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# Netaji Subhas Open University

## Honours in Geography

### Programme Code - HGR

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### Programme Objectives

Geography is a field of science devoted to the study of the lands and its features, the inhabitants, earth's description and the phenomena of the Earth. Relevance of Geography's to science and society arises from a distinctive and integrating set of perspectives through which geographers view the world around them. Geography has long been considered as one of the fundamental subjects in the education system right from the beginning of the system at the school level. In general, as ODL is concerned, our main objective is to democratize education as a resource and provide every citizen, irrespective of gender, caste and creed, easy and affordable access to quality education and particularly in the paradigm of social sciences. Considering this, the University has launched its Geography Honours (HGR) Programme at the Under-graduate level (BDP) from the session 2021-22. The prime objective of the programme is to educate and train the learners to become an effective manager, good educator, employer as well as a good researcher in the near future. Counsellors with expertise in various fields of geography like geomorphology, hydrology, bio-geography, climatology, environment, disaster management, population, social, economic, urban geography, regional planning, etc. work together to teach the graduate learners about the fundamental and applied problems that are of compelling societal and scientific interest. Issues such as climate change, global warming, water balance, energy use, resource use, hazards, socioenvironmental problems, human geography and dynamics of population and settlements, issues associated with environmental change and management, landscape development, and human impacts on the environment will also be studied with particular emphasis in this programme.

The main objectives for offering this programme can be pointed as: –

1. To prepare the learners for higher studies in this discipline by focussing the curriculum for understanding and resolving issues related to the environment and sustainable development. It is an important link between the natural and social sciences.
2. To help the learners to develop a mental map of the community, province or territory, country and the world so that the learners can understand the 'location' of places and events and relate them in the real world.
3. The university is well-prepared to offer such a programme. In this context, cooperation from study centres/colleges under different universities has been managed to keep the parity between regular as well distance mode of learning in the discipline of geography.
4. To educate and trained individuals to be effective managers and decision-makers by the field work carried out in the programme.

5. To equip individuals with the necessary scientific skills and competencies to enable them to seek jobs and progress in their career by the hands on practical teaching learning and acquiring the practical experiences.
6. To enhance the capabilities of the existing workforce in the country and abroad and thus contribute to economic development and business growth as they can cater the knowledge of such portions through the curricula.
7. To give chances for higher education to the willing learners who could not get entry to the convention universities due to their age, job and other limitations and make them capable like regular learners of other universities.

## Expected Programme Outcome

The programme geography provides its learners the opportunities to skilled adequately by learning relevant proficiency and apply their knowledge to real world challenges. The various courses of the programme are designed to give the learners an opportunity to learn valuable skills, apply classroom knowledge, connect to many organizations and issues that require geographical and environmental expertise. Thus, the learners completing this programme will positively be able to:

1. The learners appreciate Earth as the homeland of mankind and provide wise decisions about how the resources of the planet should be used properly.
2. The learners definitely understand from the geographical point of view the way of looking at the world through the lenses of place, space, and scale. Indeed, geographical location provides a cross-cutting way of looking at processes and phenomena while other disciplines tend to treat in isolation. Geographers focus on 'real world' relationship and dependency among the phenomena and processes will give character to any location or place.
3. After completion of the programme, the learners can be able to analyse environmental-societal dynamics and relating human behaviour to the physical environment, environmental dynamics by linking the physical systems, and human societal dynamics by linking economic, social, and political systems.
4. The learners can be able to accomplish spatial representation using visual, verbal, mathematical, digital, and cognitive approaches. Because in geography, places are like natural laboratories for the study of the complex relationship between processes and phenomena of the earth.
5. The learners of geography can be able to enhance their capabilities in the workforce by contributing a lot by their skills as it designed in such a manner.
6. The learning outcome from the discourse make the learners capable with the necessary scientific skills and competencies, enrich and enable them to become a better educator, teacher, employer or researcher.
7. The field survey course in the programme is designed to explore the theoretical knowledge, so that the learners can apply classroom knowledge to learn the valuable field skills and connect to the issues operated in the environment and the surrounding society.
8. With the help of such designed structure in the practical courses, the learners become capable to understand the important items to solve the problems and challenges and this enrich them for the higher studies. The practical courses include different types of scale,

surveying, map projection, geographic techniques, thematic maps, cartograms, topographical maps, morphometric techniques, weather maps, identification of rocks and minerals, geological map, station model, statistical techniques, etc. relevant to this course.

9. The knowledge gained in Remote Sensing (RS) and Geographic Information System GIS) incorporated in geography enables the learners to discover the modern applications of science in the physical, social and environmental spheres. This will help in higher studies and further extended in research works in various fields of geography as well as in the fields of human and environmental aspects at local, national and regional level.

## Programme Structure

|          | SEM | CODE               | Course Name                                                       | Theory/<br>Prac. | Credit | Study<br>Hours | TEE<br>Full<br>Marks | Assignment<br>Full Marks | Total<br>Marks | Pass<br>Marks<br>30% |
|----------|-----|--------------------|-------------------------------------------------------------------|------------------|--------|----------------|----------------------|--------------------------|----------------|----------------------|
| 1st Year | I   | CC-GR-01           | Cartographic Techniques Lab & Thematic Mapping and Surveying Lab  | Practical        | 6      | 180            | 70                   | 00                       | 70             | 21                   |
|          |     | CC-GR-02           | Geotectonics and Geomorphology Lab & Climatology Lab              | Practical        | 6      | 180            | 70                   | 00                       | 70             | 21                   |
|          |     | AE-BG-11 /AE-EG-12 | Bengali / English*                                                | Theory           | 2      | 60             | 50                   | 20                       | 70             | 21                   |
|          |     | #GEC-01            | Refer Table Below                                                 | Theory           | 6      | 180            | 50                   | 20                       | 70             | 21                   |
|          | II  | CC-GR-03           | Geotectonics and Geomorphology                                    | Theory           | 6      | 180            | 50                   | 20                       | 70             | 21                   |
|          |     | CC-GR-04           | Human Geography                                                   | Theory           | 6      | 180            | 50                   | 20                       | 70             | 21                   |
|          |     | AE-ES-21           | Environmental Studies                                             | Theory           | 2      | 60             | 50                   | 20                       | 70             | 21                   |
|          |     | #GEC - 02          | Refer Table Below                                                 | Theory           | 6      | 180            | 50                   | 20                       | 70             | 21                   |
| 2nd Year | III | CC-GR-05           | Statistical Methods in Geography Lab & Human Geography Lab        | Practical        | 6      | 180            | 70                   | 00                       | 70             | 21                   |
|          |     | CC-GR-06           | Remote Sensing, GIS Lab & Research Methodology and Field Work Lab | Practical        | 6      | 180            | 70                   | 00                       | 70             | 21                   |
|          |     | CC-GR-07           | Climatology                                                       | Theory           | 6      | 180            | 50                   | 20                       | 70             | 21                   |

|                            |              |                 |                                   |                                                     |            |     |     |    |             |    |
|----------------------------|--------------|-----------------|-----------------------------------|-----------------------------------------------------|------------|-----|-----|----|-------------|----|
|                            |              | <b>SE-GR-11</b> | Remote Sensing                    | Theory                                              | 2          | 60  | 50  | 10 | 60          | 18 |
|                            |              | <b>#GEC- 03</b> | Refer Table Below                 | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            | <b>IV</b>    | <b>CC-GR-08</b> | Environment Geography             | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>CC-GR-09</b> | Hydrology and Oceanography        | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>CC-GR-10</b> | Economic Geography                | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>SE-GR-21</b> | Research Methods                  | Theory                                              | 2          | 60  | 50  | 10 | 60          | 18 |
|                            |              | <b>#GEC- 04</b> | Refer Table Below                 | Theory                                              | 6          | 180 | 50  | 20 | 70          | 18 |
|                            |              |                 | <b>CC-GR-11</b>                   | Disaster Management Lab & Environment Geography Lab | Practical  | 6   | 180 | 70 | 00          | 70 |
| <b>3<sup>rd</sup> Year</b> | <b>V</b>     | <b>CC-GR-12</b> | Regional Planning and Development | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>DS-GR-11</b> | Soil & Bio Geography              | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>DS-GR-21</b> | Urban Geography                   | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>CC-GR-13</b> | Evolution of Geographical Thought | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>CC-GR-14</b> | Geography of India                | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            | <b>VI</b>    | <b>DS-GR-31</b> | Population Geography              | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            |              | <b>DS-GR-41</b> | Social Geography                  | Theory                                              | 6          | 180 | 50  | 20 | 70          | 21 |
|                            | <b>TOTAL</b> |                 |                                   |                                                     | <b>140</b> |     |     |    | <b>1800</b> |    |

# Any one from each group to be selected from the following option of GE courses for HGR

| Subject                  | SEM-I: GE-01                                                                        | SEM-II: GE-02                                                                | SEM-III: GE-03                                                          | SEM-IV: GE-04                                 |
|--------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|
| <b>History</b>           | GE-HI-01: Eastern India (with special Reference to Bengal): (earliest to 1203/1204) | GE-HI-02: Eastern India (with special Reference to Bengal): (1203/1204-1757) | GE-HI-03: Eastern India (with special Reference to Bengal): (1757-1947) | GE-HI-41: Making of Contemporary India        |
|                          |                                                                                     |                                                                              |                                                                         | Ge-Hi-42: Making of Contemporary World        |
| <b>Sociology</b>         | GE-SO-01: Indian Society                                                            | GE-SO-02: Population and Society                                             | GE-SO-03: Gender and Violence                                           | GE-SO-41: Sociology of Social Movements       |
|                          |                                                                                     |                                                                              |                                                                         | GE-SO-42: Rethinking Development              |
| <b>Political Science</b> | GE-PS-01: Nationalism in India                                                      | GE-PS-02: Feminism: Theory and Practice                                      | GE-PS-03: Gandhi and the Contemporary World                             | GE-PS-41: Understanding Ambedkar              |
|                          |                                                                                     |                                                                              |                                                                         | GE-PS-42: United Nations and Global Conflicts |

\* Learners have to choose any one from AE-BG-11: Bengali or AE-EG-12: English as Ability Enhancement Compulsory Course 1

# Learners have to choose any one subject from GE combination list, accordingly group courses of GE-1, 2, 3 & 4 will be fixed for Semester-I, II, III & IV. If there is 2 options available for GE course 4 in Semester IV, candidates have to choose any one option.

## Examination System Per Semester

### Term-End Examination- Dec (Odd Sem. July-Dec.)

| Semester I        | Semester III     | Semester V       |
|-------------------|------------------|------------------|
| CC1               | CC5              | CC11             |
| CC2               | CC6              | CC12             |
| AECC1 (Beng/ Eng) | CC7              | DSEC1            |
| GE1               | SEC1             | DSEC2            |
|                   | GE3              |                  |
| Total credit: 20  | Total credit: 26 | Total credit: 24 |

### Term-End Examination- June (Even Sem. Jan.-June)

| Semester II      | Semester IV      | Semester VI      |
|------------------|------------------|------------------|
| CC3              | CC8              | CC13             |
| CC4              | CC9              | CC14             |
| AECC2 (ENVS)     | CC10             | DSEC3            |
| GEC2             | SEC2             | DSEC4            |
|                  | GEC4             |                  |
| Total credit: 20 | Total credit: 26 | Total credit: 24 |

*\*Assignment will be conducted through digital platform on MCQ*

## Objective and Expected Outcome for Each Course

| Course Code                                                           | Course Objectives                                                                                                                                                                                                                                                                                                                        | Expected Outcomes                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Core Courses (CC)</b>                                              |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| CC-GR-01:<br>Cartographic Techniques & Thematic Mapping and Surveying | The objective of this course is to acquaint the learners with cartographic skills such as scales and their construction, projections and their construction, diverse ways of diagrammatic representation of data, representation of area data, preparation of Thematic maps and different kinds of levelling and surveying techniques.   | This course is expected to develop awareness and knowledge among the learners about the various cartographic techniques and they will be able to apply those in practical fields.                                                                                           |
| CC-GR-02:<br>Geotectonics and Geomorphology & Climatology             | The objective of this course is to provide knowledge to the learners regarding topographical maps of plateau region, learn construction of hypsometric curves, identify different rocks and minerals when they are on field and be able to prepare geological maps and learn measurement of weather elements using analogue instruments. | This course is expected to develop introductory practical knowledge among the learners to construct hypsometric curves, identify different rocks and minerals, measure dip and strike and be able to interpret geological maps, climatic charts and interpret weather maps. |
| CC-GR-03:<br>Geotectonics and Geomorphology                           | The primary objective of this course is to provide the knowledge of Earth's evolution, its interior with special reference to seismology, plate tectonics, folds and faults their origin and types, various landforms formed due to degradational processes and models of landscape evolution.                                           | Successful completion of this course will develop the knowledge about the concept of Isostasy and identification of landforms at the various stages of the cycle of erosion.                                                                                                |
| CC-GR-04:<br>Human Geography                                          | The main objective of this course is to transduce the knowledge of the different elements of Human Geography, gather information about space and societal forms and knowledge of race and ethnicity, along with rural and urban settlements.                                                                                             | After successful completion of this course the students will be able to demarcate space according to cultural regions, identify population resource regions, identify rural and urban settlements and have a holistic view of society, demography and ekistics.             |
| CC-GR-05:<br>Statistical Methods in Geography & Human Geography       | Primary objective of this course is to provide the practical knowledge about qualitative and quantitative testing procedure of different parameters which are very much important for the analysis of any geographical data. The preparation of different cart, graph and                                                                | This course is expected to develop the practical knowledge about the laboratory methodology related to statistics among the learners who may utilize such concepts and practical expertise in the required                                                                  |

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                  |
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|                                                                        | thematic maps are also described here.                                                                                                                                                                                                                                                                                                                                                                                                                                                           | areas, especially in the field of human geography while conducting field and research-oriented surveys.                                                                                                                                                                                                                                                                          |
| CC-GR-06:<br>Remote Sensing, GIS & Research Methodology and Field Work | Primary objective of this course is to provide the practical knowledge about the various principles of Remote Sensing, image referencing schemes and data acquisition. The practical knowledge of GIS along with the utilization, options, procedure of some RS-GIS software is also discussed in this course. The research methodology and field work procedure, techniques are also vividly discussed here. The combination of such make the learners capable for higher studies and research. | This course is expected to develop the practical knowledge about the georeferencing of maps and images and digitisation of features obtained from field work for any study purpose or research work. On the basis of collection of data and its digitisation maps for the area studied will be prepared by the learners for interpretation the outcomes of the survey conducted. |
| CC-GR-07:<br>Climatology                                               | The centralized goal of this course is to provide the detailed knowledge about the elements of atmosphere, temperature changes and nature and composition of the atmosphere, occurrence of atmospheric phenomenon and climatic classification.                                                                                                                                                                                                                                                   | This course is expected to develop the detail theoretical knowledge about the occurrences of temperature change within the atmosphere, circulation in the atmosphere, understand fronts with tropical and midlatitude cyclones and nature of monsoonal circulation.                                                                                                              |
| CC-GR-08:<br>Environment Geography                                     | The central objective of this course is to provide knowledge to the learners regarding the perception of environment in different stages of civilization, ecosystem, wetland ecosystem, different types of environmental pollution and degradation and knowledge about various environmental protocol and principles of wastelands and wetlands.                                                                                                                                                 | This course is expected to develop the detail theoretical knowledge among the learners about the concept and nature of environmental geography along with the urban and rural environmental issues, policies and their management.                                                                                                                                               |
| CC-GR-09:<br>Hydrology and Oceanography                                | The central objective of this course is to provide knowledge to the learners various aspects of runoff, drainage basin, groundwater functioning marine resources, and properties of water and sea- level changes from time to time.                                                                                                                                                                                                                                                              | This course is expected to develop the detail theoretical knowledge among learners and they will be able to use this knowledge in groundwater studies and in oceanographic studies.                                                                                                                                                                                              |

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| <p>CC-GR-10:<br/>Economic<br/>Geography</p>                                      | <p>The central objective of this course is to make the learners understand the concepts in Economic Geography, concept of economic man along with economic distance and transport costs. The learners will acquaint themselves with the primary, secondary and tertiary activities, agricultural systems and international agreements and trade blocs.</p>                                                                             | <p>This course is expected to develop the detail theoretical knowledge among learners about the nature and scope of economic geography and the economic scenario in different regions and understand the optimum use of resources. The learners will also identify themselves with the transport costs and means of reducing the costs along with demarcating the different types of economic activities and policies related to it.</p> |
| <p>CC-GR-11:<br/>Disaster<br/>Management<br/>&amp; Environment<br/>Geography</p> | <p>The primary objective of this course is to transduce the knowledge of different preparedness plan in case of any natural calamity such as thunderstorm, landslide, flood or any industrial accident. The course will also provide a method for learners to determine the soil type and preparation of questionnaire.</p>                                                                                                            | <p>After successful completion of this course learner will develop the practical knowledge about handling a touch situation during natural calamity by preparing a plan to combat against any adverse situation. They will be able to identify the soil types and also prepare a perception survey on environmental problems in case of conducting surveys for making project reports.</p>                                               |
| <p>CC-GR-12:<br/>Regional<br/>Planning and<br/>Development</p>                   | <p>The primary focus of this course is to disseminate the knowledge about the types of regions and their delineation, principles and objectives of regional planning, tools and techniques of regional planning and learn about different theories and models of regional development and the indicators of development. This will aim at knowing the measures of balanced development in India.</p>                                   | <p>This course is expected to develop the detail theoretical knowledge about the changing concept of development, concept of underdevelopment, regional development in India along with application of models for regional development.</p>                                                                                                                                                                                              |
| <p>CC-GR-13:<br/>Evolution of<br/>Geographical<br/>Thought</p>                   | <p>This course is formulated with an idea to provide sufficient theoretical knowledge about development of Geography and contributions of Greek, Chinese, and Indian geographers throughout the ages. It will also focus on understanding the dualism and dichotomies within geography, better understanding of man-environment relationship. The course aims n helping learners to know about the contributions of many Greek and</p> | <p>The learners can understand and write down the contributions made by the philosophers in the past with modern times and phase out the evolution of geography and paradigm shift in the decades. The learns will be able to understand the changing concept of space in geography in the 21st Century and be able to write down the Quantitative Revolution and its impact, and</p>                                                    |



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|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | French philosophers who have who have laid the foundations of ancient and modern geography.                                                                                                                                                                                                                                                                                                                                                                                                       | approaches such as positivism, behaviouralist, systems approach, radicalism, feminism.                                                                                                                                                                                                                                                |
| CC-GR-14:<br>Geography of<br>India                 | The main aim of this course is to give an idea to the students about the structure & relief of India, climate, soil and vegetation, distribution, growth, structure and policies of population distribution of population by race, caste, tribes, religion, language, agricultural regions and green revolution and its consequences. It also aims in providing the students' knowledge on mineral and power resources distribution and its utilisation and overview of Geography of West Bengal. | This course will definitely give the idea to the learners about the varied nature of the physiography of West Bengal. They will be able to write about the population distribution of India and physiographic distribution, understand the geography of India and be able to write about the valuable resources found in India.       |
| <b>Course Code</b>                                 | <b>Course Objectives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Expected Outcomes</b>                                                                                                                                                                                                                                                                                                              |
| <b>Discipline Specific Elective Courses (DSEC)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                       |
| DS-GR-11:<br>Soil & Bio<br>Geography               | The primary objective of this course is to give an idea about the factors of soil formation and man as an active agent of soil transformation, understanding the soil profile and profile characteristics of zonal soils, soil erosion and degradation, concept of biosphere, trophic structure and biogeochemical cycles. The course will also make them aware about degradation and soil erosion.                                                                                               | This course is expected to develop awareness and understanding about soil geography and biogeography. The learn will be able to identify the different kinds of soils, their properties and write down the factors and processes of soil erosion and degradation; can identify the threats of biodiversity and conservation measures. |
| DS-GR-21:<br>Urban<br>Geography                    | This course is formulated with an idea to develop knowledge among the students about the origin of urban places in ancient, medieval, modern and post-modern periods- factors, stages, and characteristics. theories of urban evolution and growth and learning about the urban hierarchies. The course will also impart knowledge about the land use of some major cities of India.                                                                                                              | This course is expected to develop awareness among the learners about city region and growth of cities. They can write the characteristics of urban places, learn the theories of city structure, know about the urban issues and problems related to urban areas and finally identify the policies on urbanization.                  |
| DS-GR-31:<br>Population<br>Geography               | This course is formulated with an idea to develop knowledge among the students about relation between population geography and demography, sources of population data, their level of reliability and problems of mapping,                                                                                                                                                                                                                                                                        | This course is expected to develop awareness among the learners about population dynamics, characteristics of rural-urban composition, measurements of population                                                                                                                                                                     |

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                                        | population distribution, and demographic transition model. The aim of the course is also to make them understand about the density and growth profile in India, population composition and characteristics, literacy, measurements of fertility and mortality, population policies in developed and less development countries and can relate to the contemporary issues like ageing of population, declining sex ratio, population and environment dichotomy. | change and population composition of India. The learners will be able to write down the causes of migration and national and international patterns and also know about the population policies. They will be able to write about the contemporary issues and its future implications.                                                                                                                                          |
| DS-GR-41:<br>Social<br>Geography       | The central objective of this course is to study the concept, origin, nature and scope of social geography, social differentiation and stratification, evolution of social-cultural regions of India, social policies, planning and impact management.                                                                                                                                                                                                         | This course is expected to develop awareness among the learners about the concept of space, class, religion, social wellbeing, quality of life, education, health, gender and social geographies of inclusion and exclusion, slums, gated communities, communal conflicts and crime. The learners will learn about the Five Year Plans and can relate to the social policies in India and study their social impact assessment. |
| <b>Course Code</b>                     | <b>Course Objectives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Expected Outcomes</b>                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Skill Enhancement Courses (SEC)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SE-GR-11:<br>Remote Sensing            | The primary objective of this course is to provide the basic theoretical knowledge about remote sensing, different types of satellite and sensors, principal of image rectification and interpretation. Some guidelines are also mentioned here to prepare a project using the remotely sensed data along with spatial information with the help of gained knowledge.                                                                                          | This course is expected to develop the knowledge base about the remote sensing and prepare them to know the methodology to prepare a report followed by the guidelines. The learners may utilize such concepts and practical expertise in the required areas while conducting research-oriented projects.                                                                                                                       |
| SE-GR-21:<br>Research<br>Methods       | The prime goal of the course is to make the learners understand the concepts in research. The learners will acquaint themselves with the literature review, research objectives, hypothesis, data collection, methodology; preparing a questionnaire, survey etc. They will also learn about the quantitative and                                                                                                                                              | After successful completion of this course the students will be able to understand research objectives and how to formulate hypothesis, prepare the methods to collect the data, demarcate different types of data. They will also learn to prepare a research                                                                                                                                                                  |

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|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     | qualitative data analysis, representation.                                                                                                                                                                                                                                                                                                                            | report following the required guidelines.                                                                                                                                                                                                                                                              |
| <b>Course Code</b>                                                  | <b>Course Objectives</b>                                                                                                                                                                                                                                                                                                                                              | <b>Expected Outcomes</b>                                                                                                                                                                                                                                                                               |
| <b>Generic Elective Courses (GEC)</b>                               |                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                        |
| GE-GR-11:<br>Rural<br>Development                                   | The primary objective of this course is to provide the basic knowledge about rural development approaches and planning. The rural economic base, models, governance, rural development policies and programmes.                                                                                                                                                       | This course is expected to develop the theoretical knowledge about diverse perspectives of the rural development among the learners who may utilize such concepts and expertise in the required areas during planning and research-oriented projects for rural development.                            |
| GE-GR-21:<br>Geography of<br>Tourism                                | The main objective of the course is to learn about tourism, factors and impacts of tourism, spatial pattern, tourism infrastructure, tourism policy, tourism circuit.                                                                                                                                                                                                 | This course is expected to develop the knowledge base about the tourism, features of tourism, spatial pattern and impact of tourism. It will also help to understand and use of such concepts for further study and or research work regarding tourism.                                                |
| GE-GR-31:<br>Climate<br>Change:<br>Vulnerability<br>and Adaptations | The primary objective of this course is to provide the basic knowledge about climate change, global warming, vulnerability and related topics. The diverse perspectives of climate change are vividly discussed which create a good knowledge base among the learners.                                                                                                | This course will definitely give the idea to the learners about the varied nature of the climate change, global warming and related vulnerability. This will also make them aware and capable to develop adaptation strategies, especially during any hazardous situation.                             |
| GE-GR-41:<br>Disaster<br>Management                                 | The prime goal of the course is to make the learners understand the concepts hazards and disaster, their concepts, causes, impacts and mitigation. The devastating hazards and disasters like earthquake, tsunamis, landslide flood, drought etc., their spatial pattern, and formation were also discussed to build up awareness related to this among the learners. | This course is expected to develop awareness among the learners about hazards and disasters. It will definitely help them to build up the framework of mitigation and management strategies. It also helps to create a community participation based approach of hazard management from diverse angle. |

## Detailed Syllabus

### Semester-I

#### Core Course-1 (Practical) Credit-6, Full Marks-70

#### Course Code: CC-GR-01, Course Title: Cartographic Techniques Lab & Thematic Mapping and Surveying Lab

##### ***Module-1: Cartographic Techniques Lab***

###### **Units:**

1. Scales & their construction: Linear, Diagonal & Vernier
2. Projections & their construction: Polar Zenithal Stereographic, Simple conic with one standard parallel, Bonne's, Cylindrical Equal Area and Mercator's.
3. Diagrammatic representation of data: Line & Bar
4. Representation of point data: Isoleths.
5. Representation of area data: Dots & Choropleth
6. Preparation of Thematic maps: Proportional Squares, Proportional Pie diagrams, Dots and Spheres

##### ***Module-2: Thematic Mapping and Surveying Lab***

###### **Units:**

1. Traverse survey using Prismatic Compass
2. Levelling & Contouring using Dumpy Level and Prismatic Compass

### Semester-I

#### Core Course-2 (Practical) Credit-6, Full Marks-70

#### Course Code: CC-GR-02, Course Title: Geotectonics and Geomorphology Lab & Climatology Lab

##### ***Module-1: Geotectonics and Geomorphology Lab:***

###### **Units:**

Extraction and interpretation of geomorphic information from Survey of India

1:50k

1. Topographical maps of plateau region: Delineation of drainage basin from Survey of India topographical map. Construction and interpretation of relief profiles (superimposed, projected and composite)
2. Relative relief map, Slope map (Wentworth)
3. Correlation between physical and cultural features from Survey of India topographical maps using transect chart
4. Construction of hypsometric curve from Survey of India 1:50k topographical maps of plateau region
5. Megascopic identification of
  - (a) *Mineral samples*: Bauxite, calcite, chalcopryrite, feldspar, galena, gypsum, hematite, magnetite, mica, quartz, talc, tourmaline;
  - (b) *Rock samples*: Granite, basalt, dolerite, laterite, limestone, shale, sandstone, conglomerate, slate, phyllite, schist, gneiss, quartzite, marble
6. Measurement of dip and strike using Clinometer

7. Preparation and interpretation of simple Geological Maps (Horizontal, Uniclinal and Simple Anticline & Synclinal Fold Structure)

***Module-2: Climatology Lab***

**Units:**

- 1 Measurement of weather elements using analogue instruments: Mean daily temperature, Air pressure
2. Interpretation of a Daily Weather Map of India (any two): Pre-Monsoon, Monsoon and Post-Monsoon
3. Construction and interpretation of Climograph (G. Taylor)
4. Construction and interpretation of Wind Rose
5. Construction and interpretation of Climatic Chart
6. Construction and interpretation of Ombrothermic Chart

**Semester-II**

**Core Course-3 (Theory) Credit-6, Full Marks-70**

**Course Code: CC-GR-03, Course Title: Geotectonics & Geomorphology**

***Module-1: Geotectonics***

**Units:**

1. Earth's tectonic and structural evolution with reference to geological time scale
2. Earth's interior with special reference to seismology. Isostasy: Models of Airy and Pratt
3. Plate Tectonics: Processes at constructive, conservative, destructive margins and hotspots; resulting landforms
4. Folds and Faults—origin and types

***Module-2: Geomorphology***

**Units:**

1. Degradation processes: Weathering, mass wasting and resultant landforms
2. Processes of entrainment, transportation and deposition by different geomorphic agents. Role of humans in landform development.
3. Development of river network and landforms on Uniclinal and Folded structures
4. Landforms on igneous rocks with special reference to Granite and Basalt
5. Karst landforms: Surface and sub-surface
6. Glacial and Fluvio-glacial processes and landforms
7. Aeolian and Fluvio-aeolian processes and landforms
8. Models on landscape evolution: Views of Davis, Penck, King and Hack

**Semester-II**

**Core Course-4 (Theory) Credit-6, Full Marks-70**

**Course Code: CC-GR-04, Course Title: Human Geography**

***Module-1: Nature and Principles***

**Units:**

1. Nature and scope and recent trends. Elements of Human Geography
2. Approaches to the study of Human Geography; Resource, Locational, Landscape, Environmental

3. Evolution of humans. Concept of race and ethnicity
4. Space, society and cultural regions (language and religion)

***Module-2: Society, Demography and Ekistics***

**Units:**

1. Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies
2. Human adaptation to environment: Eskimo, Masai, Jarwa, Gaddi, Santhals.
3. Population growth and distribution, population composition; demographic transition model
4. Population–Resource regions (Ackerman)
5. Human population and environment with special reference to development–environment conflict
6. Social morphology and rural house types in India
7. Types and patterns of rural settlements
8. Types and patterns of urban settlements

**Semester-III**

**Core Course-5 (Practical) Credit-6, Full Marks-70**

**Course Code: CC-GR-05, Course Title: Statistical Methods in Geography Lab & Human Geography Lab**

***Module-1: Statistical Methods: Basics***

**Units:**

1. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio), sources of data, Collection of data and formation of statistical tables
2. Theoretical distribution: frequency, cumulative frequency, normal, Sampling: Need, types, and significance and methods of random sampling
3. Central tendency: Mean, median, mode, partition values
4. Measures of dispersion: Mean Deviation, Standard Deviation, Coefficient of Variation
5. Association and correlation: Rank correlation, Product moment correlation
6. Linear Regression
7. Time Series Analysis (Moving Average)

***Statistical Methods in Geography Lab:***

**Units:**

1. Construction of data matrix with each row representing an aerial unit (districts / blocks / mouzas / towns) and columns representing relevant attributes.
2. Based on the above, a frequency table would be computed and interpreted
3. Measures of Central Tendency
4. Measures of Dispersion.
5. Histograms and Frequency Curve would be prepared on the dataset.
6. Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted
7. Drawing of Time Series Graph & Trend Line by Moving Average Method

## ***Module-2: Human Geography***

### **Units:**

1. Spatial variation in continent- or country-level religious composition by divided proportional circles
2. Measuring decadal growth rate of population
3. Types of Age-Sex pyramids: Graphical representation and analysis
4. Nearest neighbour analysis from Survey of India 1:50k topographical maps
5. Choropleth mapping based on population data
6. Variation in occupational structure by Proportional Divided Circles
7. Time Series Analysis of industrial production (India and West Bengal)
8. Transport network analysis by Shortest Path Method

## **Semester-III**

### **Core Course-6 (Practical) Credit-6, Full Marks-70**

### **Course Code: CC-GR-06, Course Title: Remote Sensing, GIS Lab & Research Methodology and Field Work Lab**

## ***Module-1: Remote Sensing & GIS***

### **Units:**

1. Principles of Remote Sensing (RS): Types of RS satellites and sensors
2. Sensor resolutions and their applications
3. Preparation of False Colour Composites from IRS LISS-3 & Landsat TM data.
4. Principles of image interpretation. Preparation of inventories of land use land cover (LULC) features from satellite images.
5. GIS data structures: types (spatial and non-spatial), raster and vector
6. Principles of GNSS positioning and waypoint collection
7. Transferring of waypoints to GIS.
8. Area and length calculations from GNSS data.

### ***Remote Sensing, GIS: List of Practical***

A Project File, comprising one exercise each is to be submitted (Use any available software for the Project Report)

1. Georeferencing of maps and images
2. Image classification, post-classification analysis and class editing
3. Digitisation of features. Data attachment, overlay and preparation of thematic map
4. Collection and Plotting of Waypoint by GPS

### ***Module-2: Research Methodology: List of Practical***

### **Units:**

1. Each student will prepare an individual report based on primary data collected from field survey and secondary data collected from different sources for either a rural area (mouza) or an urban area (municipal ward) based on cadastral or municipal maps to study specific problems.
2. The duration of the field work shall not exceed 10 days
3. The report should be hand written in English on A4 size paper in candidate's own words within 5,000 to 8,000 words excluding figures, tables, photographs, maps, references and appendices
4. A copy of the bound report, duly signed by the concerned teacher, should be submitted

**Semester-III**  
**Core Course-7 (Theory) Credit-6, Full Marks-70**  
**Course Code: CC-GR-07, Course Title: Climatology**

***Module-1: Elements of Atmosphere***

**Units:**

1. Nature, composition and layering of the atmosphere,
2. Insolation: controlling factors. Heat budget of the atmosphere.
3. Temperature: Horizontal and Vertical distribution. Inversion of Temperature
4. Greenhouse effect and importance of Ozone layer.

***Module-2: Atmospheric Phenomena and Climatic Classification***

**Units:**

1. Condensation: Process and forms. Mechanism of Precipitation: Bergeron-Findeisen theory, Collision and Coalescence Theory. Forms of precipitation.
2. Air mass: Origin and characteristics.
3. Fronts: Warm and Cold; frontogenesis and frontolysis.
4. Weather: stability and instability.
5. Circulation in the atmosphere: Planetary winds, Jet Stream
6. Tropical and Mid-Latitude Cyclones
7. Monsoon Circulation and Mechanism with reference to India
8. Climatic classification after Köppen and Thornthwaite

**Semester-IV**  
**Core Course-8 (Theory) Credit-6, Full Marks-70**  
**Course Code: CC-GR-08, Course Title: Environment Geography**

***Module-1: Concept and Nature***

**Units:**

1. Geographers' approach to environmental studies
2. Perception of environment in different stages of civilization
3. Concept of holistic environment and system approach
4. Ecosystem: Concept, structure and functions
5. Wetland ecosystem with special reference to East Kolkata Wetlands
6. Environmental pollution and degradation: Land, water and air
7. Space–time hierarchy of environmental problems: Local, regional and global

***Module-2: Principles and Management***

**Units:**

8. Urban environmental issues with special reference to waste management  
Rural environmental issues: Special reference to sanitation and public health
9. Environmental policies – Club of Rome, Earth Summits (special reference to Stockholm, Rio, Johannesburg)
10. Global initiatives for environmental management (special reference to Montreal, Kyoto, Paris)
11. Environmental Impact Assessment and Environmental Management Planning
12. Overview of principal environment-related regulations of India. Review of their achievements
13. Principles of wasteland management with special reference to West Bengal
14. Principles of forest management with special reference to West Bengal



**Semester-IV**  
**Core Course-9 (Theory) Credit-6, Full Marks-70**  
**Course Code: CC-GR-09, Course Title: Hydrology & Oceanography**

***Module-1: Hydrology***

**Units:**

1. Systems approach in hydrology. Global hydrological cycle: Its physical and biological role
2. Run off: controlling factors. Run off cycle
3. Infiltration and evapotranspiration.
4. Drainage basin as a hydrological unit.
5. Principles of water harvesting and watershed management
4. Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement.

***Module-2: Oceanography***

**Units:**

1. Major relief features of the ocean floor: characteristics and origin according to plate tectonics.
2. Water mass: Physical and chemical properties of ocean water, T-S diagram
3. Ocean temperature and salinity: Distribution and determinants.
4. Air-Sea interactions, ocean circulation, wave and tide.
5. Coral Reefs: Formation, classification and threats.
6. Marine resources: Classification and sustainable utilisation
7. Sea Level Change: Types and causes

**Semester-IV**  
**Core Course-10 (Theory) Credit-6, Full Marks-70**  
**Course Code: CC-GR-10, Course Title: Economic Geography**

***Module-1: Concept and Nature***

**Units:**

1. Meaning and approaches to Economic Geography, new Economic Geography
2. Concepts in Economic Geography: Goods and services, production, exchange and consumption
3. Concept of economic man
4. Economic distance and transport costs

***Module-2: Economic Activity***

**Units:**

1. Concept and classification of economic activities
2. Factors affecting location of economic activity with special reference to agriculture (Von Thunen), and industry (Weber).
3. Primary activities: Subsistence and commercial agriculture, forestry, fishing and mining
4. Secondary activities: Manufacturing (cotton textile, iron and steel), concept of manufacturing regions, special economic zones and technology parks
5. Tertiary activities: transport, trade and services
6. Agricultural systems: Case studies of tea plantation in India and mixed farming in Europe
7. Transnational sea-routes, railways and highways with reference to India
8. International agreements and trade blocs: GATT and OPEC

**Semester-V**  
**Core Course-11 (Practical) Credit-6, Full Marks-70**  
**Course Code: CC-GR-11, Course Title:**

***Module-1: Disaster Management Lab***

**Units:**

An individual Project Report based on any one case study among the following disasters incorporating a preparedness plan in the vicinity of the candidate's institution or residence:

1. Thunderstorm
2. Landslide
3. Flood
4. Coastal / riverbank erosion
5. Fire
6. Industrial accident
7. Structural collapse

***Module-2: Environment Geography Lab***

**Units:**

1. Preparation of questionnaire for perception survey on environmental problems
2. Preparation of check-list for Environmental Impact Assessment of an urban / industrial project
3. Quality assessment of soil using field kit: pH and NPK
4. Determination of soil type by ternary diagram textural plotting
5. Time series analysis of biogeography data
6. Interpretation of air quality using CPCB / WBPCB data

**Semester-V**  
**Core Course-12 (Theory) Credit-6, Full Marks-70**  
**Course Code: CC-GR-12, Course Title: Regional Planning and Development**

***Module-1: Regional Planning***

**Units:**

1. Concept of regions: Types of regions and their delineation.
2. Types of planning, principles and objectives of regional planning, multi- level planning in India
3. Tools and techniques of regional planning
4. Metropolitan concept: metropolitan areas, and urban agglomerations

***Module-2: Regional Development***

**Units:**

1. Development: Meaning, growth versus development
2. Concept and strategies of regional development with reference to India
3. Theories and models for regional development: Growth pole model of Perroux; growth centre model in Indian context
4. Theories and models for regional development: Cumulative causation (Myrdal) and core-periphery (Hirschman, Rostow and Friedman)
5. Changing concept of development, concept of underdevelopment; efficiency-equity debate
6. Indicators of development: Economic, social and environmental. Human development.
7. Regional development in India, regional inequality, disparity and diversity
8. Need and measures for balanced development in India

**Semester-VI**  
**Core Course-13 (Theory)                      Credit-6, Full Marks-70**  
**Course Code: CC-GR-13, Course Title: Evolution of Geographical Thought**

***Module-1: Nature of Pre Modern Geography***

**Units:**

1. Development of Geography and contributions of Greek, Chinese, and Indian geographers.
2. Impact of 'Dark Age' on Geography
3. Transition from Cosmography to Scientific Geography (Contributions of Bernard Varenus and Immanuel Kant)
4. Dualism and Dichotomies (General vs. Particular, Physical vs. Human, Regional vs. Systematic, Determinism vs. Possibilism, Ideographic vs. Nomeothetic)
5. Man-Environment Relationship, Ecological Approach
6. Cultural Landscape, Cultural Diffusion

***Module-2: Foundations of Modern Geography & Recent Trends***

**Units:**

1. Evolution of Geographical thoughts in Germany, France, Britain and United States of America.
2. Contributions of Humboldt and Ritter
3. Contributions of Richthofen, Hettner and Ratzel
4. Trends of Geography in the post World War-II period
5. Quantitative Revolution and its impact, positivism, behaviouralism, systems approach, radicalism, feminism
6. Towards Post Modernism: Changing concept of space in geography. Geography in the 21st Century

**Semester-VI**  
**Core Course-14 (Theory)                      Credit-6, Full Marks-70**  
**Course Code: CC-GR-14, Course Title: Geography of India**

***Module-1: Geography of India***

**Units:**

1. Structure & Relief of India, physiographic divisions (S.P.Chatterjee)
2. Climate, soil and vegetation: Characteristics and broad classification
3. Population: Distribution, growth, structure and policy
4. Distribution of population by race, caste, tribes, religion, language
5. Agricultural regions (Randhawa & ICAR). Green revolution and its consequences
6. Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, natural gas;
7. Industrial development: Automobile and Information technology
8. Regionalisation of India: Physiographic

***Module-2: Geography of West Bengal***

**Units:**

1. Physical perspectives: Physiographic divisions, forest and water resources
2. Population: Growth, distribution and human development
3. Resources: Mining, agriculture and industries
4. Regional Problem: Darjeeling Hills and Sundarban

## **Discipline Specific Elective Courses**

### **Semester-V**

**Discipline Specific Elective Course-1 (Theory) Credit-6, Full Marks-70**

**Course Code: DS-GR-11, Course Title: Soil & Bio Geography**

#### ***Module-1: Soil Geography***

##### **Units:**

1. Factors of soil formation. Man as an active agent of soil transformation.
2. Soil profile. Origin and profile characteristics of Lateritic, Podzol and Chernozem soils
3. Definition and significance of soil properties: Texture, structure and moisture,
4. Definition and significance of soil properties: pH, organic matter and NPK
5. Soil erosion and degradation: Factors, processes and mitigation measures
6. Principles of soil classification: Genetic and USDA. Concept of land capability and its classification.

#### ***Module-2: Bio Geography***

##### **Units:**

1. Concepts of biosphere, ecosystem, biome, ecotone, community and ecology
2. Concepts of trophic structure, food chain and food web. Energy flow in ecosystems
3. Geographical extent and characteristic features of: Tropical rain forest, Taiga and Grassland biomes
4. Bio-geochemical cycles with special reference to carbon dioxide and nitrogen
5. Deforestation: Causes, consequences and management
6. Bio-diversity: Definition, types, threats and conservation measures

### **Semester-V**

**Discipline Specific Elective Course-2 (Theory) Credit-6, Full Marks-70**

**Course Code: DS-GR-21, Course Title: Urban Geography**

#### ***Module-1: Concept and Nature***

##### **Units:**

1. Urban Geography: nature and scope, different approaches and recent trends in urban geography
2. Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods- factors, stages, and characteristics.
3. Theories of Urban Evolution and Growth: Hydraulic Theory, Economic Theory
4. Aspects of urban places: Location, site and situation, Size and Spacing of Cities: The Rank Size Rule, The Law of the Primate City
5. Urban Hierarchies: Central Place Theory; August Losch's theory of Market Centres
6. Patterns of urbanisation in developed and developing countries

#### ***Module-2: Urban Issues***

##### **Units:**

1. Ecological processes of urban growth; Urban fringe; City- Region
2. Theories of city structure-concentric zone theory, sector theory, multiple nuclei theory
3. Urban Issues: problems of housing, slums, civic amenities (water and transport)
4. Patterns and trends of urbanization in India
5. Policies on urbanization. Urban change/landscape in post-liberalized period in India
6. Case studies of Delhi, Kolkata, and Chandigarh with reference to land use

**Semester-VI**  
**Discipline Specific Elective Course-3 (Theory)** **Credit-6, Full Marks-70**  
**Course Code: DS-GR-31, Course Title: Population Geography**

***Module-1: Population Dynamics***

**Units:**

1. Development of Population Geography as a field of specialization. Relation between population geography and demography. Sources of population data, their level of reliability and problems of mapping.
2. Population distribution: density and growth. Classical and modern theories in population distribution and growth, Demographic transition model.
3. World patterns determinants of population distribution and growth. Concept of optimum population.
4. Population distribution, density and growth profile in India.

***Module-2: Demographic Attributes and Issues***

**Units:**

1. Population Composition and Characteristics– Age-Sex Composition; Rural and Urban Composition; Literacy.
2. Measurements of fertility and mortality. Concept of cohort and life table
3. Population composition of India. Urbanisation, Occupational structure.
4. Migration: Causes and types
5. National and international patterns of migration with reference to India.
6. Population and development: population-resource regions. Concept of human development index and its components.
7. Population policies in developed and less development countries. India's population policies, population and environment, implication for the future.
8. Contemporary Issues – Ageing of Population; Declining Sex Ratio; Population and environment dichotomy, HIV/AIDS.

**Semester-VI**  
**Discipline Specific Elective Course 4 (Theory)** **Credit-6, Full Marks-70**  
**Course Code: DS-GR-41, Course Title: Social Geography**

***Module-1: Concept and Nature***

**Units:**

1. Social Geography: Concept, Origin, Nature and Scope
2. Concept of Space, Social differentiation and stratification; social processes
3. Social Categories: Caste, Class, Religion, Race and Gender and their Spatial distribution
4. Basis of Social region formation; Evolution of social-cultural regions of India
5. Peopling Process of India: Technology and Occupational Change; Migration.
6. Social groups, social behaviour and contemporary social environmental issues with special reference to India

***Module-2: Social Dynamics***

**Units:**

1. Concept of Social Well-being, Quality of Life, Gender and Social Well-being
2. Measures of Social Well-being: Healthcare, Education, Housing, Gender Disparity
3. Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts and Crime.

4. Social Planning during the Five Year Plans in India
5. Social Policies in India: Education and Health
6. Social Impact Assessment (SIA): Concept and importance

### **Skill Enhancement Courses**

#### **Semester-III**

**Skill Enhancement Course 1 (Theory) Credit-2, Full Marks-60**  
**Course Code: SE-GR-11, Course Title: Remote Sensing**

#### **Units:**

1. Principles of Remote Sensing (RS): Classification of RS satellites and sensors
2. Sensor resolutions and their applications with reference to IRS and LANDSAT missions, image referencing schemes and data acquisition
3. Preparation of False Colour Composites from IRS LISS-3 and LANDSAT TM and OLI data. Principles of image rectification and enhancement
4. Principles of image interpretation and feature extraction. Preparation of inventories of land use and land cover features from satellite images
5. Guidelines for a project report based on the above themes. (A project file consisting of four exercises on the above themes is to be submitted)

#### **Semester-IV**

**Skill Enhancement Course 2 (Theory) Credit-2, Full Marks-60**  
**Course Code: SE-GR-21, Course Title: Research Methods**

#### **Units:**

1. Geographic Enquiry: Definition and Ethics; Literature Review; Framing Research Questions, Objectives and Hypothesis; Preparing Sample Questionnaires and inventories
2. Data Collection: Type and Sources of Data; Methods of data Collection; Data Input and Editing
3. Data Analysis: Qualitative and Quantitative Analysis; Techniques Data Representation
4. Structure of a Research Report: Preliminaries; Text; Citation, Notes, References, Bibliography and Abstract and Key words

## Generic Elective Courses

(For learners of Honours programmes other than Geography)

### Semester-I

Generic Elective Course-1 (Theory) Credit-6, Full Marks-70

Course Code: GE-GR-11, Course Title: Rural Development

#### **Module-1:**

##### **Units:**

1. Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy
2. Paradigms of Rural Development: Lewis Model of Economic Development, 'Big Push' theory of Development, Myrdal's thesis of Spread and Backwash Effects
3. Need for Rural Development, Gandhian Approach to Rural Development
4. Rural Economic Base: Agriculture and Allied Sectors, Non-Farm Activities
5. Rural Co-operatives and Agricultural marketing
6. Area Based Approach to Rural Development: Drought Prone Area Programmes, PMGSY

#### **Module-2:**

##### **Units:**

7. Target Group Approach to Rural Development: SJSY, MNREGA, Jan Dhan Yojana
8. Provision of Services – Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro credit; Concept of PURA
9. Rural Governance: Panchayati Raj System
10. Rural Development Policies and Programmes in India
11. Rural Infrastructural Development programmes relating to: Rural Electrification, Transport, Housing, and Connectivity
12. Rural Development Programmes for Women and children: Janani Suraksha Yojana, National Nutrition Mission, Drinking water and sanitation programmes, NRHM, Sarva Sikha Mission

### Semester-II

Generic Elective Course-2 (Theory) Credit-6, Full Marks-70

Course Code: GE-GR-21, Course Title: Geography of Tourism

#### **Module-1:**

##### **Units:**

1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism by Robinson
2. Types of Tourism: Ecotourism, Cultural Tourism, Adventure Tourism, Medical Tourism, Pilgrimage, International, National
3. Factors influencing tourism: historical, natural, socio-cultural and economic
4. Spatial pattern of tourism: Domestic and International; areal and locational dimensions comprising physical, cultural, historical and economic
5. Impact of tourism: physical, economic and social and perceptive positive and negative impacts
6. Environmental laws and tourism - current trends, spatial patterns and recent changes

**Module-2:**

**Units:**

7. Role of foreign capital and impact of globalization on tourism
8. Recent Trends of Tourism: International and Regional; Domestic (India); Sustainable Tourism, Meeting Incentives Conventions and Exhibitions (MICE)
9. Tourism in India: Tourism Infrastructure; Regional dimensions of tourist attraction; Case Studies of Dal lake, Goa, Garhwal Himalaya, Desert and Coastal Areas
10. Promotion of Tourism-National Tourism Policy
11. Infrastructure and support system-accommodation and supplementary accommodation; other facilities and amenities
12. Tourism circuits-short and longer detraction - Agencies and intermediaries - Indian hotel industry

**Semester-III**

**Generic Elective Course-3 (Theory) Credit-6, Full Marks-70**  
**Course Code: GE-GR-31, Course Title: Climate Change: Vulnerability and Adaptations**

**Module-1:**

**Units:**

1. The Science of Climate Change: Origin, scope and trends
2. Understanding Climate Change with reference to the Geological Time Scale
3. Evidences and factors of climate change: the nature- man dichotomy
4. Green House Gases and Global Warming
5. Global climatic assessment: IPCC reports

**Module-2:**

**Units:**

6. Climate change and vulnerability: Physical; economic and social
7. Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health and morbidity
8. Global initiatives to climate change mitigation: Kyoto Protocol, Carbon trading, Clean development mechanism, COP, Climate fund
9. National Action Plan (of India) on Climate Change
10. Role of Local Bodies on climate change mitigation: Awareness and action programmes.

**Semester-IV**

**Generic Elective Course-4 (Theory) Credit-6, Full Marks-70**  
**Course Code: GE-GR-41, Course Title: Disaster Management**

**Module-1:**

**Units:**

1. Definition and Concepts of Hazards and Disasters; Risk and Vulnerability; Classification of hazards
2. Causes and consequences of hazards: Physical, economic and cultural
3. Role of National and International organizations in disaster management
4. Causes, Impact and Distribution of: Earthquake and Tsunami, Landslides
5. Causes, Impact, Distribution of: Flood and drought
6. Causes, Impact, Distribution of: Deforestation, Desertification, Salinization



***Module-2:***

**Units:**

7. Response and Mitigation to Disasters: Institutional set up, NDMA and NIDM
8. Indigenous Knowledge and Community-based Disaster Management; Do's and Don'ts During and Post Disasters
9. Emerging approaches to Disaster management: (a) Pre-disaster stage, (b) Emergency Stage and (c) Post disaster stage
10. Regional perspectives of hazards in India with reference to dimension, causes, consequences and remedial measures: (a) Hills (b) Coasts
11. National and international policies for disaster management
12. Role of geospatial technology (RS and GIS) in disaster management

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