

GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

Deemed to be University u/s 3 of the UGC Act, 1956

PUNE 411004

M.Sc. (AGRIBUSINESS ECONOMICS)

COURSE STRUCTURE & SYLLABUS

(Effective from academic year 2018-19)

I N D E X

Sr. No.	Course Code No.	Name of the Course
COMPULSORY PAPERS		
1	AE-A-01	Indian Agricultural Economics
2	AE-A-17	Microeconomics I
3	AE-A-18	Microeconomics II
4	AE-A-03	Macroeconomics
5	AE-A-23	Statistics and Operations Research
6	AE-A-06	Agricultural Policy Framework in India
7	AE-A-07	Agricultural Finance
8	AE-A-08	International Trade in Agriculture
9	AE-A-19	Basic Econometrics
10	AE-A-10	Agricultural Risk Management and Insurance
11	AE-A-11	Strategic Agro-Food Marketing
12	AE-A-20	Accountancy & Financial Statement Analysis
13	AE-A-13	Environmental Economics
14	AE-A-21	Advanced Econometrics
15	AE-A-16	Supply Chain in Agriculture
16	AE-A-22	Business Analytics
OPTIONAL PAPERS (Any four to be opted)		
1	AE-B-02	Agricultural Cooperatives
2	AE-B-03	Agro-Processing Industries
3	AE-B-04	Organizational Structures in Agricultural Production
4	AE-B-05	Commodities and Commodity Derivatives
5	AE-B-08	Industrial Organization in Agribusiness
6	AE-B-09	Financial Economics
7	AE-B-10	Economic Growth and Development
8	AE-B-11	Political Economy of India's Development
9	AE-B-13	Law and Economics I
10	AE-B-14	Law and Economics II
11	AE-B-15	Farm Management Economics
12	AE-B-16	Linear Economics - I
13	AE-B-17	Linear Economics - II

AE-A-01: INDIAN AGRICULTURAL ECONOMICS

Objective: To acquaint the learner with introductory Agricultural Economics, development of agriculture in India, use of yield increasing inputs, marketing and prices.

Module I

Scope and Subject matter of Agricultural Economics, Nature and Utility of Agricultural Economics, Role and Importance of Agriculture in National Economy: share in National income, Source of livelihood, Employment, Industrial development and trade

Module II

National Resource base of Indian agriculture, India's position in World Agriculture, Comparison of India with other countries, Agricultural Growth in India during pre and post-Independence period,

Module III

Factors responsible for agricultural development in India, Growth in use of technological factors in production such as irrigation, seed, fertilisers, capital during last five decades

Module IV

Land Utilization Pattern, Changes in agrarian structure in India, Patterns of Cropping in different regions, Shift in Cropping Pattern and its Implications on Food Security.

Module V

Farm capital structure in Agriculture and its changes, Issues on Capital formation in Indian agriculture, Mechanization of Agriculture, Employment and Unemployment in agriculture

Module VI

Credit in Indian agriculture: purposes of loans, Sources of finance and changes in these over the plan period. Factors determining demand for credit. Recent policy changes in regard to farm credit and their implications.

Module VII

Marketing: Characteristics of primary agricultural markets in India, Regulated markets and market intervention, Marketing efficiency, Marketed and Marketable surplus, Marketing Channels and Functionaries

Module VIII

Farm prices, Trends in relative prices of farm products, Supply response to prices in agriculture; Behavior of marketed surplus, Price policy in India and its basis, Cost concepts

Suggested Readings:

- Acharya and Agarwal, 1987, Agricultural Marketing in India, Oxford & IBH Publishing Company.
- Agricultural Research Data Book 2009, Indian Agricultural Statistics Research Institute, Pusa, New Delhi 110 012
- Agricultural Statistics at a Glance 2010, Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, New Delhi.
- Bhalla, G. S. and Singh G., 2001, Indian Agriculture: Four Decades of Development, Sage Publications.
- Bhalla, G.S., 2007, Indian Agriculture since Independence, National Book Trust, India.

- Chadha, G.K.; S. Sen and H.R. Sharma, 2004, Land Resources, State of the Indian Farmer, Vol. 2, Academic Foundation, New Delhi.
- Dantwala, M. L. and Others, 1991, Indian Agricultural Development since Independence: A Collection of Essays, Oxford & IBH Publishing Co., New Delhi.
- Dhawan, B. D., 1988, Irrigation in India's Agricultural Development, Sage Publications Pvt. Ltd.
- Report of the Working Group on Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade for the XII Five Year Plan 2012-17, 2011, Agriculture Division, Planning Commission, GOI
- Report of The Research Study on Estimation of Marketing Efficiency of Horticultural Commodities under Different Supply Chains in India, 2010, NCAP, New Delhi
- State of Indian Agriculture: 2012-13, Ministry of Agriculture, Government of India, New Delhi
- Vaidyanathan, A., 1988, India's Agricultural Development in a Regional Perspective, Longman Limited.

Articles

- Acharya, S.S., 2007, "Agribusiness in India: Facts and Emerging Issues", Agricultural Economics Research Review, Vol. 20, Conference Issue, pp. 409-424
- Arora, V.P.S., 2010, Promoting Agribusiness in India, Indian Journal of Agricultural Marketing, Vol. 24, No. 3, p. 1-31.
- Chand, R., 2001, Emerging Trends and Issues in Public and Private Investments in Indian Agriculture: A Statewise Analysis, Indian Journal Of Agricultural Economics, Vol 56, No. 2, April-June 2001
- Chand, R. and Raju, S.S., 2009, Instability in Indian Agriculture During Different Phases of Technology and Policy, Indian Journal of Agricultural Economics, 64 (2): 283-88.
- Chand, R., Raju, S.S. and Pandey, L.M., 2007, Growth Crisis in Agriculture: Severity and Options at National and State Levels, Economic and Political Weekly, 42 (26): 2528-33.
- Chand, R., 2003, Government Intervention in Foodgrain Markets in the New Context, Policy Paper 19, NCAP, New Delhi
- Desai, B.M., D Souza, E., Mellor, J.W., Sharma, V.P. and Tamboli, P., 2011, Agricultural Policy Strategy, Instruments and Implementation: A Review and the Road Ahead, Economic and Political Weekly, Vol. 46, No. 53, pp. 42-50.
- Dev, S.M., 2012, Policies for Raising Agricultural Growth and Productivity in India, IGIDR Proceedings/ Project Series, PP-069-SMD1
- Dev, S.M. and Rao, N.C., 2010, Agricultural Price Policy, Farm Profitability and Food Security, Economic and Political Weekly, Vol. 45, Nos. 26 & 27, 53, pp. 174-182.
- Desai, B.M. and D Souza, E., 2011, Agricultural Policy Strategy, Instruments and Implementation : A Review and the Road Ahead, Economic and Political Weekly, December, 31st, 2011
- Gulati, A. and Sharma, P.K., 1991, Government Interventions in Agricultural Markets : Nature Impact and Implications, Journal of the Indian School of Political Economy, Vol 3, No. 2, April-June, 1991.
- Joshi, P.K., BIRTHAL, P.S. and Monot, N., 2006, Sources of Agricultural Growth in India: Role of Diversification towards High Value Crops, MTID Discussion Paper No. 98, International Food Policy Research Institute, Washington DC, USA
- Kannan, E. and Sundaram, S., 2011, Analysis of Trends in India's Agricultural Growth, Working Paper 276, ISEC, Bangalore

- Kumar, A., Singh, D.K. and Kumar, P., 2007, Performance of Rural Credit and factors Affecting the Choice of Credit Source, Indian Journal of Agricultural Economics, Vol. 62, No. 3, pp. 297-313.
- Kumar, A., Singh, K.M. and Sinha, S., 2010, Institutional Credit to Agriculture Sector in India: Status, Performance and Determinants, Agricultural Economics Research Review, Vol. 23, July-December 2010, pp. 253-264.
- Mishra S.N. and Chand, R., 1995, Public and Private Capital Formation in Indian Agriculture: Comments on Complementarily Hypothesis, Economic and Political Weekly, June 24th, 1995
- Mitra, S. and Sareen, J.S., nd, Adaptive Policy Case Study: Agricultural Price Policy in India', Chapter 5, IISD-TERI-IDRC Adaptive Policies Project
- Mohan, R., 2006, Agricultural Credit in India: Status, Issues and Future Agenda, Economic and Political Weekly, March 18, 2006, pp 1013-1021.
- Mullen, K., Orden, D. and Gulati, A., 2005, Agricultural Policies in India: Producer Support Estimates 1985-2002, MTID Discussion Paper No. 82, IFPRI, Washington DC, USA
- Patnaik, G., 2011, Status of Agricultural Marketing Reforms, IGIDR Proceedings/ Project Series, pp-069-11b
- Ramaswami, B., 2002, Efficiency and Equity of Food Market Interventions, Economic and Political Weekly, March 23, 2002
- Rao, V.M., 2001, The Making of Agricultural Price Policy: A Review of CACP Reports, Journal of Indian School of Political Economy, Vol. 13, No. 1, Jan-March, pp. 1-28.
- Satyasai, K.J.S., 2008, Rural Credit Delivery in India: Structural Constraints and Some Corrective Measures, Agricultural Economics Research Review, Vol. 21, pp 387-394.
- Singh, S., 2002, Multi-national Corporations and Agricultural Development: A Study of Contract Farming in the Indian Punjab, Journal of International Development, Vol. 14, pp. 181-194.
- Srivastava, R., Saxena, N.C. and Thorat, S., 2008, Land Institutions, Policy and Reforms in India, in The Dragon and the Elephant, Agricultural and Rural reforms in China and India edited by Ashok Gulati and Shenggen Fan, Oxford 2008.

AE-A-17: MICROECONOMICS - I

This course is the first attempt to develop the theoretical structure of microeconomics. The objective of this course is to develop an understanding of the basic principles of microeconomics. It is intended to improve student's analytical skills and ability to solve problems, which will be useful in several other areas of economics. By the end of this course the student is expected to be familiar with basic concepts of microeconomics and acquire analytical skills to analyse problems of economic policy. Examples and exercises would be covered to provide a flavour of various applications.

It does not require any previous knowledge of microeconomics. Familiarity with calculus and optimisation theory will be helpful. Relevant mathematical tools will be developed during the course whenever necessary.

Module I Consumer Theory

Preference relation and its properties, Consumer preferences and representation of preferences by utility functions. Budget constraint, Utility maximization and derivation of demand function, Indirect utility function and its properties, Roy's identity, Expenditure function, Shephard's lemma, Inverse demand functions, The money metric utility functions. Comparative statics, The Slutsky equation, Properties of demand function Comparative statics using first order conditions, The integrability problem. Revealed preferences. Endowments in the budget constraint, Labour leisure trade off. Consumer's surplus, Compensating and Equivalent Variations

Module II

Theory of Firm

Theory of organisation. Measurements of inputs and outputs, Specification of technology – production Function, Returns to scale and other properties of production sets, Technical rate of substitution and elasticity of substitution. Profit maximization, Comparative statics, Profit function. Hotelling's lemma, Factor demand functions, Supply function. Cost minimisation, Cost functions, Average and marginal cost functions, Short run and long run costs, Marginal cost pricing, aggregation – industry supply function, Shephard's lemma, Conditional factor demand functions. Duality between production and cost functions.

Module III

Theory of Market I: Perfect Competition, Monopoly, and Monopolistic Competition

Perfect competition: short run and long run market equilibrium. Efficiency and welfare. – Critiques of P. Sraffa, and J. Robinson. Monopoly: Monopoly power, Equilibrium output and prices, Effect on welfare, Price discrimination – first, second, and third degree, Quality choice under monopoly. Monopolistic Competition

Module IV

Game theory (basic introduction)

Description of a game, Normal form representation of game, Extensive form representation of game, Solution concepts—Nash Equilibrium, Mixed strategies, Repeated games, Sequential games, Refinement: Sub-game perfection.

Module V

Theory of Market II: Oligopoly

Cournot equilibrium, stability, comparative statics, welfare. Bertrand equilibrium. Quantity leadership, Price leadership. Conjectural variations. Spatial competition: Linear city model, Circular city model.

BASIC READING LIST

- Ferguson, C. E. (1969), The Neoclassical Theory of Production and Distribution, Cambridge University Press.
- Gravelle, H. and Rees R. (2003), Microeconomics, 3rd Edition, Prentice Hall
- Kreps, David (1992), A Course in Microeconomic Theory, Eastern Economy Edition, Prentice Hall of India
- Varian, Hal R. (1992), Microeconomic Analysis, 3rd Edition, International Student Edition, W. W. Norton and Company
- Williamson, O. E. and Winter, Sidney G. (Eds) (1993), The nature of the firm; origins, evolution and development, Oxford University Press

ADDITIONAL READING LIST

Module 1

Deaton, A. and Muellbauer (1993), Economics and Consumer Behaviour, Cambridge University Press.

Gravelle, H. and Rees, R. (2003), Microeconomics, 2003, 3rd Edition, Prentice Hall.

Green, H. A. G. (1971), Consumer Theory, Penguin, Harmondsworth.

Module 2

- Archibald, G. C. (Ed.) (1971), Theory of the Firm, Penguin, Harmondsworth.
- Bronfenbrenner, M. (1979), Income Distribution Theory, Macmillan, London.
- Gravelle, H. and Rees R. (2003), Microeconomics, 3rd Edition, Prentice Hall
- Healthfields and Wibe (1987), An Introduction to Cost and Production Functions, Macmillan, London.
- Pindyck, Robert S. and Rubinfeld, Daniel L. (1998), Microeconomics, Prentice Hall

Module 3

- Archibald, G. C. (Ed.) (1971), Theory of the Firm, Penguin, Harmondsworth.
- Bain, J. (1958), Barriers to New Competition, Harvard University Press, Harvard.
- Pindyck, Robert S. and Rubinfeld, Daniel L. (1998), Microeconomics, Prentice Hall.
- Tirole, Jean (1996), Theory of Industrial Organisation, Eastern Economy Edition, Prentice Hall of India.
- Williamson, O. E. and Winter, Sidney G. (Eds) (1993), The nature of the firm; origins, evolution and development, Oxford University Press.

Module 4

- Gibbons, Robert (1992), Game Theory for applied economists, Princeton University Press.

Module 5

- Gravelle, H. and Rees, R. (2003), Microeconomics, 3rd Edition, Prentice Hall.
- Gibbons, Robert (1992), Game Theory for applied economists, Princeton University Press.
- Tirole, Jean (1996), Theory of Industrial Organisation, Eastern Economy Edition, Prentice Hall of India.

AE-A-18: MICROECONOMICS - II

PREAMBLE

This is the second part of the core Microeconomics Sequence. This course introduces fundamental concepts and topics developed in microeconomic theory. It will cover roughly 4 topics: 1) Theory of General Equilibrium, 2) Economics of Uncertainty, 3) Games of Incomplete Information and 4) Information Economics. The aim is to be as thorough as possible in a single semester time period. The theoretical tools developed in these topics are essential in many different fields in economics.

Module I

Theory of General Equilibriums

The focus shall be on GE with certainty.

First Level: Introduction – partial equilibrium vis-à-vis general equilibrium approach. Exposition of basic concepts. An elementary general equilibrium model – the Robinson Crusoe economy. Pure exchange economy – the Edgeworth Boxes, Pareto optimality, contract curve, core, Walras Law, Walras equilibrium. First and second fundamental theorem of welfare economics (graphical exposition).

Second Level: Refreshment of analytic and scarcity properties of preference relation. A more elaborate exposition of the exchange economy: commodities, agents, preferences, utility functions, prices, demand and excess demand functions and their properties. Formal definition of allocation, Pareto optimal allocation, individually rational Pareto optimal allocation, coalition, and core. Walras equilibrium, its relation with core. Formal proof of first fundamental theorem. Gross substitutability. Price adjustment process. Brower's fixed point theorem. Existence of Walras equilibrium and Uzawa equivalence theorem. Social welfare maximization and its relation with Pareto optimality. General conditions for uniqueness, and discussion of stability – Tatonnement process. General equilibrium over time – Arrow Debreu scarcity (introduction only). Re-switching and reverse capital deepening.

Module II

Economics of Uncertainty

Measures of risk -- Domar-Musgrave index, Roy's safety index, Mean-Variance, Semi variance. Mini-max regret. Lotteries, preference relation over lotteries, N-M expected utility theory – basic axiom and representation theorem; violations of EU theory. Subjective probabilities. Risk aversion – Jensen's inequality, Acceptance set and risk aversion, various measures of risk aversion (Arrow-Pratt measure of absolute risk aversion, relative risk aversion), certainty equivalent and risk premium, Arrow-Pratt approximation of risk premium, Pratt's theorem, DARA, CARA, IARA, DRRA, IRRA, CRRA classes of utility functions and their comparative static properties; Applications to various settings and comparative static results. Stochastic dominance criterion of ordering risky prospects, and equivalence between expected utility criterion and stochastic dominance criterion.

Module III

Games of Incomplete Information

Static Bayesian games and Bayesian equilibrium – theory and examples.

Module IV

Information Economics

Introduction. The elements of the problem. Types of Asymmetric information problems – moral hazard, adverse selection, signalling.

Static Moral Hazard: Full information Benchmark, Hidden action in a Two action-Two outcome model as well as in a simple Continuous action and continuous outcome case, Solution through First order approach and its validity, Value of information and characteristics of the Optimal contract

Adverse selection and Signalling: Akerlof's Model of Lemons, Brief exposure to Mechanism Design and Revelation Principle, Intuition behind Spence-Mirrlees Single Crossing Condition. Signalling in the Spence's Model of Education, the notions of Pooling and Separating Equilibria.

BASIC READING LIST

- Mas-Colell, Andrew Michael., Whinston, D. and Green, Jerry R. (1995), Microeconomic Theory, Oxford University Press.
- Varian, Hal R. (1992), Microeconomic Analysis, 3rd Edition, International Student Edition, W. W. Norton and Company.

ADDITIONAL READING LIST Module 1:

- Broadway, R. W. and Bruce, N. (1984), Welfare Economics, Basil Blackwell, London.
- Debreu, G. (1959), Theory of Value, An Axiomatic Analysis Of Economic Equilibrium, John Wiley & Sons.
- Ellickson, Bryan (1993) Competitive Equilibrium; Theory and Applications, Cambridge University Press.
- Green, H. and Walsh, V. (1975), Classical and Neo-Classical Theories of General Equilibrium, Oxford University Press, London.
- Hansen, B. (1970), A Survey of General Equilibrium Systems, McGraw Hill, New York.
- Hilderbrand, W. and Kirman, A. P. (1988), Equilibrium Analysis; Variations on Themes by Edgeworth and Walras, North- Holland.
- Kreps, David (1988), Notes on theory of choice, Westview Press.
- Martin, J. Osborne and Ariel Rubinstein (1994), A course in game theory, MIT Press.
- Quirk, J. and Saposnik, R. (1968), Introduction to General Equilibrium Theory and Welfare Economics, McGraw Hill, New York.
- Starr, Ross M. (1997), General equilibrium theory; An introduction, Cambridge University Press.
- Weintrub, E. R. (1974), General Equilibrium Theory, Macmillan, London.

Module 2:

- Arrow, K. J. and Intrilligator, M. D. (1981), Handbook of Mathematical Economics, Vol. I, North Holland, Amsterdam.
- Borch, K. H. (1968), The Economics of Uncertainty, Princeton University Press, Princeton.
- Diamond and Rothschild (Eds.) (1978), Uncertainty in Economics, Academic Press, New York.

Module 3:

- Fudenberg, D. and Tirole, J. (1996), Game Theory, MIT Press.
- Gibbons, R. (1992), Game theory for applied economists, Princeton University Press.
- Osborne, Martin J. and Rubinstein, Ariel (1994), A course in game theory, MIT Press.

Module 4:

- Bolton, Patrick and Dewatripont, Mathias (2005), Contract theory, MIT Press.
- Fudenberg, D. and Tirole, J. (1996), Game Theory, MIT Press.
- Gibbons, R. (1992), Game theory for applied economists, Princeton University Press.
- Osborne, Martin J. and Rubinstein, Ariel (1994) A course in game theory, MIT Press.

AE-A-03– MACROECONOMICS

Objective

The objective of the paper is to familiarize the students about the contribution of various schools of thought in macroeconomics. The course structure covers the major debates and intends to provide wider vision of the present discourses in macroeconomics. The course will help to develop aptitude to relate concepts with research and policy.

Module I

Background Concepts:

History of macroeconomic thought- Classical, Keynesian and schools of thought after Keynes.

Behavioral foundations of Macro Economics:

Consumption Function: Keynes Psychological Law and Kuznet's consumption puzzle, Fisher's inter-temporal Choice Model, Permanent Income Hypothesis, Life Cycle Hypothesis and Relative Income Hypothesis.

Investment Function: Neo-Classical Theory of Investment, Stock Market and Tobin's q-ratio, Accelerator Theory of Investment (simple and flexible acceleration models)

The Monetarist School: The quantity theory of money approach

Module II

Rational Expectations and new Classical Macroeconomics:

The basic concepts – the Phillips curve and Lucas Supply equation

Module III

Real Business Cycle School:

Real Business Cycle School and inter temporal substitution of labour- Real Business Cycle theory- technology shocks- neutrality of money and flexibility of wages and prices- Real Business cycle view on great depression.

Module IV

Micro Foundations of real and nominal rigidities: New Keynesian School:

Imperfect competition and price setting- Real rigidity- Co-ordination failure models- Real Non Walrasian Theories- Small Menu Cost model and Staggering of prices, implicit wage contract theory- efficiency wage theory- Insider- Outsider model.

Module V

Basic Infinite Horizon Models:

Ramsey Problem: Command Economy, Decentralized economy, dynamic efficiency - Government in the decentralized economy.

Overlapping Generations Model:

OLG with production: tow period lives, dynamic inefficiency and altruism, Social Security Models under OLG

READING LIST

1. Barro, Robert J. & Sala-i- Martin, Xavier (1995), *Economic Growth*, McGraw Hill .
2. Blanchard, Olivier (2000), *Macroeconomics*, [Prentice Hall](#).
3. Blanchard, Olivier and Stanley, Fischer (1989), "*Lectures on Macroeconomics*", The MIT Press
4. Dornbusch, Rudiger, Fischer, Stanley & Startz, Richard (2004), *Macroeconomics*, 9th Edition, McGraw Hill.

5. Mankiw Gregory (2002), *Macroeconomics*, 5th Edition, Worth Publishers
6. Romer, David (2003), *Advanced Macroeconomics*, 3rd Edition, McGraw Hill Publishers.
7. Snowdon Brian and Vane Howard R, (2005) *Modern Macroeconomics: Its Origin, Development and Current State*, Edward Elgar Publishing Ltd.

AE-A-23: STATISTICS AND OPERATIONS RESEARCH

Objective

The objective of this course is to familiarize students with statistical theory and its application as the foundations for data analysis, as well as to acquaint them with basic and intermediate techniques from the field of operations research. Students at the end of the course should be familiar with the analysis and interpretation of data, along with hands on training in both of these fields.

Module I

Testing of hypothesis: Simple versus composite hypothesis, critical region, type I and type II errors, power of a test, The Decision Rule, trinity of classical tests (Wald test, Lagrange multiplier, likelihood ratio), application of hypothesis testing with known and unknown variances, test for correlation,

Module II

Special Distributions; Introduction, The Poisson Distribution, The Normal Distribution, The Geometric Distribution, The Negative Binomial Distribution, The Gamma Distribution, the Central Limit Theorem

Module III

Estimation and Inference; Introduction, Estimating Parameters: The Method of Maximum Likelihood, the Method of Moments, Interval Estimation, Properties of Estimators, Minimum-Variance Estimators: The Cramér-Rao Lower Bound, Sufficient Estimators, Consistency, Bayesian Estimation.

Module IV

Bivariate Distributions; Contingency tables, joint and conditional distributions, odds ratio, test of independence, Analysis of Variance (ANOVA), analysis of covariance.

Module V

Nonparametric Statistics; Introduction, Sign Test, Wilcoxon Tests, The Kruskal-Wallis Test, The Friedman Test, Testing for Randomness, Comparing Parametric and Nonparametric Procedures

Module VI

Introduction to OR; Basic algorithms; Linear programming (LP), Graphical and Simplex; LP Formulation and LP with solver and sensitivity analysis; Transportation and transshipment models; Simulation; Decision Analysis

Module VII

Advanced algorithms in OR; Goal Programming; Queuing Theory; Networking Models; Markov chains; Data Envelopment Analysis (DEA); Analytical Hierarchical processing (AHP)

Reading List

- Larsen, Richard J., and Morris L. Marx. (2001): An Introduction to Mathematical Statistics and its Applications. 3rd ed. Upper Saddle River, NJ: Prentice Hall.
- Lewis Margaret (2011): Applied Statistics for Economists, Routledge.
- Newbold P. (2007): Statistics for Business and Economics (6th edition or later), Prentice Hall
- Sweet, Stephen and Karen Grace- Martin (2008): Data Analysis with SPSS: A First Course in Applied Statistics, Allyn & Bacon, 3rd Edition.
- Field Andy (2013): Discovering Statistics using IBM SPSS Statistics. Fourth Edition, SAGE
- Quantitative Analysis for Managerial Decision Making By Render and Stair
- Operations Research by Hiller and Liberman
- Operations Research by Hamdy and Taha

AE-A-06: AGRICULTURAL POLICY FRAMEWORK IN INDIA

Objectives

The objective of this course is to provide orientation to the students regarding the agricultural policies and its effect on sustainable agricultural development and to make them to understand the globalization and its impact on agricultural development.

Module I

Agricultural and Economic Development, Role of Agriculture in Economic/Rural Development, Theories of Agricultural Development, Population and Food supply, Need for sound Agricultural Policies

Module II

Planning for Agricultural Growth-Agricultural Policy and Programmes under Planning Periods

Module III

Policy on Agrarian Reforms: Abolition of intermediaries, Tenancy Reform, Ceiling of Agricultural Land holdings, Impact of Land Reforms on Farming Community, Fragmentation of Landholdings.

Module IV

Agricultural Price Policy, Role of CACP, state intervention: Concept of Minimum Support Price and Procurement Price.

Module V

Reforms in Agricultural Produce Marketing Committee Act- Direct marketing, contract farming, private markets etc.

Module VI

Attainment of Self Sufficiency in Foodgrains: Policy initiatives in respect of Agricultural Inputs (Water, Seed, Fertilizer Policy), Promotion of Plant nutrients, Fertiliser subsidy, Agricultural Credit

and Insurance; Enforcement of Minimum Wage in Agriculture, policy options for sustainable agricultural development.

Module VII

Development issues, poverty, unemployment and rural sector

Module VIII

Agricultural taxation

Module XI

Agribusiness Policies - Concept and Formulation; and New Dimensions in Agri-business Environment and Policy.

Suggested Readings:

Books

- Bhalla, G.S. (2007), Indian Agriculture since Independence, National Book Trust, India.
- Chakaravathi, R. M. (1986), Under Development and Choices in Agriculture, Heritage Publication, New Delhi.
- Eicher K.C. and J. M. Staatz (1998), International Agricultural Development, Johns Hopkins Univ. Press.
- Frank E. (1992), Agricultural Policies in Developing Countries, Cambridge Univ. Press.
- Ghatak, S and K. Ingersent (1984), Agriculture and Economic Development, Select Book Service Syndicate, New Delhi.
- Ghatak, S and K Ingersent (1984) Agriculture and Economic Development, Select Book Service Syndicate, New Delhi
- Jhingan, M. L. (1998), The Economics of Development and Planning, Vrinda Publ.
- Jules, P. N. (1995), Regenerating Agriculture – Policies and Practice for Sustainability and Self Reliance, Vikas Publ. House.
- Report of the Expert Group to Review the Methodology for Estimation of Poverty, Government of India, Planning Commission, 2009
- Sharma, V. P. and Thaker, H. (2011), Economic Policy Reforms and Indian Fertilizer Industry, Allied Publishers, 2011
- Singh, G. (2009), Performance of Formal Rural Credit in India, Gurdev Singh, Allied Publishers
- Singh, S. (2010), Agricultural machinery Industry in India, Allied Publishers
- Thimmaiah, G. and K. Rajan (2004), Policy and Organizational Support, State of the Indian Farmer, Vol. 26, Academic Foundation, New Delhi

Articles

- Basu, K., 2011, India's Foodgrain Policy : An Economic Theory Perspective, Economic and Political Weekly, Vol XLVX, No. 5, p37
- Bhende, M.J., 2005, Agricultural Insurance in India: Problems and Prospects, NABARD, Occasional Paper-44
- Brahma, P., Saxena, S. and Dhillon, B.S., 2004, The Protection of Plant Varieties and Farmers' Rights Act of India, Current Science, Vol.86, No.3, pp. 392-397
- Chadha, G.K. and Bhaumik, S.K., 1992, Changing Tenancy Relations in West Bengal –Popular Notions, Grassroot Realities, Economic and Political Weekly May-16-23, 1992.

- Gadgil, M. and Utkarsh, G., 1999, Intellectual Property Rights and Agricultural Technology : Linking the Micro and Macro Scales, Indian Journal of Agricultural Economics, Vol 54
- Kumar, A.G., Gulati, A. and Cummings, R., 2007, Foodgrains Policy and Management in India, Responding to today's Challenges and Opportunities, Indira Gandhi Institute of Development and Research and International Food Policy Research Institute
- Kumar, P., Joshi, P.K. and Birthal, P., 2009, Demand Projections for Foodgrains in India, Agricultural Economics Research Review, Vol. 22, pp 237-243.
- Kumar, P., Kumar, A., Parappurathu, S. and Raju, S.S., 2011, Estimation of Demand Elasticity for Food Commodities in India, Agricultural Economics Research Review, Vol 24, pp 1-14.
- Panagariya, A., 2002, India at Doha: Retrospect and Prospect, Economic and Political Weekly, January 26th, 2002
- Rath, N., 2011, Measurement of Poverty: In Retrospect and Prospect, Economic and Political Weekly, October 15th, 2011
- Singh, I., 1989, Reverse Tenancy in Punjab Agriculture : Impact of Technological Change, Economic and Political Weekly, Vol. 24, No. 25, pp A86-A92.
- Suryanarayana, M.H., 2011, Expert Group on Poverty: Confusion Worse Confounded, Economic and Political Weekly, November, 12th, 2011.

AE-A-07: AGRICULTURAL FINANCE

Objective: The course aims to make students proficient in concepts and techniques of agricultural financial management.

Contents

Module I

Agricultural Finance: Concepts and Scope, Importance of Agricultural Finance, Characteristics of farm financial decisions, Steps in the process of farm financial management, classification of loans or credit, role of credit in agriculture and rural development

Module II

Agencies of Agricultural Finance: Cooperative, Nationalized Banks, RRBs, NABARD, ARDC, AFC, Regional and All India Financial Institutions, Microfinance, outlines of recommendation of various committees, Programmes of Rural development (SFA, MFAL), Comprehensive Crop Insurance Scheme

Module III

Economic Principles Applied to Financial Management of the Farm- Importance of economic principles in the farm financial management, law of diminishing returns, Principle of Marginalism/Substitution /factor-factor/Product-Product relationships, Principles of Equimarginal returns, Principle of Comparative Advantage, Opportunity Cost principle and Cost principle

Module IV

Tests of Farm Credit Proposal- Economic Feasibility Tests of Credit, Principles of Owners' Equity and Increasing Risk, Procedural Formalities in Sanction of Farm Loans, Repayment Plans

Module V

Tools of Financial Analysis: Farm Planning and Budgeting, Balanced Sheet or Net Worth statement.

Module VI

Business Financing System in India, Money and Capital Markets, venture capital financing and its stages, and International financial management.

Module VII

Warehouse Receipt Financing, Financing of Supply Chain, Channel Financing

Module VIII

Project Appraisal- B:C Ratio, Internal Rate of Return(IRR), Net Present Value (NPV), Pay Back period

Suggested Readings

Books

- Chandra, P. (2000), Financial Management, Tata McGraw Hill.
- Khan, M.Y. and P. K. Jain (2004), Financial Management: Text, Problems and Cases, Tata McGraw Hill.
- Pandey, I. M. (1997), Financial Management. Vikas Publication
- Ramachandran, N and R.K. Kakani (2005), Financial Accounting for Management, Tata McGraw Hill.
- Reddy, Subba S. and R. Raghu Ram (1996), Agricultural Finance and Management, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
- Singh, Surjit and Vidya Sagar (2004), Agricultural Credit in India, State of the Indian Framers, Vol. 7, Academic Foundation, New Delhi.
- Van Horne J C. (1997), Financial Management and Policy, Prentice Hall.

Articles

- Barton, D., 2000, What is a Cooperative? Mimeo
- Golait, R., 2007, Current Issues in Agriculture Credit in India: An Assessment, Reserve Bank of India Occasional Papers Vol. 28, No. 1, Summer 2007
- Desai, B. M., Objectives and Role of Institutional Finance for Agricultural and Rural Development, Vikalpa, Vol. 14, No. 2, pp. 25-33
- FAO, 2012, Agricultural Cooperatives: Key to Feeding the World.
- Kumar, A., Singh, K. M., and Sinha, S., 2010, Institutional Credit to Agriculture Sector in India: Status, Performance and Determinants, Agricultural Economics Research Review Vol. 23, pp. 253-264
- Mahajan, V., and Ramana, N. V., 2004, Agricultural Finance by Microfinance Institutions Problems and the Way Forward, Mimeo Murthy, C. M., Suresh, B. H., and Veena, K. P., 2009, Dimensions of Institutional Finance for Agricultural Activities: An Analysis, Indian Management Studies Journal, Vol.13, pp. 13-30
- Shah, M., Rao, R., and Shankar, P. S. V., 2007, Rural Credit in 20th Century India Overview of History and Perspectives, Economic and Political Weekly April 14, 2007, pp. 1351-1364
- Shylendra, H. S., 2006, Microfinance Institutions in Andhra Pradesh: Crisis and Diagnosis, Economic and Political Weekly, May 20, 2006, pp.1959-1963
- Shylendra, H. S., 2007, Missing the Forest for the Trees: An Assessment of the Microfinance Sector (Development and Regulation) Bill 2007, Institute of Rural Management Anand Working Paper No.200

- Vaidyanathan, A., 2013, Future of Cooperatives in India, Economic and Political Weekly, Vol. 48, No. 18, pp.30-34.

AE-A-08: INTERNATIONAL TRADE IN AGRICULTURE

Objective: The course provides insights into theoretical aspects as well as policy related issues in international trade in agricultural commodities. The objective is to acquaint the students with various principles and theories that explain basis for international trade and trade patterns, trends and patterns in international trade in agriculture, provisions of Agreement on Agriculture under WTO and their impact on agricultural trade with a focus on status of developing economies. The paper also deals with various issues relating to Indian agricultural trade and export import procedures and documents needed for conducting import export business.

Module I

Importance of Agriculture in development, trade and agriculture, Inter-regional verses international trade- importance of trade, case for free trade and for protectionism- globalization and agriculture – case of free trade and for protectionism in case of agriculture.

Module II

Mercantilist doctrine of balance of trade - Adam Smith and absolute advantage theory of trade - Ricardo and comparative advantage, its limitations - Comparative advantage in Heckscher Ohlin Model - Factor price equalisation theorem - Factor intensity reversal - the empirical evidence on Heckscher Ohlin theory - the Leontief Paradox. Stolper-Samuelson Theorem – Rybczynski Theorem- Trade theories and empirical evidence relating to trade patterns, applicability to India. Recent explanations of the basis of trade in terms of technological lead, domestic market size and product cycle approach – Linder’s hypothesis – Gravity models- empirical evidence.

Module III

Instruments of trade policy- Economic rationale and impact of tariffs - optimum tariff rate - quotas and subsidies – other instruments of trade policy - effective rates of protection. Trade policy of developing economies- Import substituting industrialization and export oriented industrialization.

Module IV

Brief history of GATT- provisions relating to agri trade- factors leading to establishment of WTO- basic principles- functions and organization - Agreement on agriculture - main provisions - market access- domestic support - export subsidies-special and differential treatment, sanitary and phytosanitary provisions, export standards, TRIPS, various rounds and Doha impasse - emergence of various country groups /alliances and their participation in negotiations -Issues for further negotiations- implications of WTO provisions on Indian Agriculture - reduction commitments for India. Formation of regional trade blocks- reasons, types and performance – impact on trade.

Module V

Overview of Foreign Trade and trade policy of India, Indian agricultural trade-trends and features, Agricultural Trade policy- objectives, instruments of trade policy, trade policy for various commodities, Competitiveness of Indian Agriculture, measures of competitiveness, competitiveness of various crops, domestic and international prices, competitiveness and

commodity trade flows, measures for improving competitiveness of Indian exports- policy recommendations.

Module VI

Export and import procedures and documentations: Introduction to international business- definition of international business and prerequisites to start export/ import business, Flow of foreign currency in cross border trade-NOSTRO and VOSTRO accounts- meaning of cross border trade settlement-methods of trade settlement with focus on foreign letter of credit- open account-advance payment-documentary credits, documentary collection, and consignment- forex market and broad features of market, Types of documents needed- clearance of goods in air and sea shipment- inco terms, Potential for agri export business in India- Functions and role of institutions involved in agri exports in India- DGFT- Customs- EXCISE – RBI – Shipping - ECGC and Insurance - EPC (APEDA)- EIA)

Module VII

World agricultural trade: changing structure and pattern - status of developing economies - multilateralism and regionalism – impact on trade- various factors affecting international trade

Suggested Readings

Books

- Bhalla, G.S. (2004), Globalisation and Indian Agriculture, State of the Indian Farmers, Vol. 19, Academic Foundation, New Delhi.
- *Chadha G. K. (2003), WTO and Indian Economy. Deep and Deep Publications.*
- *Datta Samar K. and Satish Y. Deodhar (2001), Implications of WTO Agreements for Indian Agriculture, Oxford and IBH Pub. Co., New Delhi*
- Hooda and Gulati (2007), WTO Negotiations on Agriculture and Developing Countries, Oxford University Press, New Delhi
- *Gulati, Ashok and Tim Kelley (1999), Trade liberalization and Indian Agriculture: Cropping Pattern Changes and Efficiency Gains in Semi-Arid Tropics, Oxford University Press in New Delhi, New York .*
- Vashisht A. K. and Singh Alka (2003), WTO and New International Trade Regime- Implication for Indian Agriculture. Advance Publishing Concept.
- Krugman and Obstfield (2009), ‘International Economics; Theory and Practice’ Pearson Publications, New Delhi.

Articles

- Aksoy, M.Ataman and John C. Beghin (2005), ‘The Evolution of Agricultural Trade Flows’ in M. Ataman Aksoy and John C. Beghinedt.Global Agricultural Trade and Developing Countries, The World Bank, Washington D.C.
- Deodhar, Satish, (2001), ‘WTO Pacts and Food Quality Issues’, Economic and Political Weekly , July 28, 2001 pg. 2813 to 2816.

- Deodhar, Satish (2001), 'WTO Agreements and Indian Agriculture: Retrospection and Prospects' in S.K. Datta and S. Y. Deodharedt. *Implications of WTO Agreements for Indian Agriculture, CMA Monograph No. 191, IIM-Ahmedabad.*
- Export Import Bank of India (2007), *Regional Trade Agreements - Gateway to Global Trade*, Occasional Paper 120, October 2007.
- Roberts, T. Michael (2009), 'Technical Regulations and Trade: Current Issues, Trends and Long Term Prospects, in Alexander Sarris and Jamie Morrison ed. *The Evolving Structure of World Agricultural : Trade Implications for Trade Policy and Trade Agreements, Food and Agriculture Organization of The United Nations, Rome.*
- Rao, C. Niranjana (2004), 'Indian Seed System and Plant Variety Protection', *Economic and Political Weekly, February 21, p.845-852*
- Watal, Jayshree (1998), 'Intellectual Property Rights in Indian Agriculture', Working Paper No. 44, July, Indian Council for Research on International Economics Relations New Delhi.

AE-A-19: BASIC ECONOMETRICS

Objective: The objective of this paper is to introduce basic econometric techniques that are widely used in empirical work in economics and other related disciplines. It covers the problems faced in estimation and inference in the context of single and multiple equations regression model. The focus is on conceptual understanding and 'hands on' applications using economic data drawn from real-world examples, rather than on formal theoretical proofs alone. By the end of the course, students should be able to develop simple econometric models and interpret the econometric and statistical results reported in other studies.

Module I

The nature of Econometrics and Economic Data: Introduction, Model Specification and applied research, the role of data in model specification, The Structure of Economic Data, Steps in Empirical Analysis, Causality and the Notation of Ceteris Paribus in Econometrics, etc.

Module II

The Classical Linear Regression Model: Estimation and Inference: Ordinary least squares (OLS) estimation, the Classical assumptions, the Gauss-Markov theorem and properties of the OLS estimators, interval estimation and hypothesis testing and prediction, reporting and interpreting regression results, Maximum Likelihood techniques, Restricted Least Square estimation, Likelihood Ratio (LR), Wald and Lagrange Multiplier (LM) Test, Minimum Variance Bound (Rao-Cramer Inequality Theorem).

Module III

Non-linear regression: Conversion of non-linear forms into linear forms, testing linear versus non-linear functional form, appropriateness and relevance of the choice of functional form.

Module IV

Regression Analysis with Qualitative information: Binary (or Dummy) Variables:

Exogenous Dummy Variable- Formulating and interpreting coefficients on dummy explanatory variables, interactions involving dummy variables and use of dummy variables in seasonal analysis, piece wise regression analysis, the dummy variable alternative to chow test.

Discrete and Limited Dependent variable - Linear Probability Model, Problems relating to LPM, Logit and Probit Model, Multinomial Choice Models: Ordered Response Model; Unordered Response Model, Censored and Truncated Regression Model

Module V

Multicollinearity: Introduction, perfect versus imperfect Multicollinearity, Consequences, tests for detection and remedies for Multicollinearity.

Module VI

Violation of the OLS Assumptions: Introduction, Consequences of violation of OLS assumption, GLS Estimation- Aitken's generalization of Gauss Marks Theorem. Heteroscedasticity & Autocorrelation: Causes and consequences, diagnostic tests and remedial procedural

Module VII

Specifications: Choosing the Independent Variables and Functional Form

Omitted variables: Too few variables, Irrelevant variables: variable overload, Criterion of choice, superfluous variables etc. The use and Interpretation of constant term, Alternative Functional forms, Problem with incorrect functional form, test for choosing the appropriate functional form.

Module VIII

Lagged Variables and Distributed- Lag Models: Introduction, Consequences of applying OLS, Almon's lag approach, Koyak Transformation: Partial adjustment hypothesis and adaptive expectations hypothesis, estimation of distributed lag models etc.

Module IX

Simultaneous Equation Models (SEM): Introduction, Structural, reduced form and final form model, Rational behind the use of SEM - simultaneous bias and inconsistency of the OLS estimator, Problem of Identification: Rank and Orders conditions, Methods of estimation: ILS, 2SLS, Instrumental Variable, LIML (LVR), Mixed estimation Method, 3 SLS and FIML methods

Note: Students will be taught software packages for performing econometric applications. Computer exercises will be given

BASIC READING LIST:

- Judge, G.G. et al., Introduction to the theory and Practice of econometrics, 2nd Edition John Wiley and Sons.
- Green, William H., **Econometric** Analysis, Prentice Hall.
- Johnston and Dinardo, Econometric Methods, 4th Edition McGraw-Hill International Edition.
- Wooldridge J., Introductory **Econometrics: A Modern Approach**, South-Western College Pub.
- Studenmund, A.H., Using Econometrics: A Practical Guide, Addison Wesley Publishing Company. Boston,
- Gujarati, Damodar, **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi

ADDITIONAL READING LIST:

Module 2 and 3

- Griffiths, Hill and Judge (1993), Learning and Practicing Econometrics, Wiley, New York, chapter 4-11.
- Judge, G.G. et al., Introduction to the theory and Practice of econometrics, 2nd Edition John Wiley and Sons, Chapter 3 and 5.
- Wooldridge, J. (2009), Introductory **Econometrics**, 4th edition, South-Western College Pub, Chapter 2-6
- Studenmund, A.H. (2005), Using Econometrics: A Practical Guide, Addison Wesley Publishing Company. Boston, Chapter 2-7
- Johnston and Dinardo (1997), Econometric Methods, 4th edition, McGraw-Hill international Edition, Chapter 2-3 and Chapter 5
- Gujarati, Damodar (2003), **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi, Chapter 2-8

Module 2-3 (Articles)

- Hirschfeld, Mary, Robert L. Moore and Brown Eleanor (1995), “Exploring the Gender Gap on the GRE Subject Test in Economics”, The Journal of Economic Education, Vol. 26, No. 1, Winter, pp. 3-15
- Lovell, Michael C. (1986), ‘Tests of the Rational Expectations Hypothesis’, The American Economic Review, Vol. 76, No. 1, March, pp. 110-124
- McCloskey, Donald N. (1992) ‘The Bankruptcy of Statistical Significance’, Eastern Economic Journal, Vol. 18, No. 3, Summer, University of Iowa
- Romer, David (1993), ‘Do Students Go to Class? Should They?’ The Journal of Economic Perspectives, Vol. 7, No. 3, Summer, pp. 167-174
- Saunders, Edward M. Jr. (1993), ‘Stock Prices and Wall Street Weather’, The American Economic Review, Vol. 83, No. 5, December, pp. 1337-1345
- Silva, Fabio & Sonstelie Jon (1995), ‘Did Serrano Cause A Decline In School Spending?’, National Tax Journal, Vol. 48, No. 2, June, pp. 199-215
- Smith, V. Kerry (1971), ‘A Note on Student's t Test in Multiple Regression’, The Journal of Financial and Quantitative Analysis, Vol. 6, No. 3, June, pp. 1053 -1056
- Amemiya, Takeshi (1980), ‘Selection of Regressors’, International Economic Review, Vol. 21, No. 2, June, pp. 331-354,
- Bandiera, Oriana (2005), Some Notes on the intuition behind popular Econometric Techniques.
- Boyed, Deric, The Ramsey test of functional form, The Ramsey test of Mis- Specification, university of East London
- Buckles Stephen and Freeman V. (1983), ‘Male-Female Differences in the Stock and Flow of Economic Knowledge’, The Review of Economics and Statistics, Vol. 65, No. 2, May, pp. 355-358
- Kinal, Terrence and Lahiri Kajal (1984), A Note on “Selection of Regressors”, International Economic Review, Vol. 25, No. 3, October, pp. 625-629
- Sander, W. (1985), ‘Women, Work, and Divorce’, The American Economic Review, Vol. 75, No. 3, June, pp. 519-523
- Yitzhaki, S. (1990), ‘On the Sensitivity of a Regression Coefficient to Monotonic Transformations’, Econometric Theory, Vol. 6, No. 2, June, pp. 165-169,
- Loeb, Peter D (1992), ‘The interactive effect of alcohol and altitude on traffic fatalities.’ Southern Economic Journal, July.

- Lovell, Michael C. (1983), 'Data Mining', The Review of Economics and Statistics, Vol. 65, No.1, February, pp. 1-12,
- Moffitt, R. (1990), 'The Econometrics of Kinked Budget Constraints', The Journal of Economic Perspectives, Vol. 4, No. 2, Spring, pp. 119-139
- Comanor William S. and Wilson Thomas A. (1967), 'Advertising Market Structure and Performance', The Review of Economics and Statistics, Vol. 49, No. 4, Nov., pp. 423-440

Module 4

- Gujarati, Damodar (2003), **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi, Chapter 9 and Chapter 15
- Wooldridge, J. (2009), Introductory **Econometrics**, South-Western College Pub., Chapter 7 and Chapter 17
- Johnston and Dinardo (1997), Econometric Methods, 4th edition, McGraw-Hill international Edition, Chapter 4 and Chapter 13
- Green, William H. (2014). **Econometric Analysis**, Prentice Hall, Chapter 21 and 22
- Green, William and David A Hensher (2009). Modeling Ordered Choices, NSU Stem School of Business.
(<https://pdfs.semanticscholar.org/83cb/843ab8542b4ab2ad1cca4c400b7992aad460.pdf>)

Articles

- Sommers, Paul M. and Source , Noel Quinton (1982), 'Pay and Performance in Major League Baseball: The Case of the First Family of Free Agents', The Journal of Human Resources, Vol. 17, No. 3, Summer, pp. 426-436
- Halvorsen, R. and Palmquist, R. (1980), 'The Interpretation of Dummy Variables in Semi logarithmic Equations', The American Economic Review, Vol. 70, No. 3, June. pp. 474-475
- Kennedy, P. (1986), 'Interpreting Dummy Variables', The Review of Economics and Statistics, Vol. 68, No. 1, February, pp. 174-175
- Chen, Dhal, and Khan(2002), 'Nonparametric Identification and Estimation of a Censored Regression Model with an Application to Unemployment Insurance Receipt', Center For Labor Economics University of California, Berkeley Working Paper No. 54
- Amin and Islam (2014), 'Are There More Female Managers in the Retail Sector? Evidence from Survey Data in Developing Countries,' Policy Research Working Paper-6843, World Bank
- Chintagunta and Honore (1996), 'Investigating the effects of marketing variables and unobserved heterogeneity in a multinomial probit model,' International Journal of Research in Marketing, Elsevier Science, 13(1996) 1-15

Module 5:

- Gujarati, Damodar (2003), **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi, Chapter 10
- Studenmund, A. H. (2005) Using Econometrics: A Practical Guide, Addison Wesley Publishing Company, Boston, Chapter 8
- Madala G.S., Introduction to Econometrics, John Wiley & Sons, Chapter 7

Module 6:

- Judge, G.G. et al., Introduction to the theory and Practice of econometrics, 2nd Edition John Wiley and Sons, Chapter 21
- Wooldridge, J. (2009), Introductory **Econometrics**, 4th edition, South-Western College Pub, Chapter 12
- Gujarati, Damodar (2003), **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi, Chapter 11-12
- Madala (2001), Introduction To **Econometrics**, John Wiley & Sons, Chapter 6

Articles

- Brada, Josef C. and Graves, Ronald L. (1988), 'The Slowdown in Soviet Defense Expenditures' Southern Economic Journal, Vol. 54, No. 4, April, pp. 969-984
- Hutchison, M. H. and Pyle, D. H. (1984), 'The Real Interest Rate/Budget Deficit Link: International Evidence', Federal Reserve Bank of San Francisco, Fall
- Maeshiro, A. (1976), 'Autoregressive Transformation, Trended Independent Variables and Autocorrelated Disturbance Terms', The Review of Economics and Statistics, Vol. 58, No. 4, November, pp. 497-500
- Buchline, Randolph E., Canes, Richard E. and Andrew W. Lo (1989), 'Games of survival in the UN newspaper industry', Applied Economics, Vol. 21, pp. 631-649.
- Dornbusch, R. and Pechman, Clarice (1985), 'The Bid-Ask Spread in the Black Market for Dollars in Brazil', Journal of Money, Credit and Banking, Vol. 17, No. 4, Part 1, November, pp. 517-520.
- Harvey, A. C. (1976), 'Estimating Regression Models with Multiplicative Heteroscedasticity', Econometrica, Vol. 44, No. 3, pp. 461-465, May
- Louis Amato, Louis and Wilder, Ronald P. (1985), 'The Effects of Firm Size on Profit Rates in U. S. Manufacturing' Southern Economic Journal, Vol. 52, No. 1, July, pp. 181-190

Module 7

- Griffiths, Hill and Judge (1993), Learning and Practicing Econometrics, Wiley, New York, Chapter 21.
- Madala (2001), Introduction to **Econometrics**, John Wiley & Sons, Chapter 10.
- Wooldridge, J. (2009), Introductory **Econometrics**, 4th edition, South-Western College Pub., Chapter 10.
- Judge, G.G. et al., Introduction to the theory and Practice of econometrics, 2nd Ed. John Wiley and Sons, Chapter 16.
- Pindyck & Rubinfeld (1997), Econometrics Models & Economic Forecast, 4th edition, McGraw-Hill/Irwin.

Articles

- William Sander (1985), 'Women, Work, and Divorce', The American Economic Review, Vol. 75, No. 3, pp. 519-523.

- Terrence Kinal and Kajal Lahiri (1984):A Note on "Selection of Regressors", International Economic Review, Vol. 25, No. 3 pp., 625-629, October
- Stephen Buckles and Vera Freeman (1983), 'Male-Female Differences in the Stock and Flow of Economic Knowledge', The Review of Economics and Statistics, Vol. 65, No. 2 May, pp. 355-358, May.
- Shlomo Yitzhaki (1990), 'On the Sensitivity of a Regression Coefficient to Monotonic Transformations', Econometric Theory, Vol. 6, No. 2, pp. 165-169, June
- Takeshi Amemiya (1980), 'Selection of Regressors', International Economic Review, Vol. 21, No. 2, pp. 331-354, June
- Deric Boyed: The Ramsey test of functional for The Ramsey test of Mis- Specification, university of East London
- Oriana Bandiera: Some Notes on the intuition behind popular Econometric Techniques
- William S. Comanor and Thomas A. Wilson (1967), 'Advertising Market Structure and Performance', The Review of Economics and Statistics, Vol. 49, No. 4, pp. 423-440, November.
- Robert Moffitt (1990), 'The Econometrics of Kinked Budget Constraints', The Journal of Economic Perspectives, Vol. 4, No. 2 ,pp. 119-139, Spring.
- Loeb, Peter D (1992), 'The interactive effect of alcohol and altitude on traffic fatalities Southern Economic Journal.
- Michael C. Lovell (1983), 'Data Mining', The Review of Economics and Statistics, Vol. 65, No. 1, pp. 1-12, February

Module 8

- Gujarati, Damodar (2003), **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing, New Delhi, Chapter 17
- Koutsoyiannis, A (2004), Theory of Econometrics, 2nd edition, Palgrave, N. Y., Chapter 13
- Wooldridge, J. (2009), Introductory *Econometrics*, 4th edition, South-Western College Pub., Chapter 10.
- Madala (2001), Introduction to *Econometrics*, John Wiley & Sons, Chapter 10.
- Judge, G.G. et al., Introduction to the theory and Practice of Econometrics, 2nd Ed John Wiley and Sons, Chapter 16.

Module 9

- Koutsoyiannis, A (2004), Theory of Econometrics, 2nd edition, Palgrave, N. Y., Chapter 14,15,16,17 and 19
- Gujarati, Damodar (2003), **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi, Chapter 18,19 and 20

Article

- Angrist and Kruger (2001), 'Instrumental Variables and search for Identification: From Supply and Demand to Natural Experiments,' Journal of Economic Perspective, Volume 15, November 4- Fell 2001, P 69-85

AE-A-10: AGRICULTURAL RISK MANAGEMENT AND INSURANCE

Objective: To expose the students to the various kinds of risk in farming, risk management strategies and mechanisms and insurance policies.

Module I

Risks in Agriculture: Overview, Types of Risk, Risk Management Strategies and Mechanisms, decision making process in farm business management under risks and uncertainty.

Module II

Climatic Variability & Change: Climate Risks, Challenges in Climate Variability, Drought Risk, Floods & Cyclones, Catastrophe Protection for Non-Borrowing Farmers, Bankruptcy Law

Module III

Production Risks, Technological Change -Improved Varieties and Fertiliser Use/Moisture Stress/Pests/Riskiness of Net Returns, Evidence on Aggregate Instability, Output Stability

Module IV

Risk Management through Agricultural Insurance: Introduction, National Agricultural Insurance Scheme (NAIS), Crop Insurance as Risk Mitigation Tool, Impact of Crop Insurance on Farmers, Suicides by Farmers

Module V

Crop insurance – Types, Crop Insurance – Benefits and Constraints, Crop Insurance Evolution, Crop Insurance Penetration, Fundamental Issues, Actuarial regime and Risk Transfer, Insurance and Credit Linkage, Insurance of Vegetables and Perennial Horticultural Crops

Module VI

Weather Insurance, Farm Income Insurance, Livestock Insurance, Package Insurance, Private Sector Participation in Crop Insurance, Crop Insurance: Financial Implications for XI Plan period

Module VII

Agriculture Insurance: Support Services- Scope for Using Satellite Imagery (Remote Sensing Technology, Insurance Delivery Strategies, Nationally Consistent Database

Module VIII

Price Support Measures: Introduction, Minimum Support Price (MSP), Market Intervention Scheme (MIS), Scheme for Tribals, Price Stabilization Fund Trust (PSFT), Credit Risk Fund

Module IX

Emerging Commodity Markets: Pre-harvest Concerns, Commodity Futures, International Trade

Module X

Contract Farming as Price Risk Mitigation: Introduction, Contract Farming and Risk Management.

Suggested Readings:

- Acharya and Agrawal (1992), *Agricultural Marketing in India*, oxford and IBH Publishing Co. Pvt. Ltd.

- *GOI (2007), Report of The Working Group on Risk Management in Agriculture for the Eleventh Five Year Plan (2007-2012)* , GOI, New Delhi
- Ramaswami, Bharat ; Shamika Ravi And S.D. Chopra (2004), *Risk Management, State of the Indian Farmer- A Millennium Study*, Volume 22, Academic Foundation, New Delhi.

AE-A-11: STRATEGIC AGRO-FOOD MARKETING

Objective: To apprise students regarding various aspects of agro-food marketing.

Module I

Marketing, status of agro-food industry, features of agro-food industry, marketing problems, marketing philosophy and process, market environment.

Module II

Consumer behaviour, elements of consumer analysis, consumer research and marketing strategy, model of buyer behaviour, factors affecting consumer behaviour, buyer decision process, business buyer, market segmentation.

Module III

Marketing management: Product, price, promotion and place.

Module IV

Present status of food retail marketing system in India: Organized and Un-organized marketing system.

Module V

Formats of Organized Marketing systems: Discounters (Subhiksha, Apna Bajar, Margin Free, Reliance Fresh), the value-for-money store (Nilgiris, Big Bajar, Cooperative Stores), the experience shop (Food world, Trinetra), the home delivery (Fabmart), super stores and wide reach stores (Reliance Fresh, Spencer, Food Mart), etc.

Module VI

Formats of Un-organized Marketing System: Kirana Stores and Hawkers, viz. the road side hawkers, mobile retailers, kirana stores, including open format more organized outlets and small to medium food retail outlets.

Module VII

Corporate houses in rural market place. Tata Kisan Kendra, Godrej's Aadhar, DSCL Hariyali, Mahindra's Subhlabh and ITC's Sagar Chaupal.

Module VIII

Supply chain management and vertical coordination between Indian corporate and Indian farmer: Mahindra subh-labh services, Rallies Kisan Kendra, ITC e-Chaupal, and Kisan India.

Module IX

Retailing and FDI: Retailer's efficiency and competitiveness, employment opportunities, franchising, cash and carry wholesale operations and strategic license agreements.

Module X

Marketing Infrastructure: Post-harvest Handling and Packaging, Grading Facilities, Transportation, Storage, Cold Storage and Refrigerated Containers/Vans, Processing and Value Addition, Telecommunication, Market Yards and Sub-yards, Investment Requirements, Schemes for Encouraging Private Investment

Module XI

Role of Information Technology and telecommunication in marketing of agricultural commodities, Market research, Market information service, electronic auctions (e-bay), e-Chaupals, Agmarket & Domestic & Export market Intelligence Cell – Market extension, ICT.

Suggested Readings

Books

- Armstrong Gary and Philip Kotler (2012), 'Marketing: An Introduction', 11th ed. Prentice Hall, Upper Saddle River.
- Crawford (1997), 'Marketing and Agribusiness Texts', FAO.
- FAO (2009), 'Agribusiness Handbook: Food Retail'.
- Kotler, P and Keller, KL. (2008). 'Marketing Management'. 13th ed. Upper Saddle River, New Jersey: Prentice Hall.
- Peter J. Paul and Jerry Olson (2009), 'Consumer Behaviour and Marketing Strategy', 9th ed. McGraw-Hill, United States.

Articles

- Ahya, Chetan and Mihir Sheth (2006), 'The Retail Revolution-Part I- The Macro Story', Morgan Stanley Research Asia/Pacific, November 22, pp. 1-7.
- CAIT (2012), 'FDI in Multi-brand Retail in India, 10 Million New Jobs? Unexplained Answers'.
- NABARD (2011), 'Organized Agri-Food Retailing in India'.
- Padberg et al., (1997), 'Agro-food Marketing', CAB International.
- Roy, R.S. and Nupur Kapila (2009), 'The India Retail Story', India Retail Report 2009 by IMAGES F&R Research, New Delhi.
- Shah, Deepak (2009), 'Implications of Retail Revolution in India: A Macro Analysis', Indian Journal of Agricultural Economics, Vol. 64, No. 3, July-September, p. 511.

A-15: ACCOUNTANCY AND FINANCIAL STATEMENT ANALYSIS

Objectives: The course aims at providing basic understanding of various essential concepts of accountancy and preparation of accounting statements, introduction to accounting standards and IFRS framework of accounting.

Contes

Module I

Basic Principles

Financial Accounting & Accounting Standards- Accounting Equations □ Users of Accounting Statements, Importance □ Objectives and Principles □ Accounting Concepts and Conventions □ Principle of Double Entry Book

Keeping, Trends in Accounting principles, GAAP, IFRS, IAS

Module II

The Accounting Process

Preparation of Books of Original Records: Journals □ Subsidiary Book Problems on Cash Book and Petty Cash Book Ledgers & Trial Balance □ Classification of Capital and Revenue Expenses Final Accounts with Adjustments.

Module III

Preparation of Final Accounts/Statement

Sole traders with Basic Adjustments □ Preparation of Final Accounts / Statement of Companies (Both Horizontal & Vertical Form of Financial Statements) □ Brief Introduction to Partnership Account- Accounting for small, medium and large companies

Module IV

Statement of Changes in Funds

Funds Flow Statement □ Cash Flow Statement □ Problems with Basic Adjustment on FFS & CFS □ Statement of Changes in Working Capital □ Funds from Operations □ Paid Cost and Unpaid Costs □ Distinction Between Cash Profits and Book Profits □ Preparation and Analysis of Cash Flow Statement and Funds Flow Statement.

Module V

Depreciation & Inventory Valuation

Concepts & Methods of Depreciation □ Problems on Straight Line & WDV Methods □ Inventory □ Concepts & Methods □ Problems on LIFO, FIFO & Weighted Average □ Valuation of Fixed Assets- Current and Non-current assets and liabilities-□ Tangible v/s Intangible assets □ Depreciation of Fixed Assets and Methods of Depreciation □ Inventory Valuation: Methods of Inventory Valuation and Valuation Of Goodwill □ Methods of Valuation of Goodwill.

Module VI

Analysis of Companies' Annual Reports

Provisions of the Companies Act 1956 □ Provision Affecting Preparation □ Presentation & Analysis of Audit Reports & Directors' Reports.

Module VI

Financial Analysis of Financial Performance of a Firm

Different Tools □ Ratio Analysis □ Different Types of Ratio's □ Inter-Relation Between Ratio's □ Due-point Analysis □ Common Size Statement of Inter Firm and Intra Firm □ Internal Revenue Code-Interpretation of Financial Statements From Investor and Company Point of View □ Horizontal Analysis and Vertical Analysis of Company Financial Statements □ Liquidity, Leverage, Solvency and Profitability Ratios □ Du Pont Chart □ A Case Study on Ratio Analysis

Reading List:

- Ghosh, T.P., (2010), *Understanding IFRS*, Taxmann.
- D'Souza, Dolphy, (2009), *Indian Accounting Standards and GAAP In 2 Vol.*, Snow White Publications Pvt. Ltd.
- International Accounting Standards Board (2007), *International Financial Reporting Standards 2007 (including International Accounting Standards (IAS(tm)) and Interpretations as at 1 January 2007)*, LexisNexis, ISBN 1-4224-1813-8.

- *Case studies of IFRS implementation in Brazil, Germany, India, Jamaica, Kenya, Pakistan, South Africa and Turkey, United*
- Nations Intergovernmental Working Group on International Standards of Accounting and Reporting (ISAR). (Various years)
- Catty, James P. (2010), *Wiley Guide to Fair Value, Under IFRS [6]*, ISBN: 0470477083, John Wiley & Sons.

AE – A-13: ENVIRONMENTAL ECONOMICS

Objective: This course is meant to provide some insights into the application of economic theory in the design and implementation of public policy related to the management of environment issues and problems. The course finds roots in welfare economics, national income accounting, macroeconomic policies and trade and development. Modules incorporated in this paper are devoted to issues of environmental microeconomic theory and problems, market induced correctives, environmental valuation, natural resources accounting, optimal use of natural resources, sustainable development and environmental resource problems in India.

Module I

Introduction: The Economics, Ecology, and interdependence of the subjects – resource scarcity and the material balance – production and consumption – development vs. environment, and concept of sustainable development.

Module II

Economics of Environmental Valuation: User value – Hedonic valuation (Indirect Method/Revealed Preference) – Travel Cost Method – Nonuser value – Contingent valuation (Direct Methods / Stated Preference), Property rights – Coase theorem – collective action, economic instruments (charges, taxes, subsidies, and marketable permits).

Module III

Microeconomic Theory Market failure: Externalities – environmental public goods – asymmetric information – risk – uncertainty – problems of free – rider, and moral hazard – transaction costs. Environmental Kuznet's curve

Module IV

Sustainable Development and Natural Resource Accounting: Definition, approaches, and indicators of sustainable development – Environmentally corrected GDP.

Module V

Economics of Natural Resources: Basic concepts – Exhaustible resources (discount rate) – Renewable resources (economic and biological efficiency level) – Bio-diversity loss. Institutional Framework: Community participation and management of resources.

Module VI

Economics of Environment Laws:

Theory of externality, Cost benefit analysis, Pigouvian Approach and Coase Theory Approach, Environmental protection laws and Court decisions, Principles and doctrines evolved by Supreme Court for protection of Environment, Air Pollution, Water pollution, Sound pollution, Automobile and industrial pollution, civil and criminal liability for environmental protection, Evolution of

international environmental law and principles for environmental protection.

BASIC READING LIST

- Adrian Heyes & Nadkarni, M. V. (eds.) (2001), Poverty, Environment and Development, Studies of Four Countries and Pacific Region, UNESCO Principal Regional Office for Asia and Pacific, Bangkok, pp. 25-89
- Alexander Wood (eds.) (2000), The Root Cause of Bio-diversity Loss, Earthscan Publications Ltd., London
- Antweiler, Werner, Copeland, Brian R., and Taylor Scott M. (2001), Is Free Trade Good for the Environment? American Economic Review, 91(4) :877-908, September
- Baumol, W.J. and W.E. Oates (1988), The Theory of Environmental Policy, (2nd Edition), Cambridge University Press, Cambridge.
- Bromely, D.W. (Ed.) (1995), Handbook of Environmental Economics, Blackwell, London.
- Brookshire, D.S. et.al. (1982), "Valuing Public Goods; A Comparison of Survey and Hedonic Approaches", American Economic Review, 72, pp. 165-177
- Chopra, K. Kadekodi, G. K. & Murty, M. N. (1990), Participatory Development: An approach to the Management of Common Property Resources, Sage Publications, New Delhi
- Coase, R.H. (1960), "The Problem of Social Cost", Journal of Law and Economics, 3, pp. 1-44
- Copeland, Brian R., and Taylor Scott M. (1995), Trade and Transboundary Pollution, American Economic Review, 85(4): 216-737, September
- Cropper, M.L. (1992), "Environmental Economics: A Survey", The Journal of Economic Literature, 30(2), pp. 675-740
- Devarajan Shantayanam & Fisher, A.C. (1981), "Hotelling's Economics of Exhaustible Resources", Journal of Economic Literature, 19, pp.67-73
- Fisher, A.C. (1981), Resource and Environmental Economics, Cambridge University Press, Cambridge.
- Hanley, N., J. F. Shogern and B. White (1997), Environmental Economics in Theory and Practice, Macmillan.
- Hussen, A.M. (1999), Principles of Environmental Economics, Routledge, London.
- Jeroen, C.J.M. van den Bergh (1999), Handbook of Environmental and Resource Economics, Edward Elgar Publishing Ltd., U.K.
- Kolstad, C.D. (1999), Environmental Economics, Oxford University Press, New Delhi.
- McGrathland, A. M. & Oates W. E. (1985), "Marketable Permits for the Prevention of Environmental Deterioration", Journal of Environmental Economics and Management, 12(3), pp.207-228
- Ostrom, E. (1990), Governing the Commons: The Evaluation of Institutions for Collective Actions, Cambridge University Press, Cambridge
- Perman, R. Ma and J. McGilvary (1996), Natural Resource and Environmental Economics, Longman, London.
- Sankar, U. (Ed.) (2001), Environmental Economics, Oxford University Press, New Delhi.
- Tietenberg, T. (1994), Environmental Economics and Policy, Harper Collins, New York.
- Tutenlurg, Tom (2001), Environmental Economics and Policy
- Pearce, D.W. and R. Turner (1991), Economics of Natural Resource Use and Environment, John Hopkins University Press, Baltimore.

ADDITIONAL READING LIST

Module 1

- Becker, G.S. (1974), *Human Capital* (2nd Edition), National Bureau of Economic Research, New York.
- Crones, R. and T. Sandler (1989), *The Theory of Externalities and Public Goods*, Cambridge University Press, Cambridge.
- Market versus Non-market Allocation' in *Public Expenditure and Policy Analysis*, (Ed.), Haveman, R.H. and J. Margolis, Markham, Chicago.
- Sengupta, R.P. (2001), *Ecology and Economics: An Approach to Sustainable Development*, Oxford University Press, New Delhi.

Module 2

- Smith, V. Kerry (1996), *Estimating Economic Values for Nature: Methods for Non-market Valuation*, Edward Elgar, Cheltenham, U.K. Case Studies (India)
- Chopra, K. (1998), *Valuation of Bio-diversity within Protected Areas: Alternative Approaches and a Case Study*, Institute of Eco Growth, Delhi.
- Hadker, N. et al (1997), *Willing to Pay for Borivili National Park: Evidence form Contingent Valuation*, *Ecological Economics*, Vol. 21.

Module 3

- Dasgupta, P. S. and G.M. Heal (1985), *Economic Theory and Exhaustible Resources*, Cambridge University Press, Cambridge.
- Hanley, N. (1997), *Environmental Economics in Theory and Practice*, Macmillan, London.

Module 4

- Chopra, K. and K. Kadekodi (1999), *Operationalising Sustainable Development: Economic-Ecological Modelling for Developing Countries*, Sage, New Delhi.
- Dasgupta, P. S. and K. G. Maler (Ed.) (1997), *Environment and Emerging Devtpt Issues*, Cambridge University Press, Cambridge, Mass.
- ESCAP (1997), *Accounting and Valuation of Environment — A Primer for Developing Countries*, Vol I, United Nations, New York.
- Hoel, M. (1997), 'International Coordination of Environmental Policies' in *New Dimensions in the Economic Theory of Environment*, Carrao Carlo and Domenico Siniscalco (Eds.), Cambridge University Press, Cambridge.
- United Nations (1993) *Integrated Environmental and Economic Accounting*, United Nations, New York.

Module 5

- Baland, J.M. and J.P. Plateau (1994), *Halting Degradation of Natural Resources: Is There a Role for Rural Communities*, Oxford University Press, Oxford.
- Bhattacharya, R.N. (Ed.) (2001), *Environmental Economics: An Indian Perspective*, Oxford University Press, New Delhi.
- Chopra, K., G. K. Kadekodi and M. N. Murty (1990), *Participatory Development: An Approach to the Management of Common Property Resources*, SAGE, New Delhi.
- Chopra, K. and S.C. Gulati (2000), *Migration and the Management of Common Property Resources: A Study in Western India*, Sage, New Delhi.
- Kerr, J.M. et al (Eds.) (1997), *Natural Resource Economics: Theory and Applications in India*, Oxford and IBH Publication Co. Pvt. Ltd., New Delhi.
- Markandya, A. and J. Richardson (Eds.), *The Earth Scan Reader in Environmental Economics*, Earth Scan, London.
- Mehta, S., S. Mundle and U. Sankar (1995), *Controlling Pollution: Incentives and Regulation*, SAGE, New Delhi.
- Mitchell, R.C. and R.T. Carson (1993), *Using Surveys to Value Public Goods: Resources for the Future*, Washington, D.C.

- Murty, M. N., A. James and S. Misra (1999), *The Economics of Water Pollution in India*, Oxford University Press, New Delhi.
- Ostrom, E. (1990), *Governing the Commons : The Evolution of Institutions for Collective Actions*, Cambridge Univ Press, Cambridge

Case Studies (India)

- Chopra, K., G. K. Kadekodi and M. N. Murty (1990), *Participatory Development: An Approach to the Management of Common Property Resources*, SAGE, New Delhi.
- Markandya, A. and M.N. Murty (2000), *Cleaning up the Ganges: Cost-Benefit Analysis of Ganga Action Plan*, OUP, New Delhi.
- Mehata, S., S. Mundle and U. Sankar (1995), *Controlling Pollution: Incentives and Regulation*, SAGE, New Delhi.
- Murty, M. N., A. James and S. Misra (1999), *The Economics of Water Pollution in India*, Oxford University Press, New Delhi.

OTHER REFERENCES

- Agras, Jean and Duane Chapman (1999), *A Dynamic Approach to the Environmental Kuznets Curve*, *Ecological Economics*, 28(2) : 267-277, February
- Andreoni, James and Arik Levinson (2001), *The Simple Analytics of the Environmental Kuznets Curve*. *Journal of Public Economics*, 80(2),269-286, May
- Beckerman, W., ‘Sustainable development: is it a useful concept?’ 3(3): 191-209
- Costanza, R., Farber, S., Castaneda, B.E. and Grasso, M. (2001), ‘Green national accounting goals and methods’, in C. J. Cleveland, D.I. Stern and R. Costanza (eds.), Cheltenham, UK, Edward Elgar, 262-282
- Costanza, R., Daly, H.E., Goodland, R. and Norgaard, R. B. (1997), Boca Raton, Fla: St. Lucie Press, *International Society for Ecological Economics*, Chapter 3, 6
- Diamond, Peter A. and Jerry A. Hausman (1994), *Is Some Number Better Than No Number?* *Journal of Economic Perspectives*: 8(4) : 45-64, Autumn
- Ekins, P. (2002), *Sustainable development in: E.A. Page and J. Proops (eds)*, Cheltenham : Edward Elgar, pp. 144-172
- England, R. W. (2001), ‘Alternatives to gross domestic product : a critical survey’, in C.J. Cleveland, D.I Stern and R. Costanza (eds.) Cheltenham, U.K., Edward Elgar, 218-237
- Gowdy, John and McDaniel Cart (1999), ‘The physicaldestruction of Nauru : an example of weak sustainability’, 75, 333-38
- Grossman, Gene M. and Alan B. Krueger (1995), *Quarterly Journal of Economics*, 110(2): 353-377, May
- Hanemann, Michael W. (1994), *Valuing the Environment Through Contingent Valuation*. *Journal of Economic Perspectives*: 8(14): 19-43, Autumn
- Harbaugh, William, T. Levinson, Arik, and David Molloy Wilson (2002), *Re-examining the Empirical Evidence for an Environmental Kuznets Curve*. *Review of Economics and Statistics*, 84(3) : 541-551, August
- O’Connor, M. and Spash, C (1999), Cheltenham, U.K. Northampton, MA: E. Elgar Pub.
- Portney, Paul R. (1994), *The Contingent Valuation Debate. Why Economists should care?* *Journal of Economic Perspectives* 8(4): 8-17, Autumn

AE-A-21: ADVANCED ECONOMETRICS

Module I

Seemingly Unrelated Regression (SURE): Estimation by OLS, GLS and FGLS, testing for structural change and aggregation bias, case of autoregressive errors

Module II

Time Series:

2.1. **Introduction to Time Series Analysis:** The nature of time Series data; Examples of time Series Regression Models: Static Models: Finite Distributed Lag Models. Trends and Seasonality: Characterizing Trending Time Series, Using Trending Variables in Regression Analysis. A Detrending Interpretation of Regressions with a Time Trend, Computing R-Squared when the Dependent Variable Is Trending Seasonality

2.2 **Stationary Time-Series Models:** Stochastic Difference Equation Models, ARMA Models, Stationarity, Stationarity Restrictions for an ARMA(p, q) Model, The Autocorrelation Function, The Partial Autocorrelation Function, Sample Autocorrelations of Stationary Series, Box–Jenkins Model Selection, Properties of Forecasts, A Model of the Interest Rate Spread, Seasonality, Parameter Instability and Structural Change.

2.3 **Models with Trend:** Deterministic and Stochastic Trends, Removing the Trend, Unit Roots and Regression Residuals, The Monte Carlo Method, Dickey–Fuller Tests , Examples of the ADF Test, Extensions of the Dickey- Fuller Test, Structural Change, Power and the Deterministic Regressors, Panel Unit Root Tests, Trends and Univariate Decompositions

2.4 **Multiequation Time-Series Models:** Intervention Analysis, Transfer Function Models, Estimating a Transfer Function, Limits to Structural Multivariate Estimation, Introduction to VAR Analysis, Estimation and Identification, The Impulse Response Function, Testing Hypothesis, Structural VARs. , The Blanchard and Quah Decomposition.

2.5 **Cointegration and Error-correction Models:** Linear Combinations of Integrated Variables, Cointegration and Common Trends, Cointegration and Error Correction, Testing for Cointegration -The Engle–Granger Methodology, Illustrating the Engle-Granger Methodology, Cointegration and Purchasing-Power Parity, Characteristic Roots, Rank, and Cointegration, Hypothesis Testing, Illustrating the Johansen Methodology, Error-Correction and ADL Tests, Comparing the Three Methods

2.6 **Modeling Volatility:** Economic Time Series- The Stylized Facts, ARCH Processes, ARCH and GARCH Estimates of Inflation, A GARCH Model of Risk, the ARCH-M Model, Additional Properties of GARCH Processes, and Maximum Likelihood Estimation of GARCH Models.

Module III

Panel Data

3.1 **Introduction Panel Data:** Some Examples, Benefits and Limitations

3.2 **The One-way Error Component Regression Model:** Introduction, The Fixed Effects Model, The Random Effects Model, Fixed vs Random, Maximum Likelihood Estimation, Prediction

3.3. **The Two-way Error Component Regression Model:** Introduction, The Fixed Effects Model, Testing for Fixed Effects, The Random Effects Model, Maximum Likelihood Estimation, Prediction

3.4 **Test of Hypotheses with Panel Data:** Tests for Poolability of the Data, Tests for Individual and Time Effects: The Breusch–Pagan Test, King and Wu, Honda and the Standardized Lagrange Multiplier Tests, Gourieroux, Holly and Monfort Test, Conditional LM Tests, ANOVA F and the Likelihood Ratio Tests; Hausman’s Specification Test

3.5 Introduction to Dynamic Panel Data Models

Note: *Students will be taught software packages for performing econometric applications. Computer exercises will be given to students.*

Basic Reading List

- Baltagi, B.H. (2008), **Econometric Analysis of Panel Data**, 4th Edition, Wiley
- Wooldridge, J. (2002), Econometric analysis of Cross Section and Panel Data
- Wooldridge, J. (2009), Introductory **Econometrics**, 4th Edition, South-Western College Pub.
- Hsiao, C. (2003), Analysis of Panel Data, Cambridge University Press, Cambridge.
- Walter Enders (2008), Applied Econometrics Time series, Wiley India
- Hamilton, JD (1994) Time Series Analysis. Princeton University Press, New Jersey.
- Judge, G.G., Griffiths, W.E., Hill, R.C., Lutkepohl, H. and Lee, T.C. (1985), The Theory and Practice of Econometrics, 2nd edition John Wiley and Sons, New York.
- Johnston, J. and Dinardo, D., Econometric Methods, McGraw Hill, New York.
- Lutkepohl, Helmut (2007) New Introduction to Multiple Time Series Analysis, Springer, New York
- Rao, P., Miller, R. L. (1971), Applied Econometrics, Wadsworth Publishing Company.

AE-A-16: SUPPLY CHAIN IN AGRICULTURE

Objective: The course introduces students to the concepts and processes of agricultural supply chain management.

Module I

Supply Chain: Changing Business Environment; SCM: Present Need; Conceptual Model of Supply Chain Management; Evolution of SCM; SCM Approach; Traditional Agri. Supply Chain Management Approach; Modern Supply Chain Management Approach; Elements in SCM.

Module II

Demand Management in Supply Chain: Types of Demand, Demand Planning and Forecasting; Operations Management in Supply Chain, Basic Principles of Manufacturing Management.

Module III

Procurement Management in Agricultural Supply chain: Purchasing Cycle, Types of Purchases,

Contract/Corporate Farming, Classification of Purchases Goods or Services, Traditional Inventory Management, Material Requirements Planning, Just in Time (JIT), Vendor Managed Inventory (VMI).

Module IV

Logistics Management: History and Evolution of Logistics; Elements of Logistics; Management; Distribution Management, Distribution Strategies; Pool Distribution; Transportation Management; Fleet Management; Service Innovation; Warehousing; Packaging for Logistics, Third-Party Logistics (TPL/3PL); GPS Technology.

Module 5

Concept of Information Technology: IT Application in SCM; Advanced Planning and Scheduling; SCM in Electronic Business; Role of Knowledge in SCM; Performance Measurement and Controls in Agri. Supply Chain Management - Benchmarking: introduction, concept and forms of Benchmarking.

Suggested Readings:

- Altekar R.V. (2006), *Supply Chain Management: Concepts and Cases*, Prentice Hall of India.
- Balakrishnan, R. (2008), *Supply Chain Management for Indian Agriculture: A Blueprint for Agriculture-led Prosperity*, CAB (ISBN 978-81-905989-0-3),
- Monczka R, R. Trent and R. Handfield (2002) 1, *Purchasing and Supply Chain Management*. Thomson Asia.
- Van Weele A J. (2000), *Purchasing and Supply Chain Management Analysis, Planning and Practice*. Vikas Publ. House.

AE-A-22: BUSINESS ANALYTICS

Description:

This Learning path enables participants to gain three critical skills: data analysis and problem solving framework, the ability to perform descriptive analytics and visualization, and the expertise to build and implement the most widely used data science and machine learning algorithms in use today, with R

Module I

The need for Analytics and Understanding Analytics

1. Decision Making – Heuristics and Biases
2. The need for analytics
3. Impact of analytics on business
4. Being analytically competitive
5. The difference between analytics and BI
6. Introduction to the business Analytics model
7. Types of analytics
8. Models and algorithms in Analytics
9. The Analytics Methodology

Module II

Tool and Tech Landscape

1. A review of technology used in data storage, data processing, and data science
2. Popular tools used in Data Science and when to use each

Module III

Descriptive Analytics with excel and Tableau

1. An introduction to Tableau
2. Using descriptive statistics in analysis and reporting
3. Advanced reporting with Tableau

Module IV

R programming

1. An introduction to R
2. Importing and exporting data in R
3. Data Manipulation with R
4. Advanced Data Manipulation with R
5. Data Visualization with R

Module V

Data Preprocessing

1. Data Exploration and Assessment for Data Science
2. Identifying and dealing with noise in Data
3. Preparing data for Data Science Modeling

Model 6: Predictive Models in R

1. Linear Regression Models and their applications
2. Logistics Regression Models and Their applications
3. Time Series Forecasting

Model VII

ML Models in R

1. Clustering Algorithms and application
2. Decision Tree Algorithms and applications
3. Random Forest Algorithms and applications

Model VII

Storytelling with Data

1. Communicating data science results
2. Effective presentation skills
3. Using Data visualizations for storytelling

AE-B-02: AGRICULTURAL COOPERATIVES

Objective: The objective of this course is to acquaint the students with agricultural cooperatives in India.

Module I

Philosophical and Theoretical Foundations of Co-operatives: Introduction, Early Stages of the Cooperative Movement, Statistical Importance of Co-operatives in Today's World, Theoretical Foundations of Co-operatives. Co-operatives in a Global Perspective

Module II

Genesis and Coverage of Agricultural Co-operatives in India: Progress of Co-operatives, Coverage of Agricultural Cooperatives

Module III

Strengths and Weaknesses of Co-operatives as an Organizational Format, Threats Arising from Generic Constraints of Agricultural Co-operatives, Continuing Relevance and Future Potential of Co-operatives in Indian Agriculture, Lessons for the Indian Farmer

Module IV

Co-operative Legislation in India: The Co-operative Laws before and after independence, Opportunities Lost and Gained for the Indian Farmer

Module V

Review of Issues on Business Development Planning: Relevance of Business Development Planning to Co-operatives, A Conceptual Framework of Business Development Planning, A Review of Past Experiences, Sugar and Dairy Cooperatives, half-hearted Recent Efforts at Popularising BDP Systems

Module VI

Co-operative Marketing in India: Review of Experience and Issues: An Overview, Problems and Performance in Marketing Co-operatives, Co-operative Marketing - Case Studies, AMUL versus MARKFED – A Comparison, Issues and Approach for the Future

Module VII

Overview of agribusiness Credit Co-operatives, Cooperative Marketing, Dairy cooperative; Financing Agribusiness Cooperative.

Suggested Readings:

- Akmat, J. S. (1978), *New Dimensions of Cooperative Management*, Himalaya Publ. House.
- Ansari, A. A. (1990), *Cooperative Management Patterns*. Anmol Publ.
- Datta, Samar (204), *Co-operatives in Agriculture*, State of the Indian Farmer A Millennium Study Volume 24, Academic Foundation, New Delhi.
- Sah A. K. (1984), *Professional Management for the Cooperatives*. Vikas Publ. House.

AE-B-03: AGRO-PROCESSING INDUSTRIES

Objective: The objective of this course is to acquaint the students with structure and features of Agro processing industries in India , different food processing techniques, their management and various issues relating to food safety.

Contents

Module 1

Case for Agro processing Industries-importance, farm -industry linkages, International perspective, Agro industries and developing countries-trends, impact of agro industrialization on markets and environment, challenges faced, various other issues.

Module 2

Agro-Processing Industries in India: importance, growth and present status; different types of agro-industries- food grains, oilseeds, dairy, livestock, horticulture, cotton, sugarcane etc., structure of organized and unorganised sector industries, cooperative processing industries, challenges before various industries

Module 3

India- Importance of Food Processing Industries, Women empowerment and food processing, Drivers of growth - supply, domestic demand, international demand, trade and policy support, emerging segments in food processing Problems and Opportunities

Module 4

Organization in food industry; Introduction to operations of food industry; Deteriorative factors and hazards during processing, storage, handling and distribution.

Module 5

Basic principles and methods of food processing and food preservation by manipulation of parameters and factors and application of energy, radiations, chemicals and biotechnological agents; Food packaging materials and methods, labelling of food products.

Module 6

Risk management and costs in food processing industries; Laws and regulations related to food industry and food production and marketing; Safety and Quality of food products, various regulatory and private standards and quality management systems, Prevention of Food Adulteration Act, AGMARK, ISO, BIS, GMP, HACCP and food safety, licenses required, auditing and certification, Sanitary and Phytosanitary measures under Agreement on Agriculture under WTO

Suggested Readings

- 1.Early R. (1995), Guide to Quality Management Systems for Food Industries. Blackie.
- 2.Jelen P. (1985), Introduction to Food Processing. Reston Publishing.
- 3.Potly, V.H. and M. J. Mulky (1993), Food Processing. Oxford & IBH.
- 4.Journal of Indian Food Industries, various issues
- 5.Beverages and Food World, various issues
- 6.Journal of Food Marketing and Technology, various issues.
- 7.Da Silva Carlos A. et al (Edt) , Agro-Industries for Development, The Food and Agriculture Organization of the United Nations and The United Nations Industrial Development Organization by arrangement with CAB International.
8. Export-Import Bank of India, International Trade in Processed Foods: An Indian Perspective, Working Paper No. 61, March 2017.
9. India Brand Equity Foundation- IBEF, Food Processing, January 2017, <https://www.ibef.org/download/Food-Processing-January-2017.pdf>
10. GoI, Annual Reports, Ministry of Food Processing Industries, <http://www.mofpi.nic.in/>

- 11.----- (2017), Annual Survey of Industries- 2016-2017, Summary Results for Factory Sector, Ministry of Statistics and Programme, Implementation.
- 12.------(2017), Economic Characteristics Non-Agricultural Unincorporated Enterprises of India, NSS 73rd ROUND, July 2015 - June 2016), Report no 582, NSSO, Ministry of Statistics and Programme Implementation.
- 13.India Food Processing Ingredients, Report- IN8032, USDA Foreign Agricultural Service, Global Agricultural Information Network, March 2018.[http://agriexchange.apeda.gov.in/marketreport/Reports/Food Processing Ingredients New Deelhi India 3-29-2018.pdf](http://agriexchange.apeda.gov.in/marketreport/Reports/Food_Processing_Ingredients_New_Deelhi_India_3-29-2018.pdf)
14. Gandhi Vasant (2014), Growth and Transformation of the Agribusiness Sector: Drivers, Models and Challenges, Indian Journal. of Agricultural Economics, Vol.69, No.1, Jan.-March.

AE-B-04: ORGANIZATIONAL STRUCTURES IN AGRICULTURAL PRODUCTION

Objective: The course introduces students to the types and systems of farming, contract and organic farming.

Module I

Types of Farming in India: Small and Large Scale Farming, Extensive and Intensive Farming, Specialized-Mixed-Diversified Farming, Irrigated and Dry Farming, Crop and Livestock farming, Subsistence and Commercial farming

Module II

Definition and concepts of farming system, Systems of Farming: Family, Cooperative, Institutional, Capitalistic, State, Personal, Collective and Corporate Farming

Module III

Contract Farming: Definition, Variation of Contracts, Models of Contract Farming, Advantages and Disadvantages of Contract farming, Risk/Constraints in Contract farming, Government Support

Module IV

Global Experience, Scope and Progress of Contract Farming in India, various Farm Firm Linkages, Contract farming and Small Farmer, Features of Contracts, Asset Specificity and Contract farming

Module V

Farming Contract Prevalent in India, Legal Framework/Support Available, Economics of Contract farming, Effect on Income and Employment, Food Processing and Contract farming

Module VI

Organic Agriculture Worldwide, Global Market for Organic Products, Status of Organic Farming in India, Transition to Organic Agriculture-Issues and Challenges, Major Research and Development Issues in Organic Farming, Political Economy of Contract Farming in India

Module VII

Promotion of Organic Farming in India, Cropping pattern and Inputs in Organic Agriculture, Cropwise Organic Farming in India, Economics of Organic Farming, Quality and Certification

Module VIII

Marketing Strategies, Marketing infrastructure, Organic Agro-Processing, Problems in Marketing of Organic Produce-Dimension of Domestic Organic Market, Extension and Credit availability, Organic Agribusiness Potential in India, India Competence and Strength

Module IX

Sustainable agriculture: Introduction, definition, goal and current concepts, factors affecting ecological balance and ameliorative measures; Land degradation and conservators of natural resources, Irrigation problems, waste lands and their development

Module X

Farm Income Augmentation and Stabilization

Suggested Readings

- FAO (2001), *Contract Farming: Partnership for Growth*, A Guide by Charles Eaton and Andrew W. Shepherd, FAO 145, FAO, Rome.
- GOI (2001), *Report of the Working Group on Organic and Biodynamic Farming for Tenth Five Year Plan*, Planning Commission, GOI, N. Delhi
- NAAS (2005), *Organic Farming: Approaches and Possibilities in the Context of Indian Agriculture*, NCAP, New Delhi.
- Narayan, S. (2005), *Organic Farming In India: Relevance, Problems and Constraints*, NABARD Occasional Paper 38.
- Singh, Sukhpal (2005), *Political Economy of Contract Farming in India*, CAB
- Singh, Gurdev and S.R. Asokan (2005), *Contract Farming in India- Text and Cases*, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

AE-B-05: COMMODITIES AND COMMODITY DERIVATIVES

Objective: To apprise students regarding various aspects of Commodities and Commodity Derivatives

Module I

Introduction to Commodity Derivatives, Derivatives: Definitions, Functions, Participants, Exchange Traded and OTC Commodity derivatives, Commodities and Instruments available for trading, Difference between financial and commodity derivatives, Evolution of Global and Domestic commodity derivatives trading

Module II

Fundamentals of Commodity Spot and Derivatives Markets, Importance of commodity spot trading, Forwards and futures contracts and use of derivatives for hedging for forward pricing, Pricing Commodity Derivatives, Equilibrium relationship between spot and futures prices, Price discovery in futures market

Module III

Trading, Clearing and Settlement, Commodity exchanges and their role, Trading in commodity exchanges, Clearing and settlement, Risk management, Regulatory framework

Module IV

Agricultural Commodity Markets, Commodities and instruments available for trading, Price drivers, Technical analysis in agricultural commodity markets

Module V

Gold and Base Metals, The market for gold, Base metal production, Price drivers, Application of derivatives

Module VI

Crude Oil and Natural Gas, The demand for and supply of crude oil, Crude oil price and price drivers, Trading crude oil and refined products, The demand and supply of natural gas, Measuring natural gas, Natural gas price drivers

Module VII

Coal, Emissions and Weather, The basis of coal, The price of coal and coal derivatives, The science of global warming and its consequences, Price drives for emission markets and emission derivatives, Weather and commodity markets

Module VIII

Risk Management in Commodity Markets, Physical and financial risk, Measuring risk premium and correlation risk, Institutional and market risk management

Module IX

Commodities within an Investment Portfolio, Commodities as a new asset class, Benefits of commodities within a portfolio, Methods of investing in commodities, Commodity indexes & commodity related funds

Suggested Readings:

- Helyette Geman (2005) *Commodities and Commodity Derivatives: Modeling and Pricing for Agriculturals, Metals and Energy*. John Wiley & Sons Ltd.
- Helyette Geman (2009), “Risk Management in Commodity Markets: From Shipping to Agriculturals and Energy”, J. Wiley & Sons Ltd.
- Neil C. Schofield (2007), “Commodity Derivatives: Markets and Applications”, John Wiley & Sons Ltd.
- R.W. Kolb and Overdahl J (2007), *Futures, Options, and Swaps*, 5th Edition, Blackwell Publishers, Malden MA

AE–B-08: INDUSTRIAL ORGANIZATION IN AGRIBUSINESS

Objectives: The course will analyze marketing and other strategic decisions by agribusiness sector actors in a market environment characterized by, product differentiation, imperfect information, and market power. The course uses microeconomic theory, including game theory, industrial organization, and agency theory to analyze the behaviour of integrated processing firms, contractual relations between processors and food retailers, behaviour of food retailers, and contractual relations between food retailers and customers.

Module I

Integrated food processing firm, concentration, vertical and horizontal mergers, strategic

competition, oligopoly models, industry applications

Module II

Managing links between processors and food retailers, private labels, product line choice, new product offerings, variety, slotting fees

Module III

Food retailing firms, price competition, multiple products with interdependent demands (e.g., sales, countercyclical pricing, loss leaders), Non-price competition (variety, service, location)

Module IV

Marketing retail products: Managing the link between retailers and consumers, Customer and Brand Loyalty, coupons, modelling and estimating consumer demand

Module V

Law and Economics of Corporate Law

Economic issues in competition policy, Sources of market power, Market Structure, Market Power and Definition, Monopoly and Regulation of Monopoly, Anticompetitive Agreements & Cartels, Abuse of Dominance, Merger Control, Case studies of US Antitrust law, EU competition Law and Indian Competition policy

Reading list

Module 1

- Bhuyna, S. “An Empirical Evaluation of Factors Determining Vertical Integration in U.S. Food Manufacturing Industries.” *Agribusiness* 21 (2005): 429-445.
- Muth, M.K., and M.K. Wohlgenant. “Measuring the Degree of Oligopsony Power in the Beef Packing Industry in the Absence of Marketing Input Quantity Data.” *Journal of Agricultural and Resource Economics* 24 (1999): 299-312.
- Sexton, R.J. “Industrialization and Consolidation in the U.S. Food Section: Implications for Competition and Welfare.” *American Journal of Agricultural Economics* 85 (2000): 1087-1104.
- Shy, Oz. “Chapter 8 – Concentration, Mergers, and Entry Barriers” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 97-132.
- Carter, C.A., and D. MacLaren. “Price or Quantity Competition? Oligopolistic Structures in International Commodity Markets.” *Review of International Economics* 5 (1997): 373-385.
- Kadiyali, V., N.J. Vilcassim, and P.K. Chintagunta. “Empirical Analysis of Competitive Product Line Pricing Decisions: Lead, Follow, or Move Together?” *The Journal of Business* 69 (1996): 459-487.
- Putsis, W.P., and R. Dhar. “The Many Faces of Competition.” *Marketing Letters* 9 (1998): 269-284.
- Shy, Oz. “Chapter 6 – Markets for Homogeneous Products” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 97-132.
- Reimer, J.J. “Market Conduct in the U.S. RTE Cereal Industry.” *Journal of Agricultural and Food Industrial Organization* 2 (2004): Article 9
- Vickner, S.S., and S.P. Davies. “Estimating Strategic Price Response in a Product Differentiated Oligopoly: The Case of a Domestic Canned Fruit Industry.” *Agribusiness* 16 (2000): 125-140.
- Dhar, T., J-P. Chavas, R.W. Cotterill, and B.W. Gould. “An Econometric Analysis of Brand-Level Strategic Pricing between Coca-Cola Company and PepsiCo.” *Journal of Economics*

and Management Strategy 14 (2005): 905-431.

Module 2

- Putsis, W.P. “An Empirical Study on the Effect of Brand Proliferation on Private Label – National Brand Pricing Behavior.” *Review of Industrial Organization* 12 (1997): 355-371.
- Bontemps, C., V. Orozco, V. Requillart, and A. Trevisiol. “Price Effects of Private Label Development.” *Journal of Agricultural and Food Industrial Organization* 3 (2005): Article 3.
- Sayman, S., S.J. Hoch, and J.S. Raju. “Positioning of Store Brands.” *Marketing Science* 21 (2002): 378-397.
- Shy, Oz. “Chapter 5 – The Monopoly” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 97-132. (And Chapter 8 above.)
- Draganska, M., and D.C. Jain. “Product-Line Length as a Competitive Tool.” *Journal of Economics & Management Strategy* 14 (2005): 1-28.
- Roder, C., R. Herrmann, and J.M. Connor. “Determinants of New Product Introductions in the U.S. Food Industry: A Panel-Model Approach.” *Applied Economics Letters* 7 (2000): 743-748.
- Hausman, J.A., and G.K. Leonard. “The Competitive Effects of a New Product Introduction: A Case Study.” *Journal of Industrial Economics* 50 (2002): 237-263.
- Shy, Oz. “Chapter 7 – Markets for Differentiated Products” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 97-132.
- Sullivan, M.W. Slotting Allowances and the Market for New Products. *Journal of Law and Econ.* 40 (1997): 461-493.
- Rao, A.R., and H. Mahi. The Price of Launching a New Product: Empirical Evidence on Factors Affecting the Relative Magnitude of Slotting Fees. *Marketing Sci.* 22 (2003): 246-268.
- Desiraju, R. New Product Introductions, Slotting Allowances, and Retailer Discretion. *J. of Retailing* 77 (2001): 335-358.

Module 3

- Hosken, D. and D. Reiffen. “Multiproduct Retailers and the Sale Phenomenon.” *Agribusiness* 17 (2001):115–137
- Chevalier, J.A., A.K. Kashyap, and P.E. Rossi. “Why Don’t Prices Rise during Periods of Peak Demand? Evidence from Scanner Data.” *American Economic Review* 93 (2003): 15-37
- Richards, T.J., and P.M. Patterson. “Sales Promotion and Cooperative Retail Pricing Strategies.” *Review of Industrial Organization* (2005): 391-413
- Shy, Oz. “Chapter 13 – Pricing Tactics” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 97-132.
- Rhee, H., and D.R. Bell. “The inter-store mobility of supermarket shoppers.” *Journal of Retailing* 78 (2002): 225–237.
- Smith, H. “Store Characteristics in Retail Oligopoly.” *Rand Journal of Economics* 37 (2006): 416-430.
- Kalnins, A. “Hamburger Prices and Spatial Econometrics.” *Journal of Economics & Management Strategy* 12 (2003): 591–616.

Module 4

- Shum, M.. “Does Advertising Overcome Brand Loyalty? Evidence from the Breakfast-Cereals Market.” *Journal of Economics & Management Strategy* 13 (2004): 241-272
- Huang, R., J.M. Perloff, and S.B. Villa-Boas. “Effects of Sales on Brand Loyalty.” *Journal*

- of Agricultural and Food Industrial Organization 4 (2006): Article 5
- Lal, R., and D.E. Bell. “The Impact of Frequent Shopper Programs in Grocery Retailing.” *Quantitative Marketing and Economics* 1 (2003): 179-202
 - Shy, Oz. “Chapter 16 – Price Dispersion and Search Theory” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 97-132.
 - Gerstner, E., J.D. Hess, and D.M. Holthausen. “Price Discrimination Through a Distribution Channel: Theory and Evidence.” *American Economic Review* 84 (1994): 1437-1445.
 - Nevo, A., and C. Wofram. “Why Do Manufacturers Issue Coupons? An Empirical Analysis of Breakfast Cereals.” *Rand Journal of Economics* 33 (2002): 319-339.
 - Price, G.K., and J.M. Connor. “Modeling Coupon Values for Ready-To-Eat Breakfast Cereals.” *Agribusiness* 19 (2003): 223-243.
 - Shy, Oz. “Chapter 14 – Marketing Tactics” in *Industrial Organization: Theory and Applications*, MIT Press, 1995, 341-360.
 - Dreze, X., P. Nisol, and N.J. Vilcassim. “Do Promotions Increase Store Expenditures? A Descriptive Study of Household Shopping Behavior.” *Quantitative Marketing and Economics* 2 (2004): 58-92.
 - Wessells, C.R., and P. Wallstrom. “Modeling Demand Structure Using Scanner Data: Implications for Salmon Enhancement Policies.” *Agribusiness* 15 (1999): 449-461.
 - Yen, S.T., B-H. Lin, J.M. Harris, and N. Ballenger. “Demand for Differentiated Vegetables.” Selected Paper presented at the Annual Meeting of the American Agricultural Economics Association, Denver, Colorado, August 2004.

AE-B-09: FINANCIAL ECONOMICS

PREAMBLE

The course on Financial Economics is designed with 3 objectives in mind. Firstly, to familiarize students with the financial system and its components viz. financial instruments, financial institutions, financial markets and financial regulations. Secondly, to familiarize them with contemporary theories about the workings of different financial markets including money market, capital markets (bonds, stocks and hybrids) and derivative markets. Thirdly, familiarize them with the policy and regulatory framework within which financial institutions are required to function.

Module I

The demand for securities

The time dimension – Present value and duration – The calculation of yields on zero-coupon bonds – The term structure of interest rates – The risk dimension – Measurement of risk. Bivariate distributions–Conditional probabilities and expected values – Estimating the mean and variance of returns – Expected utility.

Module II

The supply of securities

Regulations governing supply of securities – General characteristics of securities – Government bonds – Index linked bonds – Corporate Securities – equities, bonds, convertible securities –Stock market operations – Money market funds – Claims on financial institutions.

Module III

Securities markets and their efficiency

Stock exchanges – The over the counter stock market – Operational efficiency and the Efficient Market Hypothesis (EMH) – The weak, semi-strong and the strong form of EMH.

Module IV

The determination of equity prices

Shares as claims on future dividends and on corporate net worth – The Capital Asset Pricing Model (CAPM) – The simplest form – Estimating betas- Implications for portfolio management – Validity of CAPM – Arbitrage Pricing theory. An alternative approach – Stock indices – Bombay Sensitive Index, Bombay National Index, Dow Jones Industrial Index(DJI), New York Stock exchange composite index(NYSE).

Module V

Security analysis and market efficiency

A modern view of security analysis – Macroeconomic developments and securities markets– Performance of securities markets – Industry growth, structure and firm specific factors- Uses and pitfalls of Price / Earnings ratios.

Module VI

Derivatives

Uses of Derivatives – Futures contracts and futures markets – Forward contracts – The origins of Futures trading – Basic elements and organization of futures contracts.

Module VII

Futures prices

Relation among spot and futures prices – financial futures – commodity futures – Closing out with futures – Hedgers, speculators, market equilibrium – The role of expectations – Futures and portfolio management.

Module VIII

Options and option pricing

Institutional aspects – Exchange traded stock options – The pay offs from buying and selling options – Boundary conditions on option prices – The put-call parity theorem – The Black-Scholes formula – Other option models.

Module IX

Swaps, Currency and Interest Rate Swaps

Vanilla Interest Rate Swaps – Swaptions – Other types of swaps – Currency, Equity and Commodity Swaps.

Module X

Regulation of financial markets

The ethics of finance and the economic function of financial markets – The purpose of regulation – levels of regulation – Securities Contract Regulation Act – Securities and Exchange Board of India (SEBI).

BASIC READING LIST

□ Chandra, Prasanna (2008), Investment Analysis and Portfolio Management, Tata McGraw Hills

- Shapiro, Alan C. (1999), 4th ed, Multinational Financial Management, International McGraw Hills, , Prentice-Hall India
- John Y. Campbell, Andrew W.Lo and A. Graig Mackinlay, (1997) The Econometrics of Financial Markets, Princeton University Press,

ADDITIONAL READING LIST Module 1, 2 & 3

- Houthakkar H.S. and Williamson P.J. (1996), The Economics of Financial Markets, Oxford University Press
- Jurgen Echberger and Ian R. Harper (1997), Financial Economics, Oxford University Press

Module 2:

- Ross Stephan A. and Rudolph W. Westerfield (1998), Fundamentals of Corporate Finance, McGraw Hill International ed.

Module 3 & 4:

- Fabozzi (2009), Bond Markets, 7th revised edition, Pearson Publications, USA, February 27

Module 3:

- Basu, S., (1977), “The Investment Performance of Common Stocks in Relation to their Price to Earnings Ratios: A Test of the Efficient Market Hypothesis”, Journal of Finance, 32, pp. 663-682
- Fama E.F. (1970), “Efficient Capital Markets: A Review of Theory and Empirical Work”, Journal of Finance, 25 May, pp. 383-417
- Fama, E.F. (1991), “Efficient Capital Markets II”, Journal of Finance, 46, (December), pp. 1575-617

Module 4:

- Graves, Affleck, Hegde, J.S. and Miller, R. (1994), “Trading Mechanisms and the Components of the Bid Ask Spread”, Journal of Finance, 44, pp. 1471-1488.
- Barsky, R. and Long, J. De (1993), “Why Does the Stock Market Fluctuate?”, Quarterly Journal of Economics, 108, pp. 291-311
- Black, F., Jensen, M.C. and Scholes, M.A. (1972), “The Capital Asset Pricing Model: Some Empirical Tests”, in M.C. Jensen (ed.), Studies in the Theory of Capital Markets, (Praeger, New York)
- Fama E.F. and J. MacBeth, (1973), “Risk, Return and Equilibrium Empirical Tests”, Journal of Political Economy, 71, pp. 607-636
- Ross, S.A. (1976), “Arbitrage Theory of Capital Asset Pricing”, Journal of Economic Theory, 13, pp. 341-60

Module 5:

- Markowitz, H. (1952), “Portfolio Selection,” Journal of Finance, 7: 77-91.
- Merton, R. (1980), “On Estimating the Expected Return on the Market: An Exploratory Investigation”, Journal of Financial Economics, 8, pp. 323-361.

Module 6, 7, 8, 9:

- King, David N. (1999), Financial Claims and Derivatives, International Thomson Business Press.
- Hull John (1998), Future Options and Other Derivative Securities, 3rd edition, Prentice Hall International / Hua Xia Publishing House.

Module 7:

- Dusak, K. (1973), “Futures Trading and Investor Returns: An Investigation of Commodity Market Risk Premiums”, Journal of

Political Economy, 87, (Nov./Dec.), 1387-1406

Module 8:

- Simon Benninga (1997), Financial Modeling, MIT Press
- Black, I. and Scholes, M. (1973), "The Pricing of Options and Corporate Liabilities", *Journal of Political Economy*, 81, 637-59

Module 10:

- Krishan, Bal and Narta, S. S. (1998), Security Markets in India, Kanishka Publishers, New Delhi

ADDITIONAL READING LIST:

- (Basel: BIS, April 1986) "Bank for International Settlements", *Recent Innovations in International Banking*.
- Benjamin M. Friedman H. Hahn (1990) "A formal treatment of the requirements for targets" is available in Benjamin M. Friedman, "Targets and Instruments of Monetary Policy," chapter 22 in Benjamin M. Friedman H. Hahn, *handbook of Monetary Economics*, (Amsterdam: North-Holland, 1990).
- Blume, Marshall, E. (June 1975) "Betas and Their Regression Tendencies," *Journal of Finance*, 30, 785-96.
- Cox. Ingersoll, and Ross, "A Re-examination of Traditional Hypothesis," pp. 774-775.
- Culbertson, J.M. (November 1957) "The Term Structure of Interest Rates," *Quarterly Journal of Economics*, pp. 489-504.
- Daniel C. Inro, Christine X. Jaing, Michael Y. Ho, Wayne Y. Lee (May/June 1999) "Mutual Fund Performance: Does Fund Size Matter?" *Financial Analysis Journal*, pp. 74-87.
- Edward S. O'Neal (September/October 1999) "Mutual Fund Share Classes and Broker Incentives," *Financial Analysis Journal*, pp. 76-87.
- Eugene F. Fama (1976) "Forward Rates as Predictors of Future Spot Rates," *Journal of Financial Economics*, 3, no.4, pp. 361-377.
- Fama (December 1991) "Efficient Capital Markets II," *Journal of Finance*, 46, 1575-615.
- Fama (December 1998) "Value Growth: The International Evidence," *Journal of Finance*, 53, 1975-99.
- Fama, Eugene, F. (May 1970) "Efficient Capital Market: A Review of Theory and Empirical Work," *Journal of Finance*, 25, 383-417.
- Fisher Black and Myron Scholes (May-June 1973) "The Pricing of Corporate Liabilities," *Journal of Political Economy*, pp. 637-659.
- George, J. Benston (March 1973) "Required Disclosure and the Stock Market: An Evaluation of the Security Exchange Act of 1934," *American Economic Review*, pp. 132-155.
- Harry K. Markowitz, (March 1952) "Portfolio Selection," *Journal of Finance*, pp. 71-91 and *Portfolio Selection: Efficient Diversification of Investments* (New York: John Wiley & Sons, Inc., 1959).
- Irving Fisher (1930) "*The Theory of Interest Rates*" (New York; Macmillan, 1930)
- John C. Cox, Stephen A. Ross, and Mark Rubinstein (September 1979) "Option Pricing: A Simplified Approach," *Journal of*

Financial Economics, pp. 229-263.

- Jonathan Ingersoll, Jr., and Stephen Ross (September 1981) These formulations are summarized by Jonathan Ingersoll, Jr., and Stephen Ross. "A Re-examination of Traditional Hypothesis About the Term Structure of Interest Rates," *Journal of Finance* (September 1981), pp. 769-799.
- Keynes, J.M. (1936) "*The General Theory of Employment, Interest and Money*" (New York: Harcourt, Brace & World, 1936)
- Lucas Papademos and Franco Modigliani (1990) "The Supply of Money and the Control of National Income," chapter 10 in Benjamin M. Friedman and Frank H. Hahn (eds.) *Handbook of Monetary Economics* (Amsterdam; North-Holland, Elsevier, 1990), pp. 428-430.
- Lutz, F. (1940-41) "The Structure of Interest Rates," *Quarterly Journal of Economics*, pp. 36-63.
- Marshall E. Blume (April 1970) "Portfolio Theory: A Step Toward Its Practical Application," *Journal of Business*, pp. 152-173.
- Marshall E. Blume and Irwin Friend (March 1973) "A New Look at the Capital Asset Pricing Model," *Journal of Finance* (March 1973), pp. 19-33; and Eugene F. Fama and James D. MacBeth, "Risk, Return and Equilibrium: Empirical Tests," Working Paper No. 7237, University of Chicago, Graduate School of Business, August 1972.
- Merton, H. Miller (December 1986) "Financial Innovation: The Last Twenty Years and the Next," *Journal of Financial and Quantitative Analysis*, pp. 459-471.
- Merton H. Miller and Myron S. Scholes (1972) "Rates of Returns in Relation to Risk: A Reexamination of Recent Findings," and Fischer Black, Michael C. Jensen, and Myron S. Scholes, "The Capital Assets Pricing Model: Some Empirical Evidence," in Michel C. Jensen (ed.), *Studies in the Theory of Capital Markets* (New York: Praeger Books, 1971)
- Modigliani, Franco, and Miller, M.H. (June 1958) "The Cost of Capital, Corporation Finance and the Theory of Investment," *American Economic Review*, 48, 261-97.
- Richard J. Rendleman and Brit J. Bartter (December 1979) "Two State Option Pricing," *Journal of Finance*, pp. 1093-1110.
- Richard Roll (March 1997) "A Critique of the Asset Pricing Theory: Part I. On the Past and Potential Testability of the Theory," *Journal of Financial Economics*, pp. 139-176.
- Stephen A. Ross (Dec 1976) "The Arbitrage Theory of Capital Assets Pricing," *Journal of Economic Theory*, pp. 343-362.
- Stephen, A. Ross (Jul 1989) "Institutional Markets, Financial Marketing, and Financial Innovation," *Journal of Finance*, p.541.
- Stephen A. Ross (March 1980) "Options and Efficiency," *Quarterly Journal of Economics* (February 1976), pp. 75-89; and Fred Arditti and Kose John, "Spanning the State Space with Options," *Journal of Financial and Quantitative Analysis*, pp. 1-9.
- William F. Sharpe (September 1964) "Capital Assets Prices: A Theory of Market Equilibrium Under Conditions of Risk," *Journal of Finance*, pp. 425-442.
- William F. Sharpe (1981) *Investments*, (Englewood Cliffs, N.J.: Prentice Hall, 1981), Chapter 16

ADDITIONAL REFERENCES:

- All India Management Association, Global Trends in Finance: Opportunities for India, Excel Books, New Delhi, 1998.
- Damodaran, Aswath (1997), Corporate Finance, Theory and Practice, John Wiley and Sons, (Chap. 27, Option Pricing Theory).
- Babel David F., Andenas M. and Santomoro Anthony (Eds.) (1998), Financial Markets, Instruments and Institutions, Irwin/McGraw Hill, Singapore
- Huang, C. And Litzenberger, R., (1988). Foundations for Financial Economics, New York, North-Holland.
- Bingham N.H. and Kiesel Rudiger (1998), Risk-neutral Valuation: Pricing and Hedging of Financial Derivatives, 2nd edition, Springer-Verlag, London
- Pike, Richard and Neele, Bill (1998), Corporate Finance and Investment Decisions and Strategies, Prentice Hall of India
- Somanathan T.V. (1998), Derivatives
- Tushar Waghmare (ed.) (1998), Future of India's Stock Markets, Tata McGraw Hill, New Delhi

AE-B-10: ECONOMIC GROWTH AND DEVELOPMENT

Objective: The course is about the fundamental models used to analyze theoretical and empirical issues in economic growth and development. The main objective of the course is to familiarize students with the problem of development in underdeveloped and developing economies. The focus of the course is to: (i) discuss the major theoretical developments in areas of Growth economics and policy discourse; (ii) analyze the economic problems of developing countries, especially problems related to slow growth, high poverty rates, high income inequality, etc.; (iii) discuss strategies for attaining sustainable growth, reducing poverty, income inequality and use of theory and empirical analysis to address issues in these areas.

Module I

Growth:

The long and medium run: Harrod-Domar Model - the Solow growth model and its application to convergence of country growth rates

Neoclassical Growth theory: the micro foundations of growth- Ramsey model with infinitely lived agents- Application to household behavior and interaction with the government - Ricardian equivalence.

Endogenous growth theory: The AK model – Long run AK model – AK model with externalities

New Growth theory: Human capital, Externalities and ideas; endogenous technological progress and development

Module II

Development, Scope of Development Economics

Background and beginnings of 'Development Economics': post-war world economic order and end of formal colonialism; distinction between growth and development economics/studies.

Human Development and deprivation

The concept of development – Evolution of Measures of Economic Development, Human Development Index and its extensions, modifications, and other related measures: Human Poverty Index (HPA), Gender related Development Index (GDI), Gender Empowerment Measure (GEM) Associated problems of measurement; components; outcome indices and process indices.

Comparing Developing Economies

Economic performance/progress of developing countries over the recent past in reference to India, China, Africa and Latin America.

Module III

Major themes/perspectives of post-war ‘high development theory’ (late 1940s to 1970s)

Vicious circle of poverty; big push, balanced and unbalanced growth, dual-economy models – broad policy implications (Lewis, Ranis-Fei, Jorgenson models and limitations) – Rural-urban migration and urban unemployment (Harriss-Todaro model and extensions), Rural-urban wage-gap (Labour turnover model and wage- efficiency model – their extensions and limitations) – Political Economy of development and underdevelopment; dependency school and its critique

Module IV

Economics of Institutions

Evolution of Institution and their role in an economy: existing views: political organization and freedom: Role of financial institutions in economic development: Theory (Acemoglu and Zilibotti model), evidence; Decentralization of Institutions

New Institutional Economics

Market failures, government failures, role and emergence of institutions, role of state in economic development

Module V

Capital, Inequality and Growth

Income, capital and growth in the long run

The dynamics of capital accumulation: private vs. public capital and the great transformation

Inequality in the long- run: labour income vs capital ownership

BASIC READING LIST

- Bardhan, P. and C. Udry (1999), *Development Microeconomics*, Oxford University Press.
- Basu, K. (2003), *Analytical Development Economics: The Less Developed Economy Revisited*, The MIT Press.
- Meier, G. and J. Rauch (2004), *Leading Issues in Economic Development*, 7th edition, Oxford University Press.
- Ray, D. (1998), *Development Economics*, Princeton University Press.
- Thirlwall, A.P. (2006), *Growth and Development*, 8th edition, Palgrave Macmillan.

ADDITIONAL READING LIST Module I:

- Alkire, S. (2002), *Valuing Freedom: Sen’s Capability Approach*, New Delhi: OUP.
- Bagchi, A. (1982), *The political economy of underdevelopment*, Cambridge University Press.
- Bardhan, P. and C. Udry (eds) (2000), 1st edition, *Readings in Development Economics*, The MIT Press.
- Meier, G. and J. Rauch (2005), 8 edition, *Leading Issues in Economic Development*,. Oxford University Press, USA.
- Meier, G. (2001), ‘The Old Generation of Development Economics and the New’, In: G. Meier and J. Stiglitz (eds), *Frontiers of Development Economics*, World Bank.

- Mozaffar, Q. (1996), 'Capabilities, Well-being and Human Development: A survey', *Journal of Development Studies*, 33:143-162.
- Mynt, Hla (1987), 'The neo-classical resurgence in development economics: its strength and limitations', in G.M. Meier (ed) (1987), *Pioneers in Development*, Second Series, World Bank.
- Nussbaum, M. (1995), 'Human Capabilities, Female Human Beings', In: Nussbaum, M. and J. Glover (eds): *Women, Culture and Development: A study of human capabilities*, Delhi: OUP.
- Rao, V.K.R.V. (1963), 'Investment, Income and Multiplier in an underdeveloped economy', In: Agarwala, A.N. and S. Singh (eds): *Economics of Underdevelopment*, Delhi: OUP.
- Ray, D. (1998), *Development Economics*, Princeton University Press.
- Sen, Amartya (1983), 'Development: Which way now?', *Economic Journal*, reprinted in: Sen: *Values, Resources and Development*. Vol. 93(372), pages 742-62,
- Sen, Amartya (August 15, 2000), *Development as Freedom*. Anchor.
- Sen, Amartya (1988), 'The concept of development', In: H. Chenery and T.N. Srinivasan (eds): *Handbook of Development Economics Vol 1*: North-Holland.
- World Development Reports
- World Bank 1993
- World Bank 1998
- China Human Development Report 1999: Transition and the State
- Human Development Reports

Module 2:

- Baran, P. (1957), *The political economy of growth*, Monthly Review Press. Pp. 308.
- Bardhan, P. (1988), 'Alternative approaches to development economics' Oxford University Press, New Delhi,
- Chenery and Srinivasan (eds) 1995. *Handbook of Development Economics, Vol. 1*, Elsevier
- Bardhan, P. and C. Udry (1999), *Development Microeconomics*, oxford University press.
- Basu, K. (2003), *Analytical Development Economics: The Less Developed Economy Revisited*, The MIT Press.
- Booth, D. (1995), 'Marxism and Development Sociology: Interpreting the Impasse', In: Corbridge, *Development Studies*, London: Edward Arnold.
- Frank, G. (1984), 'The development of underdevelopment' in *The Political Economy of Development and Underdevelopment*, ed. Charles K. Wilber. New York: Random House. 1984. Pp. 100
- Hayami, Y. (1997), *Development Economics: From the Poverty to the Wealth of Nations*, Oxford: Clarendon Press.
- Jorgenson, D. (1978), 'Surplus Agricultural Labour and the Development of a Dual Economy', In: Singh, S.P (ed), *Underdevelopment to Developing Economies*, oxford University press Delhi.
- Kay, Geoffrey (1975), *Development and underdevelopment: a Marxist analysis*. London: The Macmillan Press Ltd.
- Krugman, P. (1993), 'Toward a counter-counterrevolution in Development Theory', *Proceedings of the World Bank Annual Conference on Development Economics 1992*, Washington DC: World Bank.
- Little, IMD (1982) *Economic Development: Theory, Policy and International Relations*, New York: Basic Books; New York: McGraw- Hill.

- Palma, G. (1978), 'Dependency: a formal theory of underdevelopment or a methodology for the analysis of concrete situations of underdevelopment', *World Development*, Vol. 6, pp. 881-924, Pergamon Press Ltd.,
- Ranis, G. and J.C.H. Fei (1961), 'A theory of economic development', *American economic review*, LI- 4 September, pp 533-565
- Ray, D. (2009), *Development Economics*, Princeton University Press.
- Thirlwall, AP (2006), 8th Edition, *Growth and Development*, Palgrave Macmillan.

Module III:

- Bardhan, P. (1989), 'The New Institutional Economics and Development Theory', *World Development*, Vol.17 (9), pp.1389-1395.
- Bardhan, P. (2001), 'The nature of institutional impediments to economic development' In: Kahkonen, S. and M. Olson (eds): *A New Institutional Approach to Economic Development*, New Delhi: Vistaar Publications.
- Bardhan, P. (2000), 'Understanding underdevelopment: Challenges for Institutional Economics from the point of view of poor countries', *Journal of Institutional and Theoretical Economics*, Vol.135, pp. 216-235.
- Bowles. S. *Microeconomics: Behavior, Institutions and Evolution*, Princeton University Press, 2006.
- Dasgupta. P. *An Inquiry into Well Being and Destitution*, Clarendon Press 1993.
- Dasgupta, P. *Human wellbeing and Natural Environment*, Oxford University Press, 2002.
- Stiglitz, J. (1989), 'Markets, Market Failures, and Development', *American Economic Review*, Vol.79, pp.197-203.
- Hayami, Y. (1997), *Development Economics: From the Poverty to the Wealth of Nations*, Oxford: Clarendon Press.

Module IV:

- Maddison. A. *World economy in the 20th century*,
- Piketty. T. *Capital in the Twenty-First Century, Editions du Seuil,, Belknap Press, 2014*
- Pomeranz K, *The Great Divergence: China, Europe and the Making of the Modern World*, Princeton UP 2000

Module V:

- Aghion. P. and Howitt. P *Endogenous Growth Theory*. The MIT Press, 1997.
- Barro, Robert J. & Sala-i-Martin, Xavier (1995), *Economic Growth*, MacGrow Hill
- Bardhan, P. (1995), 'The Contributions to Endogenous Growth Theory to the Analysis of Development Problems' In: Behrman, J. and T.N. Srinivasan (ed): *Handbook of Development Economics Vol. IIIB* pp. 2983–2998 (New York: Elsevier).
- Krugman, P. (1993), 'Toward a counter-counterrevolution in Development Theory', *Proceedings of the World Bank Annual Conference on Development Economics 1992*, Washington DC: World Bank.
- Little, I.M.D. (1982), *Economic Development: Theory, Policy and International Relations*, New York: Basic Books.
- Mynt, Hla (1987), 'The neo-classical resurgence in development economics: its strength and limitations', in G.M. Meier (ed) (1987), *Pioneers in Development*, Second Series, World Bank.

- Ruttan, V.M. (1998), The new growth theory and development economics: a survey', *Journal of Development Studies*, 35(2), pp.1-26.

AE-B-11: POLITICAL ECONOMY OF INDIA'S DEVELOPMENT

PREAMBLE

This course is designed to offer a broad structure of major issues, debates, dilemmas, relating to the key trends, aspects, features, and the future of India's economy. The course, which is oriented in a political economy perspective, aims at imparting rich analytical insights and understanding about India's economy so that students can develop a strong sense of potential, possible, and useful areas for further research on India's development from political economy perspective

Module I

Evolution of the debate over the role and ramifications of the British colonial rule for India's economy

Module II

India's population/demography since Independence

Broad features, major trends, and regional dimensions

Module III

Planning in India up to 1991

Historical roots, evolution of plan models, limitations and lessons.

Module IV

Poverty and inequality in India

Diversity of measures and estimates; debates over the trends in the post-liberalisation period; poverty alleviation programmes and REGS and their efficacy; Self-Help Groups

Module V

Reforms/Liberalisation in India

Its political economy and impact, roles of market, state, and planning in India's development and its future

READING LIST

Module 1:

- Baran, P. (1957), *Political Economy of Growth*, Monthly Review Press.
- Morriss, D. Morriss (1969), *Indian Economy in the Nineteenth Century: A symposium*, Delhi: Indian Economic and Social History Association.
- Tomlinson, B.R. (1993), *Economy of Modern India 1860-1970*, New Cambridge History, Cambridge University Press.
- Roy, T. (2002), 'Economic History and Modern India: Redefining the Link', *Journal of - Economic Perspectives*, 16(3).
- Iyer, Lakshmi (2003), 'Long-term Impact of Colonial Rule: Evidence from India' (mimeo), Boston: MIT.
- Elingingsmith, D. and Williamson. J. (2004), 'India's de-industrialisation under British rule: New Ideas, New Evidence', Working Paper 10586, NBER, Cambridge, MA, USA.

Module 2:

- Dyson, T. R. Cassen, and L. Visaria (2004), *Twenty-First Century India*, Oxford: Oxford University Press.
- Davis, K. (1951), *Population of India and Pakistan*, Princeton.
- Dyson, T. and N. Crook (1984), *India's demography: Essays on contemporary population*, New Delhi: South Asian Publishers.

Module 3:

- Bhagwati, J. and S. Chakravarty (1969), 'Contributions to Indian Economic Analysis: A survey', *American Economic Review* 59 Supplement.
- Chakravarty, S. (1998), *Development Planning: The Indian Experience*, Oxford: OUP.
- Rudra, A. (1975), *Indian Plan Models*, Allied Publishers.
- Bhagwati, J. and P. Desai (1970), *India: Planning for Industrialisation*, OUP.
- Chakravarty, S. (1991), 'Development Planning: a reappraisal', *Cambridge Journal of Economics*, 15, pp. 5-20.
- Bardhan, P. (1998), *Political Economy of Development in India*, Oxford: Oxford University Press.

Module 4:

- Deaton, A. and V. Kozel (ed) (2005): *The great Indian poverty debate*, New Delhi: Macmillan.
- *India Development Reports*, Oxford University Press.
- Dubey, A. and R. Palmer-Jones (2005), 'Poverty in India since 1983: new poverty counts and robust poverty comparisons', *Artha Vijnana*
- Patnaik, Utsa (2005), 'Poverty and Neo-Liberalism', *Artha Vijnana*, Sept-December.
- Datt, G. and Ravallion, M. (1998), 'Farm Productivity and Rural Poverty in India', *Journal of Development Studies*, Vol. 34, No. 4, pp. 62-85.
- Ravallion, M, G. Datt, and S. Chaudhuri (1993), "Does Maharashtra Employment Guarantee Scheme Guarantee Employment?: Effects of the 1988 Wage Increase", *Economic Development and Cultural Change*, Vol. 41, No. 2, pp. 251-275.
- Sen, Abhijit (2002), 'Agriculture, Employment and Poverty: Recent Trends in Rural India' in: Ramachandran, V.K. and M. Swaminathan (eds): *Agrarian Studies: Essays on Agrarian Relations in Less-Developed Countries*, Kolkata: Tulika.

Module 5:

- Bardhan (1999), *Political Economy of Reforms in India*, New Delhi: NCAER.
- Basu, K. (ed) (2004), *India's Emerging Economy*, New Delhi: OUP.
- Dreze, J. and A. Sen (2003), *Development and Participation*, Delhi: OUP.
- Rakshit, M. (2004), 'Some macroeconomics of India's Reform Experience', in Basu
- Ahluwalia, M. (2002), 'State-level performance under economic reforms in India', In: Krueger, A. (ed) (2002), *Economic Policy Reforms and Indian Economy*, New Delhi: OUP.
- Chandrasekhar, C.P. and Jayati Ghosh, (2002), *Market that failed: Decade of neo-liberal reforms in India*, New Delhi: Left Word Books.
- Human Development Reports (various years).
- DeLong, Bradford (2001) (mimeo), 'India since Independence: An analytic growth narrative' <http://www.j-bradford-delong.net>

- Frankel, F. (2005), *India's Political Economy: a gradual revolution, 1947-2004*, Oxford University Press.

AE-B-07: LAW AND ECONOMICS - I

PREAMBLE:

The hallmark of the new interdisciplinary field of law and economics is the application of the theories and empirical methods of economics to the legal system across the board, for example, the common law fields such as torts, contracts, property, etc. In fact, Ronald Coase's paper on "The Problem of Social Cost" (1960), Guido Calabresi's article on "Some Thoughts on Risk Distribution and the New Law" (1961), and the work of Alchian on "Some Economics of Property Rights" (1961) had applied the methods of economics to some of the areas of law. One endeavor, which is gaining momentum and respectability, is the application of economic analysis to legal problems. The works of Richard Posner's book on *Economic Analysis of Law* (1972) widely contributed to the introduction of the Law and Economics course. In addition, the economic analysis of law has extended to non-market behaviour, particularly influenced by the theoretical framework of Gary Becker on the economic analysis of crime, racial discrimination, and marriage and divorce.

Economics provides a scientific theory to predict the effects of legal sanctions on behavior. In addition to a scientific theory of behaviour, economics provides a useful normative standard for evaluating law and policy. Laws are not just arcane technical arguments. They are instruments for achieving important social goals. In order to know the effects of laws on those goals, judges and other law-makers must have a method of evaluating effects of laws on important social values. Economics predicts the effects of policies on efficiency and distribution. Economic analysis often takes for granted such legal institutions as property and contract, which dramatically affect the economy. For instance, the absence of secure property and reliable contracts paralyses the economies of some nations in third world. Economist, besides substance, can learn techniques from lawyers. For example, economists frequently support the merits of voluntary exchange, but they do not have a detailed account of what it means for exchange to be voluntary. In case of contract law, it has a complex and well-articulated theory of violation. So the economists, to find their models closer to reality, will have to listen to what the law has to teach them.

The benefits of interdisciplinary study can be had only when lawyers learn economics and economists learn something about law. Module 1 is an introduction to the concepts of economics as well as law. Modules 2 to 6 will focus on economic analysis of property law, contract law, tort law, and criminal law. Finally, Module 7 will put emphasis on competition law. Overall the course deals with the explanation of established links between the subjects of Economics and Law, and development of efficient rules and regulations.

Module I

Introduction to Law and Economics

Economic Analysis of Law: An instruction Why do economists need to be concerned about law?
- Relationship between law and economics Economic Concepts and their relevance to Law Legal Concepts - The Common Law and the Civil Law Traditions, Introduction to Judicial System in India, Economic Approach to Legal Rules, Methodological Aspects of Legal Rules, Efficiency,

Justice and the inherent rationality of Private Law, Development of efficient Rules: Selected Cases

Module II

Economic Analysis of Contract Law

Introduction - Economic Theory of Contract - Perfect Contracts, Imperfect Contracts Economics of Remedies for Breach of Contract - Expected Damages, Opportunity Cost, Reliance Damages, Restitution, Specific Performance Differences between Contracts and Torts - The Foreseeability Rule in Contract Law, Pure Economic loss in Torts

Module III

Economic Analysis of Tort Law

Introduction, Economic Theory of Torts Law - Accident Costs and their minimization, Liability Rules, Negligence, Contributory Negligence, Comparative Negligence, Strict Liability, Economics of Tort Liability - Liability v. Regulation, Causation in Torts, Joint and Multiple Liability, Product Liability: Producers' Responsibility, and Consumer Protection through Consumer Courts, Environmental Liability, Immaterial Damages: Pain and Suffering

Module IV

Economic Analysis of Property Law

Introduction, An Economic Theory of Property, Economics of Property Law - Market strategies, Non-market strategies, Allocation of Property Rights - First come first served, Good faith purchase, Title to Land, Establishment of entitlements - Property Rule, Liability Rule, Inalienability Rule

Module V

The Coase Theorem

Externalities, Transaction Costs, Efficiency Hypothesis & Invariance Hypothesis.

Module VI

Economic Analysis of Criminal Law

Introduction, Principal Types of Crime, Optimal Criminal Sanctions: Economics of Crime and Punishment, Criminal Intent, The Defence of Necessity, The Economics of Organised Crime

Module VII

Economic Analysis of Competition Law

Introduction, Economic Theory of Competition Law - Workable Competition: Structure- Conduct- Performance, Competition as Dynamic Process, Reappraisal of Price Theory - Vertical Restraints: Vertical Price Fixing, Predatory Pricing: Lowering Prices, Control of Concentration: Collusion, Transaction Cost Approach, Theory of Contestable Markets, Applications to USA and EC Competition Policy

Module VIII

Competition Policy in India

Monopolies and Restrictive Trade Practices Act, and Competition Policy Report, Divestment of Public Sector Units and Deregulation, Regulated Competitions and Regulatory Authorities (Power, Telecom, Insurance, Banking)

BASIC READING LIST

- Posner Richard A – Economic Analysis of Law (7th Edition 2007)

- Cooter Robert & Ulen Thomas- Law and Economics (5th Edition 2007)
- Shavel Steven – Foundation of Economic Analysis of Law (2004)
- Harison Jeffrey L. & Theeuwes Jules - Law and Economics (2008)
- Polinsky Mitchell A.- An Introduction to Law and Economics (2003)
- Friedman David D. – Law’s Order (2000)
- Wittman Donald A – Economic Analysis of Law- Selected Reading (2003)
- Micali Thomas J.- The Economic Approach to Law (2009)
- Hirsch Werner Z. - Law and Economics (1999)
- Landes Williams, Posner Richard - The Economic Structure of Intellectual Property Laws (2003).
- Mercurio Nicholas, Medema Steven G. – Economics & the Law- Second Edition (2006)
- Baird, Gentner & Picker – Game Theory & the Law (1994)

Further Readings

- Bouckaert, B. & De Geest, G., Encyclopedia of Law and Economics
- Burrows, Paul & Veljanovski, G. C., *The Economic Approach to Law*, London, Butterworths, 1981.
- Calabresi, G. *The Costs of Accidents*, Yale University Press, 1970.
- Divan, S. & Rosencronz, A. *Environmental Law and Policy in India*, Oxford University Press, New Delhi, 2001, 2nd ed.
- Laffont, J. J. & Mass., Tirole, J. *A Theory of Incentives in Procurement and Regulation*, Cambridge/1993.
- Munzer, S. R., *A Theory of Property*, Cambridge University Press, 1990.
- Newman, P., Palgrave Dictionary of Economics and the Law.
- Schmidh, P., *An Economic Analysis of Crime and Justice*, Academic Press, Orlando, 1984.
- Williamson, O.E., *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, The Free Press, New York, 1985.

Articles:

- Alessi De Louis & Staaf, R. J., "Subjective Value in Contract Law", *Journal of International and Theoretical Economics*, Vol. 145, 1989, pp. 561- 577.
- Bebchuk, L. A. & Shavell, S., "Information and the Scope of liability for Breach of Contract: The Rule of Hadley vs. Baxendale", *Journal of Law, Economic Organisation*, 1991, pp. 284-312.
- Bradley, Fischel, " Efficient Capital Market Theory, the Market for Corporate Control and the Regulation of Cash Tender Offers" in: Posner/ Scott, *Economics of Corporation Law and Securities Regulation*, 1980, pp.211- 214.
- Calabresi G. & Malamed, A., "Property Rules, Liability Rules and Inalienability: One View of the Cathedral", 85, *Harvard Law Review*, 1972, p. 1089.
- Clark, J. M., "Toward a Concept of Workable Competition", *American Economic Review*, Vol. 30, 1940, pp. 241- 256. Coase, Ronald H., "The Problems of Social Cost", *The Journal of Law & Economics*, Vol. 3, No. 1, October 1960, pp. 1- 44.
- Coffee, J. C., "The Mandatory/ Enabling Balance in Corporate Law: An Essay on the Judicial Role", *Columbia Law Review*, Vol. 89, 1989, pp.1618-1691.
- Easterbrook, H. F. & Fischel, R. D., "Limited Liability and the Corporation", *University of Chicago Law Review*, Vol. 52, No.1, 1985, pp. 89- 117.
- Gary Becker, S. "Crime and Punishment: An Economic Approach", *Journal of Political Economy*, Vol. 76, 1968.
- Murali Prasad Panta, "The relative efficiency of Liability vs. Regulation in providing incentives to the tortfeasor" *Journal of the Indian Law Institute*, 41, (3&4), pp.405-428, 1999.

- Niskanen, W. A. "Bureaucrats and Politicians", *Journal of Law and Economics*, Vol. 18, 1975, pp. 617- 641.
- The design of Contract and Remedies for Breach, *The Quarterly Journal of Economics*, 99, 1984, pp.120.
- Wadhwa, D. C., "Guaranteeing Title to Land- A Preliminary Study", *Economic and Political Weekly*, October 14, 1989, pp. 2323- 2334.

Additional Reading List.

- Alchian, A. A. & "Production, Information Costs, and Economic Organisation", Demsetz, H. *American Economic Review*, Vol. 62, 1972, pp. 777- 795.
- Ayres, I. & Gertner, R., "Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules", *The Yale Law Journal*, 1989, pp. 101- 107.
- Calabresi, G. & Klevorick, K. A., "Four Tests for Liability in Torts", *Journal of Legal Studies*, Vol. 14, No. 3, December 1985, pp. 585- 627.
- Calfee, E. John & Craswell, R., "Market Failure and the Economic Case for a Mandatory Disclosure System", *Virginia Law Review*, Vol. 70, 1984, pp. 717- 753.
- Cooter, R., "Unity in Tort, Contract and Property: The Model of Precaution", *California Law Review*, 73(1), 1985, pp. 1-51.
- Demsetz, H., "When Does the Rule of Liability Matter?", *Journal of Legal Studies*, Vol. 1, No. 1, 1972, pp. 13- 28.
- Dixit, A., "The Role of Investment in Entry Deterrence", *Economic Journal*, Vol. 95, 1981, pp. 95- 106.
- "The Corporate Contract", *Columbia Law Review*, Vol. 89, 1989, pp. 1416- 1448.
- "Mandatory Disclosure and the Protection of Investors", *Virginia Law Review*, Vol. 70, 1984, pp. 717- 753.
- Fama, E. F. "Agency Problems and the Theory of the Firm", *Journal of Political Economy*, Vol. 88, 1980, pp. 288- 306.
- Friedman, D., "What is 'Fair Compensation' for Death or Injury?", *International Review of Law and Economics*, Vol. 2, No. 1, June 1982, pp. 81- 93.
- Hansmann, H., The Economics and Ethics of Markets for Human Organs, Yale Law School Working Paper, 1988.
- Jensen, M. C. & Meckling, W. H., "The Theory of Firm, Managerial Behaviour, Agency Costs, and Ownership Structure", *Journal of Financial Economics*, Vol. 3, 1976, pp. 305- 360.
- Kennedy, D. "Cost-Benefit Analysis of Entitlement Problems: A Critique of the Externality Concept", *Stanford Law Review*, 33, 1981, 387, 393-400.
- Machlup, F., "Characteristics and Types of Price Discrimination", in *Business Concentration and Price Policy*, Princeton University Press, Princeton, 1975, pp. 397-343.
- Nelson, P. "Advertising as Information", *Journal of Political Economy*, 1974, pp. 729-754.
- Peltzman, S., "Toward a More General Theory of Regulation", Vol. 19, 1976, pp. 211-240.
- Philips, L. & Moras, I. M., "The AKZO Decision: A Case of Predatory Pricing?", *Journal of Industrial Economics*, Vol. 41, 1993, pp. 315 - 321.
- Posner, A. Richard, "The Chicago School of Antitrust Analysis", *University of Pennsylvania Law Review*, Vol. 127, 1979, pp. 925- 952.
- "A Theory of Negligence", *Journal of Legal Studies*, Vol. 1, No. 1, 1972, pp. 29- 96.
- "An Economic Theory of the Criminal Law", *Columbia Law Review*, 1985.

- Rose-Akermann, S., "The Economic Analysis of Public Law", *European Journal of Law and Economics*, Vol. 1, 1994, pp. 53- 70.
- Sen Amartya, "The Possibility of Social Choice", *American Economic Review*, Vol.89 (3), 1999, pp. 349- 378.
- Shavell, Steven "A Model of the Optimal Use of Liability and Safety Regulation", *Rand Journal of Economics*, Vol. 15, No. 2, summer 1984, pp. 271- 280.
- "Strict Liability versus Negligence", *Journal of Legal Studies*, Vol. 9, No. 1, January 1980, pp. 1- 25.
- "An Analysis of Causation and the Scope of Liability in the Law of Torts", *Journal of Legal Studies*, Vol. 9, No. 3, June 1980, pp. 463- 516.
- "Criminal Law and the Optimal Use of Non-monetary Sanctions as a Deterrent, *Columbia Law Review*, Vol. 85, 1985.
- Stigler, J. George, "The Economics of Information", *Journal of Political Economy*, Vol. 69, No. 3, June 1961, pp. 213- 225.
- "The Theory of Economic Regulation", *Bell Journal of Economics and Management Science*, Vol. 2 (1), 1971, pp. 1- 21.
- Wittman, Donald, "Prior Regulation Versus Post Liability: The Choice Between Input and Output Monitoring", *Journal of Legal Studies*, Vol. 6, No. 1, pp. 193-211.
- Wright, W. Richard, "Causation in Tort Law", *California Law Review*, Vol. 73, No. 6, 1985, pp. 1735- 1828.

AE-B-08: LAW AND ECONOMICS - II

PREAMBLE

The primary aim of this enlargement is to develop greater applied research of legal system from economic view point and also build up the Indian experience based slant to the discipline of "Law and Economics". This course will provide not only deeper and more complex view of the subject, but also afford to take up meaningful researches in specific type of law that has immense economic bearing and implications. In particular, this course will be dealing with Indian Environmental Laws, land related legislations (including land acquisition, town- planning, SEZ) and corporate laws. This will enable more all-round perspective of the subject with rich empirical analysis. It also deals with vital areas of concern, namely economics of litigation, economic costs of "administering or not administering justice", question of back-log of cases, alternative procedures of administering justice. Similarly, the economic analysis of law making process, machinery and its efficiency will be a distinguishing feature of this course.

Module I

Economic Theory of Legislation: Legislative process, Delegated legislation, Precedents, Rules v/s Standard, Interpretation of Statute

Module II

Economic Analysis of Litigation: Rules of procedure, Rules of Evidence, The adversarial and inquisitorial trial mode, Alternative dispute resolution (ADR), Lok Adalat, Arbitration, Conciliation and mediation, Settlement, Appeals and error correction, Cost of litigation, Case load and Court Delay Crisis

Module III

Economic approach to Contract law in India: Contract Act, Specific Relief Act, Court approach to formation, validity, performance, interpretation, breach of contract and remedies for breach

Module IV

Economic Approach to Environmental Protection Laws: Environmental protection laws and Court decisions, Principles and doctrines evolved by Supreme Court for protection of Environment, Air pollution, Water pollution, Sound pollution, Automobile and industrial pollution, Climate change, Carbon credits – emerging market

Module V

Economic Approach to Issues in Land Acquisition Laws: Acquisition of land for public purpose, Acquisition for companies, Purpose and suitability, Market value and compensation

Module VI

Town Planning Laws: Allocation of land – for residential, industrial, commercial, agricultural purposes, Reservation of land for public purpose

Module VII

Special Economic Zones: Concept, Law, Policy and Problems

Module VIII

Intellectual Property Rights: Patents, Copyrights, Trademark, Trade secrets, Plant varieties & Farmers' Rights, Salient features of Indian Laws

Module IX

Economic Analysis of Corporate Law Issues: Formation of a company, share capital and fund raising, Separation of ownership and control, Majority power and minority protection, Corporate governance, Regulation of security markets and protection of investors and SEBI, Management of foreign investment and foreign exchange under FEMA

BASIC READING LIST

- Posner Richard A – Economic Analysis of Law (7th Edition 2007)
- Cooter Robert & Ulen Thomas- Law and Economics (5th Edition 2007)
- Shavel Steven – Foundation of Economic Analysis of Law (2004)
- Harison Jeffrey L. & Theeuwes Jules - Law and Economics (2008)
- Polinsky Mitchell A – An Introduction to Law and Economics (2003)
- Friedman David D. – Law's Order (2000)
- Wittman Donald A – Economic Analysis of Law- Selected Reading (2003)
- Micali Thomas J – The Economic Approach to Law (2009)
- Hirsch Werner Z - Law and Economics (1999)
- Landes Williams, Posner Richard. – The Economic Structure of Intellectual Property Laws (2003)
- S Shanthakumar's – Introduction to Environmental Law.

Module wise Reading List.

Module 1: Economic Theory of Legislation –

- Posner: chapters 19, 20.

- Shavel: chapter 25.
- Harison: chapter 24.
- A Model of Optimal Complexity of Legal Rules- Luis Kaplow, Journal Of Law, Economics & Organisation Vol. 11, No. 1 (April, 1995) Pages 150 to 163.
- Codification & Optimal Specification of Legal Rules- Vincy Fon, Francesco Parisi, George Mason University School of Law –Law and Economics working paper, Source of Law and Institutional Design of Law Making.
- Legal Rules and Standards – Hans Bernd Schafer. University of Hamburg, Germany. German Working Papers in Law and Economics Vol. 2002.

Module 2: Economic Analysis of Litigation –

- Posner: chapters 21, 22, 23.
- Cooter: chapter 10.
- Shavel: chapters 17, 18, 19.
- Harison: chapters 22, 23.
- Salient Features of Civil Procedure Code, 1908 and Indian Evidence Act, 1872.

Module 3: Economic approach to Contract law in India –

- Salient features of Contract Act & their analysis applying Law & Economic methodology.
- Specific Performance and Injunctions, Research of decided cases from Law Reporters & analysis of landmark cases decided by Supreme Court & High Courts with economic approach.

Module 4: Economic Approach to Environmental Protection Laws -

- Harison: chapter 4.

Module 8: Intellectual Property Rights –

- Landes and Posner: Patents chapters 11, 12.
- Copyrights: chapters 2 to 6
- Trademark: chapters 7 & 8
- Trade Secrets: chapter 13 and Shavel: chapter 7.

Module 9: Economic Analysis of Corporate Law Issues –

- Posner: chapters 14 & 15, Economic Analysis of Law selected reading Part V.

Additional Reading List.

- Posner Eric A – Chicago Lectures in Law and Economics (2000)
- Posner Richard A – Frontiers of Legal Theory (2001)
- Mulla – Indian Contract and Specific Relief Acts.
- Patent Act, 1970.
- Copyright Act, 1957.
- Trademark Act, 1999.
- P. Narayanan – Intellectual Property Law.
- Cornish & Llewelyn – Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights.
- Protection of Plant Varieties & Farmer’s Rights Act, 2001.
- Indian Companies Act- Salient Features.
- SEBI.

- FEMA.
- Land Acquisition Act.
- Maharashtra Town Planning Act.
- Special Economic Zones.
- Air (Prevention and Control of Pollution) Act, 1981.
- The Water (Prevention and Control of Pollution) Act, 1974.
- The Environment (Protection) Act, 1986 – Rules and Notifications.

AE-B-15: FARM MANAGEMENT ECONOMICS

Objective: To expose the students to the concepts, significance and uses of production economics in an agricultural context.

Module I

Nature, scope and significance of agricultural production economics, Agricultural Production processes, character and dimensions-spatial, temporal, Centrality of production functions, assumptions of production functions, commonly used forms – Properties, limitations, specification, estimation and interpretation of commonly used production functions.

Module II

Factors of production, classification, interdependence, and factor substitution - Determination of optimal levels of production and factor application, Optimal factor combination and least cost combination of production – Theory of product choice; selection of optimal product combination.

Module III

Cost functions and cost curves, components, and cost minimization – Duality theory – cost and production functions and its applications – Derivation of firm's input demand and output supply functions – Economies and diseconomies of scale.

Module IV

Technology in agricultural production, nature and effects and measurement - Measuring efficiency in agricultural production; technical, allocative and economic efficiencies, yield gap analysis – concepts, types, and measurement

Suggested Readings

Books

- Beattie, B.R. and C. R. Taylor (1985), The Economics of Production, John Wiley and Sons.
- Debertin, D. L., 2012, Agricultural Production Economics 2nd Edn, Macmillan Publishing Company, New Jersey, USA
- Dhondyal, S.P. "Farm Management -An Economic Analyst", Friends Publications. Meerut.
- Doll, J.P. and O. Frank (1978), Production Economics - Theory & Applications, John Wiley and Sons.
- Gardner, B.L. and G.C. Rausser (2001), Handbook of Agricultural Economics, Vol. I., Elsevier.
- Heady, E.O. (1968), Economics of Agricultural Production and Resource Use, Prentice- Hall.
- Sankayan, P.L. (1983), Introduction to Farm Management, Tata McGraw Hill.

Journals

- Aggarwal PK, Hebbar KB, Venugopalan MV, Rani S, Bala A, Biswal A and Wani SP. 2008. Quantification of Yield Gaps in Rain-fed Rice, Wheat, Cotton and Mustard in India. Global Theme on Agroecosystems Report no. 43. Patancheru 502 324, Andhra Pradesh, India: International Crops Research Institute for the Semi-Arid Tropics.
- Antle, J. M. and Aitah, A. S., 1983, Rice Technology, Farmer Rationality, and Agricultural Policy in Egypt, *American Journal of Agricultural Economics*, Vol. 65, No. 4, pp. 667-674
- Binswanger, H. P., 1974, A Cost Function Approach to the Measurement of Elasticities of Factor Demand and Elasticities of Substitution, *American Journal of Agricultural Economics*, Vol. 56, No. 2, pp. 377-386
- Bravo-Ureta, B. E., Pinheiro, A. E., 1997, Technical, Economic, and Allocative Efficiency in Peasant Farming: Evidence from the Dominican Republic, *The Developing Economies*, Vol.35, No. 1, pp.48–67
- Diewert, W. E., 1986, A Brief Survey of Duality Theory, University of British Columbia, Discussion Paper No. 86-13
- Farrell, M. J., 1957, The Measurement of Productive Efficiency, *Journal of the Royal Statistical Society. Series A (General)*, Vol. 120, No. 3 (1957), pp.253-290
- Fuwa, N., Edmonds, C., and Banik, P., 2007, Are small-scale rice farmers in eastern India really inefficient? Examining the effects of microtopography on technical efficiency estimates, Mimeo
- Jensen, C. L., 2002, Applications of Dual Theory in Fisheries: A Survey, *Marine Resource Economics*, Volume 17, pp. 309–334
- Lobell, D. B., Cassman, K. G., and Field, C. B., 2009, Crop Yield Gaps: Their Importance, Magnitudes, and Causes, NCESR Publications and Research. Paper 3.
- Klenow, P., Rodriguez-Clare, A., 1997, The Neoclassical Revival in Growth Economics: Has It Gone Too Far? In *NBER Macroeconomics Annual 1997*, Volume 12, Eds. Ben S. Bernanke and Julio Rotemberg, pp. 73 – 114, MIT Press
- Lau, L. J., 1972, Profit Functions of Technologies with Multiple Inputs and Outputs, *The Review of Economics and Statistics*, Vol. 54, No. 3, pp. 281-289
- Mankiw, N. G., Romer, D., and Weil, D. N., 1992, A Contribution to the Empirics of Economic Growth, *The Quarterly Journal of Economics*, Vol. 107, No. 2., pp. 407-437
- Mundlak, Y., 2001, Production and Supply, In *Handbook of Agricultural Economics*, Vol. 1, Eds. B. Gardner and G. Raussler, pp. 4-85, Elsevier Science B.V.
- Murillo-Zamorano, L. R., 2004, Economic Efficiency and Frontier Techniques, *Journal of Economic Surveys*, Vol. 18, No. 1, pp.33-77
- Picazo-Tadeo, A. J., Gomez-Limon, J. A., Reig-Martinez, E., 2010, Assessing farming eco-efficiency: A Data Envelopment Analysis approach, University de Valencia, Working Papers in Applied Economics WPAE-2010-04
- Rao, I. V. Y. R., 2012, Efficiency, Yield Gap and Constraints Analysis in Irrigated vis-a-vis Rainfed Sugarcane in North Coastal Zone of Andhra Pradesh, *Agricultural Economics Research Review*, Vol. 25, No.1, pp. 167-171
- Schreinemachers, P., 2005, The (Ir)relevance of the Crop Yield Gap Concept to Food Security in Developing Countries, with an Application of Multi Agent Modeling to Farming Systems in Uganda, Doctoral Dissertation, University of Bonn
- Thompson, H., 1997, Substitution Elasticities with Many Inputs, *Applied Mathematics Letters* Vol. 10, No. 3, pp. 123-127

- Timmer, C. P., Using a Probabilistic Frontier Production Function to Measure Technical Efficiency, Journal of Political Economy, Vol. 79, No. 4, pp. 776-794
- Zandstra, H. G., Price, E. C., Litsinger, J. A., and Morris, R. A., 1981, A Methodology for On-Farm Cropping Systems Research, The International Rice Research Institute, Manila, Philippines

AE-B-16: LINEAR ECONOMICS – I

Preamble

This course exposes students to developments in economic theory that have been inspired by the classical economists like Adam Smith and David Ricardo. The course begins by an exposition of the fallacies in the neo-classical theories of value and distribution and the limitations of standard general equilibrium theory. It then proceeds to cover input-output analysis and its empirical applications. Finally it covers alternatives to the neo-classical theories such including the Kaldor Pasinetti theory of income distribution and the Sraffa and Von Neumann models. Finally an alternative general equilibrium model is covered which determines prices, outputs, growth and income distribution.

Model I

Critique of Mashall's theory of supply based on the law of variable proportions. Critique of the marginal productivity them. Critiques of neo-classical production functions.

Module II

Economy as a Circular Flow. Static closed and open input output models. Hawkins-Simon conditions. Construction of Input-Output tables. Some applications. Dynamic input-output analysis.

Module III

The Von Neumann model. The Sraffa system and its properties Standard Commodity. Reduction to dated labour.

Module IV

Alternative theories of income distribution. The Kaldor Pasinetti model and its developments.

Module V

Closure for the Sraffa system. An alternative general equilibrium model and its empirical relevance.

Reading List:

Books:

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AE-B-17: LINEAR ECONOMICS – II

Preamble

This course is a continuation of Linear Economics – I whose purpose is to expose students to alternative theories of international trade and to monetary general equilibrium theory.

Module I

Critique, of the Heckscher-Ohlin-Samuelson trade model. 'Twoness' in trade theory. Non-viability of reduction of reality to 2 x 2 x 2 models. Critique of exchange rate theories: the demand supply diagram, the purchasing power parity theory, etc.

Module II

Frank D. Graham's theory of multicountry multicommodity trade. Extensions of the theory to tariffs, intercountry transfers and taxation. Trade in intermediate and final goods.

Module III

Money in General Equilibrium Theory: Patinkin's Findings of Arrow, Clower, Hahn, Ostroy. Keynesian Counter revolution. Essentiality of Money of in the real world.

Module IV

The Static Keynesian economy with money. Critique of IS-LM model. Possibility of unemployment equilibrium. Fiscal Policy. General ineffectiveness of monetary policy instruments including TARP, etc.

Module V

Dichotomy in the theories of the level and theories of the term structure of interest rates. Integrated model of the level and structure of spot interest rates.

Module VI

The dynamic Keynesian economy with money and several financial assets. General disequilibrium. Role of fiscal and monetary policies.

Reading List:

Books:

Graham, F. D. (1948), *The theory of International Values*; Princeton University Press

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