HAZI A.K.KHAN COLLEGE

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Department of Geography

Sl. No.	Semester	Course Name	Course Outcome
1.	**1st Semester**	GEO/H/CC/T/01: (THEORY): GEOTECTONICS AND GEOMORPHOLOGY	Co1: understand fundamental knowledge in geotectonics and geomorphology. co2: obtain adequate knowledge on the internal structure, tectonic and structural evolution of earth, concept of isostasy. co3: acquire comprehensive knowledge of plate tectonics, folds and faults classification, earthquakes and volcanoes. co4: understand the dynamic nature of the earth surface processes, landforms and their evolution. co5: build the idea about models of landscape evolution.
2.		GEO/H/CC/T/02: (THEORY): CARTOGRAPHIC TECHNIQUES AND GEOLOGICAL MAP STUDY	Co1: understand fundamental knowledge in cartography. co2: obtain adequate knowledge about different types and components of maps. co3: comprehend the concept and types of scales. co4: build the idea about coordinate systems and concept of geoid and spheroid. co5: acquire comprehensive knowledge of map projections. co6: develop an idea about topographical maps and its reference scheme (SOI: old and open series). co7: identify different types of rocks and minerals based on their characteristics. co8: get a clear concept about geological maps.

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3.		GEO/H/CC/P/02 : (PRACTICAL): CARTOGRAPHIC TECHNIQUES AND GEOLOGICAL MAP STUDY	Co1: students can construct and represent different types of scales. co2: acquire knowledge about different procedures of drawing map projections. co3: student will be able to construct and interpret of relief profiles, relative relief map, average slope map and stream ordering. co4: identify various physical and cultural features from toposheet and can establish relationship between them through transect chart. co5: students can draw geological section and also interpret the geological map.
4.	**2nd Semester**	GEO/H/CC/T/03 : (THEORY): HUMAN GEOGRAPHY	Co1: through this lesson student will understand the concept and contemporary relevance of human geography. co2: acquire knowledge about the major themes of human geography. co3: the lesson will enable to understand the evolution of humans and human adaptation to environment. co4: acquire knowledge about ethnicity and major racial groups of the world. co5: develop an idea about space, society and cultural regions (language and religion). co6: build concrete ideas about culture, cultural diffusion, community, society and cultural realms. co7: acquire knowledge about evolution of humans society from hunting and gathering to urban society. co8: acquire knowledge of population growth, distribution and composition with spatio-temporal context. co9: develop the idea of demographic transition model. co10: gain knowledge of population resource region (Ackerman) co11: student will learn about population and environment relations with special reference to developmental environment conflict. co12: understand the social morphology and rural house types in India. co13: students will know about types and patterns of rural settlements. co14: acquire knowledge about functional classification of urban settlement. co15: understand the patterns and trends of world urbanization.

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5.		GEO/H/CC/T/04: (THEORY): CARTOGRAMS, SURVEY AND THEMATIC MAPPING	Co1: learn the basic concepts of cartograms and thematic maps. co2: understand the concepts and utility of isopleth and choropleth. co3: enhanced understanding of the concept and utility of climograph, hythergraph and ergograph. co4: understand, prepare and interpret of demographic charts and diagrams (age-sex pyramid). co5: build the ideas about bearing. co6: knowledge in basic concepts and different types of surveying. co7: develop an idea of different survey equipment and its uses. co8: understand and interpret of land use and landcover maps.
6.		GEO/H/CC/P/04: (PRACTICAL): CARTOGRAMS, SURVEY AND THEMATIC MAPPING	Co1: represent of data by using different types of diagram. co2: develop their ability and skills in thematic mapping for represent geographical data. co3: able to prepare the traverses and determine height and distances of object by using prismatic compass, dumpy level and transit theodolite.
7.	**3rd Semester**	GEO/H/CC/T/05 (THEORY): CLIMATOLOGY	Co1: understand the nature and composition of the atmosphere. co2: can represent and explain different atmospheric layers. co3: learn the different controlling factors of insolation and also get idea about heat budget of the atmosphere. co4: acquire comprehensive knowledge of temperature distribution. co5: develop the knowledge about types, causes and consequences of inversion of temperature. co6: understand the importance of the ozone layer and effect of green- house gases over climate. co7: obtain adequate knowledge on the processes and forms of condensation. co8: understand the forms of precipitation and their mechanism. co9: gain knowledge about typology, origin, characteristics and modification of air mass. co10: obtain knowledge about the types of fronts and its mechanism. co11: build concrete ideas about weather stability, instability, barotropic and baroclinic conditions. co12: have

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			better understanding of the atmospheric circulation, planetary winds, jet steam, different types of cyclones and their origin. co13: acquire knowledge of monsoon circulation and its mechanism with reference to India. co14: students can identify the world climatic zones based on climatic classification after Köppen and Thornthwaite.
8.		GEO/H/CC/T/06: (THEORY): STATISTICAL METHODS IN GEOGRAPHY	Co1: at the end of the course students will know the importance and significance of statistics in geography. co2: student will be acquainted with different types of data and their importance. co3: expertise in different source based data collection, analysis and formation of statistical tables. co4: student will be able to apply different types of sampling method in data collection and also get idea about need, types, and significance of sampling. co5: gain knowledge about frequency, cumulative frequency, probability and normal distribution. co6: student will know about central tendency, partition values, dispersion, correlation and association. co7: have better knowledge about linear regression and time series analysis.
9.		GEO/H/CC/P/06: (PRACTICAL): STATISTICAL METHODS IN GEOGRAPHY	Co1: prepare data matrix with row and columns of relevant attributes. co2: build capacity to compute and interpret of central tendency and dispersion based on frequency distribution table. co3: develop their ability and skills in graphically present of data. co4: able to draw scatter diagram with regression line. co5: compute and interpret the results of regression and residual from regression.

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10.		GEO/H/CC/T/07 :(THEORY): GEOGRAPHY OF INDIA	Co1: understand the geological, physiographic, socio-cultural and economic divisions of India. co2: recognise the various features of the soil, climate and vegetation of our country. co3: analyze the population composition of India. co4: interpret the features of agricultural regions in India and also recognise the concept of green revolution. co5: build the concept about various natural resources available in this country and assess the scenario of industrial development. co6: outline the physical features of West Bengal. co7: understand the characteristics of Darjeeling, Sundarban, Nadia & Murshidabad districts.
11.		GEO/H/SEC/P/01/A :(PRACTICAL): COMPUTER BASICS AND COMPUTER APPLICATIONS	Co1: gather the concept about numbering system. co2: apply the knowledge of computer technology to solve various problems. co3: develop their ability and skills in data management, data computation, data analysis and cartographic presentation. co4: acquire internet surfing skills and enhance their ability to gain knowledge from the digital world.
12.		GEO/H/SEC/P/01/B: (PRACTICAL): REMOTE SENSING	Co1: explain the basic concepts and principles of remote sensing, including the classification of satellites and sensors. co2: students will be able to apply different sensor resolutions, such as spatial, spectral, temporal and radiometric, to various remote sensing applications, with reference to IRS and Landsat missions. co3: able to prepare false colour composites from IRS LISS-III, Landsat tm and Landsat ETM Data, and understand the principles of image rectification and enhancement techniques. co4: students will be able to interpret satellite images using visual and digital methods, and extract features of interest based on their spectral, spatial, temporal and contextual characteristics. also able to prepare inventories of landuse

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			/landcover features from satellite images and analyze the patterns and processes of landuse/landcover change using remote sensing data.
13.	**4th Semester**	GEO/H/CC/T/08 :(THEORY): REGIONAL PLANNING AND DEVELOPMENT	Co1: build the concepts of region, its types and delineation techniques. Co2: understand the planning types, principles, techniques of regional planning. Co3: realize the needs of regional planning at different levels. Co4: analyze the concept of regionalisation like agro-ecological zones. Co5: understand the meaning of development and regional development. Co6: develop the idea of various models like Growth Pole (Perroux), Growth Foci (R.P. Mishra), Core-Periphery Models (Hirschman, Rostow, Friedman), Cumulative Causation (Myrdal) etc. Co7: formulate the idea of developed and under-developed economy and the causes of regional disparities in India. co8: understand the concept of human development, its indicators and learn to calculate the measurement of human development.
14.		GEO/H/CC/T/09 :(THEORY): ECONOMIC GEOGRAPHY	Co1: remember the meaning, concepts and approaches of economic geography. co2: understand the various factors of economic activities and transport costs. co3: build the concept and classification of economic activities like agriculture, fishing, mining, manufacturing industries etc. co4: describe the agricultural theory of Von Thunen and industrial location theory by Weber. co5: develop the concepts of technology parks

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			and Special Economic Zones (SPZ). co6: assess the features of cotton textile industries of India and USA; iron & steel industries of India and Japan. co7: remember the various tertiary activities like transport (roadways, railways, waterways & airways etc.), trade and services like banking, post etc. and also learn about transitional sea-routes. co8: build the ideas about the tea plantation of India and mixed farming in Europe.
15.		GEO/H/CC/T/10 :(THEORY): ENVIRONMENTAL GEOGRAPHY	Co1: understand the concept, scope and perception of environmental geography also realize the idea of holistic environment. co2: learn about Environmental Impact Assessment (EIA). co3: know about the concept, structure and functions of ecosystem. co4: assess the various environmental issues like pollution (land, water, air etc.), degradation and other issues related to agriculture, waste management etc. co5: outline the programmes and policies taken during earth summit (1992), Montreal and Kyoto protocol etc.
16.		GEO/H/CC/P/10 :(PRACTICAL): ENVIRONMENTAL GEOGRAPHY	Co1: prepare questionnaires for perception survey on environmental problems. co2: construct environmental maps by applying acquired knowledge. co3: test pH and NPK by using soil testing kits and interpret it. co4: evaluate the CPCB and WBPCB data of Air Quality Index (AQI).

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17.	**5th Semester**	GEO/H/CC/T/11 :(THEORY): RESEARCH METHODOLOGY AND FIELD WORK	Co1: students will be able to understand the nature, types, significance of geographical research and literature review, the formulation of research design and hypotheses, the ethical issues involved in research and fieldwork. co2: develop an idea about research problems, objectives, materials and methods. co3: they will be able to present and communicate the results of their research and field work in a clear and concise manner using tables, graphs, charts, maps, diagrams, etc. and write a well-structured research report and field report following the academic standards and conventions. co4: have expertise in identification of area of study, methodology, quantitative and quantitative analysis, and conclusions to be drawn about the area. co5: make use of proper tools and surveying methods for measurement in context of collection and processing of data.
18.		GEO/H/CC/P/11: (PRACTICAL): RESEARCH METHODOLOGY AND FIELD WORK	Co1: acquire knowledge, skills and expertise to identify geographical issues. co2: achieve skills and expertise to use various survey techniques and instruments. co3: expertise in field-based data collection, analysis and presentation. co4: prepare a report based on field data. co5: build capacity to interact with people of diverse culture.
19.		GEO/H/CC/T/12 :(THEORY): REMOTE SENSING AND GIS	Co1: have knowledge of the principles of remote sensing and image referencing schemes. co2: learn the basic concepts and terminology related to remote sensing and GIS, such as the different types of sensors, platforms, resolutions, coordinate systems, projections, etc. this will help students to understand how remote sensing and GIS data are acquired, represented, and transformed. co3: acquire knowledge of different missions & their utilities. co4: students will be able to identify the types and

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			characteristics of aerial photographs. co5: students will be able to understand the geometry and scale of aerial photographs, and measure distances, heights, areas, angles, and directions on them using various methods and instruments. co6: they will have broad knowledge about photo interpretation keys and FCC. also understand their applications. co7: they will understand and explain principles of image interpretation. co8: after this course students will obtain knowledge of GIS, its components and data structures. co9: able to master the skills of data conversion and manipulation in GIS, such as working with vector and raster data, attribute data and overlay analysis. this will enable students to perform various spatial operations and analyses on GIS data. co10: students will understand and explain principles of preparing attributes tables and GNSS positioning. co11: learn how to collect waypoint and transferring of waypoints to GIS.
20.		GEO/H/CC/P/12 :(PRACTICAL): REMOTE SENSING AND GIS	Co1: student will be able to perform geo-referencing and digitization of features. co2: achieve skills and expertise to use Q-GIS software for data attachment overlay and thematic map. co3: students will be able to prepare FCC and LULC maps using GIS software.
21.		GEO/H/DSE/T/01/A :(THEORY): URBAN GEOGRAPHY	Co1: understand the nature, scope, approaches and recent trends in urban geography. co2: analyze the theories of urban morphology, evolution, growth and hierarchy of urban settlements. co3: learn the technique to plot rank-size rule and establish a hierarchy of urban settlements. co4: understand the patterns of urbanization in developed and developing countries. co5: gain knowledge of ecological process of urban growth. co6: acquire knowledge of city region and law of the primate city. co7:

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			understand the patterns and trends of urbanization in India. co8: know land use and contemporary problems of Delhi and Kolkata. co9: obtain adequate knowledge on urban renewal programme – JNNURM.
22.		GEO/H/DSE/T/01/B: (THEORY): CULTURAL AND SETTLEMENT GEOGRAPHY	Co1: understand the scope, content and development of cultural and settlement geography. co2: acquire clear knowledge on cultural hearth, realm, cultural diffusion, cultural segregation, cultural diversity and technology. co3: learn about the various races and racial groups of the world. co4: understand the nature and morphology of rural and urban settlements. co5: learn the census definition and categories of urban settlements. co6: analyze the urban morphology models of Burges, Homer Hoyt, Harris and Ullman. co7: build concrete ideas about rural house types with reference to India and functional classification of cities by Harris, Nelson and Mckenzie.
23.		GEO/H/DSE/T/02/A: (THEORY): POPULATION GEOGRAPHY	Co1: learn the role of demography and population geography as a distinct fields of geography. co2: understand population dynamics, nature of population growth, migration, optimum population and world patterns determinants of population distribution. co3: gain knowledge about the human development index and population-resource regions. co4: the students can explain theories related to population and migration. co5: build concrete ideas about fertility and mortality. co6: know about population composition and characteristics. co7: acquire knowledge of population policies adopted in India and China with contemporary issues in population.

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24.		GEO/H/DSE/T/02/B :(THEORY): SOCIAL GEOGRAPHY	Co1: understand the nature, scope and content of social geography. co2: the students will be able to analyze the spatial patterns and processes of social groups and social behaviour in different contexts and scales. co3: understand fundamental knowledge of the social structure and process. co4: the students will be able to identify and compare the elements of social structure such as caste, class, religion, and race, and their implications in social inequality and diversity. co5: know about social stratification in India. co6: able to evaluate the contemporary social-environmental issues with references to India. co7: students can understand indicators of social well-being and quality of life. co8: able to recognize the social pathology of crime and violence, and their spatial distribution and variation. co9: acquire knowledge about social impact assessment (SIA). co10: the students will be able to critically review the social policies in India, such as Sarva Shiksha Abhiyan (SSA) and National Rural Health Mission (NRHM) and their effectiveness and challenges.
25.	**6th Semester**	GEO/H/CC/T/13 :(THEORY): EVOLUTION OF GEOGRAPHICAL THOUGHTS	Co1: the students will be able to trace the historical development of geography as a discipline and appreciate the contributions of various geographers from different regions and periods. co2: they will have comprehensive knowledge about transition from cosmography to scientific geography, dualism and dichotomies. co3: understand the philosophical foundations of modern geography and the emergence of various schools of geographical thought in different countries. co4: students will be able to critically examine the trends and challenges of geography in the post-World War-II period and the influence of quantitative revolution, behaviouralism, systems approach, radicalism and feminism on geographical inquiry. co5: able to explore the evolution of geographical thought in India and its relation to the global context. co6:

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			understand the changing concept of space in geography and geography in the 21st century.
26.		GEO/H/CC/T/14: (THEORY): DISASTER MANAGEMENT	Co1: classify hazards and disasters into different types and categories based on their origin, frequency, intensity, duration, and impact. students will also be able to explain the difference between hazards and disasters, and how they relate to risk and vulnerability. co2: apply approaches to hazard study such as risk perception and vulnerability assessment, which are methods of identifying and measuring the potential harm and exposure of people and places to hazards. students will also be able to compare and contrast different hazard paradigms. co3: analyze responses to hazards and disasters such as preparedness, trauma, aftermath, resilience and capacity building. also able to evaluate the effectiveness of various strategies and actions taken before, during, and after a hazard or disaster occurs to reduce its impact and enhance coping abilities. co4: perform hazards mapping using data and techniques such as remote sensing, Geographic Information Systems (GIS), spatial analysis and statistical methods. co5: examine specific types of hazards and disasters such as earthquake, landslide, cyclone, and fire. students will be able to describe the factors that influence their occurrence, vulnerability, consequences, and management. also be able to apply the concepts and methods learned in the course to analyze case studies of these hazards and disasters in different contexts and regions.
27.		GEO/H/CC/P/14 :(PRACTICAL): DISASTER MANAGEMENT	Co1: design and propose a disaster preparedness plan for the selected area that addresses the specific hazards, vulnerabilities and capacities of the community and stakeholders. co2: understand processes and impact of disaster. co3: understand both

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			the natural and man-made disaster and human negligence in context of environment. co4: write a field work based report on disaster management to minimize the disaster risk.
28.		GEO/H/DSE/T/03/A :(THEORY): FLUVIAL GEOMORPHOLOGY	Co1: by the end of the course, students will be able to explain the scope and significance of fluvial geomorphology and the concept of fluvial hydro system, and apply the geographer's approach to study rivers. co2: identify the components and controlling factors of run off and describe the run off cycle and its implications for fluvial processes. co3: classify different types of channel patterns and analyze the factors that influence their formation and evolution. co4: students will be able to recognize the drainage basin as a hydrological unit and evaluate its role in fluvial dynamics. co5: they will be able to measure and interpret the linear, areal and altitudinal properties of drainage basins and apply the Horton's stream laws and hypsometric curve to characterize basin morphology. co6: describe and compare various fluvial landforms such as terraces, alluvial fans, badlands and accretion topography, and understand their formation mechanisms and environmental significance. co7: able to assess the causes and consequences of river bank erosion and propose management strategies. also understand their impact on land use. co8: students will be able to demonstrate the principles and significance of integrated watershed management, and apply them to real-world case studies.
29.		GEO/H/DSE/T/03/B :(THEORY): RESOURCE GEOGRAPHY	Co1: obtain adequate knowledge on natural resources. co2: students will be able to compare and contrast different approaches to resource utilization, such as utilitarian, conservational and community based adaptive. also evaluate their strengths and

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			weaknesses. co3: able to justify the need and significance of conservation of natural resources. co4: students can analyze the problems of resource depletion in the global context and assess the impacts of deforestation, water scarcity and fossil fuel consumption on the environment and society. co5: acquire comprehensive knowledge of distribution, utilization, problems and management of metallic and non-metallic resources, such as iron ore, bauxite, mica and gypsum and understand their economic and strategic importance. co6: student can identify the problems and management of energy resources, both conventional and non-conventional. explain the contemporary energy crisis and future scenario, and examine the challenges and opportunities for developing alternative energy sources. co7: by the end of the course, students will be able to comprehend the concept of limits to growth and sustainable use of resources and critically reflect on their own consumption patterns and lifestyle choices.
30.		GEO/H/DSE/T/04/A :(THEORY): SOIL AND BIO GEOGRAPHY	Co1: learn in details about the factors, processes and formation of soil and the role of human activities in soil transformation. co2: develop the concept of origin of laterite, podzol and chernozem soil and their profile characteristics. compare their distribution and suitability for agriculture. co3: students can define and measure the soil properties of texture, structure, moisture, pH, organic matter and NPK. explain their significance for soil quality and productivity. co4: identify the factors, processes and mitigation measures of soil erosion and degradation. assess their impacts on soil health and environment. co5: students will be able to apply the principles of soil classification based on genetic and USDA systems and understand the concept of land capability and its classification for land use planning. co6: develop concepts of ecology, biosphere, ecosystem, biome (tropical rain forest, taiga, grassland etc.), ecotone, community etc. in detail. co7: understand the concept of trophic structure, food chain

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			and food web, and analyze the energy flow in ecosystems and its efficiency. co8: students will be able to describe the geographical extent and characteristic features of tropical rain forest, taiga and grassland biomes and compare their biodiversity and ecosystem services. co9: explain the bio-geochemical cycles with special reference to carbon dioxide and nitrogen and evaluate their role in maintaining ecological balance. co10: examine the causes, consequences and management of deforestation, and understand its implications for climate change and human welfare. co11: by the end of the course, students will be able to define bio-diversity, its types, threats and conservation measures, and recognize its importance for ecological stability and human development.
31.	6th Semester	GEO/H/DSE/T/04/B :(THEORY): AGRICULTURAL GEOGRAPHY	Co1: understand the progress of agricultural geography with reference to allied disciplines, and apply different approaches to study agricultural geography. co2: students will be able to trace the origin and dispersal of agriculture, and evaluate its role on human society and culture. co3: identify the factors affecting agriculture, such as physical, economic, social and political factors. classify the world agricultural systems based on their characteristics and regions. co4: able to locate and describe the major agricultural types, such as intensive subsistence, extensive commercial and plantation agriculture. compare their advantages and disadvantages for different environments and markets. co5: understand the concept of cropping pattern, crop combination, gross and net cropped area, crop rotation, and their implications for agricultural efficiency and diversity. co6: learn the agricultural model of Von Thunen and its relevance at present day. co7: measure agricultural productivity and also learn about the factors responsible for yield. co8: evaluate the role of irrigation in agriculture with special reference to India. co9: analyze different problems of

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			agriculture in various south Asian countries. co10: students will be able to describe the world patterns of agricultural production and food security, and understand the factors influencing them. co11: they will be able to conduct land use survey and land classification using USDA system, and interpret the results for land use planning and management. co12: by the end of the course, students will be able to explain the impact of globalization on agriculture with special reference to India, and explore its opportunities and threats for farmers, consumers, and environment.

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