M.A. Economics Syllabus

Semester I (Compulsory Papers)

1. MICRO ECONOMICS

Unit 1: Theory of Consumer Behavior
- Demand Theory: Preference Based Approach under Choice under Certainty
- Revealed Preference Theory
- Welfare Analysis and Aggregate Demand
- Consumer Demand Theory: Choice Under Uncertainty

Unit 2: Theory of Firm Production and Cost
- Theory of Production
- Theory of Cost
- Profit Function
- Homogeneous, Homothetic, CES, Cobb Douglas, Translog Production Function

Unit 3: Market Structure
- Monopoly
- Monopolistic Competition
- Oligopoly – Price Competition
- Oligopoly – Quantity Competition

Reading List:
- Jehle & Renne, Advanced Microeconomic Theory, Pearson Education, India

2. MACRO ECONOMICS

Unit 1: Classical Approach, Keynesian Approach and Monetarism
- Determination of Price, Output and Employment
- Is-Lm Analysis-Aggregate Demand and Supply;
- Is-Lm and the Neoclassical Synthesis
- The Short Run and Long Run Phillips Curve;
- Expectation, Interest Rates and Inflation;
• The Trade-off Between Inflation and Unemployment,
• The Natural Rate of Unemployment (NRU),
• NRU and Full Employment,
• Macroeconomic Policy.

Unit 2: New Classical Macroeconomics and New Keynesianism:
• Main Features of the New Classical Macroeconomics,
• Efficient Market Hypothesis,
• Rational Expectation Model,
• Lucas Supply Function,
• Okun’s Law and Phillips Curve,
• Reh and its Critique,
• Keynesian Reappraisal School (Clower, Leijonhufvud and Malinvaud)

Unit 3: Imperfect Completion Approach
• Inflation and Employment- Non Accelerating Inflation Rate of Unemployment (NAIRU) and Natural Rate of Unemployment,
• Policy to Shift the Equilibrium Rate of Unemployment;
• Supply Side Fiscal and Income Policies,
• The Effect of Policy on Actual Employment,
• Crowding out Effect

Reading List:
• Wendy Carlin and David Soskice (1996)- Macroeconomics and The Wage Bargain; Oxford University Press
• Dornbush, R. and S. Fischer (2004) – Macroeconomics (9th Ed, Tata-Mcgraw Hill)).
• Jha, R. (1991)– Contemporary Macroeconomic Theory and Policy; (Wiley Eastern)
• Levacic, R and A. Rebman (1986) – Macroeconomics; (2nd Ed, Macmillan).
• Mankiw, N.G. and D. Romer (Eds.) (1991) – New Keynesian Economics; (Mit, Cambridge)
• Davidson, Paul (1994), Post Keynesian Macroeconomic Theory, Aldershot, Uk: Edward Elgar.
• Romer, David (1996), Advanced Macroeconomics, New York: Mcgraw-Hill.

3. STATISTICS

Unit 1: Probability and Probability Distributions
• Introduction O Probability–Classical,Empirical and Axiomatic Definitions; Random Experiments – Sample Space, Sigma Field and Probability Measure; Methods of
Counting - Permutations and Combinations; Rules of Probability – Addition, Multiplication, Conditional, Independence, Bayes’ Theorem; Numerical Examples.

- Random Variable – Discrete and Continuous; Probability Distribution - Pdf, Pmf and Cdf; Mathematical Expectation of Random Variables and Their Functions; Mean and Variance, Moment Generating Function and Characteristic Function; Numerical Examples.
- Discrete Distributions – Uniform, Bernoulli, Binomial, Poisson, Negative Binomial, Geometric; Hypergeometric, Multinomial; Use of Tables and Numerical Examples.
- Continuous Distributions – Uniform, Exponential, Normal, Lognormal, Gamma, Beta; Use of Tables and Numerical Examples.
- Multivariate Distributions – Bivariate Pdf and Cdf, Covariance, Marginal Distributions, Correlation, Partial and Multiple Correlation, Normal Bivariate, Multivariate Hypergeometric, Numerical Examples.

Unit 2: Sampling and Sampling Distributions
- Population Versus Sample, Iid Random Variables, Sampling Errors; Non-Random or Judgement Sampling, Methods of Random Sampling – Simple Random, Cluster, Stratified, Systematic; Sample Statistic – Sample Mean and Sample Variance; Standard Error.
- Z Chi-Square, T and F Distributions.
- Chebyshev’s Inequality, Law of Large Numbers, Central Limit Theorem, Sampling Distribution of Sample Mean, Sampling Distribution of Sample Variance.
- Sampling from Finite and Infinite Population, Finite Population Correction Factor, Sampling from Normal Population.

Unit 3: Methods of Statistical inference
- Introduction To Linear and Non-Linear Regression.
- Introduction To Nonparametric Methods, Principal Components and Factor Analysis, Analysis of Variance – One Way.
Reading List:
- R. L. Schaeffer (1990), Introduction to Probability and its Applications, PWS-KENT.
- F. Daly, D. J. Hand, M. C. Jones, A. D. Lunn, K. J. Mcconway (1995), Elements of Statistics, ADDISON-WESLEY.
- S. Ross (1976), A First Course in Probability, Macmillan.

4. MATHEMATICS FOR ECONOMICS

Unit 1: Functions and Calculus
- Types of Function; Differentiability; Rules of Differentiation; Derivative Versus Differential, Interpretation of Revenue, Cost, Demand, Supply Functions; Elasticities and Their Types; Higher-order Derivatives. Convex and Concave Functions. Multivariable Functions; Types of Production Functions, Homogeneous and Homothetic Functions.
- Partial Differentiation - Interpretation; Problems of Maxima and Minima in Single and Multivariable Functions; Unconstrained and Constrained Optimization; Simple Problems in Market Equilibrium; the Implicit Function Theorem; the Envelope Theorem (Unconstrained Case).
Integration; Rules of Integration; Taylor Series Formula, Application to Consumer's Surplus and Producer's Surplus; Growth Rates and Simple Properties of Time Path of Continuous Variables.

Unit 2: Matrix, Determinant and Differential Equations
- Vectors, Matrices, Determinants – Types and Properties. Solution of Simultaneous Equations Through inversion and Cramer's Rule
- Concept of Quadratic Forms – Eigen Roots and Eigen Vectors;
- Difference Equations – Solution of First order and Second order Difference Equations; Applications in Trade Cycle Models; Growth Models and Lagged Market Equilibrium Models.

Unit 3: Linear Programming, Game Theory and Input-Output Analysis
- Linear Programming – Formulation of a Linear Programming Problem, Solution of Linear Programming Through Graphical and Simplex Methods;
- Formulation of The Dual of a Linear Programme and its Interpretation; Shadow Prices and Their uses; Concept of Duality and Statement of Duality Theorems;
- Concept of A Game; Strategies – Simple and Mixed; Value of a Game; Saddle PoInt Solution; Simple Applications.
- Introduction to input-Output Analysis

Reading List:
- A.C. Chiang and Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, Mcgraw-Hill.


Yamane, Taro (1975), Mathematics for Economists, Prentice Hall of India, New Delhi.


Semester II (Compulsory Papers)

1. OPEN ECONOMY MACROECONOMICS

Unit 1: The Open Economy
- IS-LM Analysis in Open Economy
- LM Curve and the Balance of Trade: Zero Capital Mobility
- Implication of Capital Mobility for Macro Policy
- Mundell–Fleming Model
- Marshall–Lerner Condition
- Interest-Rate Differentials
- The Mundell–Fleming Model With a Changing Price Level

Unit 2: Inflation and Unemployment in the Open Economy
- Inflation and Unemployment in the open Economy
- Equilibrium Rates of Unemployment and Sustainable Unemployment
- Fiscal Expansion, Exchange Rate and inflation
- Supply Side and Demand side in the Open Economy
- Open Economy Equilibria

Unit 3: Further Open Economy Topics
- Floating Exchange Rates with Zero Capital Mobility
- Floating Exchange Rates and Perfect Capital Mobility: Exchange Rate Expectations
- Rational Exchange Rate Expectations; Dornbusch’s Overshooting Model
- Policy Interdependence and The World Equilibrium Rate of Unemployment

Reading List:

2. GENERAL EQUILIBRIUM & WELFARE ECONOMICS

Unit 1: Partial Equilibrium and General Equilibrium Analysis
• Pareto Optimality and Competitive Equilibria
• Partial Equilibrium Competitive Analysis
• The Fundamental Welfare Theorems in a Partial Equilibrium Context
• Pure Exchange: Edgeworth Box
• One consumer one producer Economy, 2x2 Production Model
• General versus Partial Equilibrium Theory
• Pareto Optimality with Social Optima
• Existence of Walrasian Equilibrium
• Core and Equilibria in Competitive Economies

Unit 2: Social Choice & Welfare
• The Nature of the Problem
• Social Preference Relation
• Social Choice and Arrows Impossibility Theorem
• Measurability, Comparability of Social Welfare Function –
• Rawlsian Social Welfare Functions, Utilitarian Social Welfare Function

Unit 3: Market Failure
• Public Goods
• Private Provision of Public Goods
• Comparision with Private Goods
• Free Rider Problem
• Demand Revelation
• A Simple Bilateral Externalities
• Multilateral Externalities
• Coase Theorem
• Private Information and Second Best Solutions
Readings List:

- Jehle & Renne, Advanced Microeconomic Theory, Pearson Education, India

Additional Readings:

- Mukherji, A. (1990), Walrasian and Non-Walrasian Equilibria

Semester III (Compulsory Papers)

1. INDIAN ECONOMIC POLICY

Unit 1: Development Concept and Issues in Governance

- Development Concept, State and Market, Institutions,
- Panchayati Raj Institutions – (PRIs) Non Government Organizations (NGOs),
- Sustainable Development,
- Governance
- Economic Reforms, Plans After Reforms

Unit 2: Sectoral Development and Policy Reforms

- Financing of Infrastructure Development, Education Sector,
- Migration,
- Poverty, Inequality and Growth
- Current Status of Agriculture Input Pricing, Subsidies and Land Reforms
- Industrial Policy and Development after 1991, Public Sector Under-Takings (PSUs), Privatization and Disinvestment,
Unit 3: Policy Approaches in Fiscal, Financial and External Sector

- Fiscal and Monetary Policy Approaches, Fiscal Federalism,
- Tax Reforms, Central Government Finances
- Foreign Trade Liberalization, Balance of Payments, Exchange Rate Policy,
- World Trade organization (WTO) and Indian Competition Policy.

Readings List:

2. DEVELOPMENT AND GROWTH THEORY

Unit 1: Economic of Growth and Development
• Evolution of Development of Economics;
• Concept, Measurement and Methodology;
• Historical Experiences –Gdp Per-Capita To Sustainable Development;
• Theories of Under-Development, Hirschman, Rostow, Lewis, Gunder Frank, Myrdal, Harris-Tadaro.

Unit 2: Economic Growth- Theory and Practice
• Historical Trends and Patterns;
• Growth Theories-- Classical, Neo-Classical, Keynesian, Post-Keynesian and New Growth-Theories;
• State, Market and Institutions;
• Role of Natural Resource-from Classical Economists To Thermodynamics School.

Unit 3: Poverty, Income Distribution and Justice
• Commodities, Characteristics, Functioning and Well- Being;
• Poverty- Concept, Measurement and incidence;
• Justice- Concept, Measurement and Approaches, (Lock To Sen);
• Food, Famine and Entitlements;
• Ecology- Economy and Poverty;
• Migration, Demographic Transition and Poverty.

Readings List:
• Aggarwal and Singh (1958): The Economics of Underdevelopment. Oxford University Press, New Delhi
Semester IV (Compulsory Papers)

1. INTERNATIONAL TRADE

Unit 1: Trade Theories 1 (Classical and Neo-Classical)
- Notion of Comparative Advantage (Static Versus Dynamic, Natural Versus Acquired, Theoretical Versus Empirical, Etc); Sources of Comparative Advantage (Technology, Resource Endowments, Demand Patterns, Economies of Scale, Government Policies Etc).
- Classical Model (Smith, Ricardo, and Haberler): Assumptions, Implications and Limitations; Extension of Ricardian Model: The Specific Factor Model.
- Standard Model: Analysis of Gains from Free Trade.
- Neo-Classical Model: Assumptions and Their Implications, Factor Substitution, One-to-One Relationship Between Factor-Prices, Commodity-Prices and Factor-Intensities; Heckscher-Ohlin, Stolper-Samuelson, Rybczynski and Factor Price Equalization Theorems; Empirical Evidence - the Leontief Paradox.

Unit 2: Trade Theories 2 (Modern Theories and Trade Policy)
- Intra-Industry Trade - Trade Under The Assumptions of Imperfect Competition and Economies of Scale, LInder’s Hypothesis; Dynamic Explanations (Change of Technologies) - Product-Cycle and Technology-Gap Models; Strategic Trade Policy (Management) - The Diamond Model (Michael Porter).
- Free Trade Versus Protection - Need For Protection, Tariff and Non-Tariff instruments of Trade Policy, Comparison of Tariff and Quota, Learner's Symmetry, Aggregate Measures of Protection, Nominal and Effective Rate of Protection.
• Effects of Tariff for Small and Large Countries (Partial Equilibrium Analysis), Effects of Tariff on Distribution of Gains from Trade (General Equilibrium Analysis), the Optimum Tariff, Metzler’s Paradox, Domestic Distortions, Trade Distorting Tariffs.

**Unit 3: India and the World Economy**

• Patterns (Structure) of India's Foreign Trade - Volume, Trends, Composition, Direction, etc., Export Performance and Export Competitiveness.
• India's Trade Policy: Review of Pre- and Post-Liberalization - Exim Policies, Export Promotion Policies, SEZs; Tariff Structure, RTAs and FTAs.
• India and WTO: Uruguay Round, Highlights of Ministerial Meetings: Singapore to Hong Kong, Concerns of Advanced Countries (Acs) and Developing Countries (Dcs), the Doha Development Agenda (DDA) and Concerns of India.
• Effects of Trade (Liberalization and Globalization) on Poverty, Inequality, Environment, Gender, Labour Standards, Technological Transfers etc.

**Readings List:**

• Caves, Jones and Frankel (1999), World Trade and Payments, 8th Edition, Addison-Wesley.

**Additional Readings:**

• Human Development Report 2005, Undp & Oxford, Chapter-4 (For Trade & Development)
• Bhagwati, J. (2002), Free Trade Today, Oxford University Press

Articles:

2. ENVIRONMENTAL ECONOMICS - I

Unit 1: Environmental Economics: Setting and Scope
• Meaning and Central Themes of Environmental Economics;
• Ecology- Environment and Economy Perspectives;
• Environment and Economy Linkages;
• Different Perspectives on Development - Limits to Growth, Thermodynamics School and Simon Julian’s Thesis of “Ultimate Resource”;
• Current State of Environment;
• Sustainable Development: Basic Issues, Concepts, Definitions Approaches, Rules and Indicators.

Unit 2: Eco-System and Natural Resources
• Definition, Functions of Ecosystem, Food-Chains, Food Webs and Ecological Succession, Net Productivity of an Eco-System;
• Geo-Ecological Cycles;
• Ecosystem Productivity and Relevance of Different KInds of Eco-Systems;
• Natural Resources and the Economy, Natural Resource Scarcity-a Historical Perspective, Classification of Natural Resources,
• Economics of Natural Resource Exploitation: Economic Analysis of Non-Renewable Renewable Natural Resources;

Unit 3: Environmental Capital—Theory, Practice and Evaluation
• Taxonomy of Individual and Public Choices,
• Externality, Market Failures and Missing Markets.
• Theory of Environmental Valuation, and Introduction to Methods of Valuation.
• Theory of Regulation and instruments of Regulation.
• Application of Cost and Benefits Analysis to Environmental Analysis.

Reading List:
• Bhattacharya, R.N. Edt. (2001), Environmental Economics - an Indian Perspective (Oup).
• Dasgupta, Kristrom and Maler (1997), Poverty, institutions and Environmental Resource Base, in J. Berhman & T. N. Srinivasan (Eds.), Handbook of Development Economics, Vol. IIIA.
• Sengupta, Ramprasad (2002): Ecology & Economics: an Approach to Sustainable Development, Oup, India (Ch. 5, 6, & 7).
• Shankar, U. (2001), Environmental Economics (Ed.) Oup, Last Chapter


World Commission on Environment & Development (Wced), 1987, Our Common Future, Oup.

Additional Readings:


Useful Links:

- Www.Evri.Ca
- Www.Wri.org
- Www.Rff.org
- Www.Undp.org
- Www.Worldwatch.org
- Www.EcologicalEconomics.org
Semester I (Optional Papers)

No Optional Papers

Semester II (Optional Papers)

1. ECONOMETRICS

Unit 1: Regression Analysis and Violations of Basic Assumptions
- Simple and General Linear Regression Model – Assumptions.
- Estimation (Through OLS Approach) and Properties of Estimators;
- Gauss-Markov Theorem;
- Maximum Likelihood Method,
- Multiple Linear Regression, Partial and Multiple Correlation Coefficient, Hypothesis Testing.
- Nature, Test, Consequence and Remedial Steps of Problems of Heteroscedasticity; Multicollinearity and Auto-Correlation; Problems of Speciation Error; Errors of Measurement.

Unit 2: Regression with Qualitative and Lagged Variables
- Dummy Variable Techniques.
- Testing Structural Stability of Regression Models; Comparing Two Regressions, Interaction Effects, Seasonal Analysis, Piecewise Linear Regression, Use of Dummy Variables. Regression With Dummy Dependent Variables; the LPM, Logit, Probit and Tobit Models.
- Autoregressive and Distributed Lag Models- Koyck Model, Partial Adjustment Model, Adaptive Expectations; Instrumental Variables; Problem of Auto-Correlation-Application; Almon Approach to Distributed - Lag Models.

Unit 3: Simultaneous Equation Models
- The Simultaneous Equation Bias and Inconsistency of OLS Estimators;
- The Identification Problem; Rules, of Identification-order and Rank Condition;
- Method of Estimating Simultaneous Equation System; Recursive Method and OLS; Indirect Least Square (ILS); 2SLS; 3SLS – Applications.

Reading List:
- J. Johnston, Econometrics Methods, Mcgraw Hill (Fourth Edition)
• Maddala, G.S: (Ed.) (1993), Econometric Methods and Application (2 Volumes)

2. PUBLIC ECONOMICS

Unit 1: Public Economics - Concept, Scope, Provisions of Public Goods
• Information Asymmetry. Externalities,
• Public Goods, Nonrival Consumption and Non Excludability,
• Demand and Supply of Public Goods,
• Local Public Goods and Decentralization Theorem,
• Problems of Preference Revealalement, Voting Rule, Characteristic of Majority Voting Rule, Rent Seeking

Unit 2: Taxes, Public Expenditure, Debt and Budgeting
• Public Expenditure, Structure and Growth, Wagner’s Law,
• Peacock– Hypothesis,
• Cost Benefit Analysis, Shadow Pricing, Discount Rate,
• Budgeting, Public Borrowing Public Debt, Budgeting and Zero Based
• Benefits and Ability to Pay Approaches to Taxes Allocative and Equity Aspects of Taxes,
• Deadweight Losses, Excess Burden, Trade off Between Equity and Efficiency.

Unit 3: Fiscal Federalism and Fiscal Reforms in India
• Fiscal Federalism. Assignment of Function, Constitutional
• Provisions, and Sources of Revenue.
• Resource Transfer from Centre to State
• Principles of Multi Unit Finance
• Direct and Indirect Taxes,
• Budget Deficit and Its Implications.

Reading List:
• Chelliah Raja J; Fiscal Policy in Under Developed Countries, George Allen and Unwin, London 1971
• Bhargava, R.K.; Some Aspects of Indian Public Finances, Uppal Publishing House, New Delhi – 1985

3. FINANCIAL ECONOMICS

Unit 1: Financial Markets
• Financial Markets and Financial Instruments
• Real Assets and Financial Assets
• Stocks, Rate of Interest, Exchange Rates
• Indian Financial Markets, Regulations and SEBI

Unit 2: Modern investment Theory
• Securities Markets Operational Efficiency and Efficient Market Hypothesis (Emh)
• Modern View of Security Analysis, Performance of Securities Market, Price / Earning Ratios.
• The Determinants of Equity Prices, Estimating Fair Value, Capital Asset Pricing Models (CAPM), Arbitrage Pricing Theories (APT), Multifactor Models
• Fixed Income Securities, Bond Valuation and Analysis, Bond Portfolio Management

Unit 3: Financial Derivatives
• Derivatives Forward Markets and Future Markets.
• Options and Option Pricing, the Payoffs from Buying and Selling Options, Put-Call Ratio and Parity.
• Mechanics and Properties of Stock Options.

Reading List:
• Chandra, P. (1999), Financial Management: Theory and Practice, Galgotia Publishers
• Z. Bodie, Robert Merton and David Cleeton (2009), Financial Economics, Pearson
• Z. Bodie, A. Kane and A. Marcus(2008), Investments, McGraw-Hill

4. AGRICULTURAL ECONOMICS

Unit 1: Agriculture and Economic Development-Introduction
• Nature and Scope of Agricultural Economics
• Peculiar Characteristics of Agriculture
• Transformation of Traditional Agriculture-Schultz and Mellor’s Analysis
• Agriculture and Dual Models: Fei- Ranis and Arthur Lewis
• Agriculture and Its Contribution-Kuznets’s Formulations

Unit 2: Economics of Agricultural Production
• Production Function in Agriculture and forms of Production Functions-Cobb Douglas, Spill Man
• Factor Factor Relationship in Agriculture
• Rational and Irrational Production Stages of Production
• Risk and Uncertainty in Agriculture
• Crop insurance

Unit 3: Issues in India’s Agricultural Development
• Land Reforms in India and Their Impact on Agrarian Structure
• The New Agricultural Strategy
• The New Economic Policy and Indian Agriculture
• Wto and its Implication for Indian Agriculture
• Agricultural Price Policy in India

Reading List:
• Ashok Rudra (1965) Economics of Agricultural Production and Resource use, Prentice Hal
• A.S. Kahlon and D.S. Tyagi, Agricultural Price Policy in India, Heritage Publishers
• Dantwala, M.L. Et Al (1991) Indian Agricultural Development Since Independence, Oxfordand IPH, New Delhi
• Hanumantha Rao (1964) " Agriculturual Production Functions: Cost ant Return in"India" Asia Publishing House, Bombay
• Kahlon .As. and D.S. Tyagi(1983)Agriculture Price Policy in India, Allied Publishers Ltd, New Delhi
• Krishna Raj (1963) Farm Supply Response in India-Pakistan: a Study of the Punjab Region, Economics J.I Sep
• Khusro AM. (1968) Readings in Agricultural Economics, Allied, Bombay
• Lewis, W.A (1955) Economic Development with Unlimited Supplies of Labour, Manchester School of Economic and Social Study, May
• Mellor J. (1966) the Economics of Agriculture Development, Yom and Company, Bombay.
• Motra A (1977) Terms of Trade and Class Relation, P. P Baghch Ad Company Culcutta
• Rao (Ed)(1988) Studies in Indian Agriculture, Oup
• Rath, N.K. (1985) Price" Costs of Production and Terms of Trade of Indian Agriculture, IJAE, Oct-Dec
• R.K Sampanth (1980) Economic Efficiency in Indian Agriculture
• Reins G and John Ch Fei (1961) Theory of Economic Development
• Sakhyan Pl (1988) Introduction to Economics of Agricultural Production, Prentice Hall India Ltd, New Delhi
• S.A.R. Bilgrami(L996) a Introduction to Agricultural Economics, Himalayan Publishing House, Bombay.
• Schultz T.W. (1964 Transforming Traditional Agriculture, New Have, Yale Univesity Press
• Y.Haymi and V.Rutan (1971) Agricultural Development-an International Perspective, Jhon Hopkins

Semester III (Optional Papers)

1. ECONOMICS OF EDUCATION

Unit 1: Economics of Education, Human Development and Economic Development
• Economics of Education, Nature, Definition and Scope of study.
• Education and Human Development and Human Capital Accumulation.
• Aspects, Indicators and Measures of Economic Development.

**Unit 2: Cost Benefit Analysis and Financing of Education**
• Production and Cost Functions of Education.
• Theories of Public Expenditure on Education, Models and Methodologies.
• Linkages between Education, Skills and Jobs.
• Wastages in Education. Non-participation, Dropouts and Brain Drain.

**Unit 3: Problems and Prospects of Education in India:**
• Indian Perspective to Education,
• Literacy and Education Programmes of Government of India.
• Education planning, need based and Value based education planning in India.
• Public Expenditure on Education in India.
• Need and Scope for External Participation in Education in India.

**Reading List:**
• Govt. India R (Ed) (2000). India Education Report. a Profile of Basic Education National institute of Educational Planning and Administration, Oxford University Press. New Delhi.

**Additional Readings:**
• Prez, Jeon and Geeta Kingdon (2001), School Participation in Rural India, Review of Development Economics.

Journal:
• National Human Development Reports Various Issues- Planning Commission GOI, New Delhi
• Human Development Reports, Undp.

2. TIME SERIES ANALYSIS

Unit 1: Introduction of Time Series
• Stochastic Processs
• Correlation and Autocorrelation Functions
• Stationarity: Unit-Root Test
• Arima Models

Unit 2: Conditional Heteroscedastic Models
• Characteristics of Volatility
• Structure of A Model
• The Arch Model
• The Garch Models: M-Garch, E-Garch and T-Garch

Unit 3: Vector Autoregression Model, Co-Integration and Forecasting
• Introduction to Var Analysis
• Causality in Time Series: Granger Causality Test and Toda and Yamamoto Causality Tests
• Co-Integration and error Correction Model
• Testing for CoIntegration – Engle – Granger Methodology – Johansen Methodology
• Time Series Forecasting.

Reading List:
• Brockwell P.J. and Davis R.A : “Introduction to Time Series and Forecasting”, 2002
• Stewart, K. G.: “Introduction to Applied Econometrics”, 2005

3. INTERNATIONAL FINANCE AND BANKING

Unit 1: The International Monetary and Financial System
• Changing Role of Monetary System
• Organization of the Foreign Exchange Market- The Spot and the Forward Market.
• Parity Conditions in International Finance - Purchasing Power Parity, Fisher Effect & International Fisher Effect, Interest Rate Parity Theory
• Exchange Rate Regime and Foreign Exchange Market in India.

Unit 2: International Financing and Investment Decision.
• Overview of the International Financial Market. Official and Private Sources
• National Capital Markets as International Financial Centers
• The Euro-Currency Market and International Banks.
• International Equities: FDI and Portfolio investment
• Evaluation and Management of Political Risk

Unit 3: Financial and Debt Management
• Roles and Functions of External Debt in Developing Countries
• Budget Deficits and Public External Debt
• Episodes of financial Crisis
• Four Generation Models of Currency crisis
• Interrelationship between Currency, Banking and Financial Crisis
• Proposals to Resolve the Debt Crisis
• Prevention of Financial crisis
• New International Financial architecture

Reading List:
• Brain Tew. the Evolution of International Monetary’ System, Hutchinson, 1985
• J Dunning (1981), Multinational Enterprises.
• IMF: Recent Multilateral Debt Restructuring with official and Bank Credits, Washington, December, 1983.
• Moris Goldstein, the Asian Financial Crises; Causes, Cures and Systemic Implication Washington Dc, June 1998.
• Pecchioli, R.M., the Internationalization of Banking, Oecd, Paris; 1983.
• Sachs, J and Radelet, Steven 1998. “The East Asian Financial Crisis; Diagnosis, Causes and Cures, institute of International Devolvement, Us, April. Also, Published in Banking Papers on Economy Activity, 1998.
• The Banker, Third World Debt, September, 1987.

4. QUANTITATIVE FINANCE

Unit 1: Time Value of Money in Finance
• Time Value of Money – Annuity, Perpetuity, Consols
• Returns and Risks – Mathematical Expectations, Variance, Marginal, Conditional and Joint Distribution of Returns
• Mean Variance Model and Utility Function
• Log-Normality and Jensen’s inequality
• Calculation of NPV, DPV and IRR, and Optimum Investment Decisions
• Efficient Market and Financing Decisions

Unit 2: Capital Market Theory and Estimation
• Efficient Market Model and Testing For Market Efficiency
• Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (Apt) – Estimation Problems
• Factor Models – one Factor Model and Multifactor Model
• Estimating Factor Models and Implications
• Portfolio Analysis – Portfolio Selection Problem and Diversification

Unit 3: Modelling the Behaviour of Stock Prices and Options
• Stochastic Process and Deterministic Process
• Markov Process and Weiner Process
• Non-Stationarity and Integrated Process
• Co-Integration and error Correction Models
• Markov Switching Models
• Dividend Valuation Models
• Binomial Trees and Risk-Neutral Valuation Models
• Geometric Brownian Motion Model
• Black-Scholes Model for options

Reading List:

5. RURAL ECONOMICS

Unit 1 Rural Development and Introductory Aspects
• Concept of Rural Development
• Scope and Importance of Rural Development
• Different Approaches to Rural Development
• Nature and Problems of Rural Development
• Rural Development - Indian Perspective

Unit 2: Dimensions of Rural Development in India
• Agriculture
• Rural Industrialization
• Human Resources
• Physical Infrastructure

Unit 3: Programmes/ Strategies of Rural Development
• Growth Targeted Strategies
• Rural Development Strategies
• Target oriented Rural Poverty Alleviation Programmes
• Target oriented Rural Employment Programmes
Reading List:
- David A.M. Lea and D.P. Chaudhri (Ed), Rural Development and the State
- Harris John. (Ed). 1982, Rural Development Theories of Peasant Economy and Agrarian Change, Hutchison University Library, South Africa
- Chambers Robert (1985), Rural Development Putting the Last First, Longman
- Basu Kaushik, Agrarian Questions, Oxford University Press
- Battacharya S.N., Rural Industrialization in India
- Rao R.V., Rural Industrialization in India
- Bagchi V., Khadi and Village Industries in the Indian Economy
- Vasant Desai., Organization and Management of Small Scale Industries
- Sundaram J.B., Rural Industrial Development
- Vasant Desai, Problems and Prospects of Small Scale Industries in India
- Mehan K K , Small Industry Entrepreneurs Handbook
- Dandekar V.M. and Rath .N. –Poverty in India
- Government of India – Evolution of Community Development Programme in India
- Desai, Vasant – Study of Rural Economics, Himalya Publishing Company, New Delhi
- Krishnamurthy V.T. –Community Development India
- Jain P.C. – Agricultural Reforms in India
- Maheshwari S. - -Rural Development in India
- Mishra Puri – Indian Economy, Himalya Publishing House, Mumbai
- Datt, Sundaram – Indian Economy, S. Chand and Company, New Delhi
- Government of India, Ministry of Finance, Economic Division Economic Survey- Various Issues
- Jain .P.C. Agricultural Reforms in India

Semester IV (Optional Papers)

1. MONETARY ECONOMICS

Unit 1: Demand for Money
- Overview of Development of Monetary Theory and Major Issues
- Friedman, New Monetarism and its Critique.

Unit 2: Supply of Money
- Monetary Aggregates, Liquidity Aggregates and Divisia Index
- H-Theory of Money Supply
- Money Multiplier Process and Factors Affecting H
• Exogeneity of Money Supply
• Money Supply in India: its Components and Trends

Unit 3: Monetary Management and Monetary Policy
• Monetary Management – Rules vs. Discretion
• Price Targeting vs inflation Targeting vs Exchange Rate Targeting
• Monetary Policy – Challenges before Reserve Bank of India.
• Difficulties of Controlling Money Supply in an open Economy
• Further Issues of Monetary Policy and Monetary Management in India

Reading List:
• Jadhav N., Monetary Economics for India, Macmillan India Ltd., 1994
• Gupta S.B., Monetary Economics: Institutions, Theory and Policy, 1982
• Goldfeld S.M. and L.V. Chandler, the Economics of Money and Banking, Harper and Row, 1981
• Handa J., Monetary Economics, Routledge, New York, 2000

2. ENVIRONMENTAL ECONOMICS - II

Unit 1: Modeling Environment: Non-Market Valuation Techniques
• Theory of Environmental Policy;
• Empirical Models of Non-Market Valuation;
• Revealed Preference Methods: Hedonic Models, Travel Cost Models;
• Stated Preference: Contingent Valuation Method;
• Choice Experiments: Conjoint Analysis;
• Environmental Accounting.

Unit 2: Environmental Issues and Legislation in India
• Environmental Issues in India: Pollution- Types, Causes and Effects;
• Environmental Jurisdiction and Environmental Legislation: Constitutional Provision;
• institutions, Instruments, Regulation and Conservation;
• Environmental Federalism, Inter-Jurisdictional Competition, Environmental Justice;
• Environmental Movements in India.

Unit 3: Global Environmental Issues and Governance
• Transboundary Pollution, Global Warming, Climate Change, Ozone Depletion,
• Climate Change & Sustainable Development, CDM & Sustainable Development;
• International Trade & Environmental;
• Environmental Conflict Management: institutional & Legal instruments, Multilateral Environmental Agreements;
• Major Environmental Organization & Events: Green Peace Movement, the World Conservation Union, The Nature Conservancy, Sierra Club, WWF, UNEP, UNCED;
• Environmental Conventions- Earth Summit, Stockholm Declaration On Human Environment, Rio Declaration, Agenda 21, Montreal Protocol, Convention on Biological Diversity, Climate Change, Basal Convention on the Control of the Transboundary Movement of Hazardous Wastes, Convention On Wetlands of International Importance,

Readings List:
• Bhattacharya, R.N., (2001) (Ed.) Environmental Economics - an Indian Perspective (Oup),
• Kadekodi, Gopal K., 2004: Common Property Resource Management: Reflection on Theory & the Indian Experience, Oup
• Kolstad, C.D, (2004), Environmental Economics, Oxford University Press,
• Markandya, Anil & Kirsten Halsnaes (Eds.), 2002 Climate Change & Sustainable Development: Prospects for Developing Countries, Earthscan, Uk, Usa, (Ch.1, 2, 6-8).
• Shankar, U. (2001), Environmental Economics (Ed.) Oup, Last Chapter
• Totenberg, Tom. (2000), Environmental & Natural Resource Economics, 5th Edition, Addison-Wesley Longman inc. Usa. (Ch. 2, 3, 7, 8, 9, 10
World Commission on Environment & Development (Wced), 1987, Our Common Future, Oup.

Additional Readings:
Centre for Science & Environment: State of Environment Report
Websites on of Some International Environmental Conventions:
Convention on Biological Diversity @ http://www.biodiv.org/
Convention on Climate Change @ http://unfccc.int/
The Convention Concerning the Protection of the World Cultural and Natural Heritage (The World Heritage Convention) @ http://whc.unesco.org/nwhc/pages/sites/main.htm
Convention on Wetlands of International Importance (Especially as Waterfowl Habitat) @ http://www.ramsar.org/
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes @ http://www.basel.int/index.html
Convention On International Trade in Endangered Species of Wild Fauna and Flora (cites) @ http://www.cites.org/eng/disc/what.shtml
Convention on Migratory Species @ http://www.wcmc.org.uk/cms/
Conventions on Ozone Layer Protection the Convention for the Protection of the Ozone Layer the Montreal Protocol on Substances That Deplete the Ozone Layer @ http://www.unep.org/ozone/aboutsec.shtml
Convention Regional Seas @ http://www.unep.ch/seas/
Rotterdam Convention On Voluntary Prior informed Consent Procedure About Hazardous Import and Export @ http://www.pic.int/index.html
Convention to Combat Desertification. Website @ http://www.unccd.int/main.php
Northern American Free Trade Agreement (NAFTA) and Free Trade Agreement of America FTAA. (Environmental Relating Issues and institutional System)
Center For Environmental Cooperation For NFTA @ www.cec.org
3. INDUSTRIAL ORGANIZATION

Unit 1: Oligopoly: Homogeneous and Differentiated Product Market Structure
• Cournot Competition – Duopoly Cournot Vs Collusion
• Sequential Moves- Leader Follower Model
• Bertrand Market Structure, Capacity Constrain- Edgeworth Paradox, Collusion, Entry Barriers,
• Differentiated Products (Cournot & Bertrand), Location Models

Unit 2: Economics of R&D Licensing & Innovations.
• Model of The innovation Process.
• Patent Race,
• Market Structure and innovation Efforts.
• Incentives For innovations, Socially Optimal and Market investments Into R&D. Patent Life.

Unit 3: Barriers to Entry and Exit and Network Externalities
• Entry Barrier- Limit Pricing, Capacity Constraints,
• Judo Economics- Gelman and Salop Model,
• Low Price As Signalling Device – Milogram and Roberts Model,
• Reaction To Partial Entry, Predatory Pricing,
• Predation in Learning and Network Industries

Reading List:
• Economides, Nicholas, the Economics of Networks, 1996, International Journal of Industrial Organization(14), 673-699.
• Tirole J., 1988, the Theory of Industrial organization, the MIT Press

4. GAMES AND INFORMATION

Unit 1: Game Theory under Complete information
• Static Game of Complete Information.
- Dynamic Games of Complete information
- Dynamic Games of Complete But Imperfect information
- Economic Applications

**Unit 2: Game Theory Under incomplete information**
- Static Games of incomplete information – Bayesian Nash Equilibrium.
- Dynamic Game of Incomplete Information – Perfect Bayesian Equilibrium, Trembling Hand Perfection.
- Economic Applications

**Unit 3: Economics of information**
- Types of Asymmetric Information - Moral Hazards, Adverse Selection, Signaling, Market for Lemons,
- Principal Agent Problem,
- Efficiency of Market Outcomes under Asymmetric Information

**Reading List:**
- Fudenberg, Drew, and Jean Tirole, Game Theory, ANE Books, New Delhi, 2005.
- Jehle & Renne, Advanced Microeconomic Theory, Pearson Education, India

5. COMPUTER APPLICATIONS IN ECONOMICS

**Unit-I: Fundamental of Database Management**
- Concepts of Data
- Information
- Record, File
- Database, DBMS, RDBMS
- Function of DBMS
- Components of DBMS, Database Designer
- Database Administrator
- DBMS Availability
- MS Excel, MS Access, MS Word, MS Powerpoint

**Unit-II: Cross Section & Panel Data Techniques and Methods using SPSS/STATA/any other Software**

- Series, Groups, Tables, Graphs and Objects.
- Descriptive Statistics
- One Way Tabulation
- Cross Tables
- One Sample T Test
- Independent Sample Test
- Paired Sample T Test
- One Way ANOVA
- Correlation-Bivariate Partial
- Regression-Least Square, Binary & LogisticRegression
- 2 Stage Least Square, Factor Analysis, Principal Component, Panel Regression Analysis.

**Unit-III: Simultaneous Equation and Series Modeling, Using Eviews/Gempack/any other Software.**

- Introduction of Econometric Software. Creating a work file, Entering Data into a work file, Creating a group, Graphing, Generating new Variables.
- Getting Data
- Importing Data
- Exporting Data
- Unit Root Test
- Cross Correlations and Correlograms
- Granger Causality
- Cointegration

**Reading List:**
- Eviews- Manual
- SPSS- Manual
- Deaton, A.S., the Analysis of Household Surveys: a Micro-Econometric Approach to Development Policy.
- Pollak, R.A. and T.J. Wales, Demand System Specification and Estimation.
- Klein, L.R.: (A) Introduction to Econometrics, (B) Text Book of Econometrics.
• Krishna, K.L. (Ed.), Econometric Applications in India.
• Wallis, K.F., Topics in Applied Econometrics.