Course Title: Research Methodology in Geography and Field Methods  
Course Code: RGG-101  
Total Credits: 04 Credits

Section I: Research Methods in Geography  
Concepts and Scientific Methods of Research in Geography, Theoretical and Empirical Research, Objectives, Hypotheses and Theory in Research, Ethics in Research, Power-objectivity and subjectivity, Organization of Dissertation and Thesis

Section II: Research Design  
Research Design, Literature Review, Assessment of Data Requirement-Qualitative and Quantitative, Sampling Design, Pre-Field Work, Field Work and Post Field Work; Questionnaire and Schedule for Field Work, Interpretation, Analysis and Synthesis

Section III: Nature and Role of Field Survey in Geographical Studies  
Geographic Enquiry and Field Survey, Field Survey in Physical Geography and Human Geography, Components of Field Survey- Observation, Field Mapping, Data Collection, Focused Group Discussion, Recording Information

Section IV: Computer Applications and Cartographic Representation  
Computer Applications in Data Management and Analysis, Display and Interactions, Cartographic Communication and Visualization, Map Generalization

Reading List:

Section I: Epistemological basis of Quantitative and Qualitative Research
Ontology, Epistemology and Methodological issues in Quantitative and Qualitative Research; Arguments for Choosing Quantitative and Qualitative Methodologies, Power and Subjectivity in Qualitative Research

Section II: Introduction to Basic Statistics
Descriptive Statistics: Measures of Central Tendency, Measures of Dispersion, Measures of Disparity and Inequality, Spatial and Combination Analysis; Measures of Association and Explanation: Correlation and Regression Analysis; Elementary Probability; Theory of Sampling; Testing of Hypothesis

Section III: Tools of Qualitative Research
Observation – Participant and Non Participant; Focus Group; Participatory Action Research; Historical and Archival Research; Ethnography; Oral History; Visual Methods and Methodologies

Section IV: Interpretation and Communication
Coding of Data: Purpose of Coding, Types of Codes and Coding, Developing Coding Structure and Processes of Coding; Use of Computers in Data Analysis; Statistical Packages in Geographical Analysis: Types, Uses, Advantages and concerns, Key Functions; Choosing Appropriate Software for Analysis

Section V: Remote Sensing and GIS Techniques in Geospatial Research
Basics of Remote Sensing; Image Properties; Image Interpretation; Digital Image Processing and Classification; GIS: An Overview; Maps and GIS; Digital Representation of Geographic Data; Query and Analysis; GPS Fundamentals; Participatory GIS; Applications of Remote Sensing and GIS in Natural Resource Management, Socio-economic Analysis, Disaster Management

Reading List:
Section I: Focus of Research in Physical Geography
Scope and Subject Matter of Physical Geography, Earth System Sciences: Lithosphere and Tectonic System, Atmosphere and Climate, Hydrosphere and Processes

Section II: Research Techniques in Geomorphology
Scope of Geomorphology, Process of understanding Geomorphology, Geomorphological Field Mapping and Models

Section III: Research in Hydrospheric Studies
Basin Morphometry, Hydrology and Environment, Study of Coastal Morphology, Observing Oceans

Section IV: Environment and Climate
Investigating Biodiversity, Land Degradation and Desertification, Soils and Land Evaluation, Dynamics of Climate: Global Warming and Climate Change

Reading List:

Course title: Research in Human Geography
Course Code: RGGE-102
Total Credits: 04

Section 1: Key Concepts
Space: Absolute, Relative, Social and Relational; Spatiality and Spatial Structure, Concept of Third Space; Place and Sense of Place; The Idea and Morphology of Landscape; Territory and Scale; Nature- Matter and Socio-cultural Construct of Nature; Ecology- Deep Ecology and Political Ecology
Conceptual Debates: Local-Global; Society-Space; Masculinity- Feminity; Human- Non-Human; Modern- Post Modern

Section 2: Approaches
Regional and Systematic; Positivism and Rise of Spatial and Locational Approaches; Behaviouralism Systems Approach; Idealism-Humanistic; Phenomenological and Existential; Structural and Structuration- Structural Marxism, Structural- Functional; Radical, Liberal/Welfare Approaches; Feminist Perspective

Section 3: Methods/ Methodological debates
Quantitative- Qualitative; Analytic- Interpretative; Categorical- Dialectical; Pluralising-Totalizing

Section 4: Research Frontiers/ Themes
Development and Growth: Change, Inequalities and Disparities; Geographies of Poverty and Destitution; Displacement and Development Refugees; Geographies of Resistance, Dissent and Conflict; Geographies of Health and Wellbeing; Political Economies and Ecologies of Environment and Natural Resources; Hazards and Vulnerabilities; People, Resources and Livelihoods; State and the Market in the Globalised World: ‘Fordism’, Flexible Specialization; Global Integration, Financial Capital; International Division of Labour, Reconstructing of Labour Market

Reading List:

Course Title: Research in Regional Development and Planning  
Course Code: RGGE-103  
Total Credits: 04

Section I: Region and Regional Development  
Concept of Region and Regional Planning, Growth, Development and Underdevelopment, Evolution of Spatial Structure, Spatial Organization, Spatial Equilibrium and Integration, Theories of Regional Development

Section II: Approaches, Techniques and Measurements  
Alternate Approaches to Regionalization, Indicators and Construction of Indices, Classification and Grouping, Poverty, Unemployment and Migration

Section III: Regional Development Planning in India  
Regional Development and Disparities and Regional Imbalance, Regional Backwardness, Five Year Plans and Regional Development, Dimensions of Development Planning, Federalism and Fiscal Allocation; Planning Agencies: Finance Commission, Planning Commission and Niti Ayog; Role of Agriculture, Rural Development, Industrialization, Infrastructure and Urbanization in Regional Development

Section IV: Regional Planning and Case Studies  

Reading List:

2. Five Year Plan I-XII, Planning Commission. New Delhi: Govt. of India
Course Title: Social Factors in Region Formation in India  
Course Code: RGGE-104  
Total Credits: 04

Section I: Regions and Regionalism  
Territoriality and Scale, Regions and Regionalism, Historical Regionalism, Social Factors in Regions Formation – Peopling and Ethnicity, Religion, Languages and Dialects, Factors in Regionalism, Tools and Techniques of Research in Social Geography

Section II: Languages and Region Formation in India  
Languages in India, Numerical Pattern, Region Formation and Linguistic Regions, Language Shift

Section III: Tribes and Castes: Evolution  
Definition and characteristics, Communities and Spatial Distribution, Composite Regions, Socio-economic Status, Levels of Development, Globalization and Challenges

Section IV: Contemporary Issues  
Social Groups: Patterns of Gender and Space, Health, Education, Poverty, Changing Landscape, Inequality, Mobility, Conflicts.

Reading List:

3. Subbarao, B. (1958). The Personality of India: Pre and Proto-historic Foundation of India and Pakistan, Baroda: Faculty of Arts, Maharaja Sayajirao University of Baroda
The aim of this course is to enhance the knowledge of students in the applications of remote sensing techniques in geographical research. It introduces various key fields of earth system sciences such as geosciences, soil and agriculture, water resources, urban environment and natural hazards by applying satellite remote sensing technologies. This course helps the scholars in major application areas in the background of key theoretical foundation along with the usage of spatial information tools and techniques in the relevant research fields.

Section 1: Applications in Geosciences
Geomorphology, Geology, Hydrogeology, Marine and Coastal Environment

Section 2: Applications in Soil and Agriculture

Section 3: Applications in Water Resources
Snow and Glaciers, Rainfall-Runoff and Hydrologic Modelling, Integrated Watershed Management

Section 4: Applications in Urban Environment
Land Use and Land Cover, Land Transformation, Urban Sprawl, Urban Climate and Urban Hydrology, Utilities and Services, 3D/4D Studies

Section 5: Applications in Natural Hazards
Flood, Drought, Earthquake, Landslide, Cyclone, and Cloudburst

Reading List: