Course Objectives and Outcomes

SEMESTER 01

CC-01 Geomorphology

Objectives:
1. Understand theories on Earth's crust evolution (Isostasy, Continental Drift, Plate Tectonics, Sea-Floor Spreading).
2. Analyze geomorphic evolution models by Davis, Penck, and King, and processes like slope formation and erosion.
3. Classify and study arid, glacial, periglacial landforms, and underground water processes.
4. Explore geomorphic evolution in regions like Chotanagpur Highlands, Peninsular India, Shillong Plateau, and Kashmir Himalayas.
5. Learn the scope of Applied Geomorphology in engineering, oil exploration, and groundwater assessment.

Outcomes:
1. Comprehensive understanding of Earth's crust evolution theories.
2. Ability to assess and apply geomorphic models.
3. Knowledge of landform classification and formation processes.
4. Expertise in regional geomorphology of India.
5. Practical application of geomorphology in engineering and resource exploration.

CC-02 Climatology and Oceanography

Objectives:
1. Understand climatology, atmospheric composition, and heat balance.
2. Analyze airmasses, fronts, weather forecasting, cyclones, and anticyclones.
3. Explore climate change, global warming, and the effects of El Niño and La Niña.
4. Study ocean floor configuration, submarine canyons, and marine deposits.
5. Learn about tides, coral reefs, and ocean water properties (salinity, temperature).

Outcomes:
1. Grasp of atmospheric processes and climatology's relationship with other sciences.
2. Ability to classify airmasses, analyze weather patterns, and understand cyclonic systems.
3. Knowledge of past climate changes, global warming, and global phenomena impacts.
4. Understanding of oceanography, including ocean floor features and marine deposits.
5. Knowledge of tidal theories, coral reefs, and ocean water dynamics.

CC-03 History of Geographical Thought

Objectives:
1. Understand the meaning, scope, and relation of geography with social sciences, and explore contributions by Greek, Roman, Arab scholars, and ancient India.
2. Study the development of geography in the 19th and 20th centuries, focusing on contributions by Humboldt, Carl Ritter, and Mackinder, and debates like determinism vs. possibilism.
3. Analyze the quantitative revolution in geography, its merits, and demerits.
4. Explore applied, behavioral, radical, and humanistic geography.
5. Understand theories like structuralism, functionalism, feminism, and postmodernism in geography.

Outcomes:
1. Grasp the historical contributions to geographical thought across civilizations.
2. Understanding of key geographical debates and paradigms of the 19th and 20th centuries.
3. Evaluate the quantitative revolution's impact on geography.
4. Knowledge of diverse approaches like applied, behavioral, and humanistic geography.
5. Comprehend modern theoretical perspectives like structuralism and feminism in geography.

CC-04 Representation and Analysis of Statistical Data

Objectives:
1. Learn population data representation using dot maps, proportionate circles, and spherical diagrams.
2. Understand climatic data visualization with wind roses, climographs, and hythergraphs, and interpret weather maps.
3. Represent economic data using band graphs and ergographs, and population density through choropleth and isopleth methods.
4. Analyze statistical data using correlation, regression, and nearest neighbor analysis.
5. Prepare practical records and participate in viva-voce.

Outcomes:
1. Ability to represent population data through various cartographic techniques.
2. Skill in interpreting and visualizing climatic data and weather patterns.
3. Competence in using graphs to display economic data and analyze population density.
4. Proficiency in applying statistical methods for geographical data analysis.
5. Experience in practical data handling and oral defense of analysis.

AECC – 1

Swachchha Bharat AbhiyanActivites

SEMESTER 02

CC-05 Regional Planning and Rural Development

Objectives:

1. Understand the concept, merits, and limitations of regional planning, its processes, and methods for delineating planning regions.
2. Explore special-purpose planning regions in India, including river valleys, metropolitan areas, and problem regions like hilly, tribal, flood, and drought-prone areas.
3. Analyze development indicators (poverty, education, sanitation) and regional disparities in India, focusing on the need for regional planning and development challenges.
4. Learn the concept of multi-level planning, the role of Panchayati Raj institutions, and the Gandhian approach to rural development.
5. Study area-based and target group approaches to rural development, focusing on programs like MGNREGA and Jan Dhan Yojana, and improving access to education, healthcare, and microcredit.

Outcomes:

1. Gain understanding of regional planning concepts, methods, and types.
2. Knowledge of India's special-purpose planning regions and regional challenges.
3. Ability to assess development indicators and address regional disparities through planning.
4. Understand multi-level planning and the role of local institutions in rural development.
5. Familiarity with area-based rural development programs and strategies to improve essential services and economic access.

CC-06 Environment and Disaster Management

Objectives:

1. Understand the meaning, scope, and factors of environmental geography, and explore ecosystems, food chains, and energy flow.
2. Analyze causes and effects of environmental degradation, including air, water, sound, and soil pollution.
3. Study global environmental issues like global warming, sea level changes, ozone depletion, and the greenhouse effect.
4. Learn about environmental hazards and disasters (floods, droughts), and international treaties like the Stockholm Conference, Earth Summit, and Kyoto Protocol.
5. Explore man-made disasters, types (technological and industrial), and disaster management strategies, including mapping and warning systems for coastal areas.

Outcomes:

1. Understanding of ecosystem dynamics and environmental geography.
2. Knowledge of pollution types and their impact on the environment.
3. Ability to assess global warming and climate change effects.

4. Awareness of environmental treaties and disaster management strategies.
5. Competence in analyzing man-made disasters and disaster mapping.

CC-07 Resource and Economic Geography

Objectives:
1. Understand the meaning and scope of economic geography, with a focus on resource conservation and management, particularly water, biotic, and energy resources.
2. Study non-conventional energy sources and industrial location theories (Weber's and Smith's models), and analyze the iron and steel, and cotton textile industries in China and India.
3. Explore the global distribution and production of key minerals (iron ore, copper, atomic minerals) and macro-industrial regions, along with India's role in international trade.
4. Analyze major agricultural regions (India, USA, China, Japan), food production issues, and food security using Von Thunen's agricultural location model.
5. Learn about world trade theories, the impact of globalization, the role of WTO, and the concept of Export Processing Zones (EPZ) and Special Economic Zones (SEZ).
Outcomes:
1. Knowledge of resource management and conservation in economic geography.
2. Understanding of non-conventional energy sources and industrial location models.
3. Ability to analyze mineral distribution and India's place in global trade.
4. Insight into global agricultural regions and challenges in food security.
5. Awareness of global trade patterns, the impact of globalization, and the role of WTO and SEZs.

CC-08 Geography of India

Objectives:
1. Understand India's relief features, drainage systems, monsoon mechanism, soil types, and the issues of soil erosion and conservation.
2. Explore India's forest resources, conventional (coal, petroleum, hydroelectricity) and non-conventional energy sources (solar, wind, tidal).
3. Study India's industrial regions, industrial policies, and agricultural revolutions (Green, Blue, Yellow, White).
4. Analyze human resources, social well-being, unemployment, HDI, and cultural regions of India.
5. Examine spatial distribution of tribes, linguistic groups, and issues of social and gender inequality, along with the impact of female reservation.
Outcomes:
1. Knowledge of India's physical features, monsoon system, and soil conservation techniques.

2. Understanding of forest resources, energy sources, and their economic significance.
3. Insight into industrial and agricultural developments in India.
4. Ability to assess human resources and social well-being indicators.
5. Awareness of India's ethnic diversity, social inequalities, and the effects of female reservation policies.

CC-09 Cartographic Techniques

Objectives:
1. Learn the creation and interpretation of various cartograms, including hypsographic, climographic, and altimetric frequency curves.
2. Understand different types of relief profiles (serial, superimposed, composite, projected) and perform slope analysis using Smith and Wentworth methods.
3. Study map projections such as Mercator's, Sinusoidal, Polyconic, and International Projections.
4. Develop skills in interpreting aerial photographs, satellite imagery, weather maps, and geological sections.
5. Prepare practical records and participate in viva-voce assessments.
Outcomes:
1. Ability to create and interpret cartograms and frequency curves.
2. Proficiency in analyzing relief profiles and conducting slope analysis.
3. Understanding of various map projection techniques.
4. Skill in interpreting aerial, satellite, weather, and geological data.
5. Hands-on experience in practical cartography and oral defense of analysis.

AEC –1

Yoga Studies

SEMESTER 3

CC-10 Quantitative Techniques and Research Methodology

Objectives:
1. Understand the merits and limitations of quantitative methods in geography, research types, and literature review.
2. Learn data collection and classification techniques, and types of sampling (random, stratified, purposive).
3. Study hypothesis concepts, types, and testing procedures using Chi-Square and Student's Test.

4. Explore correlation techniques (Pearson, Spearman), simple linear regression, and ANOVA.
5. Understand models and analogues, focusing on the Gravity Potential and Population Potential models.
Outcomes:
1. Ability to apply quantitative methods in geographical research.
2. Proficiency in data collection, sampling, and classification.
3. Understanding of hypothesis testing and statistical analysis.
4. Skill in using correlation, regression, and ANOVA techniques.
5. Knowledge of various models and their applications in geography.

CC-11 Remote Sensing and Geographical Information System

Objectives:
1. Understand the meaning, definition, and historical development of remote sensing, its significance in geography, and ISRO's role in space studies.
2. Learn about remote sensing platforms, including geo-stationary and sun-synchronous satellites like LANDSAT, IRS, and QUICK-BIRD.
3. Study sensors, resolution, aerial photo interpretation, satellite imagery, and Digital Elevation Models (DEM).
4. Explore GIS concepts, elements, data sources, digital cartography, and projections.
5. Understand raster vs. vector data structures, GPS applications, and the use of remote sensing and GIS in land information, urban management, and disaster management.
Outcomes:
1. Knowledge of remote sensing's development, significance, and role in geography.
2. Understanding of satellite platforms and their utility in remote sensing.
3. Ability to interpret aerial photographs and satellite imagery.
4. Proficiency in GIS concepts, data management, and digital cartography.
5. Skills in applying remote sensing and GIS for urban, land, and disaster management.

CC-12 Human and Social Geography

Objectives:
1. Understand the meaning, definition, and scope of human geography, population distribution, density, and migration causes and consequences in the U.S.A., China, and India.
2. Study types and patterns of rural and urban settlements, urbanization processes, and issues in developed and developing countries.
3. Explore social geography, evolution of humanity, culture, major human races, world religions, and languages, as well as concepts of social justice and well-being.
4. Analyze social structures, quality of life, and the impact of globalization and social transformation.

5. Understand Gandhian social change, Panchayati Raj's role in transformation, and media's influence on societal change in India.
Outcomes:
1. Grasp the core concepts of human geography and global population dynamics.
2. Understanding of settlement types, urbanization challenges, and population composition.
3. Knowledge of human evolution, cultural elements, and the global distribution of races, religions, and languages.
4. Ability to evaluate social structures, quality of life patterns, and the effects of globalization.
5. Insight into social transformation theories, Gandhian principles, and the role of media and local institutions in India's societal changes.

CC-13 Landuse and Agricultural Geography
Objectives:
1. Understand the meaning and scope of land use and its relationship with agricultural geography, history of land use surveys in India, and models like Von Thunen and Jonasson.
2. Study land reforms, land use classifications (U.K. and India), and the importance of land use planning and land capability classification in India.
3. Explore the fundamental concepts of agricultural geography, factors influencing agricultural patterns, and major crops and food security in India.
4. Learn techniques for delimiting agricultural regions, measuring agricultural productivity, crop-combination, and cropping patterns in India.
5. Analyze new agricultural technologies, the Green and White Revolutions, agro-climatic regions, agricultural policies, and the role of irrigation in modern agriculture.
Outcomes:
1. Knowledge of land use patterns, reforms, and planning in India.
2. Understanding of agricultural geography and its historical and geographical factors.
3. Ability to assess agricultural regions, productivity, and crop diversification in India.
4. Insight into new agricultural technologies and revolutions, and their role in shaping India's agro-economy.
5. Awareness of the challenges in Indian agriculture and the significance of irrigation and policies in addressing them.

Cc-14 Instrumental Surveying, GIS and GPS
Objectives

1. Learn plane table surveying, leveling instruments, rise and fall methods, and plotting longitudinal profiles.

2. Understand theodolite surveying for triangle formation, base line measurement, polygon formation, and ground profiling.

3. Studygeoreferencingand map registration using GIS tools.

4. Gain skills in digitization, map preparation, and surveying through handheld GPS.

5.Prepare practical records and participate in viva-voce assessments.

Outcomes :

1.Proficiency in plane table surveying, leveling, and profile plotting.

2.Ability to conduct theodolite surveys and calculate ground measurements.

3. Competence in using GIS for georeferencing and map registration.

4.Skills in digitization, map creation, and GPS-based surveying.

5.Hands-on experience in practical surveying and data presentation.

AECC-2 (Discipline Specific Elective)

Gender Sensitization and

Human Values and Professional Ethics

Course Objectives:

• Understand the sociological concepts of values, norms, ethics, and

Sensitization.

• Sociological perspectives on human values and ethics.

• Sociological theories on gender roles and the causes of the perpetuation

Of gender discrimination.

• A short-field work on the issues and problems of women in India.

Course Outcomes:

After the completion of the course, the students will be:

• Able to inculcate among themselves humanistic values and professional

Ethics.

• Appreciate in a nuanced sociological way the causes and dimensions of

Women's problems in India.

• Gain knowledge about the measures taken by the government to improve

The conditions of women in India.

• Through field-work, gain a hands-on perspective on the causes and

Dimensions of gender discrimination in India, and get more gender

Sensitized.

SEMESTER 4

Settlement Geography(Elective Paper)

Objectives:
1. Understand the meaning, scope, and development of settlement geography in India, focusing on the evolution of settlements in the Middle Ganga Valley and rural settlement types.
2. Explore the development, morphological features, and problems of rural settlements, including the rural marketing system, house types, and service centers.
3. Study the hierarchy of settlements and the use of various building materials in rural areas.
4. Analyze the locational and functional features of urban settlements, the morphology of Indian cities, and urban problems like slums in Mumbai and New Delhi.
5. Learn about rural and urban settlement planning, metropolitan regions, and the concept of Smart Cities.
Outcomes:
1. Grasp the fundamentals of settlement geography and the evolution of settlements in India.
2. Understanding of rural settlement forms, problems, and their services and house types.
3. Knowledge of the hierarchy and material aspects of rural and urban settlements.
4. Insight into the functional features and challenges of urban centers, including slum issues.
5. Ability to assess settlement planning strategies and the concept of Smart Cities in India.

Urban geography (Elective Paper)

Course Objectives

1.Understand the definition, scope, and development of urban geography, urban ecology, and systems, along with the functional classification of towns.

2.Explore urban concepts like the Rank-Size Rule, Primate City, urban hierarchy, Million Cities, Mega Cities, Megalopolis, and Metropolitan regions.

3. Study urban morphology, theories of urban land use (Burgess, Hoyt, Harris& Ullman), CBD characteristics, conurbation, and urban agglomeration in India.

4.Analyze urbanization trends in India and globally, the concept of city regions, umland, rural-urban fringe, and their delimitation.

5.Investigate urban issues like slums, urban poverty, planning policies, and the Smart City concept in India

CourseOutcomes :Grasp the fundamentals of urban geography, including urban functions and classifications. Understand urban hierarchy concepts and the significance of large cities in urban systems. Knowledge of urban land use theories and the structure of cities in India. Ability to analyze urbanization trends and delineate city regions and rural-urban interactions.Awareness of urban challenges, planning policies, and modern urban development strategies like Smart Cities.

Population Geography (Elective Paper)

Course Objectives

Understand the nature, scope, and historical development of population geography, its relationship with demography, and sources of population data (Census of India).Study population distribution, growth, and determinants, including theories like Malthus and Demographic Transition, and the concept of optimum population. Explore population dynamics, including fertility, mortality measurements, determinants, and migration patterns in India. Learn about population regions, the Ackerman scheme, and issues of human security (economic, food, health).Analyze population growth, composition, internal migration, urbanization trends, and urban problems in India.

Course Outcomes

Grasp the fundamentals of population geography and its relationship with demography. Understanding of population growth theories and distribution patterns.Ability to measure and analyze fertility, mortality, and migration trends.Knowledge of population region typologies and human security issues.Insight into India's population distribution, migration trends, and urban challenges.

Dissertation/ Project Work(Elective Course 01)Dissertation based on field-work followed by viva-voce.

Project Objectives

Obtain a topographic map (1:50,000 to 1:25,000 scale) to study settlements in their regional context. Collect demographic, social, and economic data from Census reports to analyze temporal changes in village and town characteristics. Select sampling sites and conduct a socio-economic household survey using self-structured questionnaires and personal observations. Prepare a comprehensive field survey report based on land-use and socio-economic data, supplemented with maps, diagrams, photographs, and sketches.

Project Outcomes

Ability to analyze settlements using topographic maps.Skills in collecting and interpreting demographic and socio-economic data.Experience in conducting field surveys and gathering firsthand information. Competence in preparing detailed reports with visual and statistical representations.