban settlements • Analyze the urban morphology models of Burgess, Hoyt, Harris and Ullman • Differentiate between city-region and conurbation • Analyze the functional classification of cities • Develop the skill of mapping language distribution of India • Learn to plot proportional squares to illustrate housing distribution • Acquire the skill of identifying rural settlement types from topographical sheet • Understand Social Area Analysis of a city based on Shevky and Bell |

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| GEO-A-DSE-B-6-08-T+P | Geography of India | 4+2=6 | <ul style="list-style-type: none"> • Students would be understanding geography of our nation. • Acquire an understanding and relationship of between physiography and drainage, climate, soil • Locate resources of the country on map • Understand significance of age and discover new technique used in agriculture • Develop a solid understanding of the concept of region and its importance in planning and development • Elaborate relationship with India and its neighbouring countries. • Aware about the resources and its conservations. • Develop the concept of tribal life and culture – case studies of Toda, Gaddi, Jarawas and Santhals from different physiographic and climatic regions of India • Can gain knowledge on industrial development of automobiles and IT sectors and distribution of different minerals and potential energy sources in India • Can learn about the population growth distribution, structure and policy • Develop concept on physiographic, climate characteristics of West Bengal State and its demographic characteristics • There is a scope to learn about different regional issues and problems related to specific corners of the State --like Darjeeling and Sundarbans having their physiographic and climatic characters quite different from each other |
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Note : **NEP SYLLABUS** has been adopted by the University of Calcutta from 2023-2024 academic session and at present the Department is teaching two parallel syllabus in Geography – one proposed under CBCS syllabus from 2018-2019 academic session to smetser III, IV, V and VI students who took their last admission in the session 2022-2023 and the another of 4 years duration under NEP course from 2023-2024 for Semester I students who took admission under the Major Subject of Geography from the session 2023-2024

So far the drafting of Semester III syllabus has been done here. . The Department will update the other course outcomes soon after Semester III .

| Course Code | Course Title | Units Covered | Course Outcome |
|------------------------------|-------------------------|--|--|
| GEOG-H-CC 01/MD-CC 01 | Th – Physical Geography | <ul style="list-style-type: none"> • Cartography • Geotectonics • Geomorphology • Climatology • Soil Geography • Biogeography • Geography of Hazards | <ul style="list-style-type: none"> • Students can develop a comprehensive idea on scale concept in geography, about different types of maps and their uses • The internal structure of the earth and concept of seismology • The different types of landforms produced through weathering, erosion and fluvial processes • Nature, composition and layering of the earth's atmosphere • Factors of soil formation and idea of a soil profile • Plant adaptation and distribution in relation to water availability • Concept of hazards and disasters in the Indian Context |

| Course Code | Course Title | Units/ Topics Covered | Course Outcome |
|------------------------------|------------------------|---|---|
| GEOG-H-CC 01/MD-CC 01 | P – Physical Geography | <ul style="list-style-type: none"> • Graphical construction of scales: • Delineation of drainage basins on Survey of India 1:50k topographical maps. • Identification of drainage and channel patterns from Survey of India 1:50k topographical maps • Construction and interpretation of wind rose diagram | <ul style="list-style-type: none"> • Students are expected to learn the construction of different types of scales like plain scale, diagonal scale and vernier scale • Can develop the concept of drainage basins and their delineation from topographical sheets • Can gain knowledge about the drainage and channel patterns from the toposheet • Can learn the use of wind rose diagram and its construction |
| GEOG-H-CC02/MD-CC02-2/4-Th – | Human Geography | <ul style="list-style-type: none"> • Elements of human geography: Nature, scope, and recent trends • Human geography schools of thought: Resource, locational, landscape, environment • Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, and industrial society • Human adaptation to the environment: Chenchu, Toda, and Gond • Evolution and characteristics of post-industrial urban societies • Demographic transition. Significance of demographic dividend • Distribution, density, and growth of population in India • Characteristics of settlements: Urban and rural • Site, situation, types, and patterns of rural settlements • Size-class classification of urban settlements after Census of India | <ul style="list-style-type: none"> • Gain knowledge about major themes of human Geography. • Acquire knowledge on the history and evolution of humans and societies . • Understand the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations. • Develop an idea about space and society |

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| <p>GEOG-H-CC 02 /MD-CC02-2/4-</p> | <p>P – Human Geography Lab</p> | <ul style="list-style-type: none"> • Growth rate of population: Arithmetic growth comparing two decadal datasets • Representation and interpretation of population density of Indian states or West Bengal districts by choropleth method • Identification of types of settlements according to sites from Survey of India 1:50k topographical maps • Construction of proportional squares depicting number of houses [| <ul style="list-style-type: none"> • Can learn about drawing choropleth maps • Can learn about construction of 2d cartograms – proportional squares • Can learn to differentiate between different settlement pattern and types from toposheet . |
| <p>GEOG-H-CC03-3-Th</p> | <p>Geotectonics</p> | <ul style="list-style-type: none"> • Relative and absolute dating of rocks • The geological time scale with special reference to the events of the Pleistocene • Formation and structural differentiation of the earth • Isostasy: Models of Airy, Pratt, and their applicability • Plate Tectonics as a unified theory of global tectonics. Processes and landforms at plate margins and hotspots • Genetic classification of mountains. Types of volcanic eruptions • Major relief features of the ocean floor: Characteristics and origin according to Plate Tectonics • Folds: Formation and classification • Faults: Formation and classification • Morphometric indices of tectonic activity: Basin asymmetry factor, transverse topographic symmetry factor, and mountain front sinuosity | <ul style="list-style-type: none"> • Can develop a clear understanding of dating of rocks • Can get an idea regarding plate tectonics , isostasy • Can learn about volcanoes and its activities • Can develop a detail idea of rocks structures- folds and faults |

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| GEOG-H-CC03-3 | P – Geotectonics Lab | <ul style="list-style-type: none"> • Measurement of dip and strike using clinometer • Megascopic identification of mineral samples: Bauxite, calcite, chalcopyrite, feldspar, galena, gypsum, hematite, magnetite, mica, quartz, talc, and tourmaline • Megascopic identification of rock samples: Granite, dolerite, basalt, laterite, limestone, shale, sandstone, conglomerate, quartzite, slate, marble, schist, phyllite, and gneiss • Analysis of tectonic activity from Survey of India 1:50k topographical maps: Basin asymmetry factor and transverse topographic symmetry factor • Interpretation of geological maps with uniclinal structure, folds, unconformity, and intrusions | <ul style="list-style-type: none"> • Can learn the characteristics of rocks and minerals from hand specimens • Can understand the different structures and rock bed alignment from toposheet interpretation viz. uniclinal, fold, fault • Can learn the tectonic activities leading to basin asymmetry from toposheet |
| GEOG-H-CC04/MD-CC03-3/5- | Th – Economic Geography | <ul style="list-style-type: none"> • Economic Geography: Scope and approaches • Concepts in economic geography: Goods and services, production, exchange and consumption; concept of economic man • Classification of economic activities: Primary, secondary, tertiary, quaternary, and quinary • Location of economic activities: Agriculture (after von Thünen) and industry (after Weber) • Primary activities: Agriculture, forestry, fishing, and mining • Secondary activities: Classification of manufacturing industries, special economic zones and technology parks • Tertiary activities: Transport, trade and services • Economic globalisation: Concepts and contemporary issues • International trade, role of WTO • Emergence of economic blocs (Post WW-II). BRICS: Evolution and significance | <ul style="list-style-type: none"> • Understand the concept of economic activity, factors affecting location of economic activity. Gain knowledge about different types of Economic activities • Assess the significance of Economic Geography, the concept of economic man and theories of choice. • Analyze the factors of location of agriculture and industries. • Map and interpret data on production, economic indices, transport network and flows. |

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| GEOG-H-CC04/MD-CC03-3/5- | P – Economic Geography | <ul style="list-style-type: none"> • Construction and interpretation of gender-wise bar showing work participation rate • 2. Construction and interpretation of proportional divided circles showing state-wise variation in occupational structure • 3. Preparation of crop calendar. Construction and interpretation of ergograph [• 4. Time series analysis of industrial production of India using moving average [8] 5. Viva voce based on laboratory notebook | <ul style="list-style-type: none"> • Students will learn the constructions of 2d Cartograms – divided proportional circles • Can learn the preparation of crop calendar • Can learn to calculate the time series analysis by moving average method. |
| GEOG-H-SEC 01/MD-SEC 01 | | <ul style="list-style-type: none"> • Field Data Collection and Compilation • Methods in Physical Geography • Methods in Human Geography | <ul style="list-style-type: none"> • Students are expected to learn the relevance of doing primary surveys , preparation of questionnaires based on diverse topics, sampling procedures, compilation of data in master tables and computation of data , data handling through different statistical measures • Use of minor survey instruments: Brunton compass, distometer, smartphone levelling applications • Textural analysis of grains using sieves • Mapping areal and linear extents of riverbank and coastline shift from Survey of India 1:50k maps and/or satellite images • Mapping and extraction of flooded areas from satellite images and digital elevation models • Dominant and distinctive functions; Ternary diagram showing occupational patterns (after Ashok Mitra); Preparation of accessibility map; Preparation of flowcharts using transportation data |

| Course Code | Course Title | Units/ Topics Covered | Course Outcome |
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| GEO-H-IDC 01 | Th – Geomatics and Spatial Analysis | <ul style="list-style-type: none"> • Cartography • Surveying • Remote Sensing and Geographical Information System | <ul style="list-style-type: none"> • The topics covered under this unit will enable the students from other disciplines also to build up a comprehensive idea regarding the concept of scales, maps use and different kinds of maps, bearing concept and idea on map projections and their wide applications . • Students will also learn about the different survey techniques by traditional instruments like dumpy level, theodolite and also can learn about the modern map making techniques through remote sensing and GIS technologies . • At the end of the course they can differentiate between traditional and modern cartographic methods . |
| GEO-H-IDC 01 | P – Geomatics and Spatial Analysis Lab | <ul style="list-style-type: none"> • Construction of simple conical projection with one standard parallel • Traverse survey and plotting UTM coordinates using smartphone GNSS application • Identification of land use / land cover features from standard FCCs and preparation of inventories • Change detection of riverbank or coastline shift from multi-dated maps and images | <ul style="list-style-type: none"> • Students can learn the construction of projections , they can perform traverse survey using smartphones GNSS applications , • Can learn how to identify different landuse and landcover features through satellite imageries and change detection of shorelines and coastlines from maps and satellite images . |

PROGRAM OUTCOMES

- To understand the scope and evolution of the diverse subdisciplines of Geography.
- Recognize, synthesize and evaluate diverse sources of knowledge, arguments and approaches pertinent to exploring human-environment problems. Explain societal relevance of geographical knowledge and apply it to real world human- environment issues.
- Appreciate and reflect critically on the importance of holistic and interpretative human- environment perspectives.
- An understanding and acknowledgment of the threats that endanger the earth's natural systems through global warming and recent climate change. This helps in further realization of the significance of anthropogenic causes of many of the disasters and threats that puts life on this planet on the edge.
- Development of knowledge, skills and holistic understanding of the discipline among students. Encouragement of scientific mode of thinking and scientific method of enquiry among the students related to different problem issues. This goal is achieved through the regular field excursions conducted by the Department to various parts of India extensively and the writing a report on it.
- Students become equipped with the ability to respond to both natural and man-made disasters and acquire management skills. This is attained through the curriculum by studying and analyzing hazards, disasters, their impact and management and preparing comprehensive project report selecting any particular hazard event .
- Ability to undertake research in interdisciplinary studies and problems or issues beyond the realm of what strictly comes under the purview of geography. This is possible because of the varied nature of the curriculum that encompasses the study and analyses of concepts of sub-disciplines and allied disciplines of Geology, Seismology, Pedology, Hydrology, Environmental Studies, Disaster Management, Resource Management and Conservation, Regional Planning and Development Studies etc.

PROGRAMME SPECIFIC OUTCOMES

- PSO 1 - Student will be able to gain the knowledge on physical geography. Students may develop a general understanding about the geomorphologic and geotectonic process and the different exogenetic and endogenetic processes that are responsible for formation of the earth features. Imbibing knowledge, skills and holistic understanding of the Earth, atmosphere, oceans and the planet through analysis of landform development; crustal mobility and tectonics, climate change.
- PSO 2 – Associating landforms with structure and process; establishing man-environment relationships; and exploring the place and role of Geography vis-a-vis other social and earth sciences. Students can learn to correlate the knowledge of physical geography with the human geography. They will analyze the problems of physical as well as cultural environments of both rural and urban areas.
- PSO 3 – Developing a sustainable approach towards the ecosystem and the biosphere with a view to conserve natural systems and maintain ecological balance.
- PSO 4 –The physical environment, human societies and local and/or global economic systems are integrated to the principles of sustainable development

- o PSO 5 – Inculcating a tolerant mindset and attitude towards the vast socio-cultural diversity of India by studying and discussing contemporary concepts of social and cultural geography. Explaining and analyzing the regional diversity of India through interpretation of natural and planning regions.
- o PSO 6 – Analyzing the differential patterns of the human habitation of the Earth, through studies of human settlements and population dynamics. Understanding and accounting for regional disparities, poverty, unemployment and the impacts of globalization
- o PSO 7 – Understanding the history and philosophy of the subject; over viewing ancient and contemporary geographical thoughts and its relationship with modern concepts of empiricism, positivism, radicalism, behaviouralism , idealism etc.
- o PSO 8 – Sensitization and awareness about the hazards and disasters to which the subcontinent is exposed to; and their management.
- o PSO 9 – As a student of the Course they may enrich their observation and analytical power through field experience and in future this will help them to identify different socio- environmental problems of their community surrounding them .
- o PSO 10 – Training in practical techniques of mapping, modern and traditional cartography, software use, interpretation of maps, photographs and images etc; so as to understand the spatial variation of phenomena on the Earth’s surface. They will learn how to prepare maps based on GIS techniques by using remote sensing and other data sources.

SKILL OUTCOMES

- Carry out surveying and learn the art of map making and prepare maps for the areas with the help of surveying techniques.
 - Gain knowledge of quantitative methods and their ability to use statistical and cartographical methods to solve geographical problems.
 - Construct various types of projections and scales as per requirement of the study.
 - Collect primary and secondary data during the field visits.
 - Data management , data handling and Application of various statistical formula to analyse data.
 - Use cartographic techniques with the help of simple software techniques like MS Excel.
 - Handle topographical and weather maps and interpret them.
 - Identify types of rocks and minerals .
 - Know about modern cartographic techniques : Geographical Information System (GIS) and Remote Sensing(RS)
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