# RANCHI WOMEN'S COLLEGE, RANCHI

# M.A. - ECONOMICS

# COURSES OF STUDY - SESSION 2015 -2017

M. A. Economics is a full time Post – Graduate Programme of two academic years. Each academic year shall comprise of two semesters consisting of six papers each. The papers shall be of 100 marks. 75 marks shall be given to End Semester Examination to be conducted by the college and 25 marks will be allotted on the basis of internal evaluation by the Department

In the *End Semester Examination*, student shall be required to answer four questions. Question number one shall be compulsory and will carry 30 marks and the rest three will carry 15 marks each. The question number one shall be short answer type containing five questions of 6 marks each. The answers are expected to be between 100-150 words. The duration of end semester examination shall be three hours.

In the *Internal Evaluation*, 5 marks will be allocated to attendance / class participation and 20 marks to mid semester tests. There shall be 3 such tests of 10 marks each out of which the best two will be considered in the evaluation. In the course on ECN20, out of 25 marks for dissertation, 20 shall be allocated for the project work and 5 for viva voce examination.

The Pass marks will be 30 for the End Term University Examination and 15 for Internal Assessment. Pass marks for the dissertation in paper ECN20 shall also be 15.

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## **List of Papers**

## **MA ECONOMICS**

Serial Semester no.		Paper no.	Name of the paper			
1	I	ECN1	Micro Economic Analysis			
2		ECN2	Macro Economics-I			
3	ı	ECN3	Public Economics			
4		ECN4	Elementary Econometrics			
5	1	ECN5	Economics of Environment			
6	ı	ECN6	Quantitative Economics-I			
7	II I	ECN7	Welfare and Distribution			
8	[]	ECN8	Macro Economics-II			
9	ll l	ECN9	Planning and Development			
10	11	ECN10	Indian Economy			
11	ll l	ECN11	Economics of Human Development			
12	11	ECN12	Linear Economic Models(Quantitative Economics-II)			
13	111	ECN13	International Trade			
14	111	ECN14	Banking and Financial Institution			
15	111	ECN15A1	Advance Mathematical Economics-I			
	111	ECN15C1	Theories of Agricultural Economics			
16	III	ECN16A2	Advance Mathematical Economics-II			
		ECN-16C2	Economics of Rural Market			
17	III	ECN-17B1 Single Equation Model				
	lii l	ECN-17D1	Theories Of Demography			
18	III	ECN-18B2	Simultaneous Equation Model			
	ll III	ECN-18D2	Population Dynamics			
19	IV	ECN-19	Theories of Growth and Development			
20	IV	ECN-20	Research Methodology in Economics and Dissertation			
21	IV	ECN-21A3	Operation Research and Economics			
		ECN-21C3	Indian Agricultural Problems and Policies			
22	IV	ECN-22A4	Growth Model and Fluctuations			
	ļ .	ECN-22C4	Globalisation and Agriculture			
23	IV	ECN-23A3	Econometrics-Qualitative and Dynamic Econometrics			
		ECN-23D3	Population Growth and Development			
24	IV	ECN-24B4	Time series and Multivariate Analysis			
		ECN-24D4	Indian Demography and Population Policy			

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### Paper wise Distribution of Marks in MA Economics Session 2015-17

Duration	Pass Marks	Full Marks		Semester Paper		Academic Year	
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3 HBS	97	100	94	52	ECN'-1	1	_
3 HBS	<u> </u>	100	97	52	ECN'-5	1	
3 HRS	<b>9</b> 7	100	97	52	ECN'-3	ı	1
3 HRS	97	100	SY	52	ECN4	ı	
3 HRS	<b>97</b>	100	٩Z	52	ECN'-2	İ	1
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3 HRS	97	100	97	52	ECN7	11	
3 HRS	97	100	97	SS	ECN'-8	II	
3 HRS	SÞ	100	97	52	ECN'-6	11	
3 HRS	97	100	94	52	ECN-10	11	
3 HKS	97	100	<b>S7</b>	52	ECN11	II	
SAH £	97	100	S7	52	ECN12	II	
3 HRS	<u>5</u> †	100	SZ	52	ECN-13	111	11
3 HBS	97	100	97	52	ECN-14	111	
3 HRS	<u>5</u> †	100	92	52	ECN 15A1	111	
3 HKS	<b>9</b> †	100	S۲	52	ECN-12C1		
3 HRS	97	100	<u>2</u> ۲	52	ECN.16A2	111	i
3 HRS	<b>9</b> 7	100	97	52	ECN-18C5		
3 HRS	94	100	S۷	52	ECM-17D1	111	
3 HRS	97	100	97	52	ECN-17D2		
3 HKS	97	100	S۷	52	ECN-18B5		
3 HKS	97	100	92	52	ECN-18DS	Ш	
3 HKS	9₽	100	92	52	ECN-19	٨١	
3 HKS	S₽	100	97	52	ECN-50	ΛΙ	
3 HKS	97	100	91	52	ECN-S1A3	ΛI	
3 HRS	97	100	97	52	ECN-51C3		
3 HKS	94	100	S۷	52	ECN-SSV¢	٨١	
3 HRS	97	100	97	52	ECN-55Ct	,	
3 HRS	97	100	97	52	ECN-5383	٨١	
3 HRS	97	100	97	52	ECN-53D3		
3 HRS	42 42	100	97 57	52 52	ECM-54D4 ECM-54B4	ΛΙ	

Note:- In academic year I all papers are compulsory and in academic year – II ECN-13 and 14 and ECN-19 and 20 are compulsory papers. Rest all papers are optional. From optional paper one has to choose either of the two papers (like C1,C2 and D1,D2) or (A3,A4 and D3,D4) in each semester and so on.

MSE-Mid semester, EAC-End semester.

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### SEMESTER I

### ECN 1 MICRO ECONOMIC ANALYSIS

#### Module I Demand Analysis

Consumer's Equilibrium; Indifference curve (income and substitution effect, Slutsky theorem, compensated demand curve and their applications); Revealed preference theory; Revision of demand theory by Hicks

### Module II Theory of production and Costs

Production function—short period and long period; Law of variable proportions; Returns to scale; Traditional and Modern theories of cost

### Module III Price and output Determination

Marginal Analysis as an approach to price and output determination; Perfect completion—short run and long run equilibrium of firms and industry; Monopoly—short run and long run equilibrium; Price discrimination; Monopolistic completion—Chamberlin's approaches; Oligopoly—Collusive and non collusive models; Bilateral Monopoly—price and output determination; Monopsony—price and output determination

### Module IV Alternative theories of firm

critical evaluation of Marginal Analysis; Baumol's sales maximization theories; Williamson's Model of Managerial discretion; Marris Model of Managerial enterprise; Hall and Hitch Full cost pricing theory; Bain's limit pricing theory and its recent developments including Silos-Libani Model; Behavioural Model of the firm—Cyert and March.

#### **Basic Text**

- Baumol, William J. (1987), Economic Theory and Operations Analysis, Prentice Hall of India
   Pvt Ltd, New Delhi.
- Bilas, R.A. (1971), Micro Economic Theory, McGraw Hill Kogakausha, Ltd.
- Choudhary, Kalyanjit Roy (2005), Principles of Micro Economics (Theory, Applications and Problems), Khosla Publishing House, New Delhi.
- Henderson, James M. and Richard E. Quandt (2006), Micro Economic Theory A
   Mathematical Apporach, Tata McGraw Hill, New Delhi.
- Koutsoyiannis, A. (1979), Moderm Micro Economics, McMillan Press Ltd, London.
- Stonier, Alfred W. And Douglas C. Hague (2008), A textbook of Economic Theory, Pearson Education.

#### **Supplementary Readings**

- Gravelle, Hugh and Ray Rees (2008), Micro Economics, Pearson Education.
- Lipsey and Chrystal (2008) Economics, Oxford University Press, New Delhi.
- Salvatore, Domimick (2003) Micro Economics, Oxford University Press, New Delhi.
- Stigler, George J. And Kenneth E. Boulding (1956), Readings in Price Theory, George Allen and Unwin Ltd.
- Pindyck Robert S. And L. Rubinfeld (2005), Micro Economics, Pearson Education.
- Whinston and Green (2007) Micro Economic Theory, Oxford University Press, New Delhi.

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### ECN 1.2 MACROECONOMICS 1

### Module | National Income and Funds of Flow Analysis

Social accounting, Input – Output Accounting, Flow of Funds Accounting and Balance of Payments Accounting. Macroeconomics: micro foundations, aggregation problems, macro economic problems.

### **Module II Consumption Function**

Keynesian consumption function, short run and long run consumption function, Relative income, Life cycle and Permanent Income Hypothesis.

### Module III Investment Function

Marginal efficiency of Investment and level of Investment; Marginal efficiency of Capital, short run and long run; The Accelerator and Investment behaviour; Tobin's q, Jorgenson model; Impact of Inflation; Influence of policy measures on Investment – empirical evidence.

### Module IV Macro Determination Models

Classical, Keynesian, Post – Keynesian models; IS – LM in closed, open economy, Rational and Adaptive Expectation models; Mundell – Fleming Model, Monetary approach to BOP, New classical economics, New Keynesian economics.

### **Basic Text**

- Ackley, G. (1978), Macroeconomics: Theory and Policy, Macmillan, New York.
- Dernberg and McDougal (1983), Macro Economics The Measurement, Analysis and Control of Aggregate Economic Activity, McGraw Hill.
- Dornbusch, R. and F. Stanley (1997), Macroeconomics, McGraw Hill, Inc., New York.
- Mankiw, N.G. (2007), Principles of Macro Economics, Thomson Learning.
- Shapiro, E. (1996), Macroeconomic Analysis, Galgotia Publications, New Delhi.

### **Supplementary Readings**

- Froyen, Richard T. (2006), Macro Economics Theories and Policies, Pearson Education.
- Jha, R. (1991), Contemporary Macroeconomic Theory and Policy, Wiley Eastern Ltd., New Delhi.
- Jha, R., Macro Economics for Developing Countries, Routledge Publications.
- Hubbard, R. Gleen and Anthony Patrick O'Brien (2007) Macro Economics, Pearson Education.
- Romer, D.L. (1996), Advanced Macroeconomics, McGraw Hill Company Ltd., New York.

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### ECN 3 PUBLIC ECONOMICS

### Module I Rationale of Public Policy

Role of Government in an economy – The allocation, distribution and the stabilization functions; Market Failures – Imperfections, decreasing cost, externalities and public goods; centre state relationship. Provision of Private Goods, Public Goods, Social Goods, Merit Goods and Mixed Goods, Public Goods: Pure and Impure Public Goods; Samuelson Condition, Free Rider Problem, Lindahl Solution;

### Module II Taxation

Principle of taxation — Benefit and Ability to pay Approaches, Indices of ability to pay; Incidence of taxation — impact, incidence and effects of a tax; forward and backward shifting; Burden of tax.

### Module III Public Expenditure

Wagner's law of increasing state activities, Weisman-Peacock hypothesis; Pure theory of public expenditure; Criteria for public investment; Cost-benefit analysis, project evaluation; Reforms in expenditure budgeting; Performance and programme budgeting and zero-base budgeting; Trends of public expenditure in India.

### Module IV Public Debt

Public borrowing and price level; classical view of public debt; compensatory aspect of debt policy; Burden of public debt; Principles of public debt management and repayment.

### Module V Indian Public Finance

Fiscal federalism in India; Centre – state financial relations in India, Analysis of Central and State government budgets; Lack of flexibility in Central and State budgets, Shrinking size of development finance through budgets, Fiscal crisis and fiscal sector reforms in India.

#### **Basic Text**

- Hockley, G.C., Public Finance, Routledge and Kegon Paul.
- Musgrave, R.A., The Theory of Public Finance, McGraw Hill.
- Radhakrishnan, N., Public Finance, Vrinda Publications.
- Sundaram, K.P.M. and K.K. Andley, Public Finance, S. Chand and Company.
- Dalton, Hugh (1980), Principles of Public Finance, Allied Publishers Pvt. Ltd.

### **Supplementary Readings**

- Goode, R., Government Finance in Developing Countries, McGraw Hill, New Delhi.
- Jha, Raghbendra, Modern Theory of Public Finance, Wiley Eastern and V.S. Johri.
- Musgrave, R.A. and P.B. Musgrave, Public Finance in Theory and Practice, McGraw Hill
- Musgrave, R.A. and C.S. Shoup, Readings in the Economics of Taxation.
- Ziemba W.T. and R.G. Vickson, Stochastic Optimization models in Finance.

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### **ECON 2.4 ELEMENTARY ECONOMERTICS**

### **Module I Statistical Background**

Concept of probability; probability distribution ,basic properties of Binomial, Normal and Poisson distribution of attributes, central limit theorem ,z, t, F and Chi statistics; Confidence interval and significance tests.

### Module II

Definition and methodology of econometrics analysis; The simple linear regression model. Assumption, estimation and properties of OLS estimators Gauss Markov Theorem; Test of Estimator multiple analysis of Variance.

### **Module III**

Violation of the Classical problems: Autocorrelation; Heteroscedasticity and Multicollinearity- causes, consequences and remedies.

### **Basic Text**

- Gujarati, D.N. (1995), Basic Econometrics (2<sup>nd</sup> Edition), McGraw Hill, New Delhi.
- Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Koutsoyiannis, A. (1977), Theory of Econometrics (2<sup>nd</sup> Edition), The Macmillan Press Ltd., London.
- Yamaney, Taro (1975), Mathematics for Economists, Prentice Hall of India, New Delhi.

### **Supplementary Readings**

- Chou, Y. (1995), Statistical Analysis, Holt, Reinhart and Winston, New York.
- Kmenta, J. (1997), Elements of Econometrics (Reprint edition), University of Michidan Press, New York.
- Spiegel, M.R. (1992), Theory and Problems of Statistics, McGraw Hill Book Co., London.

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### **ECN** 5 **ECONOMICS** OF **ENVIRONMENT**

# Module | Economics of Natural Resources , Sustainable Development and Environmental ... Accounting

Meaning and Characteristics of Environmental Goods; Theories of Optimal use of exhaustible and renewable resources; Environmental and Development trade – off and the concept of Sustainable development; Integrated environmental and economic accounting and the measurement of environmentally corrected GDP; Macroeconomic policies and Environment. Environmental Kuznets Curve, The Theory of Environmental Externalities, Pigouvian Taxes and subsidies, Coase's bargaining solution and collective action, New model of Pollution control, Environmental Regulations and Enforcement.

### Module II Measurement of Environmental Values

Rationale for valuation of environment; Concept of Total Economic Values, Direct and indirect methods of Valuation; Methods based on response to hypothetical markets, contingent valuation methods.

### Module III Environmental and Natural Resource Problems and Policies in India

Mechanism for environment regulation in India; Environmental laws and their implementation; National Environmental Policy; Water Policy; Forest Conservation Act; Forest Regulation Act; WTO and environment; Climate change and International Agreements.

#### **Basic Text**

- Bhattacharya, R.N. (2006), Environmental Economics, An Indian Perspective, Oxford University Press, New York.
- Eugine, T. (2008), Environmental Economics, Vrinda Publications (P) Ltd.
- Sankar, Ulaganathan (2006), Environmental Economics, Oxford University Press, New York.
- Tietenberg, Tom (2004), Environmental and Natural Resource Economics, Pearson Education.

### **Supplementary Readings**

- Divan Shyam and Armin Rosencranz (2008), Environmental Law and Policy in India, Cases,
   Materials and Statutes, Oxford University Press, New York.
- Ganesamurthy, V.S. (2009), Environmental Economics in India, New Century Publications, New Delhi, India.
- · Government Policies.

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### ECN 6 – Quantitative Economics – I

### Module I:

Concepts and types of functions, Multivariable functions; Partial derivatives and their applications. Differentials and differentiations; Problems of maxima and minima in multivariable functions; Unconstrained and constrained optimization in simple economic problems; Homogeneous functions and their properties.

### Module II:

Expansion of function of one variable (Taylor Series) complex number; Concept and algebra of complex numbers; General sinusoidal function; oscillations and their interpretation.

### Module III

Concept of integration; Simple applications of integration in economic theory first and second order differential equations and their solutions (particular and general). Simple problems in dynamic market equilibrium and simple growth models.

### **Module IV**

Concept of differences and its algebra. First and second order difference equations: particular and general solutions; application in trade cycle models and simple dynamic market equilibrium models.

### **Basic Text**

- Allen, R.G.D (1974), Mathematical Analysis for Economist, Macmillam Press and ELBS, London.
- Anthony, Martin and Norman Biggs (2009), Mathematics for Economics and Finance Methods and Modelling, Cambridge University Press.
- Chiang, A.C. (1986), Fundamental Methods of Mathematical Economics, McGraw Hill, New York
- Yamane, Taro (1975), Mathematics for Economists, Prentice Hall of India, New Delhi.

### **Supplementary Readings**

Gondalfo, G., Mathematical Methods and Models in Economic Dynamics Ch − 1 to 7

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### **SEMESTER II**

### ECN: 7 WELFARE & DISTRIBUTION

#### Module I

Micro theories of Distribution—Neoclassical approach; Marginal Productivity Theory; Product Exhaustion theorem; Technical progress and factor shares; Theory of distribution in imperfect product and factor markets; Theories of determination of rent, wages, interest and profit

### Module II

 $\label{lem:macro} \textbf{Macro theories of Distribution-Ricardian Theory , Marxian Theory ; Kalecki's theory and Kaldor's theory$ 

#### Module III

Welfare Economics—Pigovian welfare economics; Pareto optimal conditions; Compensation principle; social Welfare function; Theory of Second best; Arrow's impossibility theorem; Sen's views on welfare

#### **Module IV**

General Equilibrium—Partial and General Equilibrium; Walrasian excess demand approach to general equilibrium; Input output approach to general equilibrium; Existence, stability and uniqueness of equilibrium.

#### **Basic Text**

- Baumol, W.J. (1984), Economic Theory and Operations Analysis, Prentice Hall, Englewood Cliffs, New Jersey.
- Graff, J.De. V. (1957), Theoretical Welfare Economics, Cambridge University Press, Cambridge.
- Henderson, J.M. and R.E. Quandt (1980), Micro Economic Theory: A Mathematical Approach, McGraw Hill, New Delhi.
- Koutsoyiannis, A. (1979), Modern Micro Economics, McMillan Press Ltd, London.
- Little, I.M.D. (1973), A Critique of Welfare Economics, Oxford University Press, New York.

### **Supplementary Readings**

- Hansen, An Introduction to Welfare Economics.
- Mishan, E.J. (1969), Welfare Economics: An Assessment, North Holland, Amsterdam.
- Pigou, A.C. (1952), Economics of Welfare.
- Rothenberg, Measurement of Social Welfare.
- Samuelson, Paul Anthony (1945), Foundations of Economic Analysis, Harvard University Press.
- Sinha, Udai Prakash, Economics of Social Sector and Environment.
- Todaro, M.P. and Stephen C. Smith (2009), Economic Development, Pearson Education.

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### ECN-8 MACROECONOMICS II

#### Module I Supply of Money

Financial intermediation – a mechanistic model of Bank deposit determination; behavioural model of money supply determination; RBI approach to money supply; high – powered money and money multiplier; budget deficits and money supply and open economy; Seigniorage; control of money supply.

#### Module II Demand for Money

Classical approach to Demand for money – Quantity Theory Approach, Fisher's Equation, Cambridge Quantity Theory, Keynes Liquidity Preference Approach.

#### Module III Post Keynesian Demand for Money

Post Keynesian Approaches to demand for money – Patinkin and the real balance effect, Approaches to Baumol and Tobin; Friedman and the Modern Quantity Theory; Monetarism vs Keynesianism.

### Module IV Theory of Inflation/ Business Cycle

Classical, Keynesian and Monetarist approaches to Inflation; Structuralist Theory of Inflation; Philip's Curve analysis – short run and long run Philips Curve; Samuelson and Solow – the natural rate of unemployment hypotheses; Tobin's modified Philip's Curve; Policies to control inflation. Theories of Schumpeter, Kaldor, Samuelson and Hicks; Control of business cycle.

#### **Basic Text**

- Aschheim, Joseph and Ching Yao (1969), Macro Economics: Income and Monetary Theory, Charles
   E. Merril Publishing Co., Columbus, Ohio.
- Campbell Colin D. And Rosemary Campbell (1981), An Introduction to Money and Banking, CBS
   College Publishing. Gupta, Suraj B. (2003), Monetary Planning For India, Oxford University Press, New
   Delhi.
- Gupta, Suraj B. (2003), Monetary Planning For India, Oxford University Press, New Delhi.
- Harris, Monetary Theory, McGraw Hill Publications.
- Luckett, Dudley G. And John M. Culbertson (1981), Money and Banking, McGraw Hill.

#### **Supplementary Readings**

- Friedman, Milton, Optimum Quantity Theory of Money, MacMillan and Co. Ltd.
- Hansen, Alvin H., (1949), Monetary Theory and Fiscal Policy, McGraw Hill Co. Ltd.
- Hicks, John (1975), Value and Capital, An Inquiry into Some Fundamental Principles of Economic Theory, Oxford University Press.
- Khatkhate, Deena (1998) (Ed.), Money and Finance, Issues Institutions Policies, Orient Longman.
- Rangarajan, C. (2000), Indian Economy, Essays on Money and Finance, UBS Publishers.
- Schumpeter, Joseph A. Vol II (1939), Business Cycles, A Theoretical, Historical and Statistical Analysis
  of the Capitalist Process, McGraw Hill Book Company.

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#### ECN-9 PLANNING AND DEVELOPMENT

### Module I Planning

Planning, Models:- Aggregate Models – Harrod-Domar Model; Multi sector models; Mahalanobis 2 sector and 4 sector models and Input – Output models; Shadow prices; Project evaluation and cost benefit analysis.

### Module II Social and Institutional Aspects of Development

Poverty and inequality of Income – meaning, causes and measures; Population growth and economic development – causes and consequences; The Demographic Transition; Human Capital Formation – Meaning, problems; Criteria for investment in Human capital.

### Module III Sectoral, Financial and Technical Aspects of Development

Agriculture and economic development – importance, stagnation and strategy; Role of industrialization; Capital – output Ratio - meaning, determinants in UDCs; Investment Criteria – Capital turnover criteria; The Social Marginal Productivity Criteria; The Reinvestment Criteria; The Time series Criteria.

### Module IV Planning in India

New Development Strategies – Implementation and Appraisals of Economic Reforms; Financial Sector Reforms, Infrastructure sector reforms and External Sector Reforms.

#### **Basic Text**

- Agarwal, A.N., Indian Economy: Problems of Development and Planning, Wishwa Prakashan
- Dhingra, I.C., Indian Economy, S. Chand and Sons.
- Higgins, B. (1959), Economic Development, W.W. Norton, New York.
- Kapila, Uma (Ed.) (2002), Indian Economy since Independence, Academic Foundations.
- Luthra, V.P., Economic Development, Planning and Liberalisation.
- Planning Commission, Government of India Ninth Five Year Plan Vol. II: Thematic Issues and Sectoral Programmes.
- Mishra S.K. and V.K. Puri (2004), Indian Economy, Himalaya Publishing House.

### Supplementary Readings

- Meier, G.M. (1995), Leading Issues in Economic Development, Oxford University Press, New Delhi.
- Sen, Raj Kumar and Chatterjee, Biswajit (Ed.) (2000), Indian Economy: Agenda for the 21<sup>ST</sup> Century, Deep and Deep Publications.
- Todaro, Michael P. And Stephen C. Smith (2003), Economic Development, Pearson Education
   Ltd.

• Thirlwall, A.P. (1999), (6<sup>th</sup> ed.), Growth and Development, MacMillan Press.

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### ECN-10 INDIAN ECONOMY

### Module I:Economic Development and its Determinants

Approaches to Economic Development and its measurement – sustainable development; Role of State, market and other institutions; Indicators of development – PQLI, Human Development Index(HDI), gender development index

### Module II: Planning in India

Objectives and Strategy of Planning; Failures and achievements of Plans; Developing grass-root organisations for development – Panchayats , NGO'S and pressure groups; National income trends.

### Module III: Demographic Features, Poverty and Inequality

Broad demographic features of Indian population; Rural-urban migration; Urbanization and civic amenities; Poverty and Inequality.

### Module IV: Resource Base and Inrastructure

Energy; Social Infrastructure – education and health; Environment; Regional imbalances; Issues and policies in financing infrastructure development; Human Resource Development.

### **Module V: The Agriculture Sector**

Institutional structure — land reforms in India; Technological change in agriculture — pricing of agriculture input and output; Terms of trade between agriculture and industry; Agriculture finance policy; Agricultural marketing and warehousing; Issues in food security — policies for sustainable agriculture.

### **Module VI: The Industrial Sector**

Industrial Policy; Public sector enterprise and their performance; problem of sick units in India;

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Privatization and disinvestment debate; Growth and pattern of industrialization; Small-scale sector; Productivity in industrial sector; Exit policy – issue in labour market reforms; Approaches for employment generation.

### Module VII: Money, Banking and Prices

Analysis of price behaviour in India; financial sector reforms; Interest rate policy; Review of monetary policy of RBI; Money and Capital Markets; Working of SEBI in India.

### **Module VIII: External Sector**

Structure and direction of foreign trade; Balance of Payments; Issues in export-import policy and FEMA; Exchange rate policy; Foreign capital and MNC's in India; The progress of trade reforms in India.

### **Module IX: Economic Reforms**

Rationale of external and internal reforms; Globalization of Indian Economy; WTO and its impact on different sectors of the economy; Need for and issues in good governance; Issues in competition and safety nets in Indian economy.

### **Basic Text**

- Ahluwalia, Isher Judge and I.M.D. Little(Ed.)(2004), India's Economic Reforms and Development, Oxford University Press.
- Datt, Ruddar and K.P.M. Sundaram (2007), Indian Economy, S. Chand.
- Dhawan, S.K. (2006), Handbook of Indian Economy, Vol 2, Maxford Books, New Delhi.
- Jalan, Bimal (Ed.) (1993), The Indian Economy, Problems and Prospects, Pengiun Books.
- Kapila, Uma (2007), Indian Economy, Performance and Policies, Academic Foundation, New Delhi.
- Kapila, Uma (Ed.) (2007), India,s Economic Development since 1949, Academic Foundation, New Delhi.

Mishra S.K. and V.K. Puri (2004), Indian Economy, Himalaya Publishing

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#### ECN-11, ECONOMICS OF HUMAN DEVELOPMENT

#### Module I

Education as an instrument of economic growth; Human capital –Human capital Vs Physical capital, components of human capital; demand for education –private and social demand; determinants of demand; cost of education –expenditure on education, private and social costs and wastage and stagnation; benefits of education –direct and indirect, private and social benefits.

#### Module II

Health dimensions of development; determinants of development –poverty, malnutrition and environmental issues; economic dimensions of health care –demand and supply of health care; Financing of health care and resource constraint; the concept of human life value; theory and empirical studies of production of health care; inequalities of health –class and gender perspectives; institutional issues in health care delivery, Public expenditure on health in India.

#### Module III

Educational planning and economic growth—cost benefit analysis, production function modules; education and labour market—effects of education, ability and family background on earnings, poverty and income distribution; economics of educational planning in developing countries with special emphasis on India, Public expenditure on education in India.

#### **Basic Text**

- Arya, P.P. and B.B. Tandon (Ed) (2004), Human Resource Development, Deep and Deep Publications Pvt. Ltd.,
   New Delhi.
- Goel, S.L. and P.N. Gautam (2005), Human Resource Development in the 21<sup>st</sup> Century, Concept and Case Studies,
   Deep and Deep Publications Pvt. Ltd., New Delhi.
- Higgins, Benjamin (2003), Economic Development Problems, Principles and Policies, Ch 19, Planning Social
   Development 1 Education, Universal Book Stall, New Delhi.
- Meier, Gerald M. and James E. Rauch (2010), Leading Issues in Economic Development, Ch 4 Human Resources,
   Oxford University Press New York.
- Todaro, Michael P. And Stephen C. Smith (2003), Economic Development, Ch 9 Human Capital: Education and Health in Economic Development, Pearson Education Ltd.

### **Supplementary Readings**

- Latchanna, Gara and Jeilu Oumer Hussein (2007), Economics of Education, Discovery Publishing House, New
   Delhi.
- Robinson, E.A.G. and J.E. Vaizey (1966), The Economics of Education, MacMillan and Company Ltd.
- Rout, S. Himanshu and Prasant Kr. Panda (2009), Human Development Dimensions and Strategies, New Century Publication, New Delhi, India.
- Singh, J.L. and K.D. Gaur (2004), Human Resources and Economic Development, Sunrise Publications.

Vaizey John , Keith Norris and John Sheehan (1972), The Political Economy of Education, Gerald Duckworth and

Company Ltd.

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### ECN-12 - LINEAR ECONOMIC MODELS (QUANTITATIVE ECONOMICS-II)

### Module I

Vector: concept and properties; algebra of vectors. Matrices: concept, their types, simple operations on matrices, matrix inversion and rank of matrix, Eigen roots Eigen vectors. Concept of quadratic forms.

### Module II

Solution of Simultaneous equations by matrix inversion (homogeneous and non homogeneous). Introduction to Input-output analysis (open and closed models). Elementary theory of games.

### Module III

Linear programming-basic concepts; formulation of Linear programming — its structure and variables; nature of feasible, basic and optimal solution; solution of linear programming by simplex method; statement of basic theorems of linear programming.

### Module IV

Elementary theory of Games, concepts of games; Two person-zero- sum game, pure and mixed strategy; Solution of two-person zero-sum game.

### **Basic Text**

- Baumol, W.J. (1984), Economic Theory and Operations Analysis, Prentice Hall, Englewood Cliffs, New Jersey.
- Chiang, A.C. (2<sup>nd</sup> ed.) Fundamental methods of Mathematical Economics, McGraw Hill, New York.
- Hadley, G. (1962), Linear Programming, Addison Wesley Publishing Co., Massachusetts.
- Koutsoyiannis, A. (1979), Modern Micro Economics, McMillan University Press, Princeton.

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### SEMESTER III

### **ECO 13 INTERNATIONAL TRADE**

#### Module I

Theories of international trade; H-O theory of trade; Factor price equilization theories; Rybczynski theorem; Stolper-Samuelson theorem; Technical progress and I.T

### Module II

Concept of terms of trade; measurement of gains from trade and their distribution; welfare implications

#### Module III

Theories of interventions: Tariffs, quotas and non tariff barriers; Economic effects of tariffs and quotas; Terms of trade on National income and income distribution; Effective and optimum rate of tariffs.

### **Module IV**

Determination of exchange rates; purchasing power parity theory; Fixed versus flexible exchange rates.

### **Basic Text**

- Bhagwati, J.N (Ed) (1981), International Trade: Selected Readings, Cambridge University Press,
   Cambridge, Mass.
- Kindleberger, C.P. (1973), International Economics, R.D. Irwin, Homewood.
- Kenen, P.B. (1973), International Economy, Cambridge University Press, London.
- Salvatore, D. (1997), International Economics, Prentice Hall, Upper Saddle River, N.J., New York.
- Soderston, Bo(1991), International Economics, Macmillan Press, London

#### **Supplementary Readings**

- Baldwin R.E. and J. Bhagwati (2003), Trade growth and the Balance of Payments, N. Holland
   Publishing Company.
- Bhagwati, Jagdish (1969), Lectures on International Trade, Oxford University Press.
- Chacholiades, M. (1990), International Trade Theory and Policy, McGraw Hill, Kogakusha, Tokyo, Japan.
- Cohen, B.J. (1961), Balance of Payments Policy, Penguin Book.
- Ellesworth P.T. and J. Clark (1975), The International Economy, MacMillan Press, London.
- Kemp, Murray C. (1976), Three topics in the Theory of International Trade, North Holland American.
- Kenen, Peter B. (1996), The International Economy, Cambridge University Press, London.
- Kriplani, V.H. (1987), International Marketing, Prentice Hall.
- Krugman, P.R. and M. Obstfled (1995), International Economics: Theory and Policy, Glenview, Foresman.
- Leighton, R.I. (1970), Economics of International Trade, McGraw Hill.
- Meade, J.E. (1966), Trade and Welfare, Oxford University Press.
- Staley, Charles E. (1970), International Economics, Prentice Hall.
- Theberge J.D. (1968), Economics of Trade and Development, John Wiley and Sons.

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### ECN-14 Banking and Financial Institution

### Module I:Financial Institution and Markets -1

The Structure of the Financial System – Functions of the Financial sector – Indicators of Financial Criteria to Evaluate Assets, Types of Risks, Return on Assets, Risk – Return Trade Off – Valuation of Securities.

### Module II:

Function of Central Bank – The Aims and Objectives of the Monetary Policy in Developed and Developing Countries – Instruments of Monetary Policy – Proliferation of Banking and Non-bank Financial Intermediaries – Effectiveness of Monetary Policy – Credit Creation and its Control; Profitability and Efficiency of Banks; Development Banks – Role and Functions; Investment Banking and Merchant Banking.

### Module III: Financial Institutions and Markets -II

Definition and Types of Non-bank Financial Institutions: Their Growth and Impact on India's Economic Development, Measures taken to control their operations; Role and structure of Money Market; Treasury Bill Market, Commercial Bill Market including Commercial Paper and Certificate of Deposits, Discount Market – Government Securities Market – Markets for Derivatives: Futures and Options and other Derivatives: types, uses and Pricing of Derivatives – Market in India; IRDA and its role in Financial Markets.

### **Basic Text**

- Bhole, L. M., Financial installations and Markets, Tata McGraw Hill, New Delhi.
- Johnson, H. J., Financial Institutions and Markets, McGraw Hill, New York.
- Khan, M. Y., Indian financial system, Tata McGraw Hill, New Delhi.
- Mithani, D.M., Money, Banking, International trade and public finance.
- Prasad ,K. N. ,Development of India's financial system, Samp and sons, New Delhi.
- Sen, S.N., Central banking in underdeveloped Money Market.

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### ECN 5 C1 Theories of Agricultural Economics

### MODULE I - Agriculture and Economic Development

Nature and scope of agricultural and rural economics – traditional agriculture and its modernisation; Role of agricultural in economic development; interdependence between agriculture and industry – some empirical evidence; models of interaction between agro and the rest of the economy; agricultural development, poverty and environment. Mellor's theory; Boserup's theory of agricultural development.

### **MODULE II – Diversification of Rural Economic Activities**

Livestock economics – livestock resources and their productivity; Problems of marketing; White revolution; Fishery and Poultry development; Forestry, horticulture and floriculture; issues and problems in rural industrialization and development of agro – based industries. Agricultural marketing; marketable surplus; Risk and uncertainty in farming.

### MODULE III - Agricultural Production and Productivity

Agricultural production – resources use and efficiency; Production function analysis in agriculture; Factor combination and resource substitution; Cost and supply curves; Size of farms and laws of returns – theoretical and empirical findings; Farm budgeting and cost concepts; Supply response of individual crops and aggregate supply; Resource use efficiency in traditional agriculture; technical change, labour absorption and gender issues in agricultural services.

#### MODULE IV - Agricultural Prices

Marketing and state policy; Agricultural markets and marketing efficiency – marketing functions and costs; market structure and imperfections; Regulated markets; Marketed and marketable surplus; Behaviour of agricultural price – cobweb model; price and income stability; state policy with respect to agricultural marketing; warehousing; prices; taxation and crop insurance; terms of trade between agricultural and non – agricultural prices; need for state intervention; objectives of agricultural price policy – instruments and evaluation; food security in India and public distribution system.

#### **Basic Text**

- Gulati, Ashok and Tim Kelley (2001), Trade Liberalization and Indian Agriculture, Oxford University
   Press.
- Lekhi, R.K. and Joginder Singh, Agricultural Economics, Kalyani Publications.
- Rao, C.H. Hanumantham (2005), Agriculture, Food Security, Poverty and Environment, Oxford
   University Press, New Delhi.
- Rane A.A. and A.C. Deorukhkar (2007), Economics of Agriculture, Atlantic Publications.
- Ray, Shovan (ed) (2007), Handbook of Agriculture, Oxford University Press.
- Reddy, S. Subba, P. Raghu Ram, T.V. Neelakant Sastry and I. Bhavani Devi (2006), Agricultural

Economics, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

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### ECN 16 A2 Advance Mathematical Economics - II

#### Module - I

Market Equilibrium: Single market equilibrium; Market demand functions; Short run and long run market supply functions; External economies and diseconomies; Short run and long run market equilibrium; Differential cost conditions and Rent; An application to taxation; Factor market equilibrium: Demand and Supply functions of factors.

### Module - II

The Stability of Equilibrium; Marshallian and Walrasian equilibrium conditions; Static and dynamic stability.

### Module - III

The Cobweb and other simple dynamic models; Extensions of the Cobweb Model; A Simple continuous model; Models with Stocks; Time lags in dynamic models.

### Module - IV

General Economic Equilibrium: Equilibrium of pure exchange; Equilibrium with fixed production coefficient; General market equilibrium equilibrium; Some problems of comparative statics.

### **Basic Text**

- Allen, R.G.D. (1976), Mathematical Economics, McMillan, London.
- Henderson, J.M. and R.E. Quandt (1980), Micro Economic Theory: A Mathematical Apporach, McGraw Hill, New Delhi.
- Seilbourg, Eugene, The Structure of Economics, A Mathematical Analysis.

### **Supplementary Readings**

- Chung, J.W. (1993), Utility and Production: Theory and Applications, Basil Blackwell, London.
- Ferguson, C.E. (1976), Neo Classical Theory of Production and Distribution.
- Hoy, Michael, John Livernois, Chris McKenna, Ray Rees, Thanasis Stengos, Mathematics for Economists.
- Intrilligator, M.D. (1971), Mathematical Optimization and Economic Theory, Prentice Hall, Englewood Cliffs, New Jersey.

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### ECN 16 C2 - Economics of Rural Market

### Module I- Rural labour market

Rural labour supply; interlocking of factor markets; mobility of labour and sementation in labour, markets, marginalisation of rural labour; nature, extent and trends in rural unemployment; agricultural wages in India; male female wage differences; non agricultural rural employment-trends and determinants; labour in agriculture; land in agriculture.

### Module II- Rural finance

Role of capital and rural credit; organized and unorganized capital markets; rural savings and capital formation; characteristics and sources of rural credit- institutional and non institutional; reorganization of rural credit—cooperatives, commercial banks, regional rural banks; role of NABARD capital in agriculture.

### **Basic Text**

- Gulati, Ashok and Tim Kelley (2001), Trade Liberalization and Indian Agriculture, Oxford
   University Press.
- Lekhi, R.K. and Joginder Singh, Agricultural Economics, Kalyani Publications.
- Rao, C.H. Hanumantham (2005), Agriculture, Food Security, Poverty and Environment, Oxford University Press, New Delhi.
- Rane A.A. and A.C. Deorukhkar (2007), Economics of Agriculture, Atlantic Publications.
- Ray, Shovan (ed) (2007), Handbook of Agriculture, Oxford University Press.
- Reddy, S. Subba, P. Raghu Ram, T.V. Neelakant Sastry and I. Bhavani Devi (2006), Agricultural
   Economics, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

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### ECON 17-, B1 SINGLE EQUATION MODEL

### Module 1: Basic Economectrics

Simple and general regression model; Assumption, estimation and properties of OLS estimators; Gauss Markov Theorem, Estimation of Non linear equations, Analysis of Variance - approach and its implications in Regression analysis;  $R^2$ 

### Module II: Assumption of disturbance variable U

Assumption of disturbance variable U – The assumption of randomness of U; The assumption of zero mean of U; The assumption of homoscedasticity; The assumption of normality of U.

### Module III: Problems in Regression Analysis I

Specification Errors; Errors in measurement

### Module IV: Problems in Regression Analysis II

Autocorrelation – Sources, consequences and test for autocorrelation, Autoregressive Schemes, Estimaton of autocorrelation parameters.

### Module V: Heteroscedasticity and Multicollinearity

Heteroscedasticity and Multicollinearity – Nature, consequences, tests and remedies of Heteroscedasticity; Plausibility, consequences, tests and solutions of Multicollinearity.

#### **Basic Text**

- Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Gujarati, D.N. (1995), Basic Econometrics (2<sup>nd</sup> Edition), McGraw Hill, New Delhi..
- Koutsoyiannis, A. (1977), Theory of Econometrics (2<sup>nd</sup> Edition), The Macmillan Press Ltd., London.

### **Supplementary Readings**

- Amemiya, T. (1985), Advanced Economectrics, Harvard University Press, Cambridge, Mass.
- Baltagi, B.H. (1998), Econometrics, Springer, New York.
- Kmenta, J. (1997), Elements of Econometrics (Reprint edition), University of Michidan Press, New York Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Maddala, G.S. (Ed.) (1993), Econometrics Application in India, Oxford University Press, New Delhi.
- Theil, H. (1981), Introduction to Econometrics, Prentice Hall of India, New Delhi.

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### ECN 17 D1 THEORIES OF DEMOGRAPHY

### Module | Introduction to Demography

Evolution to demography; Meaning, Subject matter and importance of Demography. Types of demographic data; Concepts in population change, population growth, demographic rates and composition of population, Sources of Demographic-Census, meaning, characterestics, importance, methods, problems, sample surveys; Registration.

### Module II Demographic Data Base in India

Census- Nature of information collected—1991,2001; NFHS-I and II; Sample surveys India; Registration system in India

### Module III Theories of population - I

Malthusian Theory; Optimum theory; Theories of Demographic Transition- views of C P Blacker, Karl Marx and Cowgill.

### Module IV Theories of Population-II

Biological Theories of Population; Socio-economic theories of population- views of Marx and Leibenstein; Medows Theory of Population; Euke's Theory of Population.

### **Basic Text**

- Bouge, D.J. (1971), Principles of Demography, John Wiley, New York.
- Bhende Asha A. And Tara Kanitkar, Population of Population Studies, Himalaya Publishing House.
- Novell, C., Methods and Models in Demography, Bellhaven, Washington D.C.
- NFHS Report.
- Sharma, Rajendra K., Demography and Population Problems, Atlantic Publications.
- Shyrock, H., et al (1973), The Methods and Materials of Demography, U.S. Deptt. Of Commerce Press, London.
- Srinivasan, K. And A. Shariff (1998), India: Towards Population and Demographic goals, Oxford University Press, New Delhi.

### **Supplementary Readings**

- Chiang, C.L. (1974), Life Tables and Mortality Analysis, WHO, Geneva.
- Pathak, K.B. AND F. Ram, Techniques of Demographic Analysis, Himalaya Publishing House.
- Srinivashan, K., Basic Demographic Techniques and Applications, Sage Publications.

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### ECON 18 B2 SIMULTANEOUS EQUATION MODELS

### Module | Simultaneous Equation Models - |

The simultaneous equation bias and inconsistency of OLS estimators; Structural and Recursive form models; The identification problems – Rules of identification; order and rank condition.

### Module II Simultaneous Equation Models - II

Methods of estimating simultaneous equation system; Recursive methods and OLS; Indirect Least Square (ILS); 2SLS; 3SLS and ML methods – Applications.

### **Basic Text**

- Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Gujarati, D.N. (1995), Basic Ecoñometrics (2<sup>nd</sup> Edition), McGraw Hill, New Delhi...
- Koutsoyiannis, A. (1977), Theory of Econometrics (2<sup>nd</sup> Edition), The Macmillan Press Ltd., London.

### **Supplementary Readings**

- Amemiya, T. (1985), Advanced Economectrics, Harvard University Press, Cambridge, Mass.
- Baltagi, B.H. (1998), Econometrics, Springer, New York.
- Kmenta, J. (1997), Elements of Econometrics (Reprint edition), University of Michidan Press,
   New York Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Maddala, G.S. (Ed.) (1993), Econometrics Application in India, Oxford University Press, New Polhi
- Theil, H. (1981), Introduction to Econometrics, Prentice Hall of India, New Delhi.

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### ECN 18 D2 Population Dynamics

### <u>Module i</u>

Fertility- Meaning; Concepts- CBR, ASBR, GFR, TFR, GRR, NRR; Factors affecting fertility; Fertility rates in less and more developed countries.

### Module II Mortality

Meaning; Concepts – CDR, ASDR, IMR, CMR, MMR, NMR, NNMR, CSDR, SDR. Factors affecting Mortality; Life tables, stationary and stable population.

### Module III Nuptality

Meaning; Concepts- CMR, SMR, GMR; Determinants of Nuptality; Martial Dissolution.

### Module IV Migration

Meaning; Concepts; Types; Effects; Factors promoting and retarding migration; Theories of Migration- Pull and Push Theory, Lewis's model of Rural-Urban Migration, Fei-Ranis model of Rural-Urban Migration, Harris – Todaro Model of Migration; Migration in India.

### Module IV Urbanization

Meaning; Causes; Effects; Measures of Urbanization; Urbanization in India.

### **Basic Text**

- Chiang, C.L. (1974), Life Tables and Mortality Analysis, WHO, Geneva.
- Pathak, K.B. AND F. Ram, Techniques of Demographic Analysis, Himalaya Publishing House.
- Srinivashan, K., Basic Demographic Techniques and Applications, Sage Publications.

### **Supplementary Readings**

- Bouge, D.J. (1971), Principles of Demography, John Wiley, New York.
- Bhende Asha A. And Tara Kanitkar, Population of Population Studies, Himalaya Publishing House.
- Novell, C., Methods and Models in Demography, Bellhaven , Washington D.C.
- NFHS Report.
- Sharma, Rajendra K., Demography and Population Problems, Atlantic Publications.
- Shyrock, H., et al (1973), The Methods and Materials of Demography, U.S. Deptt. Of Commerce Press, London.

• Srinivasan, K. And A. Shariff (1998), India: Towards Population and Demographic goals, Oxford University Press, New Delhi.

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### SEMESTER IV

### ECN-19. THEORIES OF GROWTH AND DEVELOPMENT

### Module I Economic Growth & Development

Meaning, charecterestics, measurement, obstacles to development

### Module II Theories of Development - I

Classical theories – Adam Smith; Ricardo and Malthus; Marxian Model of development; Schumpeter's theory of Unstable growth; Rostow's stages of economic growth; Rosentein-Rodan's Big push theory.

### Module III Theories of Development - II

Fei—Ranis theory; Leibenstein's Critical minimum effort thesis; Balanced and Unbalanced Growth; Dualistic theories — Social dualism, technological dualism and financial dualism; Lewis theory of Unlimited supplies of labour.

### Module IV Theories of Growth

Neo-classical Models of Economic growth; Joan Robinson's model of Capital Accumulation; The Von –Neumann Growth model; The golden rule of capital accumulation; The endogenous growth theory.

### **Basic Text**

- Adelman, I. (1961), Theories of Economic Growth and Development, Stanford University Press, Stanford.
- Higgins, B. (1959), Economic Development, W.W. Norton, New York.
- Todaro, M.P. and Stephen C. Smith (2009), Economic Development, Pearson Education.

### **Supplementary Readings**

- Meier, G.M. (1995), Leading Issues in Economic Development, Oxford University Press, New Delhi.
- Ray, Debraj (2005), Development Economics, Oxford University Press.
- Thirlwall, A.P. (1999), (6<sup>th</sup> ed.), Growth and Development, MacMillan Press, U.K.

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### ECN-20 RESEARCH METHODOLOGY IN ECONOMICS AND DISSERTATION

### PART I RESEARCH METHODOLOGY (30 Classes)

### Module I Constituents of Research Methodology

Introduction to research methodology, Types of Research: Theoretical and Applied Research, Descriptive and Explanatory Research, Quantitative and Qualitative Research, Conceptual and Qualitative Research, Other types of research.

### Module II Research Process

Formulation of research problems, hypothesis and research questions

### Module III Research Design

Concept and objective, Characteristics of good sample design, Types of Sample design.

### Module IV Data for Research

Quantitative and Qualitative data, Secondary panel and cross – sectional data, Sources of data for research in Economics, Techniques of Primary data collection – Questionnaire and Interview, Observation, Case study.

#### Module V

Report writing, Bibliography and Reference writing.

### PART II DISSERTATION (15 Classes)

### **Basic Text**

- Ahuja, Ram, Research Methods, Rawat Publications, New Delhi.
- Gupta, Manas Das, Research Methods in Economics Problems and Issues, Deep and Deep Publications, New Delhi.
- IGNOU MEC 009, Research Methods in Economics Selected Chapters, New Delhi.

### **Supplementary Readings**

- Blang, Mark, Methodology of Economics, Cambridge University Press
- Caldwell, Bruce (1982), Beyond Positivisms: Economic Methodology in the Twentieth Century, George Allen and Unwin, London.
- Cochran, William G. (1963), Sampling Techniques, John Wiley and Sons, New York, London.
- Des Raj and Chandok P. (1998), Sampling Theory, Narosa Publishing House, New Delhi.
- Friedman, Milton (1953), Essays in Positive Economics, University of Chicago Press, Chicago.
- Kothari, C.R., Research Methodology: Methods and Techniques, New Age International Publishers.

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### ECN 21 A3 : OPERATION RESEARCH IN ECONOMICS

#### Module I: Linear Algebra

Vector and Matrix operations; Convex Sets and Basis.

### Module II: Linear Programming

Meaning and importance of linear programming; Graphic method and Simplex method of solution, Primal and Dual problems and solutions, Transportation, storage and other applications of linear programming in Economics.

### Module III: Game Theory

Concept of game, Types of games, two person zero sum game, Pay-off Matrix, solutions with pure and mixed strategies, Min- Max theorem, Prisoners dilemma.

#### Module IV: Input Output Analysis

Open and closed models; static and dynamic models; Simon – Hawkins condition; Testing consistency of planning models.

### **Basic Text**

- Allen, R.G.D. (1976), Mathematical Economics, McMillan, London.
- Arrow, K.J. and M. Intrilligator, (Eds) (1982), Handbook of Mathematical Economics, Vol. 12 and 3, North Holland, Amsterdam.
- Hadley, G. (1962), Linear Programming, Addison Wesley Publishing Co., Massachusetts.
- Intrilligator, M.D. (1971), Mathematical Optimization and Economic Theory, Prentice Hall, Englewood Cliffs, New Jersey.

### Supplementary Readings.

- Abel, A., B.S. Bernanke and B. Manabb (1998), Macro Economics, Addison Wesely, Mass
- Barro, R.J. and H. Grossman (1976), Money, Employment and Inflation, Oxford University Press, Oxford.
- Chung, JW. (1993), Utility and Production: Theory and Applications, Basil Blackwell, London.
- Ferguson, C.E. (1976), Neo Classical Theory of Production and Distribution.
- Gravelle, Hugh and Ray Rees, Micro Economics, Pearson Education.
- Hoy, Michael, John Livernois, Chris McKenna, Ray Rees, Thanasis Stengos, Mathematics for Economists.
- Jha, R. (1991), Contemporary Macro Economic Theory and Policy, Wiley Eastern Ltd., New Delhi.
- Kothari, C.R. (1992), An Introduction to Operations Research, Vikas Publishing House Pvt. Ltd., Delhi.
- Nash, J.F. (1996), Essays on Game Theory, Cheltenham, U.K.
- Seilbourg, Eugene, The Structure of Economics, A Mathematical Analysis.
- Taha, H.A., (1997), Operation Research: An Introduction (6<sup>th</sup> ed.), Prentice Hall of India Pvt. Ltd.

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### **ECON 21 33, INDIAN AGRICUTURE PROBLEMS AND POLICIES**

### Module I-Agricultural growth in India

Recent trends in agricultural trends in India; interregional variations in growth of output and productivity; cropping pattern shifts; supply of inputs—irrigation, power, seeds, fertilizers; pricing of inputs & role of subsidies; distribution of gains from technological change; role of public investment & capital formation in Indian agriculture; strategy of agricultural development & technological progress; sustainable agriculture—Indigenous practices; biotechnological practices & growth potential.

### Module II

New agricultural strategy, farm mechanisation, food security in agricultural development, farm size & productivity, land reforms in India, farm management, agriculture price determination .

### **Basic Text**

- Gulati, Ashok and Tim Kelley (2001), Trade Liberalization and Indian Agriculture, Oxford University Press.
- Lekhi, R.K. and Joginder Singh, Agricultural Economics, Kalyani Publications.
- Rao, C.H. Hanumantham (2005), Agriculture, Food Security, Poverty and Environment,
   Oxford University Press, New Delhi.
- Rane A.A. and A.C. Deorukhkar (2007), Economics of Agriculture, Atlantic Publications.
- Ray, Shovan (ed) (2007), Handbook of Agriculture, Oxford University Press.
- Reddy, S. Subba, P. Raghu Ram, T.V. Neelakant Sastry and I. Bhavani Devi (2006), Agricultural
   Economics, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

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### ECN 22 A4 GROWTH MODELS AND FLUCTUATIONS

#### Module I

Determination of income and fluctuations in income—classical and Keynes macro system; static and dynamic multiplier; determinants of investment; accelerator; Philips model of multiplier; multiplier- accelerator model of Philips.

### Module II

Trade cycle models of Samuelson and Hicks; Goodwin, kalecki and Philips; Stabilization policy.

### Module III

Growth models – Harrod model; Neo-classical model of growth; Solow and Meade growth models with technical progress.

### **ModuleiV**

Difference and differential equations—General solutions of second and third order linear differential equations; The Laplace transform solution of differential equations by Laplace Transforms; Algebra of operators and linear systems; General solutions of second order linear difference equations; Economic illustrations of difference and differential equations.

### **Basic Text**

- Allen, R.G.D. (1976), Mathematical Economics, McMillan, London.
- Arrow, K.J. and M. Intrilligator, (Eds) (1982), Handbook of Mathematical Economics, Vol. 12 and 3, North Holland, Amsterdam.
- Hadley, G. (1962), Linear Programming, Addison Wesley Publishing Co., Massachusetts.
- Henderson, J.M. and R.E. Quandt (1980), Micro Economic Theory: A Mathematical Approach, McGraw Hill, New Delhi.
- Intrilligator, M.D. (1971), Mathematical Optimization and Economic Theory, Prentice Hall,
   Englewood Cliffs, New Jersey.

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### ECON 22 C4 Globalisation and Agriculture

### Module I - Agriculture and External sector

International trade in agricultural commodities; commodity agreements—role of World Trade Organisation; issues in liberalisation of domestic and international trade in agriculture—nature and feature of agri business; role of MNCs; globalisation of Indian economy and problems and prospects of Indian agriculture; impact of WTO on Indian agriculture

#### Module II

Foreign trade and agricultural development; New Economic Policy and Indian Agriculture; GATT and Indian agriculture.

### Basic Text

- Gulati, Ashok and Tim Kelley (2001), Trade Liberalization and Indian Agriculture, Oxford
   University Press.
- Lekhi, R.K. and Joginder Singh, Agricultural Economics, Kalyani Publications.
- Rao, C.H. Hanumantham (2005), Agriculture, Food Security, Poverty and Environment,
   Oxford University Press, New Delhi.
- Rane A.A. and A.C. Deorukhkar (2007), Economics of Agriculture, Atlantic Publications.
- Ray, Shovan (ed) (2007), Handbook of Agriculture, Oxford University Press.
- Reddy, S. Subba, P. Raghu Ram, T.V. Neelakant Sastry and I. Bhavani Devi (2006), Agricultural
   Economics, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

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### ECON 22 C4 Globalisation and Agriculture

### Module I - Agriculture and External sector

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### Module II

Foreign trade and agricultural development; New Economic Policy and Indian Agriculture; GATT and Indian agriculture.

### **Basic Text**

- Gulati, Ashok and Tim Kelley (2001), Trade Liberalization and Indian Agriculture, Oxford
   University Press.
- Lekhi, R.K. and Joginder Singh, Agricultural Economics, Kalyani Publications.
- Rao, C.H. Hanumantham (2005), Agriculture, Food Security, Poverty and Environment,
   Oxford University Press, New Delhi.
- Rane A.A. and A.C. Deorukhkar (2007), Economics of Agriculture, Atlantic Publications.
- Ray, Shovan (ed) (2007), Handbook of Agriculture, Oxford University Press.
- Reddy, S. Subba, P. Raghu Ram, T.V. Neelakant Sastry and I. Bhavani Devi (2006), Agricultural Economics, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

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### 23 #3

### ECON 23 B3 ECONOMECTRICS: QUALITATIVE AND DYNAMIC ECONOMECTRICS

### Module 1:Lagged Variables and Distributed Lag Models

Estimation of distributed lagged models; Exogenous lagged variable – Almon Approach and Granger test; Exogenous Lagged variables – Koyack, PAM and Adaptative expectation model.

### Module II: Dummy Variable Technique

Regression with mixture of Quantitative and Qualitative variables, Dummy variables alternative to chow test, Dummy variable in seasonal analysis; Piecewise linear regression.

### Module III: Qualitative Response Models

Nature and estimation of qualitative response models, LPM, Logit and Tobit.

### **Basic Text**

- Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Gujarati, D.N. (1995), Basic Econometrics (2<sup>nd</sup> Edition), McGraw Hill, New Delhi...
- Koutsoyiannis, A. (1977), Theory of Econometrics (2<sup>nd</sup> Edition), The Macmillan Press Ltd., London.

### **Supplementary Readings**

- Amemiya, T. (1985), Advanced Economectrics, Harvard University Press, Cambridge, Mass.
- Baltagi, B.H. (1998), Econometrics, Springer, New York.
- Kmenta, J. (1997), Elements of Econometrics (Reprint edition), University of Michidan Press, New York Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Maddala, G.S. (Ed.) (1993), Econometrics Application in India, Oxford University Press, New Delhi.
- Theil, H. (1981), Introduction to Econometrics, Prentice Hall of India, New Delhi.

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### ECN 23 D3, POPULATION GROWTH AND DEVELOPMENT

#### Module I Population Growth and Projection

Meaning and causes of population growth; Methods of measurement of population growth; Population Pyramid; Population Projection- Meaning, Importance and methods.

### Module II Population and Development

Concept of economic growth and economic development, relationship between population growth and economic development; Concept and measure Human Development; Human Development Index; Population Growth and Human Development.

### Module III Population Growth and Environment

Population growth and ecological imbalance; Growing population and environment pollution; Green House Effect and Ozone Depletion; Causes of environmental degradation in India. Measures of check environmental degradation.

### Module IV Population: Health and Education

Population Growth and Health, Nutrition and Productivity; relation between population growth and health; population growth and nutrition; population growth and productivity; Qualitative Demography – Role of Education and Health Care on Human race and Human Capital formation.

### **Basic Text**

- Coale, A.J. and E.H. Hoover(1958), Population Growth and Economic Development in low Income Countries – A Case Study of India's Prospects, Princeton University Press, Princeton.
- Chenery, H. And T.N. Srinivisan (Eds)(1989), Handbook of Development Economics.
- Simon, J. (1992), Population and Development in Poor Countries, Princeton University Press, Princeton.

### **Supplementary Readings**

- Agarwala, S.N. (1972), India's Population Problems, Tata McGraw Hill, Mumbai.
- Bose, A., (1996), India's Basic Demographic Statistics, B. Publishing Corporation, New Delhi.
- Chaubey, P.K. (2000), Population Policy in India, Kanishka Publishers.
- Eugine, T., Environmental Economics, Vrinda Publications.
- Gulati, S.C. (1988), Fertility in India: An Econometric Study, Sage Publications, New
   Delhi.

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### ECON 24 B4 TIME SERIES and MULTI VARIATE ANALYSIS

### Module I Time Series Analysis

Stationary, unit roots, co – integration – spurious regression, Dickey Fuller test, Engle Granger test, Random walk model, Forecasting with ARIMA modelling; Box – Jenkins methodology; Vector auto – regression; Problems with VAR Modelling – Applications; Time varying parameters and Kalman filter.

### Module II Multivariate Analysis

Multivariate probability distribution, Marginal and conditional probability distribution, multivariate normal distribution and its properties, Discriminant analysis.

### **Basic Text**

- Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Gujarati, D.N. (1995), Basic Econometrics (2<sup>nd</sup> Edition), McGraw Hill, New Delhi..
- Koutsoyiannis, A. (1977), Theory of Econometrics (2<sup>nd</sup> Edition), The Macmillan Press Ltd., London.

### **Supplementary Readings**

- Amemiya, T. (1985), Advanced Economectrics, Harvard University Press, Cambridge, Mass.
- Baltagi, B.H. (1998), Econometrics, Springer, New York.
- Kmenta, J. (1997), Elements of Econometrics (Reprint edition), University of Michidan Press, New York Johnston, J. (1991), Econometrics Methods, McGraw Hill Book Co., London.
- Maddala, G.S. (Ed.) (1993), Econometrics Application in India, Oxford University Press, New Delhi.
- Theil, H. (1981), Introduction to Econometrics, Prentice Hall of India, New Delhi.

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### 4 D4, INDIAN DEMOGRAPHY AND POPULATION POLICY

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ing characteristics of population in India- Size and growth of population in India; graphic Transition and population explosion in India.

in Composition and Distribution of India's population—Sex, age, religion, literacy, pectancy, occupational structure, rural-urban.

<u>ુ III</u>

graphic Rates in India:- Fertility rates- Trends and Varitions; Causes of High Fertility in Mortality rates- Trends; Causes of decline in Mortality rates in India. Nuptality rates in

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ation Policy in India- Evolution of population policy in India- Shift from population I to reproductive and child health approach. Strategies for development of different groups in India – Children, women and socially disadvantaged groups. Family Planning d; Strategies and outcomes; Criticisms and suggestions. National Population Policy Tasks before the National Population Commission.

### <u>Text</u>

Agarwala, S.N. (1972), India's Population Problems, Tata McGraw Hill, Mumbai. Bose, A., (1996), India's Basic Demographic Statistics, B. Publishing Corporation, New Delhi.

Chaubey, P.K. (2000), Population Policy in India, Kanishka Publishers .

Eugine, T., Environmental Economics, Vrinda Publications.

Gulati, S.C. (1988), Fertility in India: An Econometric Study, Sage Publications, New Delhi.

### ementary Readings

Coale, A.J. and E.H. Hoover(1958), Population Growth and Economic Development in low Income Countries – A Case Study of India's Prospects, Princeton University Press, Princeton.

Chenery, H. And T.N. Srinivisan (Eds)(1989), Handbook of Development Economics.

Simon, J. (1992), Population and Development in Poor Countries, Princeton

University Press, Princeton.

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