

**JAWAHARLAL NEHRU UNIVERSITY
SCHOOL OF SOCIAL SCIENCES**

CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT

COURSES OFFERED AT M.PHIL LEVEL

Course NO.	Title of the Course	Incharge	Revised Credits
RD 601	Introduction to Economics and Economic Development	Ravi Srivastava	4
RD 602	Regional Economic Analysis	Ravi Srivastava/Atul Sood	4
RD 603	Elements of Indian Regional Structure	Harjit Singh	4
RD 604	Levels of Regional Development in India	Atul Sood/ Amitabh Kundu	4
RD 605	Fluvial Processes in Geomorphology	Milap Sharma	4
RD 606	Regional Hydrology	K.S. Sivasami	4
RD 607	Regional Geomorphology and Facies Analysis	Milap Sharma	4
RD 608	Historical Geography (special Structure Of Indian Economy during Colonial Period)	S.Sinha	4
RD 609	Social Factors in Indian Regionalism	Saraswati Raju	4
RD 610	Political Factors in Indian Regional Structure	B.S.Butola	4
RD 612	Agriculture and Regional Development	S.K.Thorat	4
RD 613	Industry in Regional Development	Atul Sood	4
RD 614	Urbanisation and Regional Development	A.H Kidwai	4
RD 615	Economics of Transportation and Regional Development	Amitabh Kundu	4
RD 616	Introduction to Quantitative Methods	R.K. Sharma	4
RD 617	Quantitative Methods in Regional Analysis	Amitabh Kundu	4
RD 618	Advanced Quantitative Techniques	G.K.Chadha	4

RD 619	Political Economy of Regional Development	G.K.Chadha	4
RD 620	Rural Settlement in Regional Development	Anuradha Banerjee	4
RD 622	Geo- economy of Dryland Agriculture In India	M.H.Qureshi	4
RD 623	Spatial Aspects of Infrastructure and Development	Atul Sood/ Sucharita Sen	4
RD 624	Institution and Agricultural Development	S.K.Thorat/Ravi Srivastava	4
RD 625	Introduction to Demographic Methods	M.D.Vemuri/ Aslam Mahmood	2
RD 626	Advance Method in Demographic Analysis	P.M.Kulkarni/M.D.Vemuri	2
RD 627	Census and Vital Statistics System	SudeshNangia/A.Banerjee	2
RD 628	Population Policies and Programme	P.M.Kulkarni	2
RD 629	Fertility, Mortality and Social Structure	M.D. Vemuri	4
RD 630	Social Structure and Family Planning	M.D. Vemuri	4
RD 631	Population Urbanization & Migration	Aslam Mahmood	4
RD 632	Population, Settlements and Human Ecology	S.K. Nangia/ Anuradha Banerjee	4
RD 633	Population Growth and Economic Development: A Case Study of Brazil, India, Japan	R.K. Shamra	4
RD 634	Labour Force, Employment and Manpower Planing	Amitabh Kundu/ Saraswati Raju	4
RD 635	Demographic Factors in Regional Development	Anuradha Banerjee	4
RD 636	Population Growth and Food Policy	R.K. Sharma	4
RD 637	Economic Growth, Population and Structural Change	M.D Vemuri	4

RD 639	Regional Dimension of Female Labour Force with reference to India	Saraswati Raju	4
RD 640	Social Indicators of Development with Special Reference to Health and Education	S. Sinha	4
RD 641	Principle of Geographical Information Systems GIS :Concepts and Methods	Milap Sharma	4
RD 642	Advanced Geographical Information System	Milap Sharma	4
RD 643	Regional Dimensions of Public Finance in India	Atul Sood	4
RD 644	Development Theory and Experience	Ravi Srivastava and Atul Sood	4
RD 645	Demographic Change – Mortality and Health	P.M. Kulkarni/ M.D. Vemuri	2
RD 646	Gender and Development: Regional Dimension with special reference to India	S. Raju	4
RD 647	Natural Resources in Agriculture	Sucharita Sen	4

Course No.	:	RD-601 (Given to geography students only)
Title	:	Introduction to Economics and Economic Developments
Credits	:	4
Evaluation	:	Sessional Exam 1.0; Term Paper 1.0; End-Semester Exam 2.0
Incharge	:	<i>Prof. Ravi Srivastava</i>
Objectives	:	To introduce geography students to basic concepts in economic theory and to various problems in development economics so that the process of development of regions can be understood.

Course Content:

- I. Evolution of economic thought and key issues confronting economics.
- II. A brief introduction to concepts in micro-economics.
 - a) Basic concepts and assumptions of microeconomics. Working of free market economy. Demand and supply schedules-price mechanism. Concepts of price and income elasticity of demand. Concept of consumer equilibrium.
 - b) The law of variable proportions. Market structures and objectives and equilibrium of the firm under different market structures.
- III. A brief introduction to concepts in macro-economics.
 - a) Macroeconomic variables and their determination. The meaning and significance of national income aggregates-different methods of measuring national income. The circular flow of income.
 - b) The Keynesian consumption function. Determination of income in a simple Keynesian model. The investment multiplier. The significance of the Keynesian approach and main differences between the Keynesian and the neo-classical approaches. Aggregate demand and aggregate supply functions; concepts of unemployment.
- IV. Economic Growth and Development.
 - a) Concept of Economic Development. Features of underdevelopment and characteristics of transition. Factors influencing growth- technology, human and physical capital, the role of institutions. Constraints on growth in developing countries.
 - b) Strategies of development: Capital formation, relationship between agriculture and industry, the "Big Push", balanced vs, unbalanced growth, import substituting vs, export led growth, the role of the state and the market.
 - c) An overview of India's development strategy and experience.

Course No.	:	RD 602
Course Title	:	Regional Economic Analysis
Credit	:	4
Course Incharge	:	Ravi Srivastava/Atul Sood
Evaluation Method	:	Term paper 2; End Semester Exam 2
Course Content	:	

The concept of a region - time and space as additional variables in economic analysis.

Spatial microeconomics and location theory, price equilibrium in geographically separated and inter-linked markets - Spatial monopolistic competition - shape and size of market areas in a space economy-spatial price discrimination - profit maximising location of the firm - alternative objective of the firm with regard to locational choice - locational interdependence the hotelling formulation and its critique - agglomeration economies and diseconomies.

The role of transport costs in locational decisions Weber and Isard's theory - General equilibrium approach of Losch and Lefber to location.

Spatial micro-economics: Regional Social accounting - theory and Indian case studies - short run regional income determination - inter-regional income multiplier - income determination in a multiple - region economic system - regional balance of payments mechanism - inter-regional theories - difference in regional income growth - convergence - divergence trends in per capita income. Elements of urban economies of urbanization - structure of system of cities - determinants of land use.

Regional Economic Policy: formulation of inter-regional objective function - consistency of national and regional objectives approach towards depressed and backward regions- Channelisation of inter-regional migration - regional income stabilisation - Levelling of inter-regional disparities - the role of regional financial allocation by the Finance Committee.

Course No.:	RD603
Title:	Elements of Indian Regional Structure
Credits Allotted:	4
Course In-charge:	Harjit Singh
Evaluation Method:	Sessional Exam (1), Term paper (.75), Viva (.25), End Semester Exam (2)

Objectives:

This is a compulsory course for non-geography M.Phil students who generally join the Centre after attaining M.A. degree in economics. The basic purpose of the course is to sensitize the students about issues related to environment particularly with reference to Indian regional Structure. Therefore, the course generally is devoted to dissemination of information about India especially its physical environmental dimensions and also about the concepts and terms used in environment, ecology, geography and regional structure.

Course Content:

1. The concepts of spatial distribution and areal differentiation; the principle of inter-relationship of phenomena.
2. Factors of Unity in Diversity in the Natural Landscape of India.
3. Factors of Natural Environment and their role in Indian Regional Structure.
4. Main characteristics of India's natural environment and their implications for Economic/Regional Development in terms of;
 - i) Physiography and landforms
 - ii) Natural Drainage
 - iii) Climate
 - iv) Soils
 - v) Natural Vegetation
 - vi) Identification of Main Regions
5. Identification of Regions based on Resource Base.
6. Concept and terms related to above aspects and the current environmental debate.

Course No.	:	RD-604
Title	:	Levels of Regional Development in India.
Credits allotted	:	4
Course Incharge	:	Atul Sood/Amitabh Kundu
Evaluation Methods	:	Term Paper 2 (with viva); End-Semester Examination 2
Instruction Method	:	Lectures.

Course Content:

- I. Significance of the study of inter-regional disparities; Inter-relationship of growth process and inter-regional disparities- a review of the divergence-convergence thesis and its limitations.
- II. The Natural Resource Base of the Indian Economy; its regional analysis.
- III. Regional dimension of Economic Growth in the Colonial period in India.
- IV. Regional Economic Growth in Post Independence India.
 - i) Disparities and trends in per-capita incomes.
 - ii) Sectoral Income & Employment patterns.
 - iii) disparities in consumption and infrastructural facilities.
- V. Measurement of Regional Economic disparities in India.
 - i) Choice of indicators
 - ii) Alternative approaches to compositing of different Indicators.
 - iii) Identification of Levels of Development in India.
- VI. Regional Variations in Industrial development; Dispersal of Industries to Backward Regions; Regional Differences in industrial wages.
- VII. Regional Variations in agricultural productivity and growth.
- VIII. Social overheads(SOC): The concept of SOC in Economic Development - SOC as a leading or induced sector-Empirical evidence from Indian experience - expansion of transport network. Other indicators of infrastructure.
- IX. Regional Policy for Balanced Regional Development; The role Finance Commissions in regional resource allocation.

Course No.	:	RD-605
Title	:	Fluvial Processes in Geomorphology
Teacher	:	Milap Chand Sharma
Instruction Method	:	Lecture/Seminars
Credits	:	4
Evaluation Method:		Practical and Term Paper with viva (2) End Semester Exam (2)
Objective:		To enable students understand the importance of fluvial processes in shaping the earth, with emphasis on theoretical understanding of subject with drainage basin as a unit of study.

Course Content

Processes Studies in Geomorphology: Process-an interaction of force and resistance, Types of Processes, Processes on Hillslope and surface

Drainage Basin as a Unit of Study: Basin as Open System, Delimitation of Drainage Basin

Processes in a Basin: Overland-flow, sediment loss and accumulation, Hillslope stabilization, channel variation

Forms of Drainage Basin morphographic, morphometric, morphogenetic characteristics: Order, Length, Area, Slope, Shape, Relief of Basin, Interrelationship of these parameters.

Quantitative Evaluation: Measurement and analysis of like runoff, precipitation, sediment and solute production,

Changes in Drainage Basin: Forms and Processes over time and space, Natural and anthropogenic causes such as changes in land use, construction and impact on sediment yield.

Course No.	:	RD 606
Title	:	Regional Hydrology
Credit	:	4
Course incharge	:	K.S.Sivasami
Evaluation Methods	:	Practical/Seminar (1.0); Term paper (1.0) End Semester Exam with viva (2)

Objectives To introduce the students to the basic concepts of hydrology,of quantitative analysis of the components of the hydrological cycle and issues in water management.

Course content:

Water as an element in physical and social environment- properties of water –hydrological cycle and hydrological equation.

Factors controlling the spatial and temporal variation in the distribution of the components of the hydrological cycle in India precipitation, evapotranspiration ,soil moisture, ground water, river discharge, lakes, marshes, and glaciers.

Hydrological data- sources; water balance studies : hydrograph frequency probability and extreme even analysis – hydrological and hydrogeomorphological mapping – estimation of ground and surface water resource potential.

River basin and water shed as units for integrated water resources development and management conservation of ground and surface water-environmental aspects of water resource development projects.

Water quality – parameters of water quality, sources and types of pollutant in ground and river water – water treatment.

Water resource management issues in India – Water and food security – water and health- water related disasters: droughts and floods.

Emerging water crisis- Earth Summit Agenda- Inter State water dispute & National Water Policy.

Course No. : RD 607

Title : Regional Geomorphology and Facies Analysis

Credits allotted : 4

Course Incharge : Milap Chand Sharma

1. Factors of Lithogenesis and FAcies concept.
2. Tools of Facies Analysis - Modern and Past facies.
3. Eluvial and Proluvial forms.
4. Eluvial facies as in Sinoho-Gapga trough.
5. Desert and its problems.
6. Glacial and periglacial facies.
7. Deltas and coasts with facies control.
8. Specificity of the India peninsula.

Course No. : **RD 608**
Title : **Historical Geography (Spatial Structure of Indian Economy During the Colonial Period.**
Credits : **4**
Course in charge : **S. Sinha**

1. Spatial structure of Indian economy during the colonial period, 1850-1914:
 - i) The Impact of Imperialist Policy on Indian Economy.
 - ii) The Spatial Model of the India Economy during the Colonial period: Some General considerations.
 - iii) Nature of changes in Industrial categories during the colonial period.
 - iv) Nature of Disfunctional Development in the Port Enclaves.
 - v) Nature of stagnation in the hinterland of primary production.
 - vi) The colonial character of urbanisation
 - vii) The colonial character of Transport Development.
 - viii) The summing up.

Course No.	:	RD-609
Course title	:	Social Factors in Indian Regionalism
Credits allotted	:	4
Evaluation method	:	short essay/literature review- 0.75 credit; assigned readings and group seminar in the class and assessment of readings as critical essay - 1.25 credits; end-term evaluation 2 credits.
Teacher	:	Saraswati Raju
Objectives	:	To expose students to a critical understanding of socio- cultural factors and their contribution to processes of region formation in India as well as their contemporary relevance keeping in view the rise of regional tendencies in the Indian polity.

Course Content:

- i) Regions and regionalism: Regions and their theoretical construct as evolved through interdisciplinary engagement with the concept; emergence of regions - regionalism and regional identities and processes involved; nationalism and national identities; nature of empirical evidence from India.
- ii) Institutional responses to material and ecological bases of social organization and their interaction with the processes of region formation.
- iii) Evolution of social formations and their interface with spatial outcome - caste and tribal identities, ethnicity, religion and language and their role in region-formation, language and regionalism.
- iv) Spatiality of gendered social spaces in India and its intersection with caste, tribes and religion.
- v) Regional differentiation and levels: macro, meso and micro regions and the contextualized processes behind their emergence.
- vi) Regions and the Nation.

Course No.	RD 610
Course Title	Political Factors in Indian Regional Structure
Credits	4
Teacher	Dr. B.S.Butola
Instruction Method	L-3, S-1
Evaluation Method	Term Paper - 1.0, Literature Survey 0.5 on term paper End Semester Exam – 2.0 Term Paper viva voce 0.5
Objectives	To sensitise the students about the plurality in India. To understand the dynamics of regional structure in India in relation to space paradigm.

Course Content

- (i) Conceptualising Regional versus National Space,
- ii) Evolution of Regional Structure within the Nation Space in India over time: Ancient to Contemporary
- iii) Regionalism and ethnic nationalism in India: Linguistics and Religion
- iv) Spatial perspective on Nature of Indian state, civil society and mode of governance.
- v) Democratic decentralization, grass root level democracy and regional identity formation and politics of representation in India.
- vi) Indian Federal structure perspective on interstate disputes , Theories of Federalism, Centre State relation and regional inequity
- vii) Agrarian unrest and peasant movement and environment movement
- viii) Liberalisation and its impacts on Regional Structure in India
- ix) Democracy, Development and National Integration India.
- x) Space as Power and Political Articulation of the Marginalised in India

Course No. : **RD 612**
Course title : Agriculture in Regional Development.
Credits : 4
Course incharge : S.K.Thorat

The role of Agriculture in economic development; the changing importance of agriculture in a growing economy, interrelationships between agriculture and industry and the problem of balance.

The problem of agricultural development; the role of technological ,institutional and market factors in agricultural development. The nature of agricultural technology; the emergence of new agricultural technology in India in recent years; Green Revolution in India; the Green Revolution and the farm output productivity; employment and income distribution. The distribution of production; gains among regions of India.

Institutional changes in Indian agriculture; land relations in colonial India and land reforms since Independence: Evaluation.

Price analysis and marketing; price policy in a developing agricultural economy; state intervention in price stabilization and price support; supply response functions in developing economics.

Measurement of agricultural growth: Factors promising agricultural growth; Decomposition output and productivity levels in terms of area, cropping pattern and yield effects.

Production functions in agriculture; Laws of return with examples from Indian data; Marginal productivity and optimum combination of inputs; optimum combination of land and other resources.

Risk and uncertainty in agriculture.

Course No. : **RD-613**
Title : Industry in Regional Development.
Credits : 4
Teacher : Atul Sood
Evaluation : Term Paper (2.0), and End Semester (2.0)

1. The case for industrialisation of developing regions. The agriculture industry inter-linkages. The attributes and indicators of industrialisation. Determinants of industrialisation. Industrialisation of the developing regions since the 1960s.
2. Alternative theoretical perspectives of the process of industrialisation: the Structuralist view, the Neo-classical view and the Radical view. Import Substitution and Export-Led growth. Globalisation and Industrialisation.
3. Sectoral Patterns of Industrialisation. Time series and cross-sectional studies of Kuznets, Hoffman and Chenerry.
4. Industrial location theory: Weber, Hotelling and Isard's models of location.
5. Techniques of Spatial and Structural Analysis in Industry: Location Quotient, Localisation Coefficient and Localisation Curves. Measures of Spatial industrial change. Regional Specialisation and Diversification.
6. Industrial Growth in India: growth pattern and employment trends. Regional Spread of industrialisation. Regional Industrial Diversification. Factors explaining regional pattern of industrial growth in India. The role of Structural factors vis-à-vis regional factors.
7. Regional Inter-industry models and cluster analysis.

Course No	:	RD 614
Course Title	:	URBANIZATION AND REGIONAL DEVELOPMENT
Credits	:	4
Teacher	:	Atiya Habeeb Kidwai
Evaluation Method:	Term Paper with viva:	1.5 Credit
	Literature review:	0.50 credits
	End Semester Exam.	2.0 Credits

Objectives

To introduce the students to the:

- i) theoretical foundations of inter-disciplinary research in the process of urbanization ;
- ii) characteristics, patterns and trends of urbanization in the developed and developing countries in a comparative perspective; and the,
- iii) manifestation and concomitants of the urbanization process in India.

COURSE CONTENT:

Received theories of urbanization (1950s and 1960s): search for a theory of urbanization within the modernization paradigm (Redfield and Singer, Hoselitz) and in terms of the system of cities (Berry, Friedmann).

Search for alternative paradigms (1970s and 1980s):

- urbanization and international dependency (McGee, Slater, Santos);
- world system approach (Wallerstein, Chase-Dunn, Sassen-Koob);
- structuralists theories (Harvey, Castells);
- urban praxis theories (Castells);
- global-local interplay theories (Smith and Tardanico, Bodnar, Bienen);
- post modernism and urban theory (Knox, Soja, Davis, Harvey).

Comparative and historical review of the characteristics, patterns and trends of urbanization in a) Developed countries; b) Developing countries; and, c) India.

The process of urbanization and regional development: the role of cities in the development process: rural urban linkages.

Concepts of urban primacy and over-urbanization: received theories and frameworks of analysis, reconsideration of the received theories in the 1980s and the 1990s.

Analysis of the urban economy: the functional specialization approach; the economic base approach; two-sector models (Geertz, McGee, Hart, Sunkel); three-sector models (Friedmann-

Sullivan); economic circuits and continuums (Santos, Bremen); radical dualists (Moser, Gerry Portes): petty commodity production.

Urban Economic Change and Transformation: Global restructuring and the urban economy; phases of de-industrialization, re-industrialization and corporatization in the core cities and the 'new' industrialization in the peripheral cities- implications for city structure, urban communities and urban regions.

Urban labour markets: theories of dual labour markets (Doeringer and Piore), segmented labour markets (Reich et.al.; discontinuous labour markets (Blackburn and Mann), recent trends in urban labour market studies; gender analysis.

The urban service sector: concept and classifications; the "urban involution" hypothesis.

Official policy and the urbanization process in the Developing countries: the UN advocated urban-industrial policies of the 1960s; re-orientation of official policy in the 1970s (debate on urban bias, counter- urbanization strategies, prioritization of the small and medium towns).

New concerns in the 1980s: the urban built environment, access to urban services, urban poverty, urban social conflict.

The globalizing world and the structure of the post-metropolis.

Urban planning and management in India: the urban planning machinery, the urban development policy in the Five Year Plans; reports of urban commissions; financing and legislating urban development, implications of the 74th Amendment Act.

Course	RD 615
Title	Economics of Transportation and Regional Development.
Credits	4
Course in charge	:

Course content:

1. Introduction of transport: Nature of transport--- and economic growth ---transport and location of economic activities.
2. Demand for transport:-Characteristics of regional and urban transport demand ---factors affecting demand ---general theory of travel demand --- value of time.
3. Supply of transport: Characteristics of transport modes -- problems to identify transport output --- cost characteristics of different modes --- allocation of costs.
4. Pricing of transport services: Principles of transport pricing --- problems of cost-price relationship --- congestion and pricing.
5. Regional transport planning; Framework of transport planning-methods of forecasting traffic ---definition transport project evaluation of investment--- cost benefit analysis.
6. Transport development experience: Transport development in India during colonial and plan periods-- impact on Indian economy --- lessons from Soviet transport experience.

Course No. : **RD 616**
Course Title : Introduction to Quantitative Methods.
Credits Alloted : 4
Course Incharge : R.K.Sharma

Statistical Methods

The nature and the importance of Statistical inquiries and their limitations. Collection and Tabulation of Statistical Data; Graphical Presentation of Data, Frequency of distribution; Control Rules for forming frequency distribution; Histograms; cumulative frequency distribution; Measures of Central Tendency; Mean Median and Mode; Quartiles and Deciles; Weighted Arithmetic Averages; Discrete and Continuous frequency Distributions; Limitations of these measures.

Measures of Dispersion and Elementary Probability Theory:

The Range, the Semi-inter-quartile Range, the mean deviation, the standard deviation. The variance; coefficient of variation; Lorenz Curve and Gini's Concentration Coefficient. The Elementary Probability theory and the Theoretical Distribution; Binomial Poisson and Normal distributions; their properties, interrelationships and uses.

Tests of significance:

Large and small sample Tests based on Normal, student's 't' and 'F' Distributions.

χ^2 Test of Goodness of 'Fit' and Contingency Tables.

Correlation Analysis:

Importance and Limitations of Correlation Analysis: Zero-Order Correlation Coefficient based on Karl-Pearson's formula; Discrete and continuous Distributions; Rank Correlation.

Regression Analysis:

Bivariate Regression Analysis and the Related Tests. Limitation of Regression Analysis.

Course No. **RD 617**

Title : Quantitative Methods in Regional Analysis.

Credits Allotted : 4

Course Incharge : Amitabh Kundu

Instruction Methods : L3, Tutorial-1

Evaluation Methods : End Semester 2.0 Sessional 2.0

Objective : To introduce quantitative tools used in regional analysis at an advanced level.

Course Content:

1. Models of Descriptive Analysis.

a) Matrix Algebra, eigen values and eigen vectors, positive matrices and Frobenius theorem, Geometric representation of vectors. Applications in Social Analysis

b) Methods of Regionalisation.

Choice of indicators: Bias of scale; Giving weightage for constructing composite index. Principal Component Analysis, Use of composite indices in determining levels of socio-economic development

c) General Linear Regression Models: Interpretation of Results, Problem of multi-collinearity.

d) Input Output analysis, Static and Dynamic Models Technological viability; Computation of output limits. Determination of Maximum of growth path.

2. Optimisation Techniques.

a). Classical optimisation methods (marginal analysis).

b). Linear Programming: Transportation Model

c) Simulation Models.

Course No : **RD 618**
Course title : Advanced Quantitative Techniques.
Credits allotted : 4
Course Incharge : Prof. G.K.Chadha

1. Theory of correlation - Zero-Order, Partial and Multiple Correlation Coefficients; Correlation Ratios; Weighted Correlations; Tests of significance for Correlation Coefficients, involving 't' F and Z distribution.s
2. Theory of Multiple Regression - Variables, Functions and Stochastic Specifications; Classical Least-Squares Regression, Step-wise Regression, and Restricted Least Squares Regression; Point and Interval Estimates; Beta Coefficients and Beta Weights; Statistical Properties of Least Squares Estimates; Empirical Compatibility of Estimated Relationships; Efficacy and workability of Least Square Estimates. Use of Binary Variables in Social Science Research.
3. Limitations of Least Squares Estimates:
 - (i) Multicollinearity in Regression Models; Tests for detecting Multicollinearity (Farrar and Glaubar Tests and Frisch's Confluence Analysis), Consequences and some Plausible Solutions of Multicollinearity;
 - (ii) Autocorrelation: Sources and Consequences of Autocorrelation, Tests for Autocorrelation (Durbin- Waston, Theil-Nagar and Durbin's Statistic), Estimation of Autocorrelated Linear Models (Cochrane-Orcutt Iterative Procedure and Durbin's Two-Step Method);
 - iii) Heteroscedasticity - Sources and Consequences of Heteroscedasticity, Tests for Heteroscedasticity (Spearman's Rank-Correlation Test, Goldfeld and Quandt's Residual Ratio Test and Glejser's Test for Pure and Mixed Heteroscedasticity), Solutions for Heteroscedastic Disturbances.
 - iv) Errors of Measurement -Sources of Measurement Errors; Solutions: Classical Maximum Likelihood Approach, Wald and Bartlett's Methods, Instrumental Variable Technique;
 - v) Autoregressive and Distributed Lag Models- Expectation and Adjustment Models, Klein and Koyck types of Distributed Lag Models, Estimation and Interpretation of Estimated

Parameters.

4. Analysis of Variance - One-way and two-way classifications; Latent Squares Design; Analysis of Co-variance, one-way and two-way classifications.
5. Analysis of Time Series- Trend Formulation; Growth Rates and Growth Curves (Exponential, Logistic and Gompertz and their Modified Versions), Pooling of Time Series and Cross-Section Data.
6. Production Function Analysis - Various Types, especially Cobb- Douglas and CES, Production Elasticities, Factor Shares and Returns to Scale; Technical Change and capital intensity, Neutral and Non-neutral Technical Change.
7. Consumption Function Analysis - Engel's Elasticities, Linear Expenditure System.

Course No.	:	RD 619
Title		Political Economy of Regional Development.
Credit Allotted	:	4
Course In-Charge	:	G.K.Chadha
Instruction Method	:	Lectures
Evaluation Method	:	End-Semester 2.0, Term Paper with viva 2.0
Objectives	:	To enable the student to identify the factors which explain the emergence and the persistence of economic inequalities between nations of the world as also between regions of a given country.

Course Content:

(A) Political Economy of Regional Development: A World Overview

Economic Distance between nations. Regional variations within rich & poor nations.

Nature of regional development - historical analysis. Critical appraisal of economic theories of development & Underdevelopment.

- i) Convergence-Divergence hypothesis.
- ii) Stages of development hypothesis.
- iii) Dualistic theories.

Historical analysis of regional development in marxist frame. Emergence of capitalism and its growth into monopoly capital.

Colonial exploitation in the mercantalist period, Industrial Revolution period and period of Imperialism. Critical examination of Metropole-hinterland theories of regional development.

(B) Political Economy of Regional Development in India:

Impact of British rule on economic and regional structure of India during:

- The Mercantalist period;
- The Industrial Revolution;

The post industrial Revolution Imperialism;

Changes in Agrarian structure; Industrial structure; Structure of Labour force;

Nature & port-Enclave pattern of development.

Regional Variations in agricultural & industrial development. Nature of cause of regional disparities in development since independence.

Course No	:	RD 620
Title	:	Rural Settlements in Regional Development
Credits	:	4
Teacher/s	:	Anuradha Banerjee
Instruction Method:		Lectures and Seminars
Evaluation Method:		Sessional 2.0, End Semester Exam 1.5, Viva 0.5

Objective: To train the students in the studies of rural settlements through extensive orientation in concepts, methodology and the subject matter in rural settlement studies to enable them to pursue research in the same field.

Course Content

UNIT I: Introduction

1. Development of the subject and approaches:

Development of the concept of settlement geography with special reference to rural settlements, relationship with history, economics, sociology and other social and physical sciences; Contributions of Indian Scholars to the understanding of rural settlements in regional development; Data Base – Field survey, Census records and other source material, data analysis; mapping and development models. Techniques of settlement analysis – Conventional and Modern including Remote Sensing and GIS.

2. Definition and Histogenesis

Definition of rural settlements; settlement scale; Evaluation and growth of rural settlements. Conceptual frames, historic cultural areas (various cultural groups, mapping of their occupancy units; System of land division, proprietary grant system, common property resources, pioneer settlement areas, sequence of occupancy, dynamism in rural settlements.

UNIT II : Distribution and Interaction

1. Spatial Distribution and Morphogenesis:

Theoretical concept of spatial distribution; pattern of settlements; deviations from the theoretical distribution and factors responsible for such deviations. Settlement Structure – morphology, size, form and type of rural settlements in their regional framework.

2. Rural Urban Interactions

Process of rural urban interactions: adjustment of countryside to the growth of the city; changes in rural areas; impact of change agents in the fringe areas; role of migration, mobility and communication in rural-urban interaction.

UNIT III: Functions, Land-use and House Types:

1. Functional Pattern of Rural Settlements

Analysis of functional types of rural settlements – methodology, functional analysis, functional hierarchy, service villages and trading centres, hierarchy of rural centres in the context of central place theory,

2. Rural Land-use and House Types

Principles of Land Utilisation; field systems and field patterns house type distribution pattern and adjustment to environment.

UNIT IV: Micro-level Analysis

1. Rural Settlement Patterns under different micro-environmental conditions

Flood plains, deserts, mountains, terai region, deltaic region, mining areas, urban zone of influence etc.

2. Field-Work:

Micro-level studies based on field work.

UNIT V: Planning and Regionalisation

Area Development Concepts; planning in relation to locational efficiency of land-use, marketing, economic welfare, social dynamics; planning service villages and rural service centres as agents of rural change; planning and infrastructure development for rural uplift; planning in response to human perception and adjustment to environments, Rural Development Programmes.

Course No. : RD 621

Course Title : Mineral Resources and Regional Development.

Credits : 4

Course In charge :

1. Mineral resources as mover of economy

- a. Minerals in the history of civilisation, specially in India.
- b. Uneven development of their role.
- c. Industrial society and minerals.
- d. Post-industrial society and minerals.

II. Differing Patterns of Regional Economy.

- a. Multiplicity of patterns in space at present.
- b. Multiplicity of patterns in history, specially in India.
- c. Entropy and diversification of patterns.
- d. Homogenization of patterns and natural economy.

III. Classification of Mineral Resource Economy.

- a. Regional economic development and classification parameters.
- b. Multiplicity of classifications.
- c. Minerals of energy, food and construction.
- d. Minerals for Pyro-electro and Hydro-Metallurgy, and for exchange.

IV. Resource, Reserve, Production.

- a. Different concepts of resources and reserves.
- b. Situational relation between resources and reserve.
- c. Territorial production complexes.
- d. A Relational exercise for India.

V. Management of mineral Resource in India.

- a. Nature of India's endowment.
- b. Nature of India's exchange with other countries.
- c. Nature of exchange within India.

Course No	RD 622
Course Title	Geo-Economy of Dryland Agriculture in India
Credits	4
Course Incharge	Prof. M.H.Qureshi
Evaluation Method	Term paper 2.0 & End Semester Exam 2.0
Objective	To familiarise the students with the environmental and economic characteristics of agriculture existing in the arid and semi-arid areas of India.

Course Content:

I Introduction: Dryland farming; Importance as a strategy and a technique

A review of climatic regionalisation. Delimitation of dry regions in India. Drought Prone Areas in India and Development Strategy.

II Environmental factors affecting dry land agriculture water and soil conservation techniques.

III. Land-use pattern in dryland agricultural regions in India

IV. a. Agricultural Practices and Constraints under dry land conditions. Farmers' response to dry area and to processes of desertification.

b. Poverty of resources, process of marginalisation, low cropping-intensity, availability and potential of irrigation.

c. Croppint pattern under low moisture regime – problems and prospects. Crop-rotations and crop-mixtures under traditional and modern methods. Productivity levels of crop & factors affecting crop-productivity. Nerlove's acreage adjustment model of distributed lags. Instability in yield levels.

IV. Crop combination mixed farming, inter culturing. Risk and uncertainty – methods of risk coverage. Sale of assets in a Buyers' market and purchase under sellers' market – a mechanism of double squeeze. Role of credit for adjustments against risk, crop failures.

V. Policies and programmes. Usage of new inputs in dry areas and role of technology policy. Programmes for sustainable development of dry areas. Development of Infra-structure, linkage with markets.

Course No: RD 623
Title: Spatial Aspects of Infrastructure and Development
Credits: 4
Method of Evaluation: Term Paper & Viva: 2.0; EST: 2
Course in Charges: Atul Sood & Sucharita Sen

Objectives of the course are to 1) acquaint the students about linkages between development and infrastructure (physical and social). 2) introduce the regional /locational aspects of development of infrastructure 3) expose the students to changes in policies with respect to infrastructure financing and their implications for regional development in India.

Course Outline

A. General Aspects

1. **Concepts:** Definition, classifications, features of infrastructure, economic and social dimensions of infrastructure.
2. **Infrastructure and Development:** Spatial aspects of economic development; macro and micro economic linkages of infrastructure, externalities; impact of physical and social infrastructure on social and economic development, demand for infrastructure and its spatial aspects; stages of development and quality of infrastructure investment.
3. **Infrastructure Financing:** Factors affecting historical prominence of public sector dominance in infrastructure; changes in perspectives of development and financing of infrastructure; privatisation of infrastructure- capital market reform, resource mobilisation, project financing and critical review of the new financing framework.

B. Sectoral Aspects

4. **Irrigation:** Issues in water resource management; types of water resources, sources of irrigation, ownership - spatial aspects; impact of irrigation on selected indicators of agricultural development; externalities of irrigation development; role of public sector, pricing of water, issues in financial recovery of major irrigation projects; institutional reforms in public sector irrigation.
5. **Transport:** Factors affecting transport network; types of transport network with special reference to India; cost structure in transport, determinants of freight charges- commodity characteristics, traffic characteristics. Impact of transport development on location of economic activities, concentration and specialisation; externalities; Needs and direction of reforms in the transport sector- implications.
6. **Power:** Spatial linkages - locational specificity of resource base and power sector development; issues in transmission and distribution; Specific sectoral problems with special reference to coal and hydro-carbon sector; Problems of SEBs- direction of power sector reforms- implications for regional development.

7. **Urban Infrastructure:** Characteristics, structure and pattern of urban infrastructure in India; proposed policy framework for providing basic amenities in urban areas and its implications – new methods of resource mobilisation, de-control and de-centralisation, urban governance, implications for regional development.

Course No.	RD 624
Course Title	Institutions and Agricultural Development:
Course Incharge	Ravi Srivastava/ S K Thorat
Credit	4

A. Approaches to Study of Institutions and Development

1. Meaning of Economic Institutions. Neglect of Institutions in Mainstream economic analysis. Emerging relevance of Economic Institutions. [Hodgson (1988), Hutchinson, 1984, Bardhan (1989d, 1995)] Nabli and Nugent, 1989C & 1989d Walter Neale 1987] **SKT**.
2. Role of Institutions in Economic Development. An overview of the evolution of institutional economics. Marxian approach to institutions. Institutional Economics and its relevance to development [Myrdal 1968; Adelman and Thorbecke 1989; Bardhan 1989b, d, 1995; Bhaduri 1984; Nabli and Nugent 1989c; d; , Toye (1995)] **SKT**
3. New-institutional economics.
 - a. The Transaction Cost Approach [*Coase (1960); Datta and Nugent (1989), North (1990), Williamson (ud, 1994), Eggerton, 1989 ch 1.5*] **SKT**
 - b. Property Rights Approach [Demsetz (1967, 1973)] [Eggertsson, 1989 ch 8 & 9, Furubotn and Pejovich 1972). **SKT**
 - c. Imperfect Information [Bardhan 1989b; Stiglitz (1985, 1989)]. **RVS**
 - d. Collective Action [Hardin (1968), Olson 1985, Olson 1990, Nabli and Nugent, (1989b), Runge (1986), Roemer (1978); Seabright 1993; Bardhan 1993] Marxian Approach towards Institution [John Roemer 1978, Ruttan & Hayami 1984). **RVS**
 - e. Overlap with New Political Economy. Interest Groups. State and Bureaucracy. Rent seeking (Eggerton, ch. 10, Nabli and Nugent 1989b, Chang (2001), Mushtaq). **RVS**

4. Theories of Institutional Change. Property rights and Transaction Cost approaches. Marxian approach. Induced institutional change [North (1970, 1989, 1990), Field (1981) Brenner (1977, 1981); Reed (1973) Kikuchi and Hayami (1980), Ruttan 1984, 1988, Ruttan and Hayami (1984), Ruttan and Binswanger (1978), Schulze 1968, Grabowski (1988), Papendreu (1994, Ch 8); Bates (1995)]. **SKT**
5. Economic Institutions, efficiency, equity and distribution (Nabli and Nugent 1989c & d, Eggerton 1989, ch. 1, Bardhan 1995, Stiglitz 1989). **SKT**

B. Rural Institutions and Development, with focus on the Indian Context

1. Land: Evolution of Property Rights. Land Reform and Property Rights. Tenancy. Types of Tenancy. Theories of tenancy [Ellis (1986), Singh (1989), Srivastava (1989a), Ray (1998); Singh (1989); Binswanger and Rozenzweig (1984), Jaynes (1984)]. **RVS**
2. Labour Market: Labour market institutions. Government Interventions. Labour Market Discrimination (Bardhan 1984; 1989; Binswanger and Rozenzweig (1984), Ray 1998, Srivastava 1995). **RVS**
3. The Role of Social Institutions - Caste (Akerloff (1976, 1980), Lal 1984), Birdsall and Sabot (1991), Scoville (1996), Darity (ud), Thorat and Deshpande (2001) **SKT**
4. Capital Market: Formal and informal credit institutions. Interlocking of factor markets [Bardhan (1989c), Binswanger and Rozenzweig (1984), Ray 1998; Basu; Srivastava (1989b)]. **RVS**
5. Collective action and agricultural/rural development in the Indian context. Chopra et. al. 1990; Kolavalli 1994, Ostrom and Gardner 1993; Wade 1988, Bardhan 2000a). **RVS**
6. State and Bureaucracy. The making of Policies and Agricultural/Rural Development [Bardhan 1984, Mitra 1977, Bardhan 1995, Bardhan 1997a, Mooij]. **RVS**
7. Discursive Themes in the nature and role of institutions in Development: Insurance Markets, Decentralisation; Governance; WTO and other international institutions. (Streeten 1989, Bardhan, Chang 2001, Wade 1985, Bardhan 2000b).

Course No : **RD 625**
Course Title : Introduction to Demographic Methods
Credits : 2
Course Incharge : Murali Dhar Vemuri/Aslam Mahmood

A Statistical Methods

Source of demographic and other data:

Census, vital registration, sample survey, population register, Agricultural census, N.S.S. Limitations of data. Coverage and constant error. Sampling and non-Sampling errors. Methods of evaluating errors: internal consistencies, composition of successive censuses. Matching with independent records, post enumeration check.

Measures of Dispersion

Range, Mean deviation, Standard deviation, Variance, coefficient of variation.

Tests of significance

Large and small sample tests based on normal, students T, F.distribution.

X² Test of goodness of fit and contingency table.

Correlation Analysis

Importance of correlation analysis. Pearson's correlation coefficient. Rank correlation. Limitations of correlation analysis

Regression Analysis

Bivariate and Multivariate regression analysis. Related Tests. Limitations of regression analysis.

B. Demographic Methods.

Structure and composition of Population

Age composition, Median age, percentage -distribution by age, age dependency ratio, population pyramid, age composition cross classified by marital status, religion, economic status etc. Percentage distribution by rural and urban Index of dissimilarity, measurement of

error in age data and digital preference. Age ratio scores, whipple's Index, Myer's blended method. U.N.Age-Sex accuracy index. Adjustment of age data carrier Farrg ratio method, Kurup King, Spragues Method.

Population Change

Rate of growth in a population: limax, geometric and exponential. Trends of population growth: linear, polynomial, exponential, exponential and Logistic.

Mortality

Crude death rate, age specific death rate, direct and indirect standardization of rates. Infant mortality rate, foetal death rate. Life table: Complete and abridged Life table, generational and cross sectional Life tables. Interrelationships among different functions of Life tables. Model Life tables.

Fertility

Crude birth rate, General fertility rate, age specific fertility rate, marital fertility rate, total fertility rate, Gross and net reproduction rate. convert rates, completed fertility rate, Child-women ratio

Nuptiality

Marriage rate, duration of marriage,age at marriage, SMAM. widowhood measures. Diverse rate.

Migration

Migrants and moves. Internal and international migration. In-migration, Out-migrates Net and Gross Migration. Place a birth and usual residence. Life time migration and duration of migration. Streams of migration, return and step migration.

Distribution of Population

Spatial distribution of population. Concepts of urban and rural. Urban agglomeration, town group and standard urban areas. Population potential, Rank-Size, Lorenz curve and Gini's coefficient population estimation and projection.

Course No : RD 626

Course Title : Advanced Methods in Demographic Analysis

Credits Allotted : 2

Course-in-charge: : P.M. Kulkarni /M.D. Vemuri

Method of Instruction : Lectures

Method of Evaluation : Sessionals 1.0, End-semester examination:1.0

Objectives :This course is designed to equip students with tools of demographic analysis. The concept of stable population is introduced and its applications discussed. The course describes development of model life tables, and models of fertility patterns and marriage. Students are introduced to various techniques of indirect estimation of basic demographic measures. Methodology of analysis of fertility change is discussed. The area of population projection is covered in fair detail. The course also introduces students to computer packages in demographic analysis.

Course Content:

Stable population: Introduction to stable population. Lotka's equation, its solution and modification. Intrinsic rates of birth, death, and natural increase. Mean age of child bearing; mean length of generation.

Impact on the age structure of changes in (i) mortality, (ii) fertility, and (iii) fertility and mortality. Quasi-stable populations.

Models: Development of model life tables: U.N., Princeton (Coale and Demeny), and Brass model life tables. Model stable populations: U.N. and Coale-Demeny Models. Models of Marriage and Fertility: Coale, Coale-McNeill, Coale-Trussell, Gompertz models.

Indirect Estimation of Mortality: Estimation of adult mortality from data of two consecutive censuses. Application of stable population theory to indirect estimation. Quasi-stable and generalised stable population techniques. Estimation of child mortality from data on children surviving and children ever born. Estimation of adult mortality from data on orphanhood and widowhood.

Fertility Analysis: Decomposition of change in fertility. Reverse survival method, estimates of birth rates in India from census data, Own children method. El-Badry correction. Use of regression equation: Bogue, Palmore and Rele methods. P/F ratio method. Analysis of fertility/birth histories – birth intervals, fecundity, parity progression ratio. Concepts related to fertility preference.

Population projections: Principal issues in population projection, mathematical projection, cohort-component projection. Sub-national projections, rural-urban projections, projections of labour force, households, school age population.

Use of computer packages for demographic analysis and population projections: MORTPAK, PEOPLE.

Course No	RD : 627
Title:	Census and Vital Statistics Systems
Credits:	2
Teacher/s:	Sudesh Nangia
Instruction Method:	Lectures and Seminars
Evaluation Method:	Sessional 1.5, ESE 1.0, Viva 0.5
Objective:	The purpose of this course is to provide thorough understanding of the development of the Indian Census and the processes involved in Census Taking. It will also provide understanding of the Registration System, and Large Scale Sample Surveys in India and the steps that have been taken to improve the same.

Course Content

UNIT I: Introduction

Sources of Demographic Data:

National Census, Vital Registration, Official Statistics (as CSO), Surveys including sampling procedure in surveys; other sources (as Parish Records, historical archaeology and other archival sources of demographic data.

UNIT II: Census System

1. Historical Aspects of Census taking:

Origin of Censuses; History of Census taking before the 17th Century and after the 17th Century; growth of the concept of the Modern Census.

2. Organisation of a Modern Census in India and other countries:

The essential features of a modern population census and its organisation from elementary planning to publication of results and evaluation.

3 The Census Questionnaire:

The contents of a Census Questionnaire through the modern census period; geographical aspects; demographic aspects; social aspects; bio-social aspects; economic aspects. Static and dynamic information.

3. Census Tabulation Plan

UNIT III: Salient Aspects of Modern Census

1. Geographical aspects

Spatial units and statistics available, different kinds of information – results of detailed and abridged sample tabulation for different units of territory; Census mapping; Importance of Census for relating human resources to natural resources in overall planning.

2. Demographic aspects

Continuity and discontinuity of demographic concepts and definition from Census to Census; problems of count; Analysis of Census Table contents for demographic characteristics, 1881-2001; Comparison with NSS Tables.

3. Social and Bio-Social Aspects

Continuity and Discontinuity of concepts and definition from Census to Census.

Relevant portions of Census Questionnaire and other Surveys; Analysis of Census Table Contents for Social and Bio-Social Attributes, 1881-2001.

4. Economic Aspects

Continuity and Discontinuity of concepts and definition from Census to Census.

Analysis of the economic part of the Census Questionnaire, 1872-2001; Analysis of Census Tables on Economic Characteristics cross-classified with other variables.

Work, dependency, employment status, class, workers definition and implication for economy.

5. Appraisal of Coverage and Quality of Modern Census:

Inherent limitations; investigations and respondents, nature of questions, limitations of organisation and management; Recommendations for academic quality, future Tabulation and Publication; Post Enumeration Checks and Surveys.

UNIT IV.

Registration System:

1. Civil Registration System

Development of Civil Registration in India – from 1866 to 1968; Civil Registration Schedule; Current pattern of Vital Registration System in different states – since 1969; Registration of Births and Deaths Act, 1969.

2. Sample Registration:

The scheme of Sample Registration areas; problems of data collection and supervision; Evaluation Studies undertaken from SRS data; Evaluation of SRS Analytical Series.

3. Model Registration:

Scheme for recording Cause of Death in selected rural areas with the help of para-medical personnel; purpose of the scheme; method of implementation and its progress. WHO scheme of cause of death and its recommendations.

UNIT V: Other Surveys

1. National Family Health Surveys (NFHS)

Background of the survey; Questionnaires; Sample Design and Implementation; Field

Manuals; Data Compilation and Tabulation; Country and State Reports.

4. National Sample Surveys (NSS Reports)

National Sample Survey Organisation; Sample Design and procedure of estimation; Number of Strata; Sample Size and Subjects of Inquiry related to population in different rounds of NSS; NSS Schedule; Tabulation of Data and Dissemination of Survey Results.

3. Reproductive and Child Health (RCH) Surveys

Background and Objectives of the Survey; Sample Survey Design; Questionnaires; Data Processing and Tabulation; Dissemination of Reports.

Course No	:	RD 628
Course Title	:	Population Policies and Programmes
Credits Allotted	:	2
Course-in-charge:	:	P.M. Kulkarni
Method of Instruction	:	Lectures
Method of Evaluation	:	Sessionals 1.0, End-semester examination:1.0

Objectives :This course aims to acquaint students with the basic rationale of population policy, various types of population policies, evolution of population policy in India, policies in other countries, developed and developing, and international conferences on population policy. The course will begin with a review of theories of population followed by an overview of population policies in various countries and then discuss specifically the evolution of population policy and family planning/ reproductive and child health programmes in India. Further, the course seeks to train students in programme evaluation techniques, especially as these relate to family planning/ reproductive health programmes.

Course Content

Population theories, pre-Malthusian thinking on population growth and development, Malthus' essay on population, Marxian position, neo-classical school, concepts of diminishing returns and optimum population, theory of demographic transition, population growth and economic development, works of Coale-Hoover, Boserup, Simon, and Lee.

Population policy, objectives of a population policy, fertility, mortality, migration and urbanization influencing policies. An overview of population policies in developed and developing countries, neo-Malthusian movements, change in approaches, population conferences, especially Bucharest and Cairo (ICPD), shift towards reproductive health.

Evolution of population policy in India. Population as a factor in planned development, population policies of 1976 and 1977, the Swaminathan Committee, National Population Policy

2000.

Population programme in India, various approaches-clinic, cafeteria, extension, information, education and communication, camp, incentive, post-partum, target, integration of family planning with maternal and child health, the emergency and aftermath, paradigm shift, target free approach, community needs assessment, reproductive and child health approach, quality of service. Programme organization, structure, personnel, contraceptive services and delivery systems, management of programmes, expenditure on programme. Roles of non-government organizations and international agencies.

Evaluation of family planning/ reproductive health programmes, measurement of effort and impact, performance indicators, acceptance and utilization rates, contraceptive continuation, computation of couples protected and couple years of protection, couple protection rate, births averted due to acceptance of various contraceptive methods. Effectiveness and efficiency of various methods. Cost-benefit analysis of family planning programmes. Intermediate and long-term impact, ultimate impact. Programme and non-programme factors influencing acceptance of contraception and utilization of reproductive health services.

Course No : **RD 629**
Course Title : **Fertility, Mortality and Social Structure.**
Credits allotted : **4**
Course Incharge : **Murali Dhar Vemuri**

Objective: To provide the students an acquaintance with the social system in societies at different levels of development and its relationship to fertility and mortality. To develop a capacity to understand and appreciate the role of socio economic variables at the individual and social level in population studies with special reference to fertility and mortality.

Course content:

1. Introduction: Nature, scope and objectives of social demography. Inter relationship of demography with different social sciences, particularly with Sociology.
2. Different social systems, structures and functions of different societies. Role relationship and their effect on composition and size of population of different societies, especially tribal societies. Socialisation of individuals and groups.
3. Social and cultural aspects of population composition; sex and age structure, marital distribution and factors affecting them.
4. Fertility: Difference between fecundity and fertility and variables affecting them. Levels and trends of fertility in the world in general and in India in particular.

Variables affecting fertility; Customs and practices; Factors related to high fertility and declines in fertility; Intermediate variables, Proximate determinants; Fertility differentials in India by rural-urban residence, educational status, economic status, occupational groups;

employment of women, religious and ethnic background and by age at marriage and proportion remaining single; prospects of future trends of fertility.

5. Mortality: Levels and trends of mortality; sex and age pattern of mortality: Foetal wastage and infant mortality; Causes of death; Factors related to high mortality in the past and factors related to mortality decline in the developed countries; Mortality differentials by rural urban residence, geographical differentials religious and ethnic group differentials, differentials by family income, educational status, and occupation. Morbidity: Measures of morbidity.

6. Interrelation between fertility and mortality.

Course No. : **RD 630.**

Course Title : Social Structure and Family Planning

Credits allotted : 4

Instruction Method : Lectures.

Course In Charge : M.D.Vemuri

Evaluation Method : Book Review 0.5 Term Paper 1.5
End Semester Examination 2.0

Objectives : To acquaint the students with the inter relationships between social and institutional factors and population variables. The nature of social systems and its relationship to fertility and family planning will be discussed. This course will also provide an exposure to the family planning programmes, especially in India, and its problems and perspectives.

COURSE CONTENT:

1. Nature of inter relationship of population with different social sciences, particularly with sociology.
2. Structures and functions of different societies. Their effect on composition and size of population. Societal variables influencing fertility and its effect on use of family planning.
3. Methods adopted for family limitation. Effectiveness of the contraceptive methods. Calculation of use effectiveness. Problems in measuring the effectiveness of various methods of birth limitation. Contraceptive continuation. Couple protection rate. Demographic Evaluation, Measurement of births averted. Cost benefit analysis of the F.P. programme.

4 India's population and its family planning programme: a historical review; organisational structure, motivational and communicational aspects. KAP gap and Unmet need. United Nations' conferences on population and development. Cairo conference. Targets vs. target free approach, Community needs assessment, Reproductive and Child Health Programme. National and State Population Policies. Family Planning Programmes in other countries especially China and Bangladesh.

Course No : **RD 631**

Course Title : Population, Urbanisation and Migration in India

Credits Alloted : 4

Course Incharge : M. Satish Kumar

Urbanisation:

1. Theoretical formulations based on a demographic approach toward urbanisation
2. Perspectives on urbanisation: Sociological, Economic and Geographical.
- 3a. Urbanisation and Development: Historical pattern for developing and developed countries
- 3b. Pre-Industrial and Post-Industrial patterns: Colonial and Post-colonial, Modern and Post-Modern patterns
4. Urban Economy in the developing world:
5. Globalisation and Urbanisation: Spatial diffusion and patterns of Modernisation in the third world Cities:
7. Urban Policies and Management
8. Measurement of urbanisation

Migration

1. Theories of Migration: Internal and International
2. Characteristics of migratory movement.
3. Causes of Migration
4. Emigration Dynamics in the Developing world.
5. Measurement of Migration: Internal, International.

Course No. : **RD 632**

Title: : Population Settlements and Human Ecology

Credits : 4

Teacher/s : Sudesh Nangia

Instruction Method : Lectures and Seminars

Evaluation Method : Sessional 2.0, End Semester Examination 1.5, Viva 0.5

Objective: To familiarise the students with the basic geographical aspects of population, settlements and human ecology; viz. The spatial organisation of population and human settlements; the pattern of human interaction with nature and man and the resultant human ecological systems.

Course Content

UNIT I: Introduction:

Subject matter and scope of the course from geographical perspective; systems approach to the discipline; concept of region and regional development; human ecological systems and their importance in regional development.

UNIT II:Population:

Population distribution, density and growth. Population dynamics: theoretical framework and empirical findings.

UNIT III: Settlements:

1. Human Settlements-A Basic Physical Entity:

Classification, Evolution and Growth of Human Settlements; Morphology and functions.

2. Spatial Organisation of Human Settlements:

Theoretical concepts and empirical findings related to dispersion/localisation, rank-size distribution.

3. Settlements as Central Places:

Theoretical Framework: Central Place Theory – basic concepts; process of development of Central Places; Classical model of Central Place Theory; departure from hexagonal form; Non-hexagonal Central Place models; comparison of Central Place theory with other location theories (theories of industrial location, land-use theory etc).

4. Central Place Region:

An Ecological Unit: Variables and attributes to determine the region; delimitation of Central Place region; form of relationship between central place and its region; analysis of gradient; static and dynamic processes in the formation of Central Place Region.

UNIT IV: Human Ecology:

1. Man-Environment Interaction:

The role of macro and micro environmental factors in shaping human ecological systems; classical and modern approach.

2. Human Ecological Processes:

Concentration-dispersion dichotomy, centripetal and centrifugal forces and the role of various processes.

3. Human Ecological Organisation:

Physical organisations; socio-economic and cultural organisation; formal/non-formal organisations.

UNIT V

Population, Settlement and Ecology: Imbalances and Strategies:

Theories of balance, imbalances caused by natural factors; human factors; their impact on human ecological systems; man's perception, and adjustment to imbalances; Sustainable Human Settlements in the context of Human Eco-Systems, case-studies.

Course No. : **RD 634**
Course Title : Labour Force, Employment and Manpower Planning.
Credits Allotted : 4
Course Incharge : Amitabh Kundu/Saraswati Raju

- I. Relationship between population growth and economic development. Historical experience and theories of population growth and Employment. Changing composition of Population in the development process.
- II. Conceptual and Measurement Problems of Labour Force and Work Force. Data-Base and definition of workers in the Indian Censuses and the National Sample Surveys. Sectoral Distribution of workforce for males and females in rural and urban areas.
- III. Unemployment, Underemployment and Disguised Unemployment;. Trends and Pattern
- IV. Measuring Poverty in India. Poverty Unemployment Linkages
- V. Female Employment. Changing Structure of Employment. Aspects of Discrimination in Labour Market
- VI. Urbanisation and urban structure. Workforce Distribution and access to basic amenities in different size class of urban centres
- VII. Recent Reports on Employment related issues. Thrust on Employment in Recent Plans: Emerging Perspectives
- V. Development of Human Resources: Theoretical Aspects of Planning. Methodology for forecasting Demand and Supply. Educational Planning

Course No : **635**
Title : Demographic Factors in Regional Development
Credits : 4
Teacher/s : Anuradha Banerjee

Instruction Method: Lectures and Seminars

Evaluation Method: Sessional 2.0, End Semester Examination 1.5, Viva 0.5

Objective: To make the students familiar with the critical role of demographic factors in determining the process of regional development in developed and in developing countries, with particular reference to India.

Course Content

UNIT I: Introduction

Sources and nature of demographic data; concept of region and regional development; population maps and mapping techniques of demographic data through GIS.

UNIT II: Population Resources

1. Population Pressure and Natural Resources

Distribution and density of population in natural resource regions. Cause-effect relationship between population pressure and natural resources in developing and developed countries.

2. Economic Development and Population Pressure

Stages in economic development and distribution / density of population; theory of demographic transition; division of labour in society and population pressure.

UNIT III: Population Dynamics and Regional Development

1. Fertility and Mortality

Fertility and nuptiality; mortality and life table; role of fertility and mortality in regional development.

2. Mobility and Migration

Mobility; Internal Migration and International Migration: their structure, process and stage. Role of mobility, internal migration and international migration in regional development.

UNIT IV: Population and Urbanisation in Regional Development

Urbanisation trends in developed and developing countries; problems associated with rapid

urbanisation in India.

UNIT V

Population Policies

Population policies; population influencing policies; role of population policies in regional development. Population Policy of India – a historical perspective; Population Policies of the States and their impact on regional development.

Course No. : RD 637

Title of the Course : Economic Growth, Population and Structural change

Credits Alloted : 4

Teacher : Murali Dhar Vemuri

Evaluation Method : Term Paper 2.0 and End Semester Exam 2.0

Objective of the Course:

This course will serve to introduce the various concepts of economic growth and population to the students. The interrelationship between population growth and economic development will be examined in detail. The course will also review the structural changes brought about by economic growth and the implications if for the population.

Course Content

1. Meaning of economic growth, economic development and sustainable development.
2. Determinants of economic growth - the role of savings, capital formation, technological change and institutional factors.
3. Age and sex structure of population- dependency rate, labour force participation rate.
4. Interrelationship between economic development and population- Demographic transition, Malthusian and Marxian perspectives, Non-Malthusian views including those of Clark and Boserup.

5. Economic growth and structural change - Sectoral share in GDP and workforce, factor share in national income and distribution of income.
6. Development strategies- Agricultural development, export propelled growth, expansion of manufacturing sector, implication of each strategy towards generation of employment, reduction of income inequality.

Course No.	:	RD 639
Course Title	:	Regional Dimension of Female Labour Force
Credits Allotted	:	4
Course Incharge	:	Saraswati Raju
Evaluation Method	:	Term paper with viva 1.0 credits Book/literature review 0.5 and Report 0.5, End Semester Examination 2.0
Instruction Method	:	L 2
Objectives	:	The objective of this course is to familiarise the students with the spatial/regional concerns in the explanatory framework of research on female labour force with special reference to India

Course Content:

1. Introduction:
 - a. Identification of the problems; why study women in geography?
 - b. Sources, inadequacies and limitation of data.
2. General theories regarding sex-inequality in labour market:
 - a. Neo-classical theories
 - b. Theories of labour market segmentation
 - c. Gender theories
3. Regional patterns of labour participation
 - a. Sectoral distribution

- b. Rural/urban pattern -- formal and informal
 - c. Macro, meso and micro observations.
4. Variables affecting the regional patterns:
- a. Demographic variables: age and sex composition of the population; child/women ratio; dependancy ratio.
 - b. Development factors: green-revolution and female labour; industrialisation and female labour; education and employment linkages.
 - c. Socio-cultural factors; region/caste-specific concepts regarding the traditional roles of women; public/private, indoor/outdoor dichotomy; space as a determining variable.
5. Role of geographi factor in the explanatory framework:
- a. Agro-ecological framework
 - Wheat/Rice dichotomy
 - Coarse-grain/millet region
 - b. Regional-cultural explanation
 - Scheduled tribes/scheduled castes/non-scheduled castes, Muslims and Christions in the Population and their implication for female labour.
5. Spatial/social differentiation and overlap in the incidence of female labour

Course No. : RD 640

Course Title : SOCIAL INDICATORS OF DEVELOPMENT WITH SPECIAL REFERENCE TO HEALTH AND EDUCATION

Course Incharge: Dr. Sachidanand Sinha

Evaluation method: CL: 2; Sessionals: 1. End Term Examination 1.5, Term Paper: 1.0; Book Review/Literature Survey:0.5

Objectives: (1) To acquaint with the history and nature of social indicators and their importance in social science research;
(2) To examine the theoretical perspectives on social indicators;
(3) To examine the limitations of indicators on education and health with special reference to India

Course Content:

1. Defining Development and Social Indicators: goals and processes. Social Indicators and Human Development: Issues and substance; Indicators and Indicator Systems.
2. Social Indicators Movement and the Development Debate: Territorial Social Indicators Movement: pre and post World War II scenario. Indicators and post-modern perspectives with special reference to PRA and RRA
3. Approaches to Social and Human Development: Physical Quality of life index, Basic Needs: objective and subjective needs, hierarchy of needs; Human Development Index: capability index, gender sensitive HDI; social and political structures and the problems of social and human development.
4. Political factors in Social and Human Developments: Culture and human rights, political freedom, women's agency and social development. Social Capital approach; Markets, State, and Social opportunity.
5. Sources of Social Indicators in India.
6. Identification of Social Indicators with reference to health and education in India: Sources and problems; Structure of health care services in India, problems of access and utilization, investment in health, public and private initiatives in health care services in India, Health policy in independent India; Structure of Education in Independent India, regional patterns of enrolment and dropouts with special reference to school education, financing education, educational policy in India.

Course No.: RD-641

Title: Principles of Geographical Information Systems (GIS):
Concepts and Methods

Teacher: Milap Chand Sharma

Credits: 4

Instruction Method: L1 P2

Evaluation Method: Practical and Term Paper 2 End Semester Examination with Viva 1.5
Practical 0.5

Objective: To impart basic training on theoretical and practical aspect of GIS

Course Content

Introduction:

GIS and Cartography, Definition, Components of GIS, Computer software Requirement

Database Management:

Spatial database, non-spatial data, Sources of Data: Ground based & Airborne, DBMS, Classification and Data Structure

Functional Components: Data input/capturing, layers/themes, editing, manipulation, analysis and query.

Applications:

Present & future trends, applications in agriculture, urban management, geomorphology, and environmental management.

Course No. : RD-642
Title : Advanced Geographical Information Systems
Teacher : Milap Chand Sharma
Credits : 4
Instruction Method: L1 P2
Evaluation Method: Practical and Term Paper 2 End Semester Examination with Viva 1.5, Practical 0.5

Objective: To impart intensive practical training to the students too enable them to use RS GIS in their research investigations and thesis

Course Content

Introduction:

Review of GIS Concepts and Methods, recent advances and applications of RS-GIS. Map Projections

Database Management and Structure:

Standardization and integration of Geographical data, Spatial Relationship Database Management Systems (SRDBMS), Conceptual Models of Spatial/Non-spatial Information, Boolean Operation, Fuzzy Tolerance, Structuring of Map Data, raster, digital image processing vector and raster data models, hierarchical, topological structures

Functional Elements:

Buffering, Overlays, clip, eliminate, Digital Elevation Model, Hydrological Model, product output

Application:

GIS in Micro-Level Planning, Mobile Mapping & GPS, Urban Planning, Tourism & Business Management, Internet GIS, Automated Mapping

Course No: RD 643

Credits: 4

Title: Regional Dimensions of Public Finance in India

Teacher: Atul Sood

Evaluation Method: Review Paper (0.5), Term Paper (1.5), and End Semester (2.0)

Objective: Based on theories of Public Finance the course will provide students with a historical overview of fiscal federalism in India. The purpose of this course is to acquire analytical tools for understanding fiscal policy to achieve growth and balanced regional development.

Course Outline

1. Fiscal Policy and its relation with Monetary Policy and Balance of Payments. Meaning, context and implications of fiscal reform. Public Expenditure and taxation – elasticity, buoyancy, efficiency and incidence.
2. Theories of Fiscal Federalism. Rationale for fiscal decentralisation
3. Experience of Fiscal Federalism in India: Historical perspective of intergovernmental fiscal relations, Principles of intergovernmental state transfers, devolution formula, revenue sharing criterion, and political economy of plan expenditures, Finance Commissions. Regional Dimensions and International Experience.
4. Status of Public Finances in Indian States – expenditure and revenue patterns, debt dynamics; issues in fiscal reform of State Finances.
5. Experience of Local Finance in India: Historical perspective of local finance in India, functional classification, Regional dimensions – across and within states, Urban and Rural Finances after the 73rd and 74th Amendment in India, Issues in fiscal reform of local finances, in particular reform in capital markets for infrastructure investment and urban basic services. International Experience.

Course No: RD 644

Credits: 4

Title: Development Theory and Experience

Course Instructor: Ravi Srivastava and Atul Sood

Evaluation Method: Review Paper (0.5), Term Paper (1.5), End Semester (2.0)

Objectives: The aim of this course is to provide analytical tools to analyse problems of regional growth and disparities. The course builds around theories of development and international development experience and locates regional development issues in the context of globalisation and growing international economic integration.

Course Outline

1. Recent patterns of international growth and development – growth experience, explaining underdevelopment, changing economic structure, poverty and inequality, trade, financial flows and debt.
2. Alternative approaches to critical issues in Third World Development. Identification of some of the key development issues in the contemporary period (such as the agriculture constraint, external vulnerability and the role of the State) and an overview of Neoclassical, Structuralist, Dependency, Marxist, New-institutional and other approaches to development
3. (a) Historical Background, theoretical basis and experience (with special reference to India) of Stabilisation and Adjustment
(b) Internal/External Financial Liberalisation and implications for development
4. (a) The International Institution framework for trade and development – IMF, World Bank and WTO
(b) Implications for India and its regional development

Course No. : RD 645

Course Title : Demographic Change - Mortality and Health

Credits Allotted : 2

Course-in-charge : P.M. Kulkarni/ M.D. Vemuri

Method of Instruction : Lectures

Method of Evaluation : Sessionals 1.0, End-semester examination:1.0

Objectives : This course proposes to cover various aspects of the mortality component of demographic change. It seeks to introduce students to basic concepts in mortality, morbidity, and health, and examine levels and trends in these both in India and the world. The course will also discuss the influence of socio-economic factors on mortality, especially infant, childhood, and maternal mortality, sex differentials in mortality, routes to low mortality, and factors contributing to mortality decline.

Course Content:

Introduction: Mortality as a component of demographic change, concepts of mortality, morbidity, and health, major diseases, sources of infection and modes of transmission.

Levels and trends in mortality in developed and developing countries and causes of mortality decline in these. Mortality levels and trends in India and regional variations.

Causes of death, change in the pattern of causes of death, emergence of new diseases, HIV/AIDS. Epidemiological transition, health transition, routes to low mortality, health and development.

Sex differentials in mortality, mortality differentials by socioeconomic factors, individual and household factors, environmental factors, and institutional factors.

Infant and childhood mortality, peri-natal, neo-natal, post-neo-natal mortality, differentials and determinants. Women's health, reproductive health, maternal mortality.

Health policies and programmes in India. Primary health care, nutrition, preventive, and curative health care. The health care sector in India, activities of international, government and non-government organisations in health services. Expenditure on health. Health care projects such as Khanna, Narangwal and Matlab.

Course No: 646

Gender and Development: Regional Dimension with special reference to India

Credits: 4

Evaluation: Reading assignments and reviews- 0.50; term paper- 0.75; field-based report 0.75; end term Examination- 2.0

Course In-charge: Saraswati Raju

Contemporary development literature clearly establishes that marginalized groups have unequal share of the opportunities that open up in the process of development. Within the 'deprivation layers' of caste, class and ethnicity, women bear the additional burden of their gendered location. In India, not only, gendered processes have a persistent regional dimension that continues to exist despite overall development; development itself can have adverse implications for women. Given this, the proposed course has the following objectives:

- 1) To provide an analysis of the location of women in processes of development and to understand the centrality of gender in each case;
- 2) To examine theoretical and conceptual frameworks for the analysis, including an understanding of gender divisions and their interaction with other forms of inequality such as caste, class, race, and ethnicity and their spatiality;
- 3) To reflect upon the linkages between the global economy and the gendered macro and micro processes of development; and
- 4) To provide a basis for research, practical action, and policy formulation and for evaluating directions and strategies for social change.

Section A

Locating Gender in Development Process

1. Theoretical framework – Classical and neo-classical theories of human capital formation, institutions and their feminist critique; gender theories- contextualizing patriarchy and its importance for understanding gender relations and their implication for development processes.

2. Conceptual shift in the women and development discourse from 'Women in Development' (WID) to 'Gender in Development' (GID) and 'Gender and Development' (GAD).
3. Feminist critique of gender perspective in the Indian Planning: from welfare to 'empowerment and women's agency approach.
4. Gender and structural adjustment

Section B

Regional Dimension of Gender and Development

5. Access and control over resources and assets; the cross-cutting issues of caste and class and space; Spatial-temporal pattern; case studies
6. Social and Economic Aspects:
 - a. Literacy/education
 - b. Women and Economy: Gendered Division of labour- rural and extra-rural;

Gendered livelihoods and poverty; workforce trends and implications for emerging regional patterns; caste/class/region overlap
 - c. Gender biases in access and utilization of health including reproductive health and its consequences
 - d. Gender and political participation: national, state and local

Section C

7. Gender planning
 - a. Gender development Indices; Government and bilateral policies/schemes; Gender budgeting
 - b. Institutionalizing gender concerns and gender empowerment in policies and interventions

Course No: RD 647

Course Title: Natural Resources in Agriculture

Course in charge: Sucharita Sen

Credit: 4

Evaluation: Literature Review/Group Discussion: 0.75; Remote Sensing Applications: 0.75; Seminar Paper: 1.0; End Semester Test: 1.5.

Objectives: The aim of this course is to introduce the students to the variety and complexities of the issues regarding the utilisation and management of land and water resources for agriculture. The course, along with familiarising students with theoretical perspectives, will present concepts of sustainability and optimality with special reference to the agricultural practices in India. The course will also deal with the existing linkages between land and water conservation in the context of different agroclimatic regions and expose the students to users' perspective of natural resource management.

Course Outline:

1. **Conceptual Framework:** Population pressure and agricultural responses; Resources and their carrying capacity; stress on land and water; Ecological systems and Agricultural development; Energy efficiency and agricultural development; Linking agricultural systems to social groups- case of tribal economy; Gender dynamics of natural resource use and rural livelihood; Concepts of sustainability and optimality; Sustainability indicators in agriculture; Development and poverty linkages with natural resource degradation in agriculture.
2. **Land Resources in Agriculture:** Land as a resource: land capability; Issues in utilization of land resource: pattern and unused potential, competition for agricultural land, effects of urbanisation on agricultural land use, process of conversion of agricultural land; Institutional factors, access and distribution of land; Land degradation: types and processes, indicators of degradation: biophysical and social; Consequences for land users; diversification of agricultural land.
3. **Water resources in Agriculture:** Utilisation/potential of water resource, sources of water, agricultural water use, quality of water supply, technologies in water-use; Problems of water utilisation: overexploitation, contamination, distribution, mismatch in availability and use (seasonal and regional); Issues related to large and small irrigation works; Institutional parameters in water allocation in agriculture: water rights (warabandi, water co-operatives), water markets, pricing; Managing flood, drought and famine- disaster and livelihood security.
4. **Inter-linking land and water conservation and development:** Approaches and policy; Legislation; Land and water conservation measures –Command Area Development and watershed programmes; Obstacles to conservation; Cases of semi arid tropics and humid tropics.
5. **Sustainable rural livelihood:** need for users' perspective, categories of asset, role of indigenous technologies and coping strategies; decentralisation; role of state and NGO.