GRADUATE ATTRIBUTES IN GEOGRAPHY

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

1. Disciplinary knowledge and skills- Acquiring sound knowledge to understand the major concepts , theoretical principles and practical applicability in core Geography and its different sub-fields like, Geomorphology, Climatology and climate change, changing perspectives of Human Geography, Pedology, Ecology and Bio- geography, Environmental geography, Forest and wildlife management, Regional Planning, Cartography, Regional Geography, Economic Geography, Philosophy of Geography etc. with special reference to Resource Geography, Research Methodology, Sustainable Geography, Remote Sensing, GIS & GNSS, Hazard management and other related fields of study including broader interdisciplinary sub –fields like Geology, Mathematics, Physics, Chemistry, Life Sciences, Environmental Sciences, Information Technology etc.

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

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

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

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

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

7. Trained professional- Ability to deal with problems related with changing climatic scenario as well as hazard management as a skilled professional.

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

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

10. Ethical awareness- Development of demonstrating ability to think and analyse rationally with modern and scientific outlook and identify ethical issues to avoid unethical practices like falsification, committing plagiarism etc. Developing ability to adopt unbiased objectives and following truthful activities in all geographical spheres.

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

12. National and International perspective- The graduates should prepare themselves during their most formative years for their appropriate role to contribute towards the national development by reducing

GEOGRAPHY HONOURS

regional disparities as well as to highlight our national priorities internationally pertaining to their field of interest and future proficiency.

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

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

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

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

1. Acquire a fundamental / structured or cogent understanding of the academic field of Geography, its various learning fields and applications in basic Geography like Geotectonics, Climatology, Pedology, Regional Geography, Human Geography, Bio- Geography, Economic Geography, Environmental Geography, Cartography etc. and its linkages with related disciplinary areas / subjects like Geology, Mathematics, Physics, Chemistry, Life Sciences, Environmental Sciences, Information Technology etc.

2. Gather procedural knowledge which creates various types of professionals related to the disciplinary field of Geography, including professionals engaged in research and development, teaching and government / public services.

3. Obtain skills in fields related to one's specialization area within the disciplinary / subject territory of Geography and most recent as well as emerging developments in the ever changing field of Geography.

4. Demonstrate the coherent and systematic knowledge in the discipline of geography to deal with current issues and their solution.

5. Display an ability to read and understand maps and topographic sheets to look at the various aspects on the space.

6. Cultivate ability to evaluate critically the wider chain of network of spatial aspects from global to local level on various time scales as well.

7. Recognize the skill development in Geographical studies programme as part of career avenues in various fields like teaching, research and administration.

8. Understand the relevance of geographical knowledge to everyday life.

9. Get the ability to communicate geographic information utilizing both lecture and practical exercises.

10. Inculcate the ability to evaluate geographical problems effectively.

11. Exhibit the skill in using geographical research tools including spatial statistics, cartography, remote sensing, GIS, IRNSS and GIScience.

12. Identify and explain the physical and cultural characteristics globally and processes at varied spatio-temporal contexts.

13. Understand human-environment and nature-society interactions as well as various global environmental challenges.

14. Analyse geographic information by using geo-spatial technologies.

15. Respond towards the global and national challenges and initiatives.

16. Based on the field knowledge and advanced technologies, the students should be able to understand the on-going geographical problems in different regions and levels with appropriate pragmatic solutions.

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	KE COURSE F	OK D	.SL.G.	FOG		II (II	UND.	1							
S1 N		CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC
0	POs	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Basic concept	x	х	х	х	х	X	Х	Х	Х	х	х	Х	х	Х
	Understanding														
2	Landscape	х	x	x	-	-	-	х	-	х	Х	Х	х	х	х
3	Understading Ecosystem Structure and Potential	-	-	x	-	x	-	x	x	x	x	x	x	-	x
4	Human Perception and Behaviour	-	-	x	-	-	-	x	x	x	-	-	x	X	X
5	Identification of critical problems and issues	x	-	x	-	x	X	x	x	x	x	x	x	-	x
6	Field based knowledge	-	x	-	x	x	-	-	-	-	x	x	x	-	x
7	Spatial tools and Techniques	-	x	-	x	-	x	-	-	-	X	-	x	-	x
8	Statistical Techniques	-	x	-	x	-	x	-	-	-	x	-	x	-	x
9	Applied Dimensions	x	x	x	x	x	x	-	x	x	x	x	x	-	x
1 0	Case Study based Analysis	-	x	x	-	x	x	-	-	X	x	x	x	-	x
1 1	Public Policy and Management	-	-	-	-	x	x	x	X	X	x	x	x	-	x
1 2	Communicati on Skills	x	x	x	x	x	x	x	x	x	x	x	x	x	x

CORE COURSE FOR B.Sc.GEOGRAPHY (HONS.)

SlN o	POs	DSE- A-5-02	DSE-A- 6-04	DSE-B- 5-05	DSE-B- 6-08	SEC-A- 3-02	SEC-B- 4-03
1	Basic concept	Х	Х	Х	Х	Х	Х
	Understanding						
2	Landscape	-	Х	Х	Х	Х	-
3	Understanding Ecosystem Structure and Potential	x	_	_	x	x	_
	Human						
4	Perception and Behaviour	Х	-	Х	X	Х	Х
5	Identification of critical problems and issues	х	х	-	X	х	х
6	Field based knowledge	Х	-	-	X	X	X
7	Spatial tools and Techniques	X	X	-	-	X	X
8	Statistical Techniques	Х	X	X	-	Х	-
9	Applied Dimensions	Х	X	-	-	X	X
10	Case Study based Analysis	Х	X	-	х	Х	X
11	Public Policy and Management	х	-	-	X	X	X
12	Communication Skills	X	X	X	X	X	X

Discipline Specific Electives(DSE) and Skill Enhancement Course (SEC) for B.Sc.Geography (Hons.)

Core Courses (CC)

CC 1: GEOTECTONICS AND GEOMORPHOLOGY

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

The students will acquire knowledge about-

- The structure of the earth and Earth's tectonic and structural evolution with reference to geological time scale.
- The Plate tectonic as a unified theory of global tectonics and resultant landforms like folds and faults.
- Geomorphic processes and resultant landforms like weathering, mass wasting and some other denudational processes and landforms produced by fluvial, aeolian, fluvio-aeolian, glacial and fluvio-glacial and coastal processes.
- Acquire specific knowledge about the development of river network and landforms on Granites, Basalts and Limestones as well as uniclinal and folded structures.
- The concept of cycle of erosion postulated by i) Davis, ii) Penck, iii) King, iv) Hack, and v) Schumm and Lichty.
- In the Laboratory course students learn first-hand-
- i) How to measure dip and strike by using clinometer

ii)Identification of minerals and rocks

iii) Extraction and interpretation of geomorphic features from Survey of India 1:50,000 topographical map of plateau region as well as morphometric analysis of the concerned map.

iv) Construction of hypsometric curve and derivation of hypsometric integer of a drainage basin from a topographical map of plateau region on a scale of 1: 50,000.

GEOGRAPHY HONOURS

Course Learning Outcomes (CLO)

Core Courses (CC)

CC 2: CARTOGRAPHIC TECNIQUES

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

This course will enable the students to develop-

- Concept and classification of different types of scale and their applications.
- Concepts of generating globe, polar and rectangular co-ordinate system.
- Develop basic concepts of bearing, angular and linear system of measurements to comprehend locational and spatial aspect on the earth surface.
- Components and classification of maps and their uses.
- Classification, properties, and uses of different map projections with special reference to Polar Zenithal Stereographic Projection, Simple Conical Projection with one Standard parallel, Cylindrical Equal area projection, Bonne's Projection and Mercator's Projection as well as UTM system.
- Application of different techniques of thematic mapping and their significance for regional development and decision making.
- In laboratory course the students learn to

i)Construction of different types of scales and their applications.

ii) Constructions of different map projections and their properties. Accordingly, they learn in first-hand the application of different types of map projections.

iii) Different techniques of thematic mapping and its application which can be applied for the purpose of regional development.

Core Courses (CC)

CC 3: HUMAN GEOGRAPHY

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

After going through this course, the students will develop the concept of:

- Approaches to Human Geography in special reference to the concept and classification of race and ethnicity and cultural region.
- Evolution of human society in temporal sense and spatially, human adaptation to their environment.
- Population growth and composition and Demographic transition
- Population-resource region postulated by Ackerman.
- Conflict between development and environment.
- Types and patterns of rural settlement and rural house types as well as morphology and hierarchy of urban settlement.
- In laboratory course they can apply specific techniques of cartograms like:

i) Divided proportional circles to represent country level religious composition,

ii) Measurement of arithmetic growth rate and its representation by bar graph,

iii) Types of age-sex pyramid and nearest neighbour analysis by using topographical map of 1: 50,000 scale.

Core Courses (CC)

CC 4: Thematic Mapping and Surveying

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

At the end of this course the students are expected to acquire the knowledge about fundamental mapping techniques and its applications like:

- Theoretical knowledge of geodetic and plane surveying by using Prismatic Compass, Dumpy level, Theodolite, Abney level and Laser Distance measurer.
- How to read the different types of Geological maps like uniclinal, folded structures and its interpretation.
- Preparation and interpretation of weather maps in post-monsoon, monsoon, and pre-monsoon period.
- Preparation and interpretation of land use and land cover maps as well as socio-economic maps.
- Gather information about the Principal National agencies like NATMO, GSI, NBSSLUP, NHO and NRSC.
- In field survey and laboratory courses they learn in first hand:
 - i) Traverse survey by Prismatic compass.
 - ii) Profile survey by using Dumpy level.
- iii) Height determination in triangulation method by using Theodolite.
- iv) Cross-section profile drawing in uniclinal and folded structure in Geological maps.

Core Courses (CC)

CC 5: Climatology

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

This course will enable the students to

- Understand the elements of weather and climate and its controlling factors like horizontal and vertical distribution of temperature, types, causes and consequences of inversion of temperature.
- Learn about process and forms of condensation; mechanism and forms of precipitation.
- Learn about the typology, origin, characteristics, and modification of air mass as well as circulation of the atmospheric winds like planetary winds, jet streams index cycle.
- Understand the frontogenesis and frontolysis and atmospheric disturbance like tropical and mid-latitudinal cyclones and thunderstorms.
- Develop the concept on mechanism of monsoon with special reference to India.
- Understand the causes and consequences of Greenhouse effect as well as formation, depletion, and significance of the Ozone layer.
- Comprehend the climatic classification developed by i) Thornthwaite and ii) Oliver.
- In Laboratory course, the students learn to
 - i. measure mean daily temperature, air pressure, relative humidity and rainfall with the help of relevant instruments like Six's maximum and minimum thermometer, Barometer, Hygrometer and Rain Gauge respectively.
 - ii. Interpret Pre-monsoon, Monsoon and Post-monsoon daily weather map of India.
 - iii. Construct and interpret hythergraph and climograph.
 - iv. Construction and interpretation of wind rose.

Core Courses (CC)

CC 6: Hydrology and Oceanography

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

The students will acquire knowledge about-

- The physical and biological role on Global Hydrological cycle and its system approach.
- Controlling factors of different hydrological phenomenon like run-off and ground water recharge and discharge and their circulation.
- Principles of water harvesting and watershed management focusing on drainage basin as a hydrological unit.
- Characteristics and origin of major relief features of the ocean floor according to Plate Tectonics.
- Physical and chemical properties of ocean water with special reference to the distribution and determinants of temperature and salinity.
- Air-sea interactions, ocean circulation, water mass, T-S diagram and wave and tides.
- Sustainable use of marine resource with special reference to the formation, classification, and threats of coral reefs.
- Types and causes of sea level changes.
- The laboratory course they learn
 - i. Construction and interpretation of rating curve, hydrographs and unit hydrographs,
 - ii. Construction and interpretation of monthly rainfall dispersion diagram, climatic water budget and Egrograph,
 - iii. Construction of Theissen polygon from precipitation data.

Core Courses (CC)

CC 7: Statistical Methods in Geography

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

After the completion of this course the students will acquire the knowledge on statistical application which will help them to analyse socio-economic data in Geography. They learn:

- Sources and types of statistical data and data processing for analysis.
- Tabulation of statistical data and measures of central tendency, partition values.
- Measures of absolute and relative dispersions.
- Regression, association and correlation to show the nature of relation between two variables.
- Time series analysis to understand the trend of any variable with time.
- Hypothesis testing for selection of data and its significance for future research purpose.
- Different methods of sampling from population which could be true representation of the population.
- In their laboratory course they learn:

i) Construction of data matrix and based on it the students will calculate the central tendency, partition value and dispersion.

ii) Drawing of sample set by using random, systematic and stratified sampling method and its representation on map.

iii) Representation of scattered diagram, linear regression line and residual from regression on map.

Core Courses (CC)

CC 8: Economic Geography

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

This course will enable the students to understand:

- Concepts of economic geography in special reference to Goods and services, production, exchange and consumption.
- Concept of economic man, theories of choices and importance of economic distance and transport cost as well as transnational sea-route, railways and highways with special reference to India.
- Concept and classification of economic activities as well as factors affecting location of economic activities with special reference to

A) Agriculture (Von Thunen) and

B) Industry (Weber).

- Importance and significance of different types of economic activities like Primary activities, secondary activities and Tertiary activities.
- Evolution, structure and functions of WHO and BRICS and International trade and economic blocs.
- In their Laboratory course they apply previously acquired knowledge in cartograms to represent state-wise variation in GDP, occupational structure.
- Also, they use statistical techniques like time series analysis to represent national and state industrial production.
- They learn Detour Index and Shortest path analysis to analyse transport network.

Core Courses (CC)

CC 9: Regional Planning and Development

(Credits: 06; Theory-04, Practical: 02)

Course Learning Outcome (COs):

This course will provide a fundamental conceptual base for future integrated regional development. The students will be able to:

- Understand types of regions as well as evolution and types of regional planning and purpose of it.
- Select a region for Planning, delineation of planning region and characteristics of an Ideal Planning region.
- Have comprehensive understanding regarding theories and models for Regional Planning like A) Growth Pole Model by Perroux,
 - B) Cumulative Causation by Myrdal and
 - C) Stages of Development by Rostow.
- Develop the concept of growth and development and dichotomy between them; evolution of the concept of human development and its indicators as well as causes of underdevelopment.
- Have a foundation on India's regional diversity and disparity as well as need and measures for India's regional development.
- In their laboratory course they will acquire knowledge for application in:
 - A) Delineation of formal regions by Weighted index method,
 - B) Delineation of functional regions by Breaking point analysis,
 - C) Measurement of inequality by Location quotient method,
 - D) Measurement of regional disparity by Sopher index.

CC 10: SOIL AND BIO-GEOGRAPHY

(Credits: 06, Theory-04, Practical-02)

Course learning outcome (COs):

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

- Acquire clear concept about factors of soil formation along with Physical as well as Chemical properties of soil.
- Understand the origin and characteristics of soil profile.
- Articulate knowledge of soil erosion and degradation with special reference to anthropogenic activities.
- Learn the basic concept and principles of soil and land capability classification.
- Understand the concept of Ecosystem, Ecology, Bio-sphere, Biome, Community and Ecotone along with classification of World Biomes.
- Obtain concept about trophic structure, Food chain, Food Web as well as Energy flow in the Ecosystem.
- Gather knowledge regarding Bio-geo chemical cycles.
- Articulate knowledge of Bio diversity
- Procure conscious knowledge about Deforestation.
- In the laboratory course the students will get an opportunity to determine A) Soil reaction (pH),
 - B) Soil salinity,
 - C) Textural classification of soil.
 - D) Access statistical methods to determine Plant species diversity,
 - E) Time series analysis of bio- geography data.

CC11: RESEARCH METHODOLOGY AND FIELDWORK

(Credits: 06, Theory-04, Practical-02)

Course learning outcome (COs):

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

- Gather detailed knowledge about Research in Geography as well as Literature review with special reference to formulation of research design.
- Secure clear vision about Research materials and methods with emphasis on Research problems, objectives and hypothesis.
- Acquire proper understanding about various techniques of writing scientific reports.
- Obtain actual concept about plagiarism along with its prevention.
- Understand the role and significance of Field work along with lessons regarding pre field academic preparations and ethics of field work.
- Acquire proper knowledge about logistics and handling of emergencies during Field work.
- Gather knowledge about recent techniques to conduct proper field work for the collection of primary data to bring out grassroots realities.
- Procure sufficient knowledge regarding positioning and collection of samples and preparation of inventory from field data.
- Possess accurate skill to make use of proper tools and surveying methods for measurement in context of collection and processing of data.
- Conduct field work in physical and human geography, besides investigating socio-economic and environmental issues.
- Develop tools to collect primary data from the field and interpret them meaningfully.
- In the Laboratory course the students will learn to prepare field report with suitable tables, maps and diagrams based on the data collected from the field and secondary sources in the following ways-

i) To prepare the Field report by collecting primary data on physical aspects like relief and soil by using survey instruments wherever necessary.

ii) To prepare the Field report by collecting socio economic data at the household level with the help of a proper questionnaire.

iii) To prepare a Field report with post- field tabulation by processing and analysis of quantitative as well as qualitative data.

iv) To prepare a complete Field report with relevant maps, diagrams and photographs using primary and secondary data, clearly citing their sources.

CC12: Remote Sensing, GIS and GNSS

(Credits: 04, Theory-02, Practicals-02)

Course learning outcome (COs):

This course will enable the student to

- Understand the concepts of Remote Sensing, Geographical Information System and Global Navigation Satellite System (GNSS) and their applicability in geographical studies.
- Gather knowledge about the various successful space missions undertaken by Indian Space Research Organization in India and National Aeronautics and Space Administration in U.S.A.
- Develop the skill to interpret the satellite imageries with the help of the interpretation keys and understanding the standard false colour composition of those images.
- Learn about the advanced concepts of Digital Elevation Model, its types and their uses in geographical studies to identify the areas of resources (resource management) as well as the areas which are under certain stress (hazard preparedness), their exact locations and solutions.
- Differentiate between various data structures to efficiently represent the imageries onto the Geographical Information System which is necessary for complex analysis in sustainable development.
- Get acquaintance with the theoretical concepts of attribute table, manipulation, query buffer and vector overlay analysis as preparations for practical part.
- Manual measurements of length and area using GNSS data and its utility in geographical studies.
- Using Q-GIS software to georeference any raster image, digitize different features and administrative boundaries, attach data and create thematic maps, followed by image enhancement, supervised classification and preparing reflectance libraries of LULC features present in a satellite imagery, vector overlay analysis and lastly, graphical plotting of waypoints collected by GARMIN e-trex 10.

CC 13: EVOLUTION OF GEOGRAPHICAL THOUGHT

(Credits: 06, Theory-04, Practicals-02)

Course learning outcome (COs):

This course will enable the student to

- Distinguish the paradigms in geography discipline through time.
- Understand the geographical thinking in different regions of world.
- Appreciate the past and future trends of world geography in general and Indian geography in particular.
- Acquire clear knowledge about debates and dichotomies in the field of Philosophy of Geography.
- Secure real knowledge about development of Geography through various ages.
- Understand the Transition from cosmography to scientific Geography.
- Obtain genuine knowledge about development of different schools of geographical thought in different countries of the world along with contributions of eminent scholars of that school.
- Understand the trends of geography in the post-World War-II period with special reference to Quantitative revolution, systems Approach, Structuralism and historical materialism.
- Possess complete information regarding changing concept of space with special reference to Harveyas well as the volution of Critical Geography.
- Procure comprehensible knowledge about journey towards post modernism focussing Geography in the 21st century.
- In the laboratory course the students will get an opportunity to learn
 - A) Changing perception of world maps through ages.
 - B) Mapping voyages following famous expeditors.

C) About a school of thought according to a philosophy or particular approach by poster presentation (Group presentation)

CC 14: HAZARD MANAGEMENT

(Credits :06, Theory-04, Practical-02)

Course learning outcome (COs):

This course will enable the student to

- Understand processes and impact of disaster.
- Understand both the natural and man-made disaster and human negligence in context of environment.
- Gain a perspective of disasters and various dimensions of disaster management.
- Have comprehensive knowledge of various natural and manmade disasters in India.
- Examine the response and mitigation measures of disasters.
- Acquire knowledge on concepts, types, classification method, causes, impacts, distribution and mapping of disasters in India.
- Understand the man-made disasters and human negligence in the context of environment.
- Secure knowledge about approaches to hazard study focussing risk perception, vulnerability assessment and hazard paradigms.
- Bring awareness about the preparedness, mitigation and processes of disaster risk reduction.
- Appreciate the responses and mitigation measures of disasters in India with special reference to resilience and capacity building.
- Procure the techniques of hazard mapping by data and geospatial techniques.
- Acquire in depth knowledge for different hazard specific study focussing West Bengal and India like
 - a) Flood,
 b) Earthquake,
 c) Landslide,
 d) Tropical cyclone,
 e) Fire,
 f) Biohazard.
- In the laboratory course the students will prepare a group project report on any hazard from West Bengal (as enlisted in the syllabus) incorporating a preparedness plan.

DSE-A-5-02: CLIMATE CHANGE : VULNERABILITY AND ADAPTATIONS

(Credits: 06, Theory- 04, Practical- 02)

Course learning outcome (COs):

This course will enable the student to

- Understand the foundational concepts of climate change and its impacts.
- Assess the human and environmental vulnerability to climate change.
- Learn the various adaptation and mitigation for reducing the impacts of climate change and national action plan.
- Understand the climate change and its physical, economic and social vulnerabilities.
- Diagnose the impacts of climate change on various spheres of the earth.
- Appreciate the global, national and local adaptation and mitigation efforts and plans of the governments.
- Gather knowledge about climate change with reference to the geological time scale focussing Greenhouse gases and global warming.
- Secure clear concepts about origin, scope, trends, evidences and factors of climate change.
- Possess proper knowledge about Electromagnetic spectrum, atmospheric window, heat balance of the earth.
- Obtain comprehensible knowledge about global climatic assessment with special reference to IPCC reports as well as National Action Plan on climate change.
- Access sufficient knowledge about climate change and vulnerability coupled with impacts of climate change on various spheres of life.
- Acquire recent awareness about global initiatives to climate change mitigation focussing Kyoto Protocol, carbon trading, clean development mechanism, COP, climate fund.
- Understand climate change vulnerability assessment and adaptive strategies with particularreference to South Asia.
- Assess the role of urban local bodies, Panchayats and educational institutions on climate change mitigation with regard to awareness and action programmes.
- In the laboratory course, the students will analyse the following aspects-

i) Trends of temperature as well as comparative analysis of seasonal variability of rainfall of some India Meteorological Department stations.

ii) Annual rainfall variability of any two decades of any two representative climatic regions,

iii) Preparation of an inventory of extreme climatic events and mitigation measures of any climatic region / country of South Asia for a period of one decade based on secondary information.

DSE-A-6-04: RESOURCE GEOGRAPHY

(Credits: 06, Theory- 04, Practical- 02)

Course learning outcome (COs):

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

- Acquire knowledge about concept and classification and significance of natural resources along with some important approaches to resource utilization.
- Obtain awareness about global scenario of the problem of resource depletion focussing towards appraisal and conservation of natural resources.
- Procure actual consciousness about sustainable resource development.
- Gather cognizance about distribution, utilisation, problems and management regarding
 - i) Metallic mineral resources,
 - ii) Non-metallic resources,
 - iii) Energy resources emphasizing the conventional and non-conventional types.
- Possess true realization about contemporary energy crisis highlighting future scenario as well as sustainable use of resources and resource sharing.
- In the Laboratory course the students will Acquire skills-

A) Regarding mapping and estimating changes in area / number from maps and /or satellite images for following components-

i) Forest or vegetation cover,ii) Water bodies.

B) Analyse the decadal changes in state -wise production of coal and iron ore.

C) Compute Human Development Index focussing comparative decadal change of top five Indian states.

DSE-B-5-05: CULTURAL AND SETTLEMENT GEOGRAPHY

(Credits: 06, Theory- 04, Practical- 02)

Course learning outcome (COs):

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

- Gather sufficient knowledge about definition, scope, content and development of Cultural Geography.
- Secure clear concept about following elements
 - i) Cultural hearth and realm,
 - ii) Cultural diffusion,
 - iii) Diffusion of major world religions and languages.
 - iv) Cultural regions of India.
 - Understand the actual relationship of culture with technology and development along with the concept of cultural segregation and diversity.
 - Acquire complete perception about races and racial groups of the world.
 - Obtain true concept about following dimensions of rural settlements-

i) Definition, nature, characteristics,ii) Site, situation, morphology.iii) Census of India categories.

- Procure comprehensible cognizance regarding rural house types of India highlighting the role of social segregation.
- Gather proper realization about Census of India definition and categories of urban settlement.
- Access actual concept of urban morphology with special reference to the models of Burgess, Hoyt, Harris and Ullman.
- Achieve true perception of city-region and conurbation as well as functional classification of cities as put forward by Harris, Nelson, and McKenzie.
- In laboratory course, students will learn the skill of mapping language distribution of India as well as will secure the knowledge to identify the rural settlement types of India from Survey of India 1:50k topographical maps along with the required skill for CD block-wise housing distribution in any district of West Bengal.
- Possess proper knowledge about Social area analysis of a city.

DSE-B-6-08: GEOGRAPHY OF INDIA

(Credits: 06, Theory- 04, Practical- 02)

Course learning outcome (COs):

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

- Understand the physical and climate related profile of the country.
- Study the resource endowment and its spatial distribution and utilization for sustainable development.
- Synthesise and develop the idea of regional dimensions.
- Gather complete perception about population profile of the country with special reference to some tribal population.
- Obtain proper knowledge about agricultural regions coupled with the concept of Green revolution and its consequences.
- Acquire detailed knowledge about the distribution and utilisation of mineral and power resources like iron ore, coal, petroleum and natural gas.
- Attain actual awareness about industrial development in relation to Automobile and information technology.
- Secure thorough knowledge about physiographic and economic regionalization of India following R.L. Singh and P. Sengupta respectively.
- Acquire complete knowledge about the following aspects of West Bengal-

i) Physical and demographic perspectives,ii) Various dimensions of resources,iii) Regional issues highlighting Darjeeling Hills and West Bengal.

- In the laboratory course, the students will get an opportunity to attain skills to draw monthly temperature and rainfall graphs of some selected stations from different physiographic regions of India and get practical knowledge from that.
- Obtain skills to calculate and analyse crop combination from any two contrasting districts of West Bengal.
- Secure skills to analyse annual trends of production of mineral resources and manufacturing goods as well as to compute Composite Index to compare developed and backward states of India.

SEC-A-3-02-TH: TOURISM MANAGEMENT

(Credits :02)

Course learning outcome (COs):

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

- Equip with a basic understanding of nature and scope, trends and patterns of various types of tourisms.
- Have sound knowledge on geographical, environmental and socio-cultural aspects of tourism in India.
- Apply the principles of Geo-tourism and analyse the prospects and problems associated with pilgrimage tourism.
- Appreciate the basic concepts and geographical parameters of tourism.
- Acquire knowledge on the recent trends and patterns of tourism development in India and other countries.
- Understand the impacts of tourism on national, regional and local economy, environment and society.
- Gather knowledge about scope, nature, concept and issues of tourism management along with factors influencing tourism and various types of tourism.
- Utilize information on factors to prepare plan for destination marketing, Niche tourism and tourism products.
- Secure sufficient information regarding

i) Tourism Impact Assessment,ii) Sustainable Tourism,iii) Information technology and tourism

• Tour operations planning and guiding with special reference to tourism in India focussing infrastructure, access and planning for different budgets for following destinations-

i) Western Himalayas,ii) Goa,iii) Chilka / Vembanad,iv) Jaipur.

SEC-B-4-03-TH: RURAL DEVELOPMENT

(Credits :02)

Course learning outcome (COs):

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

- Appreciate the concepts, needs and various approaches to rural development
- Understand the strong economic bases of rural areas of India
- Appreciate the area based and target group based approaches and provision of services to rural development
- Define development focussing rural development as well as inter-dependence of Urban and Rural Sectors of the Economy highlighting the concept, basic elements and measures of level of rural development.
- Gather knowledge about paradigms of rural development likei) Gandhian approach,
 ii) Lewis Model,
 iii) "Big Push" theory,
 iv) Myrdal's Model
- Obtain concept about rural governance focussing Panchayati Raj System as well as rural development policies and Programmes in India.
- Access proper knowledge about Area Based Approach to Rural Development like Drought Prone Area Programmes, PMGSY.
- Acquire comprehensible cognizance about Target Group Approach to Rural Development like SJSY, MNREGA and Jan DhanYojana.