Banaras Hindu University
Department of Geography

Course work for Ph.D. in Geography

I Semester

A. (ScP). Common Course (given at Faculty level) ................................. 3 credits

ScP-01. Ethics, Concept and significance of research
ScP-02. Methods of Research & Good Laboratory Practices
ScP-03. Science Communication

B. Department Specific Course: ....................................................... 7 credits (4+3)

GRP-101. Theory: I. Research Strategy & Orientation in Geography…… 4 credits
(details given in the sequence)

GRP-301. Practical: I ........................................................................ 3 credits
i. Application and relevance of statistical and cartographic techniques;
ii. Application of computer, remote sensing, GIS and GPS; and
iii. Framing Pilot/ research project; use of writing manuals

II Semester

C. Research theme specific course .................................................... 10 credits (3+3+4)

Each research scholar keeping in view of research topic will undergo any two of the following courses and project writing as identified by RPC under the following broad schemes:

GRP- 201 to 215. Theory: II and III (OPTIONAL) ......................... 6 credits (3 + 3)

From the Optional Papers (201 to 215), student can opt any TWO papers (see details).

GRP-302. Field Survey and Analysis ................................................ 2 credits
i. Introduction of research problems, objectives and research methodology.
ii. Critical review of the thematic literatures.
iii. Data collection and generation (indices, indicators); Field survey (sampling, design, representation, selection, overview); Analysis and interpretation of data and maps.

GRP-303. Practical II: Preparation of thematic appraisal of research paper and its presentation (Seminar); Preparation of Synopsis (Objectives; Methodology and approaches, Appraisal of the thematic and recent literature; Hypotheses/ theoretical framework; Specific Remarks about the theme: Details and sequence of the Chapters (chapterisation); and References in detail)

............................ 2 credits
GRP: Course work for Ph.D. in Geography
I Semester
Core (compulsory paper), Theory
GRP-101. Research Strategy & Orientation in Geography

CREDITS : 4
Number of Lectures : 48

UNIT I
Planning research. Data sources: collection and generation; Primary data and Secondary data; Data collection and arrangement; Collection of data: methods, sources and types; Data processing; Characteristics and component of a computer system.

UNIT II
Research design. Participatory research; Sampling: methods, techniques and procedures; Making and designing of Survey-questionnaire; Variable and indices: selection, identification and application.

UNIT III
Data interpretation. Production and arrangement of data; Classification and tabulation of data; Analysis of data and maps; Model making.

UNIT IV
Theoretical Construction. Appraisal of System theory; Quantitative and Qualitative interpretations; Framing pilot/ research project; Application and relevance of statistical and cartographic techniques.

Suggested Readings

Course work for Ph.D. in Geography
II Semester

List of Optional Theory Papers (201 to 215):
ONLY TWO to be opted by the student.

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II Semester (optional), Theory
GRP-201. Advances in Geomorphology

CREDITS : 3
Number of Lectures : 36

Unit I
A critical analysis of fundamental concepts; Concept of Dynamic Equilibrium versus Davis’ and Penck’s concepts; Time, Space and Causality in Geomorphology; Recent Trends in Geomorphology

Unit II
Climatic Geomorphology; Environmental Geomorphology; Mapping Techniques in Geomorphology; Systems in Geomorphology; Models in Geomorphology

Unit III
Geomorphology and Economic Deposits; Geomorphology in Ground water studies; Geomorphology in Soil Studies and Mapping; Geomorphology in Engineering Construction; Alluvial Fans and Flood Plains—their morphology, materials and Processes.

Suggested Readings

II Semester (optional), Theory
GRP-202. Applied Hydrology

CREDITS : 3
Number of Lectures : 36

Unit I
Hydrology as emerging discipline of earth science, hydrological cycle, man’s intervention in hydrological cycle, major components of hydrological cycle: precipitation, evapotranspiration, infiltration, surface and ground water runoff.

Unit II
Hydrograph: components and separation, unit hydrograph, estimation of evapotranspiration, river basin/water shed as planning unit for integrated water resource development and management, conservation of water resources.

Unit III
Water crisis in India, water resource management in India with special reference to irrigation for food security, problems associated with water: droughts and floods in India, water balance graph and its application with special reference to seasonal crop management.

Suggested Readings

II Semester (optional), Theory
**GRP-203. Environmental Problems and Strategic Management**

**CREDITS : 3**
**Number of Lectures : 36**

Unit I
**Introduction**: Meaning and Concept of Environment, Pollution, Types of Pollution and Environmental Degradation; Environmental Quality Indices: Air, Water, Soil, Noise and Solid Waste; Environmental Management: Meaning, Concept and Approaches

Unit II
**Environmental Problems**: Environmental Problems at Global, National and Regional level: Air Pollution and Global Climatic Change, Water Pollution and its Crisis, Land Degradation and Biodiversity, Natural Hazard and Mapping; Human Response and Attitude towards Environmental Problems; Environmental Quality and Health

Unit III
Suggested Readings


II Semester (optional), Theory
GRP-204. Remote Sensing & GIS as tools in Geographical Research
CREDITS : 3
Number of Lectures : 36
Unit I
Nature of Geographical Data; Conventional methods of geographical data collection vis-à-vis remote sensing and GIS; Some aspects of geodesy of earth and their implications in GIS; Spectra of common natural objects; Mechanism of remote sensing data acquisition.

Unit II
Models of geographic data representation in GIS; Spatial Data quality and error analysis; Conceptual and Logical Data Modelling; Some important characteristics of Remote Sensing Data; Nature of image patterns and their interpretation

Unit III
DEM and Derivatives; GIS as spatial decision support system; Information extraction procedures from remote sensing data—manual and digital; Application of remote sensing and GIS in Land use, hydro-geomorphological and integrated rural and urban development studies.

Suggested Readings
II Semester (optional), Theory
GRP-205. Population Dynamics and Family Welfare Programmes
CREDITS : 3
Number of Lectures : 36

Unit I

Unit II

Unit III
Measures and Indices. Data Sources, Error & Adjustment; Measures of Population change (arithmetic, geometric and exponential) and distribution (density, population potential, Lorenze curve); Measures of Mortality: Adjusted and Unadjusted and Lifetable); Measures of period and Cohort Fertility, Measures and Models of Migration (indirect estimation of internal migration and Ravenstein’s law, Zipf’s gravity, Todaro’s rural-urban); Population Estimates and Projections.

Suggested Readings

II Semester (optional), Theory

GRP-206: Geography of Human Resource Development

CREDITS : 3
Number of Lectures : 36

**Unit I**

**Unit II**
Concepts and Methods in studying Human Resource Development; Human Resource Development Indicators relating to Literacy, education, health, disease, food and nutrition, etc.; Types and sources of human resource development data; Managing human resource development data and devising indices; Concept and Computation of HRD or HDI; Amenities and Planning for human resources development.

**Unit III**
Problems of Human Resource Development; Spatial and Societal variation in human resource development; Human Resources in India: Potential, Utilized and Un-utilized; Development and Utilization of Primary, Secondary and Tertiary Human Resources in India; Deterioration
and Conservation of Human Resources; Human Resources Development, Quality of life and Social well being.

**Suggested Readings**

II Semester (optional), Theory
GRP-207. Health, Space and Ecology

CREDITS : 3
Number of Lectures : 36

UNIT I
Concept of mortality, morbidity and health; Political economy of health; Colonial and Post-colonial conception of health and medicine; Health as a commodity; Health and Quality of life; Social capital approach to health-care; Market, State and Social Opportunity; Linkage between health and ecology; Political ecology of disease; scope of Political Ecology of Disease;

UNIT II
Pattern of morbidity- world, and India; Geographical aspect of distribution of major diseases in India- communicable and non-communicable; Regional variation in Prevalence of diseases; sources of infection, modes of transmission and creation of Disease Network and the correlates; Spatial epidemiology; Disease Mapping; Geo-statistical methods of Health issues;

UNIT III
Structure of health care services in India; Health inequality; Problem of access and utilisation; Investment in Health; Public and Private Initiatives in health-care provisions; Health Policy in Pre-independent India; Health Policies and Programmes in independent India; Nongovernmental initiatives and case studies of these initiatives like Khanna, Matlab etc.

Suggested Readings
II Semester (optional), Theory
GRP-208. Rural Geography: Theory and Practice  
CREDITS : 3  
Number of Lectures : 36

UNIT I  
Rural communities; Rural space, society, and rurality; Governance and globalization; Revisiting landownership and property rights; Theories and Models of rural settlement and its diffusion.

UNIT II  
Theorization of culture, politics, space and poverty in rural contexts; Rise of productivist farming ways of conceptualising agricultural change; Institutional-strengthening issues; Rural future and globalisation; Food supply and food security; Challenges of sustainability.

UNIT III.  
[Indian Scenario]-- Indian Village: Concept, attributes, and historical context and multiplicity; Regional morphological characteristics; Morphological interaction models: Religio-ritual, Secular-economic, Rural Housing and Architecture, Rural-urban linkages: Peri-urban interface; Role of service centres; Transformation and Planning of Indian village: models and plans.

Suggested Readings
II Semester (optional), Theory
GRP- 209. Urban Studies

CREDITS : 3
Number of Lectures : 36

Unit I
Conceptual Issues in Urban Studies: Urbanisation in space and time; Theories and Approaches of urban studies: locational, regional, spatio-structural, eco system and environmental perception; Dimensions of urban studies in India: geographical and non geographical; problem, policy, sand evaluation oriented.

Unit II

Unit III
Urban Management and Governance: Urban planning: Governance and Managements; urban development policies; Implications of 74th CAA on urban governance; Future governance structure PPP, capacity building for better service delivery.

Suggested Readings
II Semester (optional), Theory
GRP-210 Peri-Urban Interface and its Dynamics
CREDITS: 3
Number of Lectures: 36

Unit I
Theoretical Base. Evolution of the PUIs; Basic concepts: urban, rural, urbanization, urban growth, urban sprawl, spatial hybridization, etc.; Typology and processes; PUI Studies: major trends and emerging issues; Methodologies and techniques: qualitative, quantitative, and GIS & Remote Sensing; Approaches: descriptive, explanatory, normative, critical, participatory, and predictive.

Unit II
Application. PUIs and their characteristics: developed vs. developing world; Migration, urbanization and peri-urbanization; Production systems in the PUIs: the PUI impacts land use, biodiversity, environment, agriculture, resources, livelihood, and infrastructure. and conflicts; Challenges: management, planning, and sustainability.

Unit III
Indian Scenario. Metropolization and Peri-Urban growth; Metropolitan growth: regional comparison; Impacts in PUIs: Land use, environmental, resources livelihood, infrastructure; Peri-urban governance; Case studies: Delhi, Chennai, Varanasi.

Suggested Readings


UNIT I

**Conceptual Issues:** Process of globalisation; Impact of Globalisation in different sphere of economic and political life; Changing paradigm of Planning in Post-globalised era; Changing Nature of State Intervention and Process of Regional Development; Natural, Economic and Planning Regions; Aspects of Concentration and Dispersal of economic activities Polarization and Spread.; Multiplier Effect in Spatial terms; Regional variation in productivity of capital and labour; Diversity and Disparity.

UNIT II


UNIT III

**Measurement of Developmental Processes and Examples:** Dimensions, Variables and Indicators; Choice of indicators; Alternative approaches of compositing of different indicators: Principal Component Analysis; Gravity Model; Simulations; Input-output Model; Regionalisation – Clustering; Process of Economic Concentration and Relocation - China, Venezuela, India; Problem Regions- Eastern UP, Bundelkhand; Regional policy of Balanced development.

**Suggested Readings**

8. Datta, B. 1997. *Indian Planning at Crossroad*, OUP
II Semester (optional), Theory

GRP-212. Geography of Tourism and Heritage

CREDITS : 3
Number of Lectures : 36

Unit I
Development of the Geography of Tourism and Heritage; Basic concepts: Tourism Studies: Concepts and Principles; Methodologies and Approaches:

Unit II
Geography of Tourism: National, Regional and Global scenarios; Alternative tourism and Prospects: Ecotourism, Sustainable tourism, Heritage Tourism; Tourism Management, heritage issues and prospects: policy and planning - global, and national.

Unit III
INDIAN SCENARIO:- Tourism and Heritage resources, Tourism as industry and economy: national, state and local contexts; Heritage Planning and Master Plan, Varanasi: Heritage Zoning, identification and planning, Types of tourism: domestic, international, local, pilgrimages; Tourism policies, perspectives, and plans.

Suggested Readings

II Semester (optional), Theory
GRP-213. Industrialization and Regional Development

CREDITS : 3
Number of Lectures : 36

Unit I
Concepts and theories: Meaning of industrialization; Processes of industrialization; Structuralist view, Neo-classical view, Radical view; Theories of industrial location — Weber, Smith and Allen Pred; Industrial linkages, Role of industries in regional development.

Unit II
Techniques of spatial and structural analysis: Indicators of industrialization; Location Quotient, Localization Coefficient and Localization Curve; Regional specialization and Diversification; Level of industrialization.

Unit III
Industrialization in India: Evolution and growth of industries; Industrial regions and complexes; Factors and trend of regional diversification, Industrial policies, Rural industrialization, Industries and environmental degradation.

Suggested Readings

**II Semester (optional), Theory**

**GRP-214. APPLIED CLIMATOLOGY**

**CREDITS : 3**

**Number of Lectures : 36**

**Unit I**
Meaning and Scope of Climatology, Difference between weather and climate, climatology and meteorology, elements of weather and climate, Temperature: Their distribution and controlling factors, laws of horizontal motion of air and general atmospheric circulation

**Unit II**
Monsoon, jet streams and their significance with reference to India, precipitation: spatio-temporal variation and distribution in India, Tropical Cyclone: origin and associated weather, cyclone prone areas in India, climatic classification: Koppen and Thorthwaite.

**Unit III**

**Suggested Readings**

II Semester (optional), Theory
GRP-215. AGRICULTURE GEOGRAPHY AND RURAL DEVELOPMENT

CREDITS : 3
Number of Lectures : 36

Unit I
Concept, approach and methodology of agricultural geography; Agricultural land-use and carrying capacity; Measures of agricultural efficiency and agricultural productivity. Agro-climatic regions of India, Green revolution in India; Second generation reforms in Indian agriculture, Agricultural planning and policies in India.

Unit II
Concept and approach of rural development: Five Year Plans and rural development in India; rural development policies and programmes: Integrated area development and rural development programmes; rural development planning: problem, policy and target group oriented approach.

Unit III
Rural development and poverty amelioration in India; Five Year Plans and poverty removal strategy and planning; poverty and rural development target groups and planning in India; policy, programme and implementation at the local level planning/micro level planning; People’s participation in rural development and planning; role of Panchayati Raj.

Suggested Readings
