Jawaharlal Nehru University
School of Social Sciences

Centre for the Study of Regional Development

M.A. Syllabus

Course No. **RD-528**

Title Regional Development and Planning

Credits 4

Teacher Atiya Habeeb kidwai

Evaluation Method SE(5) 25 credits each, MSE (3) ESE test = 2 credits

Objectives To impart an advanced level knowledge of regional development doctrine in the developed and developing world and to acquaint students with the socio-economic ramifications of the current regional planning practice.

Course Content

1. Recapitulation of phases of theoretical development in regional development theory with special emphasis on the analysis of distinctive assumptions in each phase.
2. Main themes and contribution to regional development theory.

    a) Theories of Spatial organization and Integration: Douglas C. North (1955), H.S. Perloff (1966); J. Friedmann (1966), E.A.J. Johson (1970), M. Raza and B. Chattopadhyay (1971).
    b) Theories of Polarized Development: F. Perroux (1955), Lloyd Rodwin (1963), J.R. Boudeville (1966), A. Kuklinski (1975), R.P.Misra (1975).
    c) Theories of Spatial Underdevelopment: D. Sater (1974), D. Forbes (1984).
    d) Theories of Development from Below: W. Stohr and F. Todling (1977), D.A. Rondinelli and K.Ruddle (1978), J. Friedman and M. Doughlas (1980).
    e) Ecological Theories: Eco-development, 'Another Development', 'Sustainable Development'.
3. The state, regional policy formation and regional development strategies in India, a detailed review of the five year plan, official strategies, the debate on the urban bias in Indian Planning.
4. The evolution of regional planning practice- The western heritage and the Indian variants; Planning for supra-urban spaces (metropolitan and port-hinterland plans), resource regions, target areas (tribal, and hills), multi-state plans, District Plans.
5. Regional Social Movements in India and their linkages with regional policy and regional development strategies.

Course No.:	**RD-401**
Title:	Geomorphology and Pedalogy with Special reference to India.
Credit:	4
Teacher:	Milap Chand Sharma
Instruction Method:	L: 2, TP: 0.5, PR: 1.5
Evaluation Method:	Practical and term paper: 2 Credit ESE: 2 Credits; ESE (W) 1.5 Credits, Practical 0.5 Credit.
Objective:	To enable the students to critically evaluate the concepts and approaches in geomorphology and to learn relevant techniques used in landform evaluation.

Course Content:

Part-I

Development of Geomorphic ideas
Concepts and approaches in Geomorphology.
Geomorphic Processes: a) Plate Tectonics, b) Weathering, Mass Wasting and Erosion
Climate and Landform evolution; Processes and landforms : a) Fluvial, b) Glacial,
c) Coastal
Slope dynamics
Geomorphology and Environmental Management.

Part-II

Evolution of Indian sub-continent
Geomorphic Regionalization of India

Part-III

Soil forming processes
Soil characteristics
Soil classification
Soils of India

Course No. : **RD-402**

Title : Regional Geography of India

Credits : 4

Teacher : Harjit Singh & B.S. Butola

Instruction Method : L2 PR2

Evaluation Method : TP-0.75, LS-0.25, PR-1.0, EST(T), EST(P)-0.5

Objectives :

To familiarize students with India with all its Complexities especially with regards to the historically evolved regions and to provide foundation for the more advanced courses in regionalisation taught at M.A. specialization and M.Phil levels. The emphasis is on spatial organization of Natural and socio-economic parameters in regional settings.

Part-I Towards Understanding the concept of Region and Indian Regions

Nature and scope of Regional Method of analysis, Concept of Region and Regional Geography, types of regions; issues involved in demarcating geographical regions.
Personality of India – Unity in Diversity
Review of major schemes presented of Indian Regions with special reference to those of Baker & Stamp, K.S. Ahmad, Pithawala, Spate and Learmonth, R.L. Singh, C.D. Deshpande and Ranjit Tirtha etc.
Critique of methods and techniques used for identifying regions.

Part-II Regions and Sub-Regions

Macro Regions of India : a) The Himalayas b) Indo-Ganga Plains c) Indian Peninsula : their personality, physical and socio-economic characteristics and Meso and Micro Regions.
Detailed study of at least four meso\micro regions and identification of their sub-regions from each of the macro regions.

Course No. **RD 403**

Title Economic Geography with special reference to India

Incharge M.H. Qureshi and Sucharita Sen

Definitions and Scope of Economic Geography: its place in Human Geography, relationships with Economics and other branches of knowledge.

Resource base of the Economy

Concept of resources;

Classification of resources;

Resources and environment: scarcity and sustainability.conservation of resources;

3. Location analysis of economic activities

Basic concepts in location problems;

Location in a simplified economic landscape and heterogeneous land surface,

Demand, scale and agglomeration;

Location models;

Time dimension in economic location.

4. The Economy

Structure of economy in its spatial context;

Sectors of the economy- agriculture, manufacturing and tertiary activities;

Structure of Indian economy, its evolution;

Important policy changes in the macro-economic and the sectoral levels of the

economy.

5. Bases of Economic activity: Infrastructure and the Economy

Transport and it's regional linkages- networks and freight rates, bottlenecks and transport policy.
Fuel and power- power sector development in its spatial context, policy outlook for the power sector.
Infrastructure financing- emerging changes.

6. Trade and exchange

Some basic concepts related to demand, trade and substitution- opportunity costs, absolute and comparative advantage, trade as an alternative to movement of capital
and labour, core periphery concept in trade.

Commodities in world trade.
Trade blocs.
India's performance in trade- recent policy changes and their implications.
The problems of economic regionalisation; bases for economic regionalisation- agricultural, industrial and economic regions of India.
Emergence of a new global economy: transnational integration and its spatial outcomes.

Course No. **RD 404**

Title. Quantitative Methods in Geography-I

Credits. 2

Teacher Aslam Mahmood/K. Varghese

Evaluation Method Sessional tests 1; ESE 1

Course Contents

Statistics
Frequency distribution: histograms and graphical representation;
Measures of central tendency: mean, median and other partitioned values and mode. Skewness;
Measures of dispersion: mean deviation, standard deviation quartile deviation. Measures of relative variability: Coefficient of Variation.
Theory of probability and sampling: Introduction to simple and compound probability, theoretical probability distributions: Binomial, Poisson and Normal distributions. Introduction to sampling theory; sampling distributions and standard error.
Statistical tests of significance: Confidence limits; level of significance. 't'- test, F-test, Chi-square test and z-test.

Use of Computers.
Introduction of Computer: Physical Components, Software Tools; Creation of Folders, saving files.
Spreadsheet/Database Maintenance through Microsoft Excel: Data Input, Use of Formulae, Calculation of Sum, Mean, Standard Deviation, Percentages, Growth Rates. Generating Bar Diagram, Pie Charts, Line Graphs etc.
Application of Statistical Software SPSS: Data Input, Recoding Data, Calculation of Minimum, Maximum, Range, Mean, Standard Deviation, Frequency Tables and Cross Tabulation etc.

Course No.:	RD 406 :
Title:	Human Ecology and Ecosystem: Man-Environment Relationship
Credits:	2
Teacher:	Harjit Singh
Instruction Method:	L 2
Evaluation Method:	SE .25, TP/FR .75, EST 1.0
Objectives:	To sensitize the students towards environmental issues and to make them aware of future implications especially in the third world countries. And to look at Man-Environme relations in a dynamic framework

Course Content

I **Introduction:** (a) The Science of Ecology: Biosphere; (b) Interdependencies and interrelations – food chains, food webs, and energy pathways; (c) Biogeochemical Hydrological, Nutrient, Gaseous Cycles and Feedbacks; (d) Human Ecology; (e) R of studying Ecology in Geography and Geography and Human Ecology; (f) Major Environmental Zones (Biomes).

II **Human Activity and Environmental Constraints:** (a) Changing Relations of Ma Environment with Development in a Historical Perspective; (b) Human Population Impact on Environment; (c) Specific ecosystems in the context of Human groups a varying Human economic Response (i) Tribal (ii) Sub-agricultural (iii) Advanced Agricultural, commercial and mechanised; (vi) Industrial groups, urbanization (vi Significance of man's increasing influence on eco-system.

III **Eco-system and Resources:** (a) Definition of Resource, Stock, Reserve; (b) Resou Cultural Concept; (c) Classification of Resources; (d) Estimation and Evaluation o Resource Reserves; (e) Limits of Resource Utilization; (f) Enrichment of Environ Technology; (g) Conservation of Eco-system

IV **Noosphere and Noogenisis**

V **Current Ecological Crisis- Its Geographical, Economic, Social and Political Dimensions:** (a) Energy Crisis, North-South Dialogue, Earth Summit; (b) Specific of the Third World Countries with regards to Conservation of Environment.

Select Reading List:

Haggett, P. *Geography – A Modern Synthesis* Harper & Row New York 1975
Chorley, R.J. *Directions In Geography* Methuen, London
Smith, R.L. *Ecology of Man – An Ecosystem Approach,*

Course No. **RD 407**

Title Climatology and Biogeography with Special Reference to India

Incharge K.S.Sivasami/Milap Chand Sharma

Credit 3

Instruction Methods TP, PR, MTT: 1.50ESE(W); 1.2 ESE(P)0.3

Objective To introduce the student to the fundamentals of Climatology, interpretation and generation of climate information and their application and to the interaction between climate and living organisms with special reference to India

Course Content

Section A: Climatology

Introduction : History of exploration of atmosphere; development of climatology and applied climatology
Structure and Composition of the atmosphere, the effect of trace gases emission and their control.
Climatic elements; Radiation, Temperature, Moisutre, Pressure Systems; Wind and General Ciculation of the atmosphere, Air masses and Atmosphere Disturbances.
Indian weather and its controls: Synoptic climatology of Western Disturbances, local convective systems Monsoons and Tropical Cyclones.
Weather forecasting: Short,Medium and Long Range Weather forecast.
Climatic classification: Koppen and Thornthwaite, Major climatic regions of the world with the particular reference to the tropics.
Climate changes: Evidences and theories of climate change, global warning concept and its impact on society.
Applied climatology: Data collection, archiving accessing, interpretation and generation of climate information for various purposes

Section B: Biogeography

Scope and Development of Biogeography
Environment, Habitat and Plant-animal association, biome types
Element of plant geography, distribution of forests and major communities
Zoogeography and its environmental relationship
Plant successions in newly formed landforms-examples from flood plains and glacial fore-field
Palaeobotanical and Palaeontological records of Environmental Change in India
National Forest Policy of India
Conservation of Biotic Resources

Course No.	**RD 409**
Title	Regional Geography of the North American Manufacturing Belt
Incharge	Professor Saraswati Raju
Credits	2
Instruction Method	L 2
Evaluation Method	S – 1.00; ESE – 1.00

Objective To give the students an overall knowledge of the development and characteristics of the industrial heartland of North America

Course Content

Definition of Manufacturing region, various attempts to delimit manufacturing region. Location and extent. The industrial nodes within the regional (general background)

Physical background: Land, climate, vegetation and natural resources

Transportation and its role in the establishment of the manufacturing region:

The canal era 1800-1860;

The railroads and steamship 1860-1920;

The highways and automobile – 1920-1950

The peopling of USA:

European colonies early development;

Frontier advance 1783-1920 (a) civil war, (b) acquisition and consolidation of territory;

The contemporary composition of Population

The resource base of the manufacturing region

Manufacturing nodes, their resource and major industries; New St. Lawrence; Middle Atlantic; New York Metropolitan Area; and Great Lake Region

The Decline of manufacturing Region: Myth & Reality

Course No. : RD-410

Title : Tibet: A Regional Analysis

Credits : 2

Teacher : Harjit Singh

Instruction Method : L2

Evaluation Method : BR .25, LE/TP .75, ESE 1.0

Objectives To familiarize students with the regional structure of an underdeveloped region outside India. Tibet is a unique region. It shows a special kind of human response to harsh environment that got reflected in its traditional socio-economic, demographic and institutional framework. Further, Tibet also experienced major changes in the recent past, which have created a number of internal as well as external complications.

Course Content:

Introduction: Geopolitical setting and its importance. Historical outline

Physical Setting; (a) Geomorphic Characteristics, Processes and features; and Physiographic Regions, (b) Drainage – Major River Systems and Basins their evolution and characteristics, Lakes, Glaciers. (c) Climate – factors, variations and characteristics, (d) Natural Vegetation – factors, characteristics and distribution.

Environmental Constraints in the framework of Man-Nature Interaction: Harsh nature of environment and its influence on the socio-economic aspects of life and on the regional structure of Tibet.

Evolution of Space Relations of Tibet: (a) Functional review of traditional routes; (b) Role of environment in the evolution of space relations; (c) Space Relations of Tibet with the Adjacent Territories in a historical perspective.

Population Characteristics: (a) Structure and distribution of population; (b) Dynamics of population – growth, age-sex structure, Literacy and education.

Social Aspects of Tibet : (a) Ethnic characteristics of population; (b) Religious aspects and the role of religious institutions (Gompas) in the traditional socio-economic set-up of Tibet.

Economic Base: (a) Land use, agriculture, constrains of agrarian economy, important crops, inputs and distribution of arable land; (b) Pastoral component of the economy; (c) Important Natural resources; (d) Household and cottage industry; (e) Economic regionalisation.

Transport: (a0 Important transport routes; (b) Mode and characteristic of transportation.

Recent Social and Economic Changes

Course No: RD 414

Title: Japan with Special Reference to Industrial Development

Credits: 2

Teacher/s: Sudesh Nangia, Anuradha Banerjee, Bhupinder Zutshi

Instruction Method: L 2

Evaluation Method: Sessional 1, ESE 1.

Objective: To provide background of regional structure and industrial development of Japan and identify underlying forces of development in Japanese economy.

Course Content

Introduction: i) Natural framework, ii) Historical Background of Japanese Economy.

Agrarian Set-Up: i) Factors affecting agricultural development, ii) Crops and their distribution, iii) Agricultural Regions, iv) Forestry and Fishing.

Industrial Set-up: i) Process of Industrialisation, ii) Location and characteristics of major industries, iii) Major industrial regions iv) Pattern of industrial development.

Population Distribution and Urbanisation: i) Regional pattern of population distribution, density and growth, its characteristics and trends, ii) Characteristics of urban and rural settlements, iii) Urbanisation and industrialisation.

Infrastructure, Technology and Industrialisation: i) Spatial pattern of transport and communication, ii) Nature and characteristics of foreign trade, iii) foreign trade policies, iv) Role of transport and trade in the process of industrialisation.

Planning and Development: Planning and programmes related to the development of agriculture, land-use, infrastructure, population and human settlements and their impact on industrial development.

Course No.: RD-415

Title:	Field Survey Method (Physical)
Credit:	3
Teacher	Milap Chand Sharma
Evaluation Method:	ESW: 0.5; FD 0.5, (W) FP 1.5 TP 0.5.
Objective:	Students shall be visiting Glacial Environs in the Himalayas for 3-4 weeks during summer vacations This course is designed to enable geography students to critically evaluate & integrate field realities with classroom teaching in geomorphology and to learn relevant techniques to identify landforms evaluation and process evaluation.

Course Content:

Landform Identification & Geomorphological Mapping Using: Tape & Chain, Plane Table, GPS, EDM, Theodolite

Relative Dating of Landforms: Boulder Characteristics, Sound Rebound Values, Lichenometry Plant Succession, Landform Association, Pebble Fabric.

Laboratory Techniques: Particle Size, Surface Texture, Micromorphology, use of GIS Techniques in Geomorphology

Course No.	**RD 416**
Course Title	European Union: A Meso Regional Study
Teacher	Sudesh Nangia
Credits	2
Instrcution Methods	Lectures/Seminars
Evaluation Method	S-1, ESE 1
Objective	The purpose of this course is to familiarize the students with the processes which led to the coalition of different countries to form a Union: Their geo-physical characteristics; natural and human resource base and the factors of unity and diversity within the geographical framework.

Course Content:

Introduction: A brief survey of the history of European Integration; (Institutions of the Union: The Council of EU Parliament, European Commission, The Court of Justice, The Court of Auditjors, Economic and Social Committee etc.) Common Policies of the EI and their Implementation.

Natural Framework: Natural regions based on physical, climatic and biotic characteristics

Resources & Economy: Natural resources, mining, agricultural, industry, tourism, trade transport & tourism activities. Their spatial and temporal variations

Population & Human Settlements: size, structure & composition, population dynamics, urbanization and migration

Regionalization and Regional Development; Socio-economic and cultural dimensions of regionalization; Geographical profile of individual countries in terms of regional development

The role of European Union in the Asian Countries in General and India in particular.

Course No. **RD 501**

Title Hydrology and Oceanography

Credit 3

Teacher K.S.Sivasami/B.S. Butola

Instruction Methods L2, P/T-1

Evaluation Method P/T – 1.5, EE –1.5 (Theory 1.2 and Practical 0.3)

Objective To acquaint the students with the basic concepts in Hydrology and Oceanography and water management issues in India

Course Content Part I : HYDROLOGY

Introduction , Hydrological cycle, role of hydrology in emerging water crisis.

Precipitation, evaporation and evapotranspiration, spatial and temporal variation over India, water balance

Groundwater-origin, occurrence, movement, regimes; aquifer parameters, quality of groundwater, groundwater resources management and conservation in India.

Rivers – river system and river basin-channel flow; discharge measurement; hydrograph analysis; analysis of discharge data; sediments and river water quality, surface water resources in India; flood management ; inter basin transfer of water

Hydrological aspects of lakes – reservoirs-marshes-glaciers.

Water Pollution

Water resources of India- water availability and water demand – drinking water, irrigation, hydel power, navigation, recreation; issues in water resources development and management; national water policy

Part II : OCEANOGRAPHY

The nature and origin of oceanographic environment

Ocean bottom relief and deposits

Composition of Ocean water.

Dynamic Oceanography: Vertical movement and mixing of sea water-fluctuation of see level; waves, tides, current and oceanic circulation
Utilization of marine resources – fisheries and minerals.

Course No.	**RD 502**
Title	Levels of Regional Development in India
Credits	3
Incharge	Professor Saraswati Raju
Instruction Method	L –3
Evaluation Method	S 0.50; TP 1.0; ESE 1.5

Objectives:

To introduce in order the concepts of development and under development, to enable the students to distinguish between growth and development, as well as between diversity and disparity

To develop a model of the spatial strcuture of underdevelopment in colonial India and to study the modifications brought therein since independence

To study the regional disparities in levels of productivity and growth rates in agriculture industry and transport. Also to examine the processes of urbanization in independent India.

To study regional concentration of deprived groups i.e. The scheduled castes and tribes in relation to development processes.

To situate gender inequality in the development scenario

To enable the students to develop tools so as to measure the levels of regional development, and to develop explanatory models in this context.

Course Content:

Define `development': the role of environment, technology and institution; development as eco-development.
Specific features of regional development as a sub-set of development
Regional Structure of underdevelopment in colonial India
Regional disparities in terms of levels and growth rates in the major sectors of the economy.
Demographic and social indicators of development and underdevelopment
Spatial model of modified underdevelopment in independent India
Gender issue in the processes of development
Problems of measurement of levels of development and critical analysis of the various attempts made in India in this regard
Territorial Division of Labour, and the sectoral structure of the economy, Strategies for regional development as an integral part of national development process

Course: Number RD-503

Title:	**Regional Development Theory**
Credits:	4
Teacher:	Atiya Habeeb Kidwai
Methods of Evaluation:	Sessionals (4) , Mid-term Tests (2) = 2 credits End Semester Exam = 2 credits
Objecti ves;	To introduce the students to the theories of regional development as they have evolved during the post World War II decades and to acquaint them with the practice of regional planning in India.

Course Content:

1. Concepts and definitions; parameters of economic and social development in the context of regional planning.
2. Heritage of regional development theory: regional science, regional economics and theoretical geography.
3. Phases of theoretical Development :
   - i) (1930 –1955): received economic growth doctrines and their impact on regional development theories (E. Hoover, D.C. North, F. Perroux, W.Isard), the primacy of regional resource development.
   - ii) (1955-1970): primacy of the Modernization Paradigm and "development from above", theories of transmission of economic growth (G. Myrdal, A.O. Hirschmann, H.S. Perloff, L. Rodwin, J. Friedmann); the U.N. sponsored policies and programmes of national and regional development in the Developing Countries.
   - iii) (1970-1980): debate on the relevance of the received western theories for the Developing Countries; re-thinking development (D.Seers, Club of Rome, H. Chenery, the neo-marxists); territorial vs. functional regional development (J. Friedmann); theories of regional underdevelopment (D. Slater, D. Forbes); paradigm shift from development from above to development from below (W.Stohr and F. Toddling, D.A. Rondinelli and K. Ruddle), J. Friedman and C. Weaver).
   - iv) (1980-1990): development of multifaceted paradigms of regional development theory (Eco-development, "Another" development, sustainable development).
   - v) (post-1990) relevance and the context of regional development under Structural Adjustment Programmes.
4. Regional Planning strategies:
   - i. Urban - industrial growth pole strategies as a tool for diffusion of modernization.
   - ii. Neo-populist regional development strategies : integrated rural development, basic needs approach, target area and target group approach, multi-level regional planning.

5. Delineating regions for planning : distinction between planning regions and geographical regions; schemes of regionalization (J. Friedman, V. Nath, L.S. Bhatt, P. Sengupta, Galina Sdasyuk), territorial production complexes.
6. The role of cities and the urbanization process in regional development in India, planning for supra-urban spaces (metropolitan regions, the national capital region).
7. The State and regional policy in India; the status of regional planning in the Five year Plans, regional plans of national importance (the South East Resource Region Plan, The Western Ghats Plan etc.)
8. Administrative machinery for regional planning in India : the Planning Commission, the Town and Country planning Organization (TCPO), District level planning machinery.
9. Regional social movements in India and their linkages with state regional policy and development strategies.
10. The New Economic Policy and its impact on the regional structure and regional planning problems in India.

Course No: **RD- 505**

Title: Population and Settlement Geography with Special Reference to India

Credits: 4

Teacher/s: Sudesh Nangia, Anuradha Banerjee,

Instruction Method: L 2, PR/Sl 2

Evaluation Method: Sessional 2, ESE (W) 1.50 ESE (P) 0.50

Objective: To familiarise the students with the fundamentals of population and settlement studies in Geography, and the current population and settlement scene in India.

Course Content

Subject matter, and scope of population and settlement geography, nature and sources of data and maps for studies in population and human settlements, units of settlements, definition of rural and urban.

Population distribution, density and growth, theoretical issues, spatial and temporal trends in India. The need for adopting sustainable regional development strategies, particularly to promote a balanced spatial distribution of population.

Population Composition: Biological (age, sex etc.); Economic (occupation and industrial classification; Socio-cultural (marital status, family, and household, literacy and education, religion, caste and tribe); rural-urban composition. Population composition and gender issues.

Population Dynamics: Fertility and reproductive health; mortality and morbidity; and migration. Their measurement, spatial and temporal trends.

Human Development Index and its components.

Evolution, size and growth of human settlements: Theories of evolution of settlements, size distribution, spatial and temporal trends in size and growth of settlements.

Distribution Pattern: Spatial distribution pattern of settlements: Theoretical models and empirical findings.
Settlement Structure: Physical (characteristics of internal structure and external form, theories explaining internal morphological structure of cities); functional (functional classification of urban centres, functional typology of villages, functional landscape, functional structure of towns in India); Landuse (principles and theories of landuse in urban and rural setting); house types and building materials.
Settlement Hierarchy: Concept of hierarchy, factors contributing to hierarchy, central place theory; hierarchical structure of settlements in India.

Issues, perspectives and policies on Population and Human Settlements.

Course no. **RD 506**

Title	Quantitative Methods in Geography II
Credits	2
Teacher	Aslam Mahmood
Evaluation Method	Sessional test 1.00; ESE 1

Course Contents

Statistics

1. Correlation: Scatter diagram and concept of empirical association. Carl Pearson's Product moment correlation coefficient and its limits; Spearman's rank correlation. Tests of significance of coefficients of correlation.
2. Association among attributes: Cross classifications and contingency tables; Chi- square test.
3. Regression analysis: Principle of least square and ordinary least square regression line. Test of significance of intercept, regression coefficients and coefficient of determination. Concepts of non-linear and multivariate regression lines.

Mathematics

1. Matrix algebra: Introduction to matrices, their types and operations such as transposition, addition, subtraction, multiplication and division or inverse.
2. Elementary arithmetic: Basic operations: arithmetic; geometric and exponential. Logarithms and their applications in geographic analysis.
3. Coordinate geometry: Euclidean distance and its use in measuring socio-economic distance. Equation of a Line and a Parabola.
4. Elementary differentiation and integration: Meaning of derivatives and their application in maximization and minimization and estimation of area.

Course No.	**RD 508**
Title	Socio-cultural Dimensions of Regionalisation in India
Incharge	Saraswati Raju
Credits 4	
Instruction Method	L 4
Evaluation Method	An B- 0.25; SE- 0.25; BR -0.50; TP-1.00; ESE-2.00

Objectives To acquaint the students to the processes of region-formation and the role of socio-cultural factors there in along with identification of these factors as expressed in space in India on one hand and the working of federal

Course Content:

The process of region-formation; geographic and non-geographic viewpoints; controversies involved; classification scheme; Region, Regional identity and regionalism; Their expression at various levels; regionalism and nationalism. The debate: Pan-Indian and supraregional, and identities of Indian regions through historical evolution.

Social components in region-formation: tribal; dialect and language, caste and religious groups; principle of mutual exclusivity in the distribution of observed variables. Pilgrimage and its role in region formation.

Gender-disparities and their spatial expression as a basis for region- identification: plausible ways.

Indian unity in diversity; viewpoints from social geography

Course No.: **RD 511**

Title Urbanization and Migration

Credits 4

Teacher Aslam Mahmood

Instruction Method L3

Evaluation Method BR:0.5; TP:1.0; MTT:0.5; ESE:2.0

Objectives : To acquaint students with the concepts of urbanization, its theories, processes and measurements; concepts of internal and international migration their types, streams, patterns, theories and measurement and implecations of migration trends on urbanization.

Course contents:

Introduction:

1. Importance of the study of urbanization and migration in the cintext of regional development Interrelationship between urbanization and migration in developed and developing countries.

The Process of Urbanization

2. The Process of Urbanization: Definition and the concept: economic, sociological, demographic and geographical connotation of urbanization. Definition of 'Urban centres' in different countries and the evolution of the definition adopted by the Census of India, its limitations and problems in its application in different states.
3. City as a melting pot of cultures and as harbinger of social change.
4. Economic base of the cities and role of small and medium size towns in the urbanization of a country.
5. Theories regarding the establishment of cities, size class distribution and the Rank-Size rule, primacy of the urban system.
6. Trends and patterns of urbanization, measurement of urban growth and its characteristics and correlates.

Migration

7. Definition of the migrants: Internal and international migration.
8. Migration selectivity: Streams; distance; age; gender; education and skills etc.
9. Theories of migration: Revenstein; Stouffer; Lee; Zelensiky; Lewis; Todaro.
10. Causes and consequences of migration, relevance of push and Pull factors.
11. Measurement of migration: Direct methods based on Census and surveys and indirect methods based on survival ratios.

Course No RD: 512

Title: Geography of Central Places

Credits: 4

Teacher/s: Sudesh Nangia

Instruction Method: L 2, Sl 2

Evaluation Method: Sl 2; ESE 2

Objective: To introduce the basic concepts pertaining to the system of Central Places and their relevance in the context of balanced regional development.

Course Content

Genesis: Concept of Central Places, Attributes, and principles of central places, Process of formation of central places.

Geographical Foundations of Central Places: Locational arrangement of nodes, spacing, dispersion and localisation; Clustering and competition; Economies of agglomeration.

Central Place Functions: Nature of Central functions, locational pattern of functions within a central place region,. Hierarchy of nodal centres based on functions and size.

Measurement of Centrality and Hierarchy: The scale of Functional Hierarchy; Methods of measurement of Centrality and Hierarchy (like Central Score, Central Tendency, Population Threshold, and Graph Theoretical Techniques). Ranking of settlements based on centrality and hierarchy of functions.

Central Place and Region: Delimitation of central place region: commutation, Communication, flow of goods and services; form of interaction and analysis of gradient.

Central Place and Region, theoretical framework: Central Place theory; Basic concepts: classical and modern central place theories; relevance of the study of Central Places.

Central Place Systems: Central Place theory vis-a-vis other location theories; Central Place Systems and their controls.

Central Place Systems in India: Individual case studies of the Metropolitan Cities of India.

Course No **RD- 513**

Title: Demography and Population Geography

Credits: 4

Teacher/s: M.D.Vemuri and Anuradha Banerjee.

Instruction Method: L 2, Sl 2

Evaluation Method: Sessional 1, MSE 1, ESE (W) 2

Objective: To familiarise the students to the various methods, materials and analysis pertaining to Demography and Population Geography,

Course Content

Sources of Demographic data: The quality of information from different sources.

Age – Sex Structure: Measurement of quality of Age Data. Smoothing of Age Data.

Population Growth Patterns: Measures of population growth. Factors associated with variations in population growth. Distribution and Density of population, spatial pattern and rural urban components.

Population Dynamics: (a) Fertility - Measures and methods of estimation. Measures when vital registration system is incomplete. Regional variations. (b) Mortality: Measures and methods of estimation. Measures when vital registration system is incomplete. Regional variations. Construction of a Life Table. (c) Migration: various measures of migration and migration patterns. (d) Urbanisation.

Population Projections – Methods of population projections, projections of urban and rural populations.

Techniques of analysis of spatial and temporal variations: Index of dissimilarity and concentration.

Characteristics of Population: (a) Demographic characteristics: sex, age, marital status; (b) Socio-cultural characteristics: literacy and educational attainment, religion, scheduled castes and tribes, ethnic and linguistic composition. (c) Economic characteristics: Work Force and labour force, work participation rates, industrial and occupational composition.

Variations in Population Characteristics: (a) Structure of population in different physiographic and economic regions. (b) Rural-urban and metropolitan regions. (c) Agricultural and non-agricultural regions. (d) Areas of heavy in and out-migration, (f) Gender Differentials.

Demographic Regions of India: Attributes, characteristics and structure of demographic regions.

Course No **RD: 514**

Title: Geography of Rural Settlements

Credits: 4

Teacher/s: Sudesh Nangia and Anuradha Banerjee.

Instruction Method: L 2, Sl 2

Evaluation Method: TP I, LR I, ESE 2

Objective: To analyse the spatial, demographic and socio-economic structure of rural settlements and their macro and micro-environmental conditions; rural dynamics, State Policies towards sectoral-spatial and Integrated Rural Development.

Course Content

pproaches to Rural Settlement Geography: (1) Development of the concept of Settlement Geography with special reference to Rural Settlements. (2) Data Base and maps: Census records, archives, place names, maps, field work and other sources.

Histogenesis of Settlements: (a) Definition and Settlement –Scale, (b) Evolution and growth, (c) Sequence of Occupance and Pioneer Settlements, (d) Size, form and Types of rural settlements.

Spatial Organisation of Settlements: (a) Dispersion, Localisation, Spacing of Settlements, (b) Rank-Size distribution.

Functional Organisation: (a) Functional types of Settlements; Central Places and Rural Growth Points; Market Centres; Social Infrastructure and Service-centres.

Rural-Urban Fringe: Structure, characteristics and functions.

Rural-Urban Interactions: Forms and processes of rural-urban interaction; change and adjustment in the fringe areas. Role of communication on interaction; Rural-urban movements and vice versa.

Rural Development Planning: Sectoral, Infrastructural and Regional – Objectives and achievements of the Five Year Plans and other specific development plans like Integrated Rural Development Plans, Sub-area plans.

Course No. **RD- 518**
Title Mineral and Marine Mineral Resources
Teacher
Credit 4
Instruction L 4
Method
Evaluation S1 2.00, SEE 2.00
Methods

Course Content
Part I: Introduction

The general aspects of mineral resources, including historical perspective, relationship of man, minerals and society, and classification of minerals.

Source of minerals: constitution of the earth; concentration of minerals in the upper layer of the earth; method of surveys.

Industrial minerals, energy and ecology.

Mineral resources of India: metallic, non-metallic and rocks.

Mineral fuels, and water: Mineral infrastructure in the country.

Minerals in the international affairs and the mineral economics

Minerals, a part of a material system of economy.

Part-II Marine Mineral Resources

Introduction: The Oceanic environment/physics and chemistry of the Oceanic waters/Biology of the Oceans/Geological provinces of the Ocean bottom/Geological characteristics of the sea-bed; and the sea floor.

Mineral Resources of the Ocean: Coastal deposits, Sea deposits, Deep Ocean deposits.

Minerals from: the Oceanic water.

The role of marine mineral resources in the Indian Economy: Present and Future.

Course No. **RD 520**

Title Remote Sensing: Techniques and Applications

Credit 4

Teacher K.S.Sivasami

Evaluation Methods ES: Theory –1, Practical-1, Sessionals & Practicals –2

Objective Introduce the students to the recent advances in the application of remote sensing techniques in Geography and to impart training in using simple photogram metric instruments, visual and digital interpretation of satellite imageries.

Course Content:

Introduction: Development of remote sensing techniques – an historical perspective, Indian Space Research Programme and its relevance in geographical studies.

Fundamentals of Remote Sensing: Principles of radiation; energy sources, energy interactions in the atmosphere and with earth's surface features.

Basic principles of aerial photos: types; scale and ground coverage, photographic resolution: radiometric characteristics, film exposure and density

Fundamentals of photogrammetry and air photo interpretations: Geometric elements of vertical photographs; relief displacement, tilt, image parallax; measurement of parallax and height, basic principles of air-photo interpretation

Satellite remote sensing: Platforms – LANDSAT, SPOT, IRS, INSAT, RADARSAT's Sensors – MGS, TM, LISS I & II, SPOT, PLA & MLA, SLAR, NOAA AVHRR – Principles and geometry of Scanners and CCD arrays, Orbit characteristics and data products.

Image interpretation: types of imagery, techniques of visual interpretation, transfer of interpreted thematic information to Basemaps, ground verification

Digital image processing: rectification, enhancement and mosaicing, supervised and unsupervised classification gound data and training set manipulation; post classification analysis and accuracy assessment.
Principles of air photo and image interpretation in mapping landuse and land cover, land evaluation, urban landuse, geomorphology, and in the study of climatology and water resources.

Course No.	**RD-521**
Title	Explanations in Geography
Tracher	Prof. Harjit Singh
Credits	4
Instruction Methods	L3, Seminar 1
Evaluation Method	S1: 1.0, TP : 1.0, ESE: 2.0
Objectives	To acquaint the students with geographical concepts, generalizations and their applicability.

Course Content

1. Introduction: Meaning, Needs and Methods of Explanation in Geography. The study of spatial structure; philosophy of space, forms, hierarchies and structure, multi-dimensional nature of spatial structure; the relevance of multivariate methods in the amaryllis of structure. Role of theory, Model, hypothesis and law in explanation. Purpose, form and strategy of models, theories and laws.

2. Spatial Interaction and behaviour: Theories and models, Interactions and spatial organization. Convergence of spatial structure and behaviour, formulation of field theory spatial diffusion and decision processes systems in Geography, Different models of explanation geography.

Course No.:	**RD-524**
Title:	Landform Geography
Teacher:	Milap Chand Sharma
Credits:	4
Instruction Method:	L 2.0, Practical 2.0
Evaluation Method:	Practical and Term Paper 2.0 ESE (W) 1.5 ESE (P) 0.5
Objective:	To enable students to comprehend the dynamics of landforms evolution, equip them with field techniques and land resource management and introduce them to new advances and applied aspect of geomorphology

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Course Content

1. Conceptual Aspects: Dynamic Equilibrium, Temporal and Spatial Scales, Magnitude and Frequency, Geomorphological Systems, Chronology in Geomorphology- Relative and Absolute Dating Methods: TL/OSL, ^{14}C, Oxygen Isotope, Paleomagnetism

2. Structural Geomorphology: Plate Tectonics, diastrophism, and relief expressions of igneous, metamorphic and sedimentary rocks

3. Exogenic Processes: Alpine glacial system, stratigraphic correlation, facies analysis Reconstruction of Paleoclimates and landform identification.

4. Applied Geomorphology: methods, risk evaluation, hazard and environmental management

Practical:

1. Geological Cross-Section
2. Reconstruction of ELAs/FLAs
3. Sedimentological analysis: particle size, shape, fabric
4. Geomorphological mapping with GPS/Digital Satellite Imageries
5. Geomorphic Hazard Mapping

Course No.:	**RD-525**
Title:	Fluvial Processes in Geomorphology
Teacher:	Milap Chand Sharma
Instruction Method:	L 2.0, TP 1.0, and Practical 1.0
Credits:	4
Evaluation Method:	Practical and Term Paper 2.0 ESE (W) 1.5 ESE (P) 0.5
Objective:	To introduce students to new focus areas of catchment, river channel and hillslope studies and management.

Course Content

1. Processes in Geomorphology: Theoretical approach: Force and Resistance, Uniformity, Thresholds, Processes on hillslopes-Horton's Model, Climate Change and hydrology

2. Approaches to the study of Processes: River Channel Environments, Catchments processes, Drainage Basin Development
3. Channel Forms and Processes: Mechanism of flow, Sediment transport and deposition, channel cross-section, hydraulic Geometry, Channel Types, Stream Grading, Interrelationship of Form and Process within Channel.

4. Drainage Basin in Geomorphic Perspective: Characteristics of area and linear properties, Channel changes Through Time and Space, Anthropogenic modification in Drainage Basin, Basin and denudation Chronology.
Practical:

6. Delimitation of Drainage Basin
7. Linear and Areal Properties.
8. Identification of Channel and Drainage Patterns
9. Run-off Sediment Relationship.
10. River cross-section

Course No	**RD-526**
Title	Transport in Regional Analysis
Credits	2
Teacher	
Instruction Methods	L-4
Evaluation Methods	SI – 2 credit; ESE-2 credits.

Course Content

1. Transport for Spatial Interaction: Spatial interaction by bridging space gap and thereby enlarging the radius of market-Dynamic relationship between transport and spatial readjustment----Role of Transport as a leading induced sector.

2. Problem of Accessibility: The Transport network --- Network shape and Location; regional variations in its density; methods of measurement, transport and spatial processes—Traffic flow and regional interaction--- identification of national and regional nodes through traffic.

3 Transport and Location of activities: Theories of location of agriculture, industry and settlements---- Impact of different aspects of transport on spatial equilibrium of location --- Problem of location and regional development.

4. Urban Transport: Profile of urban transport facilities--- Traffic in Towns---- transport services and urban land use pattern --- Subsidization of urban transport; Financial transport sector.

5. Regional Transport Planning: The framework of regional transport planning Traffic generation --- methods of forecasting--- Zonal interchange of traffic----- Model and route assignment Methods--- Evaluation of transport projects.

6. Indian Transport: Evolution of mechanized means of transport of India--- Transport development during colonial and plan periods---l Transport and structuring of Indian economic geography of India.

Course No: **RD-529**
Title: **Process of Urbanization and Urban Planning**
Credits: 4
Teacher: Atiya Habeeb Kidwai
Methods of Evaluation: Sessionals (4) , Mid-term Tests (2) = 2 credits
End Semester Exam = 2 credits
Objectives; to introduce the students to the theories of the urbanization process, urban form and functions and the principles of urban planning.

Course content:

Part 1

1. Relevance of the study of the urban variable in understanding the process of regional development.
2. Urbanization as an economic, sociological, demographic and geographical process.
3. Theories of urbanization: initial formulations at the Chicago symposium (1954), structuralist theories, urban praxis theories, dependency and world system theories.
4. The process and the patterns of the urbanization process in the developed and the developing countries; the process in India: colonial legacy, the post-independence characteristics.
5. The analysis of urban systems: structuralist perspectives, the systems approach.
6. The concept of urban primacy and over-urbanization.
7. Analysis of the urban economy, urban labour markets and their linkages with urban poverty.

Part 2

8. The urban built environment in an historical perspective: from the classical cities to the modern in India and the West.
9. The emergence of urban planning: the pioneer thinkers (1880-1945):
   - The Anglo-American tradition (E. Howard, R. Unwin, P. Geddes, P. Abercrombie); Patrick Geddes in India.
   - The European tradition (Soria Y. Mata, Le Corbusier).
10. Post- War planning doctrines: Linking urban and regional planning, planning for metropolitan regions (eg. the national capital region in India), the new town movement, le Corbusier and the Chandigarh plan.
11. Components of urban planning: zoning, neighbourhood planning, housing, public utilities and services, master plans.
12. Planning for small and medium sized towns, the 74^{th} Constitutional amendment Act.
13. The urban planning administration in India: The Town and Country planning Organization (TCPO), State level administrative machinery- their duties and responsibilities. Recommendations of the urban commissions in India.
14. New trends in urban planning: from physical planning to policy planning and urban management.
15. The globalized Indian city – emerging exigencies in urban planning.

Course No.	**RD 530**
Title	Political Geography with Reference to India
Teacher	B.S. Butola
Credit	4

Political Geography

A General Introduction

a)Conceptualising Political Geogphy: it's nature, scope and development
b)Approaches to the study of Political Geography

Nation as space and space as power. Geographical perspectives on the formation of Nation space, state, civil society and governmentally, core and peripheries, frontiers and boundaries,

Globalization – information revolution and Politics of spatial-cultural identity formation.

Bio-politics, political ecology Environmentalism and human right

Political Geography of India

India continuity and change: spatial setting and its regional and global significance

Rise and Growth of Nation space and Nationalism in India

Spatial dimension and politics of governance in India.

Democracy and Development in relation of federalism, Centre state relations electoral democracy, local self-government and empowerment.

Identity movement and challenger before nation state in India.

Course No: **RD - 532**

Title: Population and Environment

Credits: 4

Teacher/s: Sudesh Nangia and Anuradha Banerjee.

Evaluation Method: Sessional 2, ESE (W) 2

Objective: The purpose of this course is to identify the inter-relationship between population and environment in both rural and urban areas:
To introduce and sentisize the students to the relevance of the inter-relationship between population and environment within the matrix of development.
To identify and acquaint the students with the concepts and issues pertaining to environment and population.
To assess the inter-relationship of population growth and environment.
Course Content
Introductory: A critical overview of the paradigms of development in the context of the developed and developing world. Economic consequences of population change in the Third World, Environmental debates: Oriental and occidental perspectives. Some issues and trends. Development and ecological crisis: a theoretical introduction. Are there limits to growth? Malthus and Neo-Malthusian framework. Club of Rome, Phonex Consensus.
Concepts and Changing Views on Environment: Sustainability, Eco-development, Eco-feminism, Carrying Capacity. Pareto optimality and its utility in environmental issues. Environmental economics and its relation to regulation and policy application; measurements of costs and benefits of environmental programmes; state of environmental economics and its potential contribution to the formation of public policy.
Population Dimension: Population impact on natural resources and the environment. Land degradation and food. Tropical forest destruction; loss of bio-diversity; Population impacts on quality of life – Health, Employment, Landlessness, Urbanisation, Poverty, Water Pollution, Environmental refugees. Access to basic amenities and infrastructure, viz., health, sanitation, safe drinking water, housing and transport.
Gender and Environment: Women's role as managers of environment. Women's empowerment and resource management. Women in forest, women in the food chain. Women's contribution in rural household economy and environment protection; Role in shelter development.
Government and Non-Government Organisation and Environment: Roles of government in endoesing environmental safeguards during the Five-Year Plan periods. Local initiatives in ensuring environmental safeguards. Interest versus conflict groups. Service and development group; action group; Environmental regeneration versus afforestation in different agro-ecological zones.
Policy Consideration: Overview of the Amsterdam Declaration, Brundtland Report; Rio Declaration; New International Economic Order; Population Policies; Sustainable development as an imperative of Policy: A Synergism towards an international acceptable policy.

Course No.	**RD 533**
Title	Micro Regional Planning
Credits :	4
Course Incharge	: Dr. B.S.Butola
Evaluation Method	End Semester Examination Term paper 0.75, Seminar 0.25, Literature Survey 0.5 Book/articles Review 0.5
Objective	Structural adjustment programmes have marked the beginning of the new melinium. These programmes have special significance to the planned and mixed economies and societies. Central sectoral and macro planning models have become things of the past. Now Decentralized, micro regional planning are gaining importance. These plannings primarily focus on peoples participation and resource utilisation at the local level for sustainable development. Students will be introduced to the philosophy and methods of people centre development and Planning. Concept of Micro-Regional Planning

Unit: I

1. Multi-Level Planning and Decentralized Planning
2. Concepts of Regions for Planning
3. Evolution of Micro Regional Planning as a Philosophy and strategy for balanced Regional Development.
4. Spatial perspective on Planning: Analysing relationship between regional and politics- administrative framework in planning (from National development Council to Local Level.)
5. Structure and function of Multi-level planning and decision making in relation to district, block and village level planning.

Unit:II

6. Policies Planning Strategies and
7. Paradigms in Micro-Regional Planning
8. Micro-Regional Planning through Plans in India
9. Top down modernisation and Bottom up Grass Root Level Planning

10. Growth Centre approach to Micro-Regional Planning(Case Studies from India)

11. Structural Adjustment Programmes and Micro Regional Planning for empowerment and sustainable development.

Unit: III

Administering Micro-Regional Planning

12. Micro-Regional Planning and Local Self Government.

13. Peoples participation, Panchayati Raj system with special reference to 73 and 74 constitutional amendments

14. Approaches to Rural reeconstruction and village as Rural Republics.

15. Development for freedom and human welfare index at village and house hold levels.

Unit: IV

Case Studies:

15 Resource moblisation, Land and Environmental Planning at the Village Level (Agro-Forestry, Farm Foresty, Social Foresty and Joint Forest management) Micro Watersted management Sukho Manjni Micro-Water sted management)

16. Man Power Planning and Rural Industrialisation with special refer ence to inclucation enterprenurial skill at the village and house hold level (Khadi Gramodhog).

17. Role of Non-government Organisation in Grass Root Level Planning and sustainable development.

18. Information Revolution, Bio-politics and micro-regional planning.

Course No. **RD-522**
Title Advanced Quantitative Methods in Geography
Teacher Prof Aslam Mahmood
Credit 4
Evaluation Method SI: 2.0 ESE: 2.0

Course Contents

1. Matrix Algebra: Basic concepts of matrix as their types and operations of addition, subtraction, multiplication and the inverse of al; matrix. Linear dependence of vactors and the rank of a matrix. Victors, their length and normalization. Eigen values, eigen vector of the symmetrical matrices. The orthogonal matrices.
2. Multivariate Linear Regression Analysis: Introduction to the concepts of a bivariate linear regression model. The extension of a bivariate model to multivariate linear regression model. Estimates best linear unbiased of the parameters and underlying assumptions. Test of significance of the regression coefficients, analysis of variance, coefficient of determination. R2 and R2 (Adjusted to the degrees of foredoom) stepwise regression analysis. The problem of heteroscedasticity and multi-collinearity. Use of dummy variable and maps oil the residual from regression.

3. Principle Component Analyses (Regionalization problems): Problems of summarizing a large complex body of data into a smaller number of dimensions. Choice of the variables, limitation of the business of scale and the determination of weights, in the construction of composite indices. Simple ranking and other methods. Introduction to principle components factor loadings and interpretation of principle; components. Introduction of Canonical correlation, Discriminates function and cluster analysis.

Course No. **RD- 531**

Course Title Rural Development in India

Credits 4

Teacher Prof. M. H. Qureshi

Instructional Methods Lectures, Tutorials and seminars

Evaluation Sessionals 2, ESE 2