

COURSE OUTCOMES OF GEOGRAPHY (HONS.)

SEMESTER: III

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC5	Climatology	5-1-0	6

Upon successful completion of this course, students will be able to:

CO 1	Describe the salient features of layers of Earth's atmosphere; demonstrate how the Sun's energy impacts weather and atmospheric movement; elucidate the causes of formation of auroras in the polar areas and relate the importance of atmosphere on human life.
CO 2	Assess the various factors responsible for variation in insolation received from the sun; analyse the relationship of sun spot cycle to that of solar constant; identify the processes of heat transfer through the atmosphere and explain the procedure by which terrestrial radiation takes place.
CO 3	Identify the impact normal lapse rate on air temperature of a place; relate the causes of the differences in rate of evaporation on the earth's surface and inspect the causal factors of the growth of plantation on upper slopes of mountains.
CO 4	Assess the background of emergence of Montreal Protocol; elucidate the impact of greenhouse gases on the environment; identify the places that might develop into heat island and suggest some remedial measures for combatting the impact of greenhouse.
CO 5	Interpret the significance of condensation nuclei; deduce the causes of formation of dew in winter and generalise the mechanism of precipitation occurring in a particular locality.
CO 6	Identify the source areas of air mass; outline the procedure by which transfer of heat modify an air mass and formulate the phenomena associated with respective air masses.
CO 7	Demonstrate an idealised model of warm sector depression; justify the role of upper level flow in creation of frontal waves and predict the weather phenomena associated with warm and cold fronts.
CO 8	Deduce under which circumstances barotropic and baroclinic conditions form and account for the causal factors of stability and instability in weather

	condition, cite examples of regions where stability or instability arises.
CO 9	Sum up the impact of apparent movement of the Sun on the planetary winds; relate the causal factors of monsoon and its relation to jet stream and list the areas that come under the influence of monsoon winds.
CO 10	List the areas affected by cyclones; determine the mechanism of tropical cyclone in Bay of Bengal; predict the weather conditions prior to, during and after the passage of a cyclone and identify the impact of cyclone from recent past.
CO 11	Account for the detailed changes in the past climate; analyse the impact of ice ages on world climate and figure out the implications of climate change in present day situation.
CO 12	Outline the various bases of climatic classification'; applyKoppen's climatic classification to categorise climate of a particular country and assess the relevance of Thornthwaite's climatic classification in present day context.

Course Type	Course Code	Name of the Course		No. of hours per week L-T-P	Credit
Core Course	CC6	Statistical Methods in Geography	Theory	4-0-0	4
			Practical	0-0-4	2

Upon successful completion of this course, students will be able to:

CO 1	Apply statistical data in estimation of geographical phenomena; select the proper number of samples for execution of the task and choose the proper scales of measurement depending on the nature of data.
CO 2	Find out the sources from which data can be collected for a definite purpose and prepare statistical tables.
CO 3	Assess the significance of sampling methods in statistical investigation; categorise the different types of sampling and select the type of sampling method on the basis of the target and population.
CO 4	Differentiate between frequency and cumulative frequency; learn how to calculate less than and more than cumulative frequency from the frequencies and interpret the cumulative frequency.
CO 5	State the need of central tendency in calculation of statistical data; apply the technique of calculation of mean in analysis of geographical data; analyse the significance of partition values;relate the similarity between median, 2 nd quartile, 5 th decile and 50 th percentile; find out the relation between mean, median and mode and comment how this relation affect the nature of distribution.
CO 6	Understand the uses and application of range, mean and standard deviation and coefficient of variation; apply these techniques of dispersion to interpret a data set of a particular areal unit or time period.
CO 7	Assess the nature of relationship between two variables; comment on the relevance of 'r' in computation of correlation; validate the value of 'r' by employing two different methods as propounded by Pearson and Spearman.

CO 8	Analyse the linear approach to model the relation between response and explanatory variables; predict the nature of response by the linear regression method; deduce the use of least square method to fit the linear regression; deal with time bound data sets and forecast on the nature of response variable from the given explanatory variable of a particular time period.
CO 9	Prepare a frequency distribution table to represent geographical data such as population, literacy, workforce composition of a specific areal unit, calculate the class boundaries and respective frequencies.
CO 10	Calculate the highest occurrence of frequency and median value; deduce the arithmetic mean to get a general trend of the distribution; comment on the nature of distribution of the respective data set; assess the variability of the data sets on the basis of coefficient of variation.
CO 11	Construct a histogram and frequency polygon for the graphical representation of the data, calculate and prepare ogives on the basis of cumulative frequency.
CO 12	Estimate the nature of association and degree of correlation between two variables, construct a scatter diagram to represent the graphical relation between these variables; measure the equation of linear regression by least square method and predict the value of the dependent variable with change in value of the independent one.

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC7	Geography of India	5-1-0	6

Upon successful completion of this course, students will be able to:

CO 1	Assess the geological complexities of the Himalayas; describe the reasons of relative stability of the peninsular landmass; explain the causes of formation of Himalayas, Indo- gangetic plain and Meghalaya plateau and analyse the importance of relief features in formation of drainage pattern in India.
CO 2	Elucidate the impact of jet stream on the climate of India; relate the occurrence of El-Niño and pattern of monsoon; classify and categorise the major soil types and forest of the country; assess the role of social and agro forestry and suggest methods to reduce the impact of soil erosion in India.
CO 3	Explain the changing demographic structure of the country since 1920s; account for the causes of varying population concentration in various parts of India; assess the position of India on the basis of Demographic Transition Theory and evaluate the current policies of population control.
CO 4	Make the classification of race according to Risley; prepare thematic maps to represent the distribution of religion and language groups; suggest methods for development of tribal areas and assess the rigidity of the caste system in present day context.
CO 5	Delineate the agricultural regions of the country; describe the context under which Green Revolution took place; assess the impact of Green Revolution on India's agricultural production with special reference to wheat and elucidate the emergence of Punjab-Haryana as leading agricultural regions of India.

CO 6	Describe the mineral deposits of the country; critically discuss the utilisation of various resources; suggest some non-conventional sources of energy to reduce pressure on the conventional sources and discuss some remedial measures to increase the deposit of non-renewable energy.
CO 7	Describe the reasons of inclusion of industries in plan periods; evaluate the goals and target achieved in industrial production throughout the plan periods and detect the causes of decentralisation of industries in recent times.
CO 8	Analyse the regionalisation schemes of India according to Bhatt and Spate and comment on the relevance of these schemes in present day context.
CO 9	Classify the physiographic divisions of West Bengal; account for the major forest types in West Bengal; describe the role of water based resources in evolution of the landscape of the state and inspect the intensity of human interference on the physical aspects of the state.
CO 10	Detect the changing population pattern since the independence; identify the causes responsible for variation in population density across the state and compare the man-land ration with population density of West Bengal.
CO 11	Give an account of the resource deposits of West Bengal; locate the distribution of industries along Hugli industrial Belt; evaluate the causes of concentration of iron and steel and allied industries in Durgapur-Asansol-Raniganj belt and compare the present scenario of industrial development to that of the developed world.
CO 12	Figure out the need of regional development in Darjiling Himalayas; validate the causes of acute water shortage of the northern mountainous region of West Bengal and analyse the problems and suggest suitable measures to be undertaken for development of Sunderbans.

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC8	Regional Planning and Development	5-1-0	6

Upon successful completion of this course, students will be able to:

CO 1	Delineate region mentioning their bases; differentiate formal from functional regions and apply the principle of delineating a region into certain category.
CO 2	Outline the principles of planning for demarcation of planning regions; cite examples of areas that could emerge as planning regions in India and inspect the causes of future prosperity of planning regions in India.
CO 3	Delineate the causes behind the emergence of decentralised planning in block level; account for the need of multilevel planning structure in a country and categorise the hierarchy of planning regions in India.
CO 4	Generalise the development of metropolis; describe the procedure by which metropolitan areas emerge into metropolitan regions and cite examples of cities that emerged into metropolis in the last few years.
CO 5	Apply the basis of development to classify the countries of the world; find out the indicators of development; differentiate between 1 st and 3 rd world

	countries on the basis of development and figure out the causes under which underdevelopment emerges.
CO 6	Outline the need for models in regional development; explain the basic tenets of Growth Pole Theory by Perroux, comment on the validity of Growth Pole Theory; comment on the relevance of Core Periphery model in present day and apply the proper theory for enhancing regional development of a region.
CO 7	Figure out the thrust areas of regional planning in India and critically analyse the Growth Foci model by Mishra.
CO 8	Inspect the causes of regional disparity in India; categorise the states of India on the basis of regional disparity and explain the procedure by which regional disparity bring deceleration in the development of economy.
CO 9	Deduce the role UN in developing the concept of human development; account for the goal posts used in measurement of human development and describe the changing nature of indicators of human development.
CO 10	Outline the indicators of regional imbalances in India and criticise the measures adopted to remove regional imbalances with reference to their district.
CO 11	Discuss the objectives of five year plans in facilitating regional development in India and evaluate the drawbacks of the 12 th five year plan.
CO 12	Account for the background of formation of NITI Aayog and evaluate the major thrust areas of operation of NITI Aayog.

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC9	Economic Geography	5-1-0	6

Upon successful completion of this course, students will be able to:

CO 1	Make contrast on the changing approaches of economic geography in the contemporary world and suggest the appropriate approach to find out the basic tenets of economic geography.
CO 2	Comment on the nature of goods and services and formulate the production and consumption pattern of various economic activities with reference to geographical location.
CO 3	Appraise the significance of raw materials in establishment of any industry; clarify the reasons of decentralisation of industrial areas and apply a model of economic activity in locating an industry
CO 4	Apply various models to determine the transport cost between two places; analyse the factors that make up least transport cost and cite examples of industrial areas where least transport cost approach has been adopted.
CO 5	Give an account of the changing nature of economic activities since historical past; categorise the type of workers associated with each of these activities and assess the role of human and nature in the evolution of the economic activities.
CO 6	Justify the needs of locational theories in centralisation of economic activities; elucidate the relevance of Von Thunen's theory in present day context;

	outline the importance of the locational theory of industries by Weber and relate the applicability of Weber's model with special reference to particular industries.
CO 7	Develop the factors of concentration of commercial farming in the developed nations of the world; suggest remedial measures of deforestation and reduction of forest cover on the JFM practices; comment on the role of international organisations on controlling fishing activities and combatting over-exploitation in marine areas.
CO 8	Apply the industrial theories for concentration of iron and steel industries; account for the present status and future prospects of iron and steel industries and validate the reasons of upcoming petrochemical industries in India.
CO 9	Assess the need of tertiary activities in economic sector; judge the role of human resources in development of tertiary activities and compare the intensity of these activities of different region of the world.
CO 10	Detect the relevance and outcome of present agricultural system; evaluate the performance of India in tea production; suggest the ways of increase in production to compete with the other countries; validate the causes of rapid development of mixed farming in Europe and comment for the underdevelopment of India in mixed farming.
CO 11	Interpret the need of constructing six lanes highways in India; relate the recent developments in highways to that during the 1950s and establish the relation between recent technological and transport developments.
CO 12	Outline the emergence of WTO; inquire how a trade dispute system work and why countries take a dispute to the WTO; draw conclusions on the overarching goals of WTO for their interventions in trade negotiations and justify the need of OPEC countries in maintaining economic relationship.

COURSE OUTCOMES OF GEOGRAPHY (HONS.)

SEMESTER: IV

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC10	Environment Geography	5-1-0	6

Upon successful completion of this course, students will be able to:

CO 1	Describe the geographical approach of environmental studies.
CO 2	Assess the perception of environment in different stages of human civilization.
CO 3	Identify the performance of ecosystem.
CO 4,5	This topic is deals with water and air pollution, agriculture related issue.
CO6,7,8	This topics deals with urban environmental issue, bio-diversity, and policy

	regarding forest and wet land related issue in national–global stage.
	PRACRICAL
CO 1	Environmental Perception survey questionnaire preparation
CO 2	Discuss on EIA
CO 3,4	Soil testing mainly NPK and Ph and air quality analysis using CPCB And WBPCB data.

SEMESTER: V

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit	
Core Course	C11	Research methodology and field work.	Theory	6-0-0	4
			Practical	0-0-4	2

Upon successful completion of this course, students will be able to:

	Unit -1(Research Methodology)
CO 1	Discuss on concept of research in geography
CO 2,3	Discuss on literature review, research problem, and objective.
CO 4	This topic deals with project report writing and another research related matters.
	UNIT-2
CO 1	This unit deals with field work of geographical studies.
CO 2	Preparation of questionnaires and how to make an interview, this is main dealing topics in this portion.
CO 3,	How to make a Landscape survey ,this is main theme of this portion
CO 4	Tabulation of collected data and post field work.

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC12	Remote sensing and GIS	5-1-0	6

Upon successful completion of this course, students will be able to:

	UNIT-1(Theory)
CO 1,2	Definition and concept of RS and EMR,Sensors etc.
CO 3,4	Introduction to FCC And different images and there interpretation.
	UNIT-2
CO 1,2	Definition of GIS and different data structure. And preparation of tables and overlay analysis.
CO 3,4	Deals with GNSS positioning and application of GIS.

	PRACTICAL-(Remote sensing and GIS)
CO 1,2	This topics deals with georeferencing and preparation of FCC
CO 3,4	This portion deals image classification and preparation thematic mapping.

SEMESTER: VI

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC13	EVOLUTION OF GEOGRAPHICAL THOUGHT	5-1-0	6

Upon successful completion of this course, students will be able to:

CO	UNIT:1
CO 1,2	Definition, scope and content of Geography and ancient Greek and Roman Geography, this are the main theme of the topic.
CO 3,4	This topic deals with medieval and post medieval period of geography.
CO 5,6	These topics deal with classical German contribution in 19 th century and quantitative revolution and its criticism.
	UNIT:2
CO 1,2,3,4	This four topic particularly deals with German,French,American,Indian contribution to Geography
CO 5,6	These topics deal with Determinism, possibilism, and systematic and regional geography.

Course Type	Course Code	Name of the Course	No. of hours per week L-T-P	Credit
Core Course	CC14	Disaster management	5-1-0	6

Upon successful completion of this course, students will be able to:

	UNIT:1
CO 1,2,3,4	This unit deals with classification, risk assessment, and mapping of Hazard.
	UNIT:2
CO 1,2,3,4	This unit deals with different disasters factors, vulnerability, consequence, and management.

Course outcomes of geography

Semester- v

paper- DSE

Course Type	Course code	Name of the code	Credit pattern (L:T:P)	credit
DSE 1		Culture & settlement geography	5-1-0	6

Upon successful completion of this course students will be able to :

Unit: 1

CO 1	Describes and analysis the ways language , religion, economy , government and other cultural phenomena vary or remain constant , from one place to another and explain how human function spatially.
CO 2	Understand the development of culture in societies of different place on world from ancient period to twenty century .
CO 3	Identify a location that saw the origins of a culture from which it later spread and which continue to inspire and influence modern societies of the world today.
CO 4	Describes an environment that supports creative thinking and advances efforts to extract economic and social value from knowledge, and doing so, generates new or improved products, services or processes.
CO5	Describes separation of an ethnic, racial, religious, or other minority group from the dominant majority. Identify at multiple levels in both the original(native) and newly adopted(host) cultures.
CO6	Describes a group of common ancestry , distinguished from others by physical characteristics, such as hair type, colour of eyes and shin, stature etc and their distribution in world . Principal races are Caucasoid , Mongoloid and Negroid .

Unit:2

CO 1	Describes mans relationship with his environment .That investigates the earths surfaces part settled by humans.
CO 2	Assess the various factor responsible for settlement type of rural settlement and analysis the settlement types with local environment , local area, local agriculture etc.
CO 3	Identification of the population of a country that is carried out in order to find out how many people live there and to obtain details of such things as people age and jobs, and identification a human settlement with high population density and infrastructure of built environment.
CO 4	Identify the place where growth of that settlement than depended upon its situation in relation to accessibility and availability of natural resources.
CO 5	Describes the process of urbanization and are categorized by urban morphology as cities, towns , conurbations or suburbs.
CO 6	Describes of towns attempts to categorize towns and cities according to there economic function, thereby identifying their roles within urban systems.

Course outcomes of geography

Course Type	Course code	Name of the code	Credit pattern (L:T:P)	credit
DSE 2		Population geography	5-1-0	6

Upon successful completion of this course students will be able to :

Unit: 1

CO 1	Describes spatial variation in the distribution, composition, migration and growth of populations are related to the nature of places.
CO 2	Assess the size and age composition of populations as dynamical systems and impact of biological and environmental processes on population.
CO 3	Describes high birth and death rates to lower birth and death rates as a country or region develops from a pre-industrial to an industrialized economic system.
CO 4	Describes the different factors influencing the distribution and density of population and also describes positive and negative effects of population growth on societies and economy.

Unit:2

CO 1	Describes of a population according to characteristics such as age-sex , female-male ratio.
CO 2	Understand how fertility and mortality measured, and which factors effect on fertility and mortality.
CO 3	Describes the distribution or division of the population according to different occupation.
CO 4	Assess of different type of migration and positive and negative effect of migration on job opportunities, quality of life, economic growth of the region.
CO 5	Describes the effect of life expectancy, education and per capita income on human development and also describe the present condition of the country scores.
CO 6	Describes the relationship between population and the resource base in a natural environment, and describe and explain the way this relationship differs between human populations and their resource bases.
CO 7	Describes a set of measure taken by Swedan and China to modify the way its population is changing or control that effect on economic growth.
CO 8	Understand how over and less population effect on health and unemployment and also effect on economic level on a region.

Course outcomes of geography

Course Type	Course code	Name of the code	Credit pattern (L:T:P)	credit
SEC -1		Computer Basics and Computer Application	0-0-4	2

Upon successful completion of this course students will be able to :

CO 1	Describes the technique how to represent number, value as arithmetically and work with number from computer.
CO 2	Describes the technique how to stored information of text documents, images, software programs or different type of data by computer and also describe the technique to measures of central tendency within a distribution of numerical values.
CO 3	Describes the statistical process to show the relationships among the numeric values in several data series.
CO 4	Know use of different website, software and social networking site for better communication.

Course outcomes of geography

Semester- IV

paper- SEC

Course Type	Course code	Name of the code	Credit pattern (L:T:P)	credit
SEC -2		Field work	5-1-0	6

Upon successful completion of this course students will be able to :

CO1	Assess of different perspectives on social , political or ecological issues, enabling to clarify and justify to acknowledge and respect other peoples values. Describe of various lifestyles, events, occupation, literacy, economy etc.
CO2	Know the human values, human perception towards their habitat. Environmental impact on human life in different part like high altitude, low altitude, desert etc.

Course outcomes of geography

Semester- vi

paper- DSE

Course Type	Course code	Name of the code	Credit pattern (L:T:P)	credit
DSE 3		Fluvial geomorphology	5-1-0	6

Upon successful completion of this course students will be able to :

Unit: 1

CO 1	the main theme of geomorphology and its recent trends and interrelation ship ,fluvial activities and its pattern and various geomorphic theory.
CO 2	Students able to know types and characteristics of run off and its environmental impact in different region.
CO 3	Different river regime and their flow impact on local landforms and erosional activities
CO 4	Formation of drainage basin and its hydrological important in an area .different kind of drainage pattern and its basin and its water levels.

Unit:2

CO 1	The basin morph metric parameters including linear and aerial aspects of a river and sub basin were determined and computed. Analysis of stream length, bifurcation ratio, drainage density, stream frequency, drainage texture, form factor, circularity ratio, elongation ratio, compactness ratio,relief ratio etc
CO 2	Horton's method and its important in geomorphology. Evaluation of streme order and its impact on nature and human life.
CO 3	Process of forming landforms.satges of the river channel and study about the river slope and its impact on agricultural pattern and daily life oOf human beings.
CO 4	Erosion and deposition of a river in convex and concave side of a river bed and formation of natural levee,meander, pull riffle water falls and different kind of river sediment.
CO 5	Channel geomety or forms,hydraulic geometry at a station relationships ,downstream variations in channel forms,bed and bank materials and hydraulic geometry,sediment load and hydraulic geometry,channel bed topography,channel patterns and channel types.
CO 6	Positive and negative impact on an area and agricultural process and human life.
CO 7	The relevant characteristics of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans,programs,and projects to sustain and enhance watershed functions that affected the plant,animal and human communities within the watershed boundary also including water supply,water quqlity,drainage stormwater runoff,water rights and the the overall planning and utilization of watershed.
CO 8	The study about that area,flood ,soil erosion,power generation and their positive and negative impact.

Course outcomes of geography

Semester-

paper-

Course Type	Course code	Name of the code	Credit pattern (L:T:P)	credit
DSE 4		Soil and bio geography	5-1-0	6

Upon successful completion of this course students will be able to :

Soil geography:

CO 1	Concept of soil. Influence of parent material, topography, organisms, climate, and time.
CO 2	The study about the components of soil, origin of soil, and processes of soil formation.
CO 3	Important of structure, classification soil structure, soil colour, soil air and aeration, soil water. Significance of organic matter, carbon, soil pH. Decomposition of organic matter.
CO 4	Favourable physical environment for development of zonal, azonal, intrazonal soil, podsol and laterite soil. Processes of podzole and laterite soil development and its impact.
CO 5	Objectives of soil classification and system of soil classification. to study about the soil taxonomy and processes of identification according to particular method.
CO 6	Concept of soil erosion. different processes of soil erosion. factors of soil erosion and method related to soil erosional management.

Bio –geography:

CO 1	Nature, scope development, historical background and expansion of bio geography and modern trends of bio geography. structural organization of biosphere .concept and important of ecology, ecosystem, environment, communities, habitats, niche, and biotopes.
CO 2	Energy flow in ecosystem, sun as the the source of energy and different kind of energy model. concept, types and important of food chain. Important of of energy flow and its impact on environment.
CO 3	Concept of carbon and nitrogen cycle. Description of the carbon and nitrogen cycle and its important on human daily life.
CO 4	Factors of light, heat, moisture, wind, soil and topography in plants for growth in different region and different environment and its important .
CO 5	Definition and concept of bioms. concept of major bioms of the world. Identification of tropical and temperate region and climatic condition, plant community and animal community and its important.
CO 6	Concept and significance of bio diversity. Identify the main reason of degradation of biodiversity. concept of extinction of bio species and extinction trends. measures of biodiversity. Methods of conservation.