Department of Economics

Course: M.A. ECONOMICS

Semester-Wise Paper and Credits*

(REVISED COURSE STRUCTURE w.e.f. 2016-17)

SEMESTER-I	SEMESTER-II
MES-C-101: Micro Economics MES-C-102: Macro Economics MES-C-103: Mathematics MES-C-104: Statistics MES-CB-101: Rural Economics MES-CB-102: Economics of Population & Demographic Analysis	MES-C-201: Open Economy Macro Economics MES-C-202: General Equilibrium & Welfare Economics MES-C-203: Environmental Economics MES-C-204: Econometrics MES-CB-201: Financial Economics MES-CB-202: Labour Economics
SEMESTER-III	**SEMESTER-IV**
MES-C-301: Indian Economic Policy MES-C-302: International Trade MES-OP-301: Time Series Analysis MES-OP-302: Quantitative Finance MES-CB-301: Economics of Education MES-CB-302: Public Economics MES-AE-301: Statistical Data Analysis & Softwares	MES-C-401: Growth Economics MES-C-402: Development Economics MES-OP-401:International Finance MES-OP-402: Monetary Economics MES-CB-401: Agricultural Economics MES-CB-402: Games and Information MES-SE-401: Computer Applications in Economics

*Each paper carries 100 marks/4 credits.

M.A. Economics Syllabus

Semester I

MES-C-101: 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:
1. Mas-Colell, Andreu, Michael D.Whinston and Jerry R. Green, (1995), Microeconomic Theory, Oup, New York.
2. Jehle & Renne, Advanced Microeconomic Theory, Pearson Education, India
3. Varian, Hall R., (1992), Microeconomic Analysis (Third Edition), W.W. Norton & Company, New York, London.
4. Varian, Hall R.(1990), Intermediate Microeconomics, W.W. Norton & Company, New York, London.
5. Kreps, David M.(1998), A Course in Microeconomic Theory, Prentice Hall, India, New Delhi (For Unit V).
6. Silberberg E., The Structure of Economics: A Mathematical Analysis, McGraw-Hill

MES-C-102: MACRO ECONOMICS

Unit 1: Classical Approach, Keynesian Approach and Monetarism
- Determination of Price, Output and Employment
- IS-LM Analysis-Aggregate Demand and Supply
- 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) 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
- ➢ Critique of Rational Expectation Hypotheses
- ➢ 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:
1. Wendy Carlin and David Soskice (1996)- Macroeconomics and The Wage Bargain; Oxford University Press
2. Branson, W. (1989) – Macroeconomic Theory and Policy; (3rd Ed, Harper & Row)
3. Dornbush, R. and S. Fischer (2004) – Macroeconomics (9th Ed, Tata-Mcgraw Hill)).
4. Jha, R. (1991)– Contemporary Macroeconomic Theory and Policy; (Wiley Eastern)
5. Levacic, R and A. Rebman (1986) – Macroeconomics; (2nd Ed, Macmillan).
6. Mankiw, N. Gregory (2000) – Macroeconomics (4th Ed, Macmillan-Worth))
7. Mankiw, N.G. and D. Romer (Eds.) (1991) – New Keynesian Economics; (Mit, Cambridge)
8. Begg, D. K. H. (1982), The Rational Expectation Revolution in Macro-Economics", Oxford, Allan
9. Davidson, Paul (1994), Post Keynesian Macroeconomic Theory, Aldershot, Uk: Edward Elgar.
10. Romer, David (1996), Advanced Macroeconomics, New York: Mcgraw-Hill.

MES-C-103: MATHEMATICS

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:
1. Hoy, M., J. Livernois, C. Mckenna, R. Rees and T. Stengos (2001), Mathematics for Economics, 2nd Ed. Mit Press.
2. Simon, Carl P. and Blume, Lawrence (1994), Mathematics for Economists, First Edition, 1994, W.W. Norton and Company.
3. A.C. Chiang and Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, Mcgraw-Hill.
4. Chiang, A.C. (1984), Fundamental Methods of Mathematical Economics, 3rd Edition, Mc-Graw Hill.
5. Allen, R.G.D.(1974), Mathematical Analysis for Economists, Macmillan Press, London.
6. Sydsaeter, Knut, Peter Hammond (2002), Essential Mathematics for Economic Analysis, Prentice Hall.
7. Dixit, A.K. (1990), Optimization in Economic Theory, 2nd Edition, Oxford University Press.
8. Dowling, Edward T. (2004), Introduction to Mathematical Economics, 3rd Ed. Mcgraw-Hill.
9. Dowling, Edward T. (1992), Schaum's Outline of Theory and Problems of Mathematics for Economists, McGraw-Hill.
10. Silberberg, E.(1990), the Structure of Economics - a Mathematical Analysis, McGraw-Hill, 1990.
11. M.W. Klein (2002), Mathematical Methods for Economics, 2nd Ed. Addison-Wesley.
12. Pemberton M. and N. Rau (2001), Mathematics for Economists, Manchester University Press.

13. Mathur, P. N. and R. Bharadwaj (Eds.) (1967), Economic Analysis in Input-Output Research, Input-Output Research Association of India, Pune.
14. Hadley, G. (1962), Linear Programming, Addison Wesley Publishing Co., Massachusetts.
15. Kothari, C. R. (1992), An Introduction to Operations Research, Vikas Publishing House, New Delhi.
16. Yamane, Taro (1975), Mathematics for Economists, Prentice Hall of India, New Delhi.

17. Baumol, W. J. (1984), Economic Theory and Operations Analysis, Prentice Hall, Englewood Cliffs, New Jersey.

MES-C-104: 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 3

➢ 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.

➢ Methods of FInding Sampling Distributions – Direct Method, Transformation of Variables Method, Mgf Method.

➢ 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

➢ Desirable Properties of An Estimator - Unbiasedness, Consistency, Efficiency and Sufficiency. Robustness, Mean-Squared Error. Consistency and Best Asymptotically Normal Estimator, Cramer-Rao Inequality, Method of Moments, Method of Maximum Likelihood, Interval Estimation - Confidence Intervals For Mean and Variance.

➢ Types of Hypothesis, Types of Errors, Level of Significance, Power of a Test, Interpretation of P-Value; Most Powerful Test – Neyman-Pearson Lemma. Loss Function and Risk Function. Generalized Likelihood-Ratio Tests. Uniformly Most Powerful Tests. Unbiased Test. Uniformly Most Powerful Unbiased Test. Sequential Probability Ratio Test.

➢ Testing For Means – One Sample and Two Sample Tests, Testing For Variance – One Sample and Two Sample Tests. Chi-Square Tests – Goodness of Fit Test, Test for Independence, Homogeneity Test.

- Introduction To Linear and Non-Linear Regression.
- Introduction To Nonparametric Methods, Principal Components and Factor Analysis, Analysis of Variance – One Way.

Reading List:

1. J. E. Freund (1999), Mathematical Statistics, 5th Edition, Prentice-Hall International.
2. J. E. Freund and R. E. Walpole (1987), Mathematical Statistics, Prentice-Hall inc.
3. Hogg, R.V. and Craig, A.T. "Introduction To Mathematical Statistics", Prentice-Hall International, inc. Engle Wod Cliff, N.J., Fifth Edition, 1995.
4. Mood, A.M. Graybill, F.A. and Boes, D.C., "Introduction to the Theory of Statistics", Mcgraw-Hill Book Company, New York, Third Edition, 1974.
5. Hogg, R. V. and A. T. Craig (1970), Introduction to Mathematical Statistics (3rd Edition), Macmillan Publishing Co., New York.
6. Sukhatme, P. V. and B. V. Sukhatme (1970), Sampling Theory of Survey With Applications, Lowa State University Press, Ames.
7. J. A. Rice (1995), Mathematical Statistics and Data Analysis, 2nd Edition, Duxbury Press.
8. Hogg, R.V. and Tanis E.A., "Probability and Statistical inference" Macmillan Publishing Company, New York, Fourth Edition, 1993.
9. S. C. Gupta (1993), Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi
10. D. Gujrati (2002), Basic Econometrics, 4th Edition, Mcgraw-Hill/Irwin
11. D. G. Rees (1987), Foundation of Statistics, Chapman & Hall.
12. G. M. Clarke and D. Cooke (1992), A Basic Course in Statistics, 3rd Edition, Arnold.
13. R. L. Schaeffer (1990), Introduction to Probability and its Applications, Pws-Kent.
14. F. Daly, D. J. Hand, M. C. Jones, A. D. Lunn, K. J. Mcconway (1995), Elements of Statistics, Addison-Wesley.
15. S. Ross (1976), A First Course in Probability, Macmillan.
16. Chou, Y. (1975), Statistical Analysis, Holt, Reinhart and Winston, New York.
17. Croxton, Crowden and Klein (1971), Applied General Statistics, Prentice Hall of India, New Delhi.
18. Millar, J. (1996), Statistics For Advanced Level, Cambridge University Press, Cambridge

MES-CB-101:RURAL ECONOMICS

UNIT –1   RURAL DEVELOPMENT AND INTRODUCTORY ASPECTS

- Concept of Rural Development - Scope and importance of Rural Development- Objectives of Rural Development-Typology and strategies of Rural Development
- Approaches to Rural Development strategies- Different approaches to Rural Development- Contemporary Populism, Unimodal and Bimodal Strategies of Agrarian Change, Lipton's argument of Why Poor People Stay Poor, Agrarian Transition and Agrarian Question, Appraisal of Terry Byres
- Rural Development - Indian Perspective –Alternative strategies for Rural Development in India, Planning strategies for Rural Development in India

UNIT –1I DIMENSIONS OF RURAL DEVELOPMENT IN INDIA

- Rural Development – Agrarian Issues-Land Reforms, Green Revolution, Agriculture Extension on Services- Land Markets, Land ownership and tenancy, rental contracts-
- Rural Entrepreneurship- Entrepreneurship- Rural and urban entrepreneurship, Rural Industry concept and definition, Role of SSI/MSME sector in India, Handloom, Agro-based Industries, Rural Artisans, Handicrafts and Sericulture.Rural Industrialisation Policy- Field Level Organizations - District Industries Centre (DIC), National Institute for Small Industries Extension and Training (NISIET) – Small Industry Development Organization (SIDO) Small Industries Service Institutes,
- Rural credit and Banking- Role of Rural credit -Credit Sources- All India Rural Credit Survey- Institutional sources- NABARD, RRBs, Cooperative Credit Societies, Alternative rural credit markets- SHGs etc.

Unit – III   PROGRAMMES/STRARTEGIES OF RURAL DEVELOPMENT

- Income and Employment Generation Programmes - Integrated Rural Development Programme (IRDP), Development of Women and Children in Rural Areas(DWCRA), Training of Rural Youth for Self Employment (TRYSEM)- Supply of Improved Toolkits to Rural Artisans (SITRA) , Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)
- Infrastructure development Programmes- Food for Work Programme (FWP), National Rural Employment Programme(NREP), Rural Landless Employment Guarantee Programme (RLEGP)- Jawahar Rojgar Yojana (JRY)Indira Awas Yojana (IAY), Million Wells Scheme(MWS)
- Area Development programmes – Drought Prone Area Programme (DPAP), Desert Development Programme(DDP)- Tribal and Hill Area Development Programme (THADP)- Intensive Agriculture District Programme (IADP)- Intensive Agriculture Area Programme (IAAP)- High Yielding Variety Programme (HYVP)

References:

1. Ray Deb Raj, Development Economics,   (Chapters 11,12,13 and 14) Oxford University Press
2. Dantwala, Indian Agriculture since Independence
3. Mamoria & Tripathi, Agricultural problems of India
4. Sarap Kailas, Inter Linked Agrarian Markets in Rural India
5. Belshaw, H Agricultural Credit in Economically Underdeveloped
6. Countries
7. Khusro, AM Agricultural Credit Review Committee Report
8. Battacharya S.N., Rural Industrialization in India
9. Rao R.V., Rural Industrialization in India
10. Bagli V., Khadi and Village Industries in the Indian Economy
11. Vasant Desai., Organization and Management of Small Scale Industries
12. Sundaram J.B., Rural Industrial Development
13. Vasant Desai, Problems and Prospects of Small Scale Industries in India
14. Mehan K K , Small Industry Entrepreneurs Handbook
15. David A.M. Lea and D.P. Chaudhri (Ed), Rural Development and the State
16. Harris John. (Ed). 1982, Rural Development theories of Peasant economy and agrarian change, Hutchison University library, South Africa
17. Chambers Robert (1985), Rural Development putting the last first, Longman

18. Basu Kaushik, Agrarian Questions, Oxford University Press
19. Battacharya S.N., Rural Industrialization in India
20. Rao R.V., Rural Industrialization in India
21. Bagchi V., Khadi and Village Industries in the Indian Economy
22. Vasant Desai., Organization and Management of Small Scale Industries
23. Sundaram J.B., Rural Industrial Development
24. Vasant Desai, Problems and Prospects of Small Scale Industries in India
25. Mehan K K , Small Industry Entrepreneurs Handbook
26. Dandekar V.M. and Rath .N. –poverty in India
27. Government of India – evolution of community development programme in India
28. Desai, Vasant – study of rural economics, Himalya Publishing Company, New Delhi Krishnamurthy V.T. –community development India
29. Jain P.C. – Agriculture Reforms in India
30. R.B.I Report on SFDA - -R.B.I. Mumbai
31. Maheshwari S. - -Rural Development in India
32. Mishra Puri – Indian Economy, Himalya Publishing House, Mumbai
33. Datt, Sundaram – Indian Economy, S. Chand and Company, New Delhi
34. Government of India, Ministry of Finance, Economic Devision Economic Survey-various issues
35. Jain ,P.C. Agricultural Reforms in India

MES-CB-102: ECONOMICS OF POPULATION & DEMOGRAPHIC ANALYSIS

Unit-I:

Development of the discipline, Population Studies and Demography, Population studies in India subject matter, Importance &. scope, Sources of demographic data, Population Census, Definition, Features, Procedures, census operation in India, vital events registration system, sample surveys, sample registration system in India.

Unite - 2:

Population Theories, Early Population concerns, Contribution of Mal thus; Malthusian Population trap, Marxian approach, Optimum Population, Demographic Transition, Population and Economic Development and Developing countries. Arthur Lewis model, Leibenstein critical minimum effort, Labour force concept, Economically active population, Census approaches, Migration Concept, Kinds Causes, Estimation, Theories, Rural urban Migration Model (P. Todaro).

Unite - Ill:

Fertility, basic concepts, measures of fertility, reproduction rate, fertility transition, reasons for high fertility in developing countries, economic theories of fertility, mortality, concepts,

measures of mortality, life expectancy, sex and age pattern of mortality, mortality in India, life table, age sex, structure, sex ratio, factors, affecting sex ratio, age structure, aging of population factors determine, age structure, population growth and population policy in India.

Suggested Readings:

1. Bague D. J. ; Principles of Demography, John WHey New York 1971.
2. Bhende A. Kanitkar T; Principles of Population studies, Himalaya Publishing House, Bombay.
3. Coale A.J. and L.M. Hoover; Population growth and economic development in Low income Countries: A Case Study of India's prospects, Princeton University Press 1958.
4. Thomos W.S. and Lewis D.T. Population Problems Tata Mac Graw Hill Bombay 1965.
5. Agarwal, S.N.; India's Population Problem, Tata Mac Graw Hill, Bombay 1972.
6. United Nations: The Determinates and consequences of population in _~rends vol.I 1973 in part of Chapter 2 population theory vol-I 1973 UNO Publication.
7. John C. Caldwell, Toward a Restatement of Demographic transition theory, Population and Development Review vol. 2 No. 3 .. 4 September and December 1976
8. Gary Becker.An economic analysis of'Fertility in Demographic and Economic change in Developed countries, Princeton University press 1960.
9. Choubey, P. K.; Population Policy in India, Kaniska Publications New Delhi 2000.
10. Srinivasan, K Basic Demographic techniques and application, Sage New Delhi 1968
11. Srinivasan, K and A. Sharif; India: Towards population and Demographic goals, oxford university press New Delhi 1998.
12. Bose, A; India's basic Demographic Statistics, B.R. publishing corporation New Delhi 1996
13. Daugherty, Ginn Helen, Kennith C.W. Kammeyer: An Introduction to. Population.
14. Second edition The Guilford Press, New York, 1995.
15. Chandersekhar, S: Infant Mortality Population Growth and Family Planning in India" Routledge, 2011.
16. Todaro, Michael P, Stephan C Smith: Economic Development Pearson Education India 2003.
17. Peterson Williorn: Population, Macmillon 1975.

MES-C-201: OPEN ECONOMY MACROECONOMICS

Unit 1: Open Economy in the Short-Run
- Opening the Goods Market- IS-LM Analysis in Open Economy, Price Setting in Open Economy, Marshall-Lerner Condition
- Opening Financial Market: Uncovered interest parity condition
- Exchange Rate Regime: Fixed vs Flexible
- Trade Balance and Balance of Payments: Macro implications
- Mundell-Fleming Model for the Short run: Monetary vs Fiscal policy
- Short-run implication of imperfect capital mobility, large size of an open economy and imperfect asset substitutability.

Unit 2: Inflation and Unemployment in the Open Economy
- Inflation and Unemployment in the open Economy
- Supply side in the open economy: Wage and Price setting; ERU curve
- Demand Side and Trade Balance
- Open Economy Model: Short run, Medium run and Long-run equilibrium
- Fiscal, Monetary, exchange rate and supply side policies
- External and Domestic Shocks: Aggregate Demand Shocks, Domestic Supply Shocks, External Trade vs Supply shocks

Unit 3: Interdependent Economies
- 2-Block Model: Spillover and the case for policy coordination; interdependence in the short-run; implication of income feedback effect
- International Spillovers in the medium run: Medium run analysis in 2-block model
- Policy Interdependence and The World Equilibrium Rate of Unemployment
- Interdependence in the short and medium run: Monetary expansion under fixed vs flexible exchange rates; Fiscal expansion under fixed vs flexible exchange rates;

Reading List:
1. Wendy Carlin and David Soskice (2008) Macroeconomics: Imperfections, Institutions & Policies; Oxford University Press
2. Wendy Carlin and David Soskice (1996) Macroeconomics and the Wage Bargain; Oxford University Press
3. Mankiw, N. Gregory (2000) – Macroeconomics (4th Ed, Macmillan-Worth))
4. Obstfeld, M. and K. Rogoff (1996), Foundations of International Macroeconomics, Cambridge, Ma: Mit Press..
5. Frenkel, J. and A. Razin (1996), Fiscal Policies in the World Economy, 3rd Edition, Cam-
6. Bridge, Ma: Mit Press.
7. Grossman, G. and K. Rogoff (Eds.) (1996), Handbook of International Economics, Vol. III,
8. Amsterdam: North-Holland.
9. Turnovsky, S.(1997), International Macroeconomic Dynamics, Cambridge, Ma: Mit Press.

MES-C-202:GENERAL EQUILIBRIUM & WELFARE ECONOMICS

Unit 1: Partial Equilibrium and General Equilibrium Analysis
- Introduction - Partial Equilibrium Vs General Equilibrium
- The Fundamental Theorems of Welfare Economics
- Pure Exchange (Edgeworth Box) Economy and Competitive (Walrasian) Equilibrium
- One Consumer - One Producer (Robinson Crusoe) Economy
- 2x2 Production Model
- Partial Equilibrium Competitive Analysis
- Pareto Optimality, Core and Competitive Equilibrium

Unit 2: Social Choice and Welfare
- The Nature of the Problem
- Social Preference Relation and Social Choice Function
- Social Welfare Function – Measurability and Comparability Conditions
- Social Choice and Arrows Impossibility Theorem
- Utilitarian Social Welfare Function
- Rawlsian Social Welfare Function
- Critical Analysis of Social Welfare Functions

Unit 3: Public Goods and Market Failure
- Public Goods – Discrete and Continuous
- Externalities and Free Rider Problems
- Provisioning of Public Goods – Efficient, Private and Voting
- Demand Revealing Mechanism of Public Goods
- Externalities Problem and Pigovian Tax
- Property Rights and Coase Theorem
- Private Information and Second Best Solutions

Reading List

Text Books

1. Arrow, K.J. (1963). *Social Choice and Individual Values*, Cowles Foundation, Yale University Press: New Haven.
2. Henderson, J.M. and R.E. Quandt (1980). *Microeconomic Theory: A Mathematical Approach*, Third Edition, McGraw-Hill International Edition, Singapore.
3. Hildenbrand, W., and Kirman A.P. (1976), Introduction to Equilibrium Analysis.
4. Jehle, G.A. and P.J. Reny (2000). *Advanced Microeconomic Theory*. Second Edition, Pearson Education, India

5. Mas-Colell, Andreu, Michael D.Whinston and Jerry R. Green (1995). *Microeconomic Theory*. OUP, New York.
6. Varian, Hall R. (2009). *Microeconomic Analysis.* Third Edition (Indian Edition), W.W. Norton & Company.
7. Quirk J.P. and Saposnik, R. (1968), Introduction to General Equilibrium Theory and Welfare Economics.

Journal Articles

1. Arrow, K.J. (1950). 'Difficulty in the Concept of Social Welfare'. *The Journal of Political Economy*, Vol. 58(4), pp. 328-46.
2. Arrow, K.J. (1974). 'General Economic Equilibrium, Purpose, Analytic Techniques, Collective Choice'. *American Economic Review*, Vol. 64, pp. 253 - 273.
3. Arrow, K.J. (1968). 'Economic Equilibrium' in International Encyclopaedia of the Social Sciences, (ed.) David Sills, Vol. 4, pp. 376 - 386, Reprinted in Collected Papers of K.J. Arrow, Vol. 2, Chapter 6.
4. Coase R.H. (1960), 'The Problem of Social Cost'. *Journal of Law and Economics*, Vol. 3, pp.1-44.
5. Strasnick, Steven (1976). 'The Problem of Social Choice: Arrow to Rawls'. *Philosophy & Public Affairs*, Vol. 5 (3), pp. 241-73.

MES-C-203: Environmental Economics

Unit-I: Introduction
➢ Meaning, scope, importance, environment relation with economics growth of environmental economics, environment, market and state environment balance, environment debate, ecology, environment and economy, perspectives current state of environment, sustainable development, concept, definition, approaches, different perspectives on development and growth, thermo dynamics school, Simon Julian's thesis of "Ultimate Resource".

Unit-II: Eco-System and collective choices
➢ "Eco-system its function, net productivity of eco-system, energy flow, food chains, food webs, various eco-systems, human activities its impact on environment, environmental accounting collective choice, basic concepts, tragedy of commons, Olson's Theory of collective action, natural resource, scarcity, classification of natural resources, economics of natural resources, natural resources exploitation, non-renewable and renewable natural resource.

Unit-III: Environmental Evaluation and Regulation
➢ Externality, market failure and missing market, methods of environmental evaluation, meaning and types of environmental valuation, measures of economic values, market valuation, net price method, contingent valuation method (cvm), travel cost method, hedonic pricing technique, regulation and instrument of regulation environmental policy, vision, goal and objectives

Basic Readings:
1. Baumol, William J. And Wallace E. Oates, (1988) The Theory of Environmental Policy, 2nd Edition, Cambridge University Press, (Ch. 3,4,5)
2. Bhattacharya, R.N. (2001), (Ed.) Environmental Economics – An Indian Perspective (OUP).
3. David Paper, (1996), Modern Environmentalism – An Introduction, Routledge, London.
4. Dasgupta, Kristrom and Maler (1997), Poverty, Institutions and Environmental Resource Base, in J. Berhman & T.No. Srinivasan (Eds.), Handbook of Development Economics, Vol. IIIA.

5. Hanley, Shogren and White (1997), Environmental Economics in Theory and Practice, macmillan India Ltd. (and OUP Edition).
6. Hussen, Ahmed. M, (2000), Principles of Environmental Economics: Economics, Ecology and Public Policy, Routledge, New York.

MES-C-204: ECONOMETRICS

Unit 1: Classical Linear Regression Analysis
- Simple and General Linear Regression Model-Summary
- K-Variable Classical Linear Regression Model, Hypothesis Testing.
- Violation of CLRM assumption-Heteroscedasticity; Multicollinearity and Auto-Correlation;
- Maximum Likelihood Method

Unit 2: Regression with Qualitative and Lagged Variables
- Introduction to Dummy Variable, Regression with Dummy independent Variables, Dummy Variable Trap.
- Application of Dummy Variables: 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 and Logit and Probit Models.
- Autoregressive and Distributed Lag Models- Koyck Model and Almon Approach.

Unit 3: Simultaneous Equation Models
- Introduction to Simultaneous equation Models
- The Simultaneous Equation Bias and Inconsistency of OLS Estimators with proofs
- The Identification Problem; Rules of Identification-order and Rank Condition
- Structural and Reduced form of Model
- Method of Estimating Simultaneous Equation System and their limitations

Reading List:
1. Amemiya, T. (1985), Advance Econometrics, Harvard University Press, Cambridge, Mass.
2. Goldberger, A.S. (1998), Introductive Econometrics, Harvard University Press, Cambridge, Mass.
3. Gujarati, D.N. (1995), Basic Econometrics (2nd Edition), Mcgraw Hill, New Delhi.
4. Hill R. C, E.G. William and G.G. Judge (1997), Undergraduate Econometrics, Wiley, New York.
5. J. Johnston, Econometrics Methods, Mcgraw Hill (Fourth Edition)
6.

MES-CB-201. 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), Multifactor Models

Unit 3: Financial Derivatives
- ➢ Derivatives Forward Markets and Future Markets.
- ➢ Mechanics of Futures Markets and Price Determination
- ➢ Hedgers, Speculators, Hedging Strategies
- ➢ Options and Option Pricing, Options Payoffs, Put-Call Ratio and Parity
- ➢ Mechanics and Properties of Stock Options

Reading List:
1. Alexander, G.J., W.F. Sharpe and J.V. Bailey (2002), Fundamentals of Investments, Third Edition, Prentice-Hall of India Private Limited, New Delhi
2. Chandra, P. (1999), Financial Management: Theory and Practice, Galgotia Publishers
3. Hull, J.C. (2002), Options, Futures, and other Derivatives, Fifth Edition, Prentice-Hall
4. Francis, J.K. (1991), Investments: Analysis and Management, McGraw-Hill
5. R.E.Bailey(2005) The Economics of Financial Markets, Cambridge University Press
6. Z. Bodie, Robert Merton and David Cleeton (2009), Financial Economics, Pearson
7. Z. Bodie, A. Kane and A. Marcus(2008) Investments, McGraw-Hill

MES-CB-202: Labour Economics

Unit-I: Introduction
- ➢ Concept, nature and scope of labour economics, Supply and Demand for labour, Investment and Technology and demand for labour, function of labour market, labour market reform.

Unit-II: Employment and Wage Determination:
- ➢ Employment , unemployment, concept, measures counts of unemployment, unemployment in India Theories of wage determination variation, Concept of wages, Minimum wages, wages and inflation labour productivity and wage relationship.

Unit-III: Trade Union and Collective Bargaining:
- ➢ Emergence and role of union collective bargaining, social security and labour welfare, discrimination and gender bias in treatment of labour globalisation and labour market, International labour organisation.

References:
1. Lester, R.A. Economics of labour IInd Edition, Mac Millan, New York, 1964.
2. McConeel, C.R. and S.L. Brue, Contemporary Labour Economics, Mc Graw Hill New York 1986.
3. Papola, T.S. P.P. Ghosh and A.N. Sharme (Edi), Labour Employment and Industrial relations in India, B.R. Publishing Corporation, New Delhi.
4. Hajela, P.D., Labour Restructuring in India, A critique of the New Economic Policies, Common Wealth Publisher, New Delhi, 1998.

5. Rosenberg M.R., Labour Markets in low income countries in chenry, M.B. and T.N. Srinivasan (Edi) The Handbook of Development Economics , North Holland, New York, 1988.

MES-C-301: 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
- Financial Sector Reforms, Money and Capital Market.
- Foreign Trade Liberalization, Balance of Payments, Exchange Rate Policy,
- World Trade organization (WTO) and Indian Competition Policy.

Readings List:
1. Ahluwalia. I.J. and I.M.D Little (Eds.), India's Economic Reforms and Development (Essays in Honour of Manmohan Singh) Oxford University Press, New Delhi – 1999.
2. Bardhan. P.K. (9th Edition), the Political Economy of Development in India, Oxford University Press, New Delhi – 1999.
3. Bawa. R.S. and P.S. Rainkhy (Edi) Structural Charges in Indian Economy, Gurunanak Dev University Press, Amritsar.
4. Brahmananda, P.R. and V.R. Panchmukhi (Edi) Development Experience in Indian Economy, Interstate Perspectives, Bookwell, Delhi – 2001.
5. Dutt. R.(Edi), Second Generation Economic Reforms in India, Deep and Deep Publications, New Delhi – 2001.
6. Dutt. R.(Edi), Second Generation Economic Reforms in India, Deep and Deep Publications, New Delhi – 2001.
7. Joshi, V. and Imd Little; India: Macro Economics and Political Economy, 1964-1991, Oxford University Press, New Delhi – 1999.
8. Ahluwalia. I.J,; Industrial Growth in India, Oxford University Press, New Delhi – 1985.
9. Appu. P.S.; Land Reforms in India, Vikas, New Delhi – 1996.

10. Bhargawa, P.K.; India's Fiscal Crises, Ashish Publishing House, New Delhi – 1991.
11. Brahmananda, P.R. and V.R Panchmukhi (Edi.), the Development Process of Indian Economy, Himalayas Publishing House, New Delhi – 1987.
12. Byers. T.J. (Edi); the Indian Economy: Major Debutes Since Independence, Oxford University Press, New Delhi – 1998.
13. Chelliah, Raja J: Towards Sustainable Growth, Essays in Fiscal and Financial Sector Reforms in India – Oxford University Press, New Delhi – 1996.
14. Chelliah. Raja J. and R. Sudarshan: Income, Poverty and Beyond Human Development in India Social Science Press, New Delhi – 1999.
15. Debroy. B.:Foreign Trade Policy Changes and Devaluation - B.R. Publishing Corporation, Delhi – 1993.
16. Dhameeja, N. and K.S. Sastry: Privatisation: Theory and Practice, A.H. Wheeler – New Delhi – 1998.
17. Dubey. M: Anllnequal Treaty: World Trading order After Gait, New Age International Ltd., New Delhi
18. Gupta. S.P.: Post Reform in India: Emerging Trends Allied Publishers.
19. Kabra. K.N.: Development Planning in India, Sage Publication, New Delhi – 1997.
20. Mookherjee. D. (Edi); Indian Industry, Policies and Performance – Oxford University Press, New Delhi – 1997.
21. Mundle. S: Public Finance; Policy Issues for India – Oxford University Press, New Delhi – 1999.
22. Srinivasan. T.N. (Edi.) Measurement of inequality and Poverty, Oxford University Press, Calcutta, 1997.
23. Myrdal. Gunnar. Asian Drama: an inquiry Into Poverty of Nations, New York, Twentieth Century Fund.
24. Williamson, Oliver E: The Economic institutions of Capitalism, Firms, Markets, Relational Contracting, New York: Free Press.
25. Bardhan, Pranab; Poverty Agrarian Structure and Political Economy in India. Selected Essays – Oxford University Press, New Delhi – 2003.
26. World Bank; Re-Energising the Agriculture Sector to Sustain Growth and Reduce Poverty – Oxford University Press, New Delhi – 2005.
27. Rao Hunumanta, C.H.; Agriculture, Food Security Poverty and Environment, Essays on Post Reform in India, Oxford University Press, New Delhi – 2005.

MES-C-302: 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 Lndia'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:

1. Salvatore, Dominick, International Economics, 6th Edition (1998) Prentice Hall, 7th and 8th Editions (2001 and 2004) John Wiley & Sons.
2. Sodersten, Bo and Reed, G. (1994), International Economics, Macmillan Press Ltd., London
3. Sawyer, W.C. and Sprinkle R.L. (2003), International Economics, Prentice-Hall of India, New Delhi.
4. Krugman P.R. and Obstfed D. (1994), International Economics: Theory and Policy. Third Edition. Harper Collins. New York

5. Caves, Jones and Frankel (1999), World Trade and Payments, 8th Edition, Addison-Wesley.
6. Additional Readings:
7. Suranovic Steven M. (2005), International Trade Theory & Policy Analysis, Http://internationalecon.Com
8. Bowen Harry P., Hollander A., Viaene J. (1998), Applied International Trade Analysis, The University of Michigan Press, and Macmillan Press Ltd.
9. Human Development Report 2005, Undp & Oxford, Chapter-4 (For Trade & Development)
10. Bhagwati, J. (2002), Free Trade Today, Oxford University Press
11. Bhagwati, J. (2004), in Defense of Globalization, Oxford University Press
12. Bhagwati, Srinivasan and Panagariya (1998), Lectures On International Trade, 2nd Edition, Mit Press
13. Bimal Jalan (Ed).(1992). The Indian Economy: Problems and Prospects. N. Delhi.
14. Cherunilam, Francis (2006), International Economics, 4th Edition, Tata Mcgraw-Hill, New Delhi
15. Wadhwa, Charan.D. 1994. Economic Reforms in India and The Market Economy. Allied Publishers Ltd. New Delhi.
16. Srinivasan, T. N. (2000), Eight Lectures on India's Economic Reforms, Oxford University Press.

Articles:
1. Baldwin, R. (1952), "The New Welfare Economics and Gains in International Trade", Quarterly Journal of Economics, 91-101.
2. Baldwin, R.E. (1960), "The Effects of Tariffs on International and Domestic Prices", Quarterly Journal of Economics, 74(1) 65-70.
3. Bhagwati, J. (1958), "Immiserizing Growth: A Geometric Note", Review of Economic Studies, 25, 201-205.
4. Krugman P .R. (1980), "Scale Economics, Product Differentiation and Pattern of Trade." American Economic Review. PP 950-175.
5. Lancaster, K (1980) "Intra-Industry Trade Under Perfect Monopolistic Competition, Journal of International Economics PP. 151-175.
6. Posner, M. V. (1961) "International Trade and Technical Change: Oxford Economic Paper PP. 323-341.
7. Vernon. R. (1966) "International Investment and International Trade in the Product Cycle'. Quarterly Journal of Economics. Pp. 197-207.
8. Metzler L.A. (1949)'Tariff: the Terms of Trade and the Distribution of National Income', Journal of Political Economy, Pp. 1-29.
9. De Graft V.J. (1949) ".On Optimum Tariff Structure: Review of Economic Studies No. I Pp. 47 -59
10. Samuelson, P .A. (1948), "International Trade and the Equalization of Factor Prices, "Economic Journal, Pp 165-184.
11. Johnson H.G. (1985), "The Gains from Free Trade With Europe: An Estimate". Manchester School of Economics and Social Studies. Pp. 247-255.

MES-OP-301. TIME SERIES ANALYSIS

Unit 1: Introduction of Time Series
➢ Characteristics of Time Series Data, Lag Operator
➢ Stationary and Non-Stationary Random Variables

- Characteristics of stochastic processes (means, covariance, autocovariance and autocorrelation functions).
- Variance Decomposition
- Non-stationary univariate time series model: Pure Random Walk, Near Random Walk with and without drift, Difference stationary and trend stationary process
- Testing for unit roots

Unit 2: Time Series Models
- **Univariate Models:** Autoregressive models AR(p), Moving average models MA(q), Invertibility between AR and MA process, Autoregressive-moving average models ARMA (p,q), Autoregressive-integrated moving average models ARIMA (p,d, q), Forecasting in the framework of Box-Jenkins model.
- **Time series volatility Models:** Characteristics of Financial Time Series Data, ARCH Model, GARCH Models: M-GARCH, E-GARCH and T-GARCH

Unit 3: Multivariate Time Series Models and Co-integration
- 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 Co-Integration – Engle – Granger Methodology – Johansen Methodology
- Time Series Forecasting using VAR/VECM

Reading List:
1. Brockwell P.J. and Davis R.A : "Introduction to Time Series and Forecasting", 2002
2. Enders, W.: "Applied Econometric Time Series", 2nd Edition, 2003
3. Harris, R. and R. Sollis: "Applied Time Series Modelling and Foecasting", 2003
4. Kocenda, E. and A. Cerny, "Elements of Time Series Econometrics", 2007
5. Hamilton, J.D.: "Time Series Analysis, Princeton University Press", 1994
6. Kratzig, M. and H. Lutkepohl ,"Applied Time Series Econometrics", 2004
7. Stewart, K. G.: "Introduction to Applied Econometrics", 2005
8. Tsay, R. S. : "Analysis of Financial Time Series", 2005.
9. Verbeek, M.: "a Guide to Modern Econometrics", 2nd Edition, 2004
10. Gujrati, D: "Basic Econometrics" 4th Edition, 2004
11. Patterson, K, "An Introduction to Applied Econometrics a Time Series Approach", 2000.

MES-OP-302: QUANTITATIVE FINANCE

Unit 1: Time Value of Money in Finance

- Time Value of Money – Present Value & Future Value, Annuity & Perpetuity
- Power of Compounding and Loan Amortization
- Types of Bonds and Valuation of Bond
- Bond Price and Interest Rates, Term Structure of Interest Rate, Maturity and Interest Rate Sensitivity
- Net Present Value (NPV) and Optimum Investment Decisions
- Internal Rate of Return (IRR) and Optimum Investment Decisions
- NPV Vs IRR as Optimum Investment Rule

Unit 2: Modern Portfolio Theory and Investment

- ➢ Review of Mathematics
- ➢ Concept Market Efficiency
- ➢ Returns and Risks – Concepts
- ➢ Efficient Market Model and Testing for Market Efficiency- Random Walk Model
- ➢ Portfolio Analysis – Portfolio Selection Problem and Diversification
- ➢ Mean Variance Model and Optimum Portfolio Analysis
- ➢ Euler's Theorem, Risk Decomposition, and Portfolio Risk Budgeting

Unit 3: Capital Market Theory and Estimation

- ➢ Review of Time Series Concepts
- ➢ Valuation of Stocks
- ➢ Models of Equilibrium of the Capital Markets
- ➢ Standard Capital Asset Pricing Model (CAPM)
- ➢ Empirical Tests of Forms of CAPM
- ➢ Asset Pricing Model – Estimation and Empirical Relevance
- ➢ Factor Models – One Factor Model and Multi-Factor Model
- ➢ Estimation of Factor Models and Implications

Reading List:
1. Alexander, G.J., W.F. Sharpe and J.V. Bailey (2002), Fundamentals of Investments, Third Edition, Prentice-Hall of India Private Limited, New Delhi.
2. Charemza, W.W. and Derek F. Deadman (1997), New Directions in Econometric Practice: General to Specific Modelling, CoIntegration and Vector Autoregression, Second Edition, Edward Elgar Publishing Limited, U.K.
3. Cuthbertson, Keith and Dirk Nitzsche (2004), Quantitative Financial Economics: Stocks, Bonds and Foreign Exchange, Second Edition, John Wiley & Sons Ltd., England.
4. Hull, J.C. (2002), Options, Futures, and Other Derivatives, Fifth Edition, Prentice-Hall of India Private Limited, New Delhi.
5. Ross, S.M. (2003), an Elementary Introduction to Mathematical Finance: Options and other Topics, Second Edition, Cambridge University Press, U.K.
6. Ross, S.A., R.W. Westerfield and Jeffrey Jaffe (2005), Corporate Finance, Seventh Edition, Tata Mcgraw-Hill Publishing Company Limited, New York.

MES-CB-301. 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.
- ➢ Impact of Education on Labour Force Participation, Technological Change and Economic Development.

Unit 2: Cost Benefit Analysis and Financing of Education
- ➢ Production and Cost Functions of Education.
- ➢ Financing of Education, Public - Private Participation.

➢ 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:
1. De. Anuradha and Jean Dreze (1999)-Public Report on Basic Education in India (Probe), Oxford University Press. New Delhi.
2. GovInda R (Ed) (2000). India Education Report. a Profile of Basic Education National institute of Educational Planning and Administration, Oxford University Press. New Delhi
3. Mahbubul Haq (1996) Reflections on Human Development, Oxford University Press. New Delhi.
4. Dreze Jean and Sen Amartya (1994) Indian Economic Development and Social Opportunity. Oxford University Press. New Delhi.
5. Tilak Jandhala B.G. (1994) Education and Development in Asia, Sage Publications New Delhi.
6. Vaidyananthan A and Nair P.R.G (2001) Elementary Education in Rural India- a Grass Root View, Strategies for Human Development in India, Vol. 2, Sage Publications, New Delhi

Additional Readings:
1. Ananda Krishnan M (2006) Privatization of Higher Education Opportunities and Anomalies, National Seminar on Privatisation and Commercialization of Higher Education, New Delhi May
2. Amit Mukherjee (2007) 'Implications for Education' EPW Volume XLII No. 14 April 2007, PP 1273-1276
3. Prez, Jeon and Geeta Kingdon (2001), School Participation in Rural India, Review of Development Economics.
4. Panchamukhi P.R. (1990) 'Private Expenditure on Education in India- an Empirical Study', Indian Institute of Education, Pune
5. Tilak J.B.G (2006) 'Economics of Human Capital in India' Indian Economic Journal 89(4) Dec. 27, 29, Pp 2-24.
6. ------- (1999), Investment in Human Capital in India: an Interstate Analysis of Stock Flow of Human Capital of India, School of Political Economy Vol. XI No 1.
7. ----- (2002), Education Policy in India Review of Development and Change, Vol. XI, No. 1

Journal:
1. National Council of Education Research and Training 1982, 1999. Education Survey Report, New Delhi.
2. World Development Reports, Various Issues- Washington D.C Oxford University Press. New Delhi.

3. National Human Development Reports Various Issues- Planning Commission GOI, New Delhi
4. Human Development Reports, Undp.

MES-CB-302: PUBLIC ECONOMICS

Unit 1: Public Economics - Concept, Scope, Provisions of Public Goods
- Public Economics, Concept, Role of Government, Public, Private and Merit Goods, Pure impure Public Goods, Qasi 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 Revealation, 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:
1. Duff L, Government and Market, orient Longman, New Delhi 1997.
2. Qullis. John and Jones Phillp: Public Finance and Public Choice, Oxford University Press, Second Edition 1998
3. Atkinson Anthony B, Stiglitz, Josheph E; Lectures on Public Economics, Mac Graw Hill Book Co. Singapore 1980
4. Musgrave, Richard A, Musgrave, Peggy B; Public Finance in Theory and Practice, Tata Mc Graw Hill Companry, New Delhi 2004
5. Chelliah Raja J; Fiscal Policy in Under Developed Countries, George Allen and Unwin, London 1971.
6. Bhargava, R.K.; Some Aspects of Indian Public Finances, Uppal Publishing House, New Delhi – 1985
7. American Economic Association: Reading in Fiscal Policy, George Allen and Unwin, London – 1955.

MES-AE301: Statistical Data Analysis & Softwares

Unit1: Statistical and Econometric Analysis using Eviews Software

- ➢ Introduction to Eviews
- ➢ Data Handling and Generating New Variables
- ➢ Graphical Analysis and Descriptive Statistics
- ➢ Correlation and Regression
- ➢ Hetroscedasticity, Auto correlation and Multi colllinearity
- ➢ Simple Forecasting

Unit2: Statistical and Econometric Analysis using SPSS Software

- ➢ Introduction to SPSS
- ➢ Advance Data Handling in SPSS-Recoding Variables, Merging Data Set, Sorting Cases etc.
- ➢ Descriptive Statistics
- ➢ PP Plots and QQ Plots
- ➢ T tests- One Sample T Test, Independent Sample T Test and Paired Sample T Test
- ➢ Non Parametric Tests of Group Differences
- ➢ Reliability Analysis
- ➢ Cluster Analysis
- ➢ Discriminant Analysis

Unit 3: Statistical and Econometric Analysis using R Software

- ➢ Introduction to R Econometric Software
- ➢ Data Handling in R and Generating New Variables
- ➢ Graphical Analysis and Descriptive Statistics
- ➢ Correlation and Regression
- ➢ Hypothesis testing
- ➢ Forecasting

Readings

1. Eviews – Manual
2. R Carter Hills, William E Griffiths, George G Judge (2001),"Using Eviews for Under Graduate Econometrics Second Editon, John Wiley &Sons, Inc
3. SPSS- Manual
4. Ajay S Gaur and Sanjana S Gaur "Statistical Methods for Practise and Research, A Guide to Data Analysis using SPSS", Sage Publication
5. Robert I. Kabacoff (2015), "R in Action- Data Analysis and Graphing with R" , Second Edition, Manning Publications
6. Zuur, Leno and Meesters (2009), "A beginner's Guide to R" Spinger
7. Krishna K.L (Ed), 1987 Econometrics Applications in India
8. Krishna Murthy, K. and Pandit V(1985), "Macro Economic Modelling of the Indian Economy", Hindustan

MES-C-401: Growth Economics

UNIT I: **Concepts and Issues in Economic Growth**

- ➢ Economic growth; Measurement of Growth; Growth v/s development.
- ➢ Historical Growth Experiences
- ➢ Factors affecting Growth— Capital, Labour, and Technology.
- ➢ Characteristics of Modern Economic Growth.
- ➢ Overview of Classical Growth theory-Adam Smith, Ricardo, Malthus.

Unit 1 : Basic Growth Models

- ➢ Growth models — Harrod and Domar Model, Instability Analysis
- ➢ Neoclassical Growth Model: Steady State, Transitional Dynamics; Solow Growth Accounting: measuring the impact of technology; Technological Progress, Economic Convergence, Speed of Convergence.
- ➢ Cambridge Models of Growth- Kaldor, Johan Robinson
- ➢ Differences between neoclassical and Cambridge Models of Growth

Unit 3: Endogenous Growth Theory

- ➢ Endogenous growth; Intellectual capital: role of learning, education and research;
- ➢ AK model — Explanations of cross country differentials in economic growth;
- ➢ Solow-Swan Model versus AK Approach;
- ➢ Schumpeterian Growth Models
- ➢ Endogenous Growth and Sustainable Development
- ➢ Optimal Growth in AK and Schumpeterian Growth Framework

Resources:

1. Adelman, I. (1961). Theories of Economic Growth and Development, Stanford University Press, Stanford.

2. M.P. Todaro and S.C. Smith, (2003), 8th ed; Economic Development, Pearson Education, Delhi.

3. A P Thirwal (1999/2006), 6th/8th ed; Growth and Development, Palgrave Macmillan, U.K.

4. M. Gills, Perkins, Romer, Snodgrass; Economics of Development, W.W.Norton and Company, New York.

5. D.N. Weil, (2009), 2nd ed; Economic Growth, Pearson Education, India.

6. R.J. Barro and Sala-i-Martin, (2007), 2nd ed; Economic Growth, Prentice Hall of India, New Delhi.

7. D. Acemoglu, "Introduction to Modern Economic Growth", 2009, Princeton: Princeton University Press.

8. P. Aghion and P. Howitt, "The Economics of Growth", 2009, Cambridge, Massachusetts: MIT Press.

9. R.J. Barro and X. Sala-i-Martin, "Economic Growth", Second Edition, 2004, b Cambridge, Massachusetts: MIT Press.

MES-C-402: Development Economics

Unit-I: Development, Concept and Theoretical issues:
➢ Development, Concept measurement issues, development indicators - State vs Market -Institutions, governance and Economic Development, Growth and Development. Economic Welfare Indicators and measures, Theories of under development, Hirchman, Rostow, Lewis, Gunder Frank, Myrdal, Harris Todoro, vicious circle of poverty, Gradual and Big push theory to economic development

Unit-II: Development, Population Growth, Poverty and Income inequality
➢ Population and economic development, poverty concept, poverty measurement to poor and access to credit, nutrition inequality of income, inequality and welfare, Lorenz curve, gninin coefficient, functional distribution, Kuzenet invertedness hypothesis, Low level equilibrium trap theory of Social and technological dualism.

Unit-III: Development Theories and Development Strategies:
➢ Theories of economic development, Adam Smith's Theory, Ricardian theory, Malthusion Theory, J.S. Mill's Theory of development, Marxian Theory, Schmpter's Capitalistic development through innovations, choice of techniques various approaches, planning meaning and needs, centralised, decentralised indicative planning. Micro-level planning, Trade and Development, Dual gap analysis, Globalisation and developing countries.

Basic Readings-

1. Todaro, Michael P, Economic Develpment, Longman Group United Kingdom, 1994.
2. Mier,G.M., Leading issues in economic development. Oxford University Press, 1991.
3. EPW Research Foundation, Social Indicators of development-II, Economic Political Weekly, May 21, 1994.
4. Malthns, T.R, An Essay on the Principle of Population, Combridge University Press 1992.
5. Burdhan, Pranab, Scarcity, Conflict and cooperation, Essays in the Political and Institutional Economies of development, Oxford University Press, New Delhi, 2005.
6. Bardhan, Pranab and Udry, chlastopher, development micro-economies, Oxford University Press, 1999.
7. Basu, Kanshik, Analytical Development Economies, Oxford University Press, 1998.
8. Dobb, Maurice, Theories of valvue and Distribution since Adam Smith, Indian Reprint, Kinz New Delhi, 1982.
9. Chaudhury, Permit, The Economic Theory og Growth, Harvester Whellts heaf London, U.K.
10. Rostow, inw, Theories of Economic Growth from David Hume to Present Day, Oxford University Press, Oxford, 1990.
11. Sehumpter, Joseph A, Capitalism Socialism and Democracy, Haper, New York, 1952 (Fifth Edition), Allen and unwin, London.

MES-OP-401: INTERNATIONAL FINANCE

Unit 1: The Foreign Exchange Market
➢ Foreign Exchange Market – Structure and Functions

➢ Organization of the Foreign Exchange Market- Spot and Future Market
➢ Trading Mechanism in Foreign Exchange Market
➢ Efficiency of Foreign Exchange Market
➢ Foreign Exchange Market in India

Unit 2: Balance of Payment and Exchange Rate Determination
➢ Balance of Trade and Balance of Payment
➢ Exchange Rate Systems
➢ Theories of Balance of Payment and Exchange Determination - PPP, Monetary Approach, Portfolio Balance Approach
➢ Mundell- Fleming Model, Perfect Capital Mobility and Flexible Exchange Rates
➢ Policy Conflicts and Adjustment under Fixed Exchange Rates
➢ Exchange Rate Changes and Trade Adjustment: Empirical Issues

Unit 3: International Financing System
➢ Changing Role of Monetary System
➢ New International Financial Architecture
➢ European Monetary Union and Financial System
➢ Single Currency and Optimum Currency Area
➢ The Euro-Currency Market
➢ Currency Crisis and Role of FEMA
➢ Exchange Rate Stability and Role of IMF

Reading List:
1. Brain Tew. the Evolution of International Monetary' System, Hutchinson, 1985
2. Shapiro, Alan C., Multinational Financial Management, John Wiley and Sons, 2003, Seventh Editions, Chapter3.
3. Franciso L. Rivera- Batiz, and Luis Rivera- Batiz, International Finance Open Economy Macroeconomics, Mazewell Macmillan International Edition, 1989; Chapter
4. Ahmad Khan Masood, Euro-Currency Market: Structure and Working, Indus Publishing Company, 1992.
5. Rajwade, A.V., (1996), Foreign Exchange, International Finance and Risk Management, Acacdemy of Business Studies.
6. J Dunning (1981), Multinational Enterprises.
7. Dornbusch and Fisher, Macroeconomics, Mcgraw Hill International Editions.
8. Krugman, Paul (1979) "A Model of Balance of Payments Crisis" Journal of Money, Credit and Banking 11, August.
9. Salat, Sw and D.W Henerson (1978), " Market Anticipation of Government Policies and Price of Gold," Journal of Political Economy 86 (August).
10. Obstfied, M and Rogoff, K "Foundations of International Macroeconomics", MIT Press, 1996.
11. Salvatore, D International Economics, VII Editions.
12. Kenen, P.B, the International Economy, Prentice Hall Publication.
13. Pecchioli, R.M., the Internationalization of Banking, Oecd, Paris; 1983

14. 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.
15. Moris Goldstein, the Asian Financial Crises; Causes, Cures and Systemic Implication Washington Dc, June 1998.
16. Batiz and Batiz, Chapter17
17. The Banker, Third World Debt, September, 1987.
18. IMF: Recent Multilateral Debt Restructuring with official and Bank Credits, Washingtion, December1983.
19. IMF: External Indebtedness of Developing Countries Occasional Paper No.3, Washington, May 1981.

MES-OP-402: MONETARY ECONOMICS

Unit 1: Demand for Money
- Overview of Development of Monetary Theory and Major Issues
- Classical and Neo-Classical Theories of Money: Early Versions. Pigou and Cambridge School, etc. The Dichotomy between the Monetary Theory and Value Theory. Patinkin's Critique of Neo-classical Theory.
- Money in Keynesian Framework: Liquidity Preference (L-P) Theory and Further Developments in L-P Approach; Tobin, Boumal Models.
- 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:
1. Pierce D.G. and P.J. Tysome, Monetary Economics: Theories, Evidence and Policy, Butterworths, London, 1985
2. Jadhav N., Monetary Economics for India, Macmillan India Ltd., 1994
3. Gupta S.B., Monetary Economics: Institutions, Theory and Policy, 1982
4. Goldfeld S.M. and L.V. Chandler, the Economics of Money and Banking, Harper and Row, 1981
5. Handa J., Monetary Economics, Routledge, New York, 2000

MES-CB-401: AGRICULTURAL ECONOMICS

Unit 1: Agriculture and Economic Development
- 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
- Factor Factor Relationship in Agriculture
- Rational and Irrational Stages of Production
- Risk and Uncertainty in Agriculture
- Crop Insurance
- Terms of Trade between Agriculture and Industry

Unit 3: Issues in India's Agricultural Development

- Land Reforms in India and Their Impact on Agrarian Structure
- The New Agricultural Strategy(Green Revolution)
- Recent Trends in Agricultural Growth in India
- WTO and Its Implication for Indian Agriculture
- Agricultural Price Policy in India
- •Sustainable Agriculture- indigenous practices, Bio- technological practices and growth potential

Reading List:
1. Ashok Rudra (1965), Economics of Agricultural Production and Resource Use, Prentice Hall.
2. Acharya, S.S.(1998), Agricultural Marketting in India: Some Facts and Emerging Issues, IJAE, July-Sept.
3. Kahlon A.S. and D.S. Tyagi, Agricultural Price Policy
4. in India, Heritage Publishers
5. Dantwala, M.L. et al (1991) Indian Agricultural Development since Independence, Oxford and IPH,
6. New Delhi
7. Ghatak Subrata and Ken Inqresent (1984) Agriculture and Economic Development, Select Book Services Syndicate, New Delhi
8. Hanumantha Rao (1964), "Agriciturua 1 Production Functions: Cost ant Return in India" Asia Publishing House, Bombay
9. Drummond H. Evan, and Jhon W Goodwin (2004) Agricultural Economics, Pearson Education, Delhi
10. Heady E.O. (1964) Economics of Agricultural Production and Recourse Use". Prentice Hall India Ltd,
11. New Delhi.
12. Kahlon. A.S. and D.S. Tyagi (1983), Agriculture Price Policy in India, Allied Publishers Ltd, New Delhi
13. Krishna Raj (1963) Farm Supply Response in India- Pakistan: A Study of the Punjab Region, Economics J.I, Sep
14. Khusro A.M. (1968) Readings in Agricultural Economics, Allied, Bombay

15. Kuznets. S. (1965) Economic Growth and Structure, Oxford and DBH Publishing Compnay, New Delhi.
16. Lele U. (1965) Food Grain Marketing in India: Private Performance and Public Policy, Popular Prakashan, Bombay.
17. Lewis, W.A. (1955) Economic Development with Unlimited Supplies of Labour, Manchester School of
18. Economic and Social Study, May.
19. Melior J. (1966), The Economics of Agriculture Development, Yom and Company, Bombay.
20. Melior J.W. (1969), Agricultural Policy in the Context of Economic Development" American Journal of
21. Agriculture Economics, 51 (5).
22. Motra A (1977), Terms of Trade and Class Relation, P. P Baghch Ad Company, Culcutta
23. M.L. Dantwala 1985), (Ed.) Agricultural Growth in India, Indian Society for Agricultural Economics. Raj K.N. and Sen A.K. and L.H.H.
24. MS Swaminathan (2012), Agriculture Cannot Wait- New Horiszons in Indian Agriculture, Academic Foundation, New Delhi
25. Rao (1988), (Ed.) Studies in Indian Agriculture, OUP
26. Rao Y.M (1992) Fixing Agricultural Price: Issues and Experiences, EPW March
27. Rath, N.K. (1985), 'Price', Costs of Production and
28. Terms of Trade ofIndian Agriculture, IJAE, Oct-Dec
29. R.K Sampanth (1980), Economic E.ffidency in Indian Agriculture
30. Reins G and John Ch Fei (1961), Theory of Economic Development
31. Robertson C.A. (1971) Introduction to Agricultural' Production Economics and Farm Management", Tata Mac-Graw Hill New Delhi
32. Sakhyan P.I. (1988) Introduction to Economics of Agricultural Production, Prentice Hall India Ltd, New
33. Delhi
34. S.A.R. Bilgrami (1996) a Introduction to Agricultural Economics, Himalayan Publishing House, Bombay.
35. Schultz T.W. (1964), Transforming Traditional Agriculture, New Have, Yale Univesity Press
36. Sidhu, D.S. (1990) Some Aspects of Agricultural Economics and Price Policies in India, IJAE, July-Sept.
37. Suthworth, H.M. and B.F. Johnston (Ed.) (1974 Agricultural Development and Economic Growth
38. Cornell Univesity, London
39. Tyagi D.S. (1974) Farmers Response to Agricultural Price in India: A Study in Decision Making, Heritage Publishers, New Delhi

MES-CB-402: 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.

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:

1. Gibbons, Robert (1992), A Primer in Game Theory, Harvester Wheatsheaf, Newyork, London
2. Fudenberg, Drew, and Jean Tirole, (2005) Game Theory, ANE Books, New Delhi
3. Oz Shy (1995), Industrial organization: Theory and Applications, Themit Press, Cambridge, Massachusetts, London, England.
4. Church, J. and Roger Ware (2000), Industrial Organization: A Strategic Approach, Mc-Graw –Hill, International Editions.
5. Jehle & Renne, Advanced Microeconomic Theory, Pearson Education, India
6. Mas-Colell, Andreu, Michael D.Whinston and Jerry R.
7. Green, (1995), Microeconomic Theory, OUP, New York.
8. Varian, Hall R., (1992), Microeconomic Analysis 3rd Edition, W.W. Norton & Company, New York, London.

MES-SE 401: COMPUTER APPLICATIONS IN ECONOMICS

Unit 1: Data Analysis and Regression Models with Statistical/Econometric Software
- ➢ Types of Data and Data Mining
- ➢ Analysis of Data – Descriptive Statistics and Stationarity Test
- ➢ Correlation and Correlograms
- ➢ Simple and Multiple Regression
- ➢ Binary and Logistic Regression
- ➢ Analysis of Variance
- ➢ Factor Analysis – Principal Component Analysis

Unit 2: Application to Micro Economics Models with Statistical/Econometric Software
- ➢ Consumption Functions and Empirical Issues
- ➢ Estimation and Analysis of Consumption Functions, Demand Functions and Related Measures
- ➢ Production Functions and Empirical Issues

- ➢ Estimation and Analysis of Production Functions and Related Measures
- ➢ Production Efficiency and Total Factor Productivity – Empirical Analysis
- ➢ Cost Functions and Estimation

Unit 3: Macro Econometric Models and Estimation with Statistical/Econometric Software
- ➢ Simultaneous Equation Systems in Economics
- ➢ Model Building in Economics: Specification, Identification and Estimation of Models
- ➢ Methods of Estimating Simultaneous Equation Models
- ➢ Examples of Macro-Econometric Models

Reading List:
1. Cramer, J.S., Empirical Econometrics.
2. Deaton, A.S., the Analysis of Household Surveys: a Micro-Econometric Approach to Development Policy.
3. Deaton, A.S. and J. Muellbauer, Economics and Consumer Behaviour.
4. Iyengar, N.S. and N. Bhattacharya, a Survey of Research in Economics, Vol. 7.
5. Pollak, R.A. and T.J. Wales, Demand System Specification and Estimation.
6. Klein, L.R.: (A) Introduction to Econometrics, (B) Text Book of Econometrics.
7. Krishna, K.L. (Ed.), Econometric Applications in India.
8. Wallis, K.F., Topics in Applied Econometrics.
9. Fair, R.C., Specification, Estimation and Analysis of Macro-Econometric Models, Harvard University Press, Cambridge, 1984.
10. Kendall, M.G., 'Introduction to Model Building and Its Problems' in Mathematical Model Building in Economics and Industry, 1968, London, Charles Griffin and Co., Ltd.
11. Bergstrom, A.R., Selected Economic Models and Their Analysis, 1967, New York, American Elsevier Publishing Company, Inc.
12. Tabor, M., Chaos and Integrability in Non-Linear Dynamics: an Introduction, 1989, New York, John Wiley.
13. Granger, C.W.J., (Ed.), Modelling Economic Series: Readings in Econometric Methodology, Clarendon Press, Oxford, 1990.
14. Granger, C.W.J. and Timo, T., Modelling Non-Linear Economic Relationships, 1996, Oxford University Press.
15. Rubinstein, R., Simulation and The Monte Carlo Method. 1981, New York.
16. Fair, R.C., Testing Macro-Econometric Models, Harvard University Press, 1994.
17. Hoover, S.V. and Ronald, F.P., Simulation: A Problem-Solving Approach, 1989, Massachusetts, Addison Wesley.
18. ormerod, P., Economic Modelling: Current Issues and Problems in Macroeconomic Modelling in the UK and The US. 1979, Heinemann, London 1979.
19. Rapp, B., Models for Optimal Investment and MaIntenance Decisions, 1974, Stockholm, Almquist & Wiksell International.
20. Woods, R.L. and Kent, L.L., Modelling and Simulation of Dynamic Systems, 1997, Prentice Hall, New Jersey.
21. Peter R. M., Joanne E.S. and Kenneth, F.W., 'Fiscal Policy Rules in Macro-Economic Models: Principles and Practice', Economic Modelling, 17 (2000), 171-193).
22. Fisher, P., Rational Expectations in Macroeconomic Models, Kluwer, 1992.
23. Krishnamurty, K. and V. Pandit, Macroeconomic Modelling of the Indian Economy, Hidustan, 1985.

24. Bedkin, R., L.R. Klein and K. Marwah, History of Macro-Econometric Modelling, Edward Elgen, 1991.
25. Cooley, T.F. (Ed.), Frontiers of Business Cycle Research, Princeton, 1995.
26. Zeigler B., Theory of Modelling and Simulation, Wiley, 1976

Department of Economics
Course: B.A. (HONS) ECONOMICS
Semester-Wise Paper and Credits*
(REVISED COURSE STRUCTURE w.e.f. 2016-17)

Semester-I	Semester-II
BES-C-101: Micro Economics-I BES-C-102: Mathematical Methods for Economics-I BES-CB-101: Environmental Economics	BES-C-201: Micro Economics-II BES-C-202: Mathematical Methods for Economics-II BES-CB-201: Agricultural Economics
Semester-III	**Semester-IV**
BES-C-301: Macro Economics-I BES-C-302: Statistical Methods -I BES-C-303: Indian Economy BES-AE-301: Economics of Education	BES-C-401: Macro Economics-II BES-C-402: Statistical Methods-II BES-C-403: Money and Banking BES-CB-401: International Finance
Semester-V	**Semester-VI**
BES-C-501: Development Economics BES-C-502: Econometrics - I BES-C-503: International Trade BES-CB-501: Financial Economics	BES-C-601: History of Economic Thought BES-C602: Public Economics BES-C-603: Econometrics - II BES-SE-601: Computer Applications in Economics

*Each paper carries 100 marks/4 credits.

BES-C-101: MICROECONOMICS-I

Unit-1: Theories of Consumer Behaviour
- Law of demand/supply, Determinants of demand/supply, Expansion/ contraction of demand/ supply, Increase/ decrease in demand/ supply, Market demand/ supply curve, concept of equilibrium, Elasticity of demand/supply and its measurement
- Cardinal utility approach (assumptions, equilibrium and its critique)
- Ordinal utility approach (assumptions, equilibrium and its critique), Income consumption curve, Engel curve, Price consumption curve, Income effect, Substitution effect and Price effect (Hicks and Slutsky approaches)
- Revealed Preference approach
- Consumer's surplus-Marshallian and Hicksian approaches.

Unit-2: Theory of Production and Costs

- Production Function, law of variable proportions, Isoquants, factor substitution, Equilibrium of the firm with respect to input use, Returns to scale, Economies and Diseconomies of scale, Expansion path, features of Cobb Douglas production function and elasticity of substitution
- Different concepts of cost and their inter-relationship, Short run and long run cost curves, Empirical evidence on costs, Modern theory of costs

Unit-3: Market Structure-I

- Perfect competiton(assumptions, features revenue curves, short & long run equilibrium of firm and industry, economic profits, Short and long run supply curve of firm and industry
- Monopoly (Features, conditions, Equilibrium of the firm, Price discrimination, Conditions of equilibrium under price discrimination.

References:
1. Varian H.R: Intermediate Microeconomics, 7th Edition 3
2. Pindyck, Rubinfield and Mehta: Microeconomics, 6th Edition
3. Ferguson and Gould: Micro economics, 6th Edition
4. Gravelle and Rees- Microeconomics; Pearson Education, 2nd Edition
5. Nicholson, Microeconomics

BES-C-102: MATHEMATICAL METHODS FOR ECONOMICS- I

Unit -1: **Basic concepts, Functions and Graphs**
- ➢ Sets and set operations, Ordered pairs, the real numbers, natural numbers, integers, rational and irrational numbers; absolute value and intervals; inequalities.
- ➢ The general concept of function, types of function (linear, quadratic, power, exponential, inverse); graphs of functions; Applications in Economics

Unit-2: Limits, Continuity and Single variable Differential Calculus
- ➢ Limits, continuity and differentiability, rules of differentiation (simple differentiation, sums, products, and quotients); Second and higher order derivatives, power rule, chain rule, implicit differentiation; Linear approximation and differentials; Quadratic approximations, Elasticities the Intermediate-value Theorem; the Extreme-value Theorem; The Mean-value Theorem; Indeterminate forms and L'Hopital's rule; Applications in Economics

Unit-3: **Single variable optimization and Integral Calculus**
- ➢ Stationary points of a function, Maxima and Minima(local and global); Convexity and Concavity of functions; Points of inflection; Optimization of economic functions Rules of integration, integration by parts, integration by substitution, indefinite integral, Definite Integral, Proper and Improper integral; Areas under curves and economic application of integration.

References:
1. Knut Sydsaeter and Peter J. Hammond (2005), *Mathematics for Economic Analysis*. Pearson Educational Asia: Delhi, 4th Indian reprint.
2. Chiang, A. C. & Kevin Wainwright (2005) (Fourth Edition): Fundamental Methods of Mathematical Economics, McGraw-Hill.
3. Allen, R.G.D.(1974), Mathematical Analysis for Economists, McMillan press, London
4. Chiang, A. C. (1984), *Fundamental Methods of Mathematical Economics, 3rd Ed*, McGraw-Hill.
5. Hoy,M., J. Livernois, C. McKenna, R. Rees and T. Stengos(2001), Mathematics for Economics, 2nd Edition Prentice Hall, India.
6. Dowling, Edward T. (1992), Schaum's Outline of Theory and Problems of Introduction to Mathematical Economics, 3rd Edition, McGraw Hill.

BES-CB-101: ENVIRONMENTAL ECONOMICS

Unit-1: Basic Environmental Issues:
- Environmental Economics- Meaning, Definition, Nature, Scope and Limitations, Difference between Environmental Economics and Resource Economics., Economy-Environment Linkages. Elementary Ecology- Definition, Types and Functions of Ecosystem; Laws of Thermodynamics; Basic Concept of Capital Theory, Externality-Positive and Negative, Public Goods and Criterion for Public Goods; Market Failure; Sustainable Development: Concepts; Indicators of Sustainable Development.

Unit-2: Economics of Natural Resources:
- Renewable and Non-Renewable Natural Resources: Forest Resources, Water Resources, Mineral Resources, Land Resources, Energy Resources; Common Property Resources (CPRs), Destruction of CPRs· and Its Impact on Human Welfare.

Unit-3: Economics of Environmental Regulation
- Evolution of Environmental Regulation; Environmental Legislations/ Policies in India; Instruments for Pollution Control: Command and Control Policy vs. Market Based Instruments: Taxes vs. Permits; Direct and Indirect Instruments of Pollution Control; Pollution Control System and Policy Measures in Indian Context

Basic Readings:

1. Bhattacharya, Rabindra N. (2001), "Environmental Economics-An Indian Perspective", Oxford University.Press, New Delhi
2. Boumal, WJ. and W.E. Oates (1988), "The Theory of Environmental Policy", 2nd Edition, Cambridge University Press, UK
3. Hanley, NJ.F. Shogren and B. White (1997), "Environmental Economics in Theory and Practice", OUP, Delhi.
4. Kolstad, Charles D. (2000), "Environmental Economics", Oxford University Press, New York
5. Sankar, U (2001), "Environmental Economics", Oxford University Press, New Delhi
6. Sengupta, R. (....), "Ecology and Economics: An Approach to Sustainable Development", Oxford University Press, New Delhi
7. Tietenberg,T.(1994),"Environmental Economics and Policy",Harper Coli ins,New York(T)
8. Tietenberg, T. (2003), Environment and Natural Resource Economics, 6th Edi. Pearson Education Inc. New Delhi.
9. Pearce D. W. and R. Kerry Turner, (1990), "Economics of Natural Resources and Environment, Baltimore, Maryland USA: The johns Hopkins University press.

BES-C-201: MICROECONOMICS-II

Unit-1: Market Structure
- Monopolistic Competition : Assumptions of Chamberlin's model, Concept of product group, Equilibrium of individual firm (selling cost excluded) and Group equilibrium, Excess capacity, criticism of the model
- Oligopoly:-Cournot's duopoly model and its applicability to Oligopoly, Cournot's equilibrium using reaction curves, Paul Sweezy's kinked demand curve solution.

Unit-2: Factor Pricing
- Wage determination under perfect and imperfect competition, monopolistic and monopsonistic exploitation
- Theories of rent- Ricardian theory of rent (scarcity rent verses differential rent, critical evaluation of the theory), Modern Theory of rent, Quasi-rent
- Theories of interest-Classical, Neoclassical and Keynesian theories of interest
- Theories of profit-Dynamic theory, Risk and uncertainty theory and Schumpeterian theory of profit.

Unit-3: Welfare Economics
- Various approaches to social welfare
- Pareto's welfare criteria
- Kaldor-Hicks compensation criteria
- Concept of Social welfare function, maximisation of social welfare and determination of 'Point of Bliss'.

References:

1. Chaudhary, Kalyanjit, Roy Microeconomics.
2. Koutsyansis, A. Modern Microeconomics, Macmillan.
3. Left witch, price Theory and Resource Allocation .
4. Lipsey, R.G. An Introduction to Positive Economics.
5. Ray, N.C. An Introduction to Microeconomics, Macmillan.
6. Samuelon, P.A. and W.D. Noidhaus, Economics.
7. Stonier and Hague A Text Book of Economic Theory.
8. Varian, Hal, Intermediate Microeconomics.
9. Ferguson and Gould: Microeconomics, 6th Edition

BES-C-202: MATHEMATICAL METHODS FOR ECONOMICS- II

Unit - 1: Linear Algebra
- System of linear equations, vectors, vector operations, linear combinations of vectors, length of vectors and orthogonality, Applications in Economics
- Matrices and its types, matrix operations(row and column), Echelon and Reduced echelon forms, determinants and its properties, singularity of a matrix, inverse of a matrix, linear independence and rank of a matrix, solution of a system of linear equations (by Cramer's Rule, Matrix Inversion), Applications in Economics
- Solution of Homogeneous Equation System; Leontief Input-Output models (Open and Closed),Applications in Economics

Unit - 2: Calculus of Multivariate Functions
- Partial derivatives (two variables and many variables) and its economic relevance, Total derivatives, Derivatives of functions using chain rule, Derivative of functions defined implicitly, Homogeneous and Homothetic functions, Multivariable optimization, local and global extreme, Stationary points of a function, first and second order condition using Hessian, Point of Inflection, Saddle point, Constraint Optimization (using Lagrangean 6 multiplier), sufficient condition (using Bordered Hessian), Optimization of economic functions, Applications in Economics

Unit -3: Dynamic Analysis
- Continuous time: First order linear differential equations (homogeneous and non homogeneous case) with constant coefficient and constant term; with variable coefficient and variable term; Dynamics of market price; Exact differential equations. Discrete Time: First order Difference equations, the stability analysis of the equilibrium (oscillatory and non-oscillatory, divergent and convergent time paths); The Cobweb model, Applications in Economics

References:
1. Knut Sydsaeter and Peter J. Hammond (2005), *Mathematics for Economic Analysis.* Pearson Educational Asia: Delhi, 4th Indian reprint
2. Chiang, A. C. & Kevin Wainwright (2005) Fourth Edition): *Fundamental Methods of Mathematical Economics,* McGraw-Hill.
3. Allen, R.G.D.(1974), *Mathematical Analysis for Economists*, McMillan Press, London
4. Chiang. A.C. (1984), *Fundamental Methods of Mathematical Economics,* 3rd ed. McGraw-Hill
5. Hoy.,M., J. Livernois, C. McKenna, R.Rees and T. Stengos: *Mathematics for Economics*, 2nd Edition Prentice Hall, India (2001)
6. Dowling, Edward T. (1992*), Schaum's Outline of Theory and Problems of Introduction to Mathematics,* 3rd Edition, McGraw-Hill

BES-CB-201: AGRICULTURAL ECONOMICS

Unit- 1: Introduction
- Definition and scope of Agricultural Economics, Unique features of Agriculture, Role of Agriculture in Economic Development-Kuznet formulation, linkage between Agriculture and Non Agricultural sectors.

Unit -2: Agricultural Marketing and Price Policy
- Agricultural Marketing, Efficiency criteria of Agricultural Marketing, causes for the inefficiency of Indian Agricultural Marketing, E- Marketing in agricultural Commodities-issues and Challenges, Agricultural Price Policy and Evaluation, Public Distribution system in India-issues and challenges, Food Corporation of India, Agricultural Costs and Price Commission.

Unit- 3: Issues in India's Agricultural Development
- Land Tenure system on the eve of independence, land reforms measures- Achievements, problems and policy- The new agricultural technology and Green Revolution-Rationale, Progress Problems and Prospects. Agricultural credit-Problems and sources, WTO and Indian Agriculture.

Readings:
1. GS Bhalla, Agricultural Development since Independence
2. TW Schultz, Transformation of Traditional Agriculture
3. Mellor, Agricultural Development
4. R.N. Soni,Leading Issues in Agricultural Economics
5. Sadhu and Singh,Agricultural Problems in India
6. Indian Journal of Agricultural Economics -Relevant issues
7. Economic Survey various issues
8. Khusro A. M. , Readings in Agricultural Economics
9. Swaminathan M. S , Agriculture Cannot Wait- New Horizons in Indian Agriculture

BES-C-301: MACROECONOMICS-I

Unit-1: National Income and Methods of Measurement.
➢ Concept of National Income –GNP and NNP at market price and factor cost, National product and Domestic product, Measurement of National Income –Method ,Expenditure Method and Value added Method. Problems in the estimation National Income

Unit-2: Classical Theory of Output and Employment.
➢ Says law of Market ,Quantity Theory of Money, Classical model without saving and investment. Effects of a change in Labour Supply and a change in labour demand on the level output and employment, rigid money wage, monetary policy and full employment. Classical Theory with saving and investment.

Unit-3: Keynesian Theory of output and Employment.
➢ The Keynesian approach to the determination of price, Output and Employment –The complete Keynesian model. Consumption function, Saving and Interment Equality, Concept of Multiplier, Government Expenditure Multiplier, and Tax multiplier Leakages of Multiplier.

Basic Readings:
1. Macroeconomics Rudiger Dornbush,Stanley Fischer,Richard Startz, Eleventh Edition.
2.Macro Economy Today Bradley R.Schiller,Tata Mcgraw-Hill, Eleventh Edition.
3. Macroeconomics N. Gregory Mankiw, First Indian Reprint 1992.
4.Macroeconomic Theory and Policy,William H.Branson, Second Edition.
5. Macroeconomics John Lindauer,Third Edition.
6. Macroeconomics Analysis and Policy,Lioyd G.Reynolds Sixth Edition.
7. Macroeconomics Theory and Policy, William J.Baumol,1973.
8.Shapiro E. Macro Economic Analysis Second Edition.
9. Wilfred Beckerman' An Introduction to National Income Analysis'.
10. S.K.Aggarwal National Income Accounting Latest Edition.

BES-C-302: STATISTICAL METHODS – I

Unit-1: Basic Concepts and Descriptive Methods
- ➢ Definition and Role of Statistics; Measures central location – Median, Mode, Mean, Harmonic Mean, Geometric Mean (AM, GM, HM, GM), simple and weighted averages, group averages, Measures of dispersion – Range, Variance and Standard Deviation, Mean Deviation, Quartile Deviation, Measures of Skewness and kurtosis; Measures of economic inequality

Unit-2: Probability and Probability Distributions
- ➢ Random experiment, sample space and events; classical, empirical and axiomatic definitions of probability; addition and multiplication theorems; conditional probability, independent events and Baye's rule, Random variable ; mathematical expectation -mean and variance of a random variable Binomial, Poisson and Normal distributions

Unit-3: Index Numbers and Time Series Analysis
- ➢ Index Numbers: Concept and uses; Laspeyres, Paasche's and Fisher's index numbers; time reversal, factor reversal and circular tests; problems in constructing index numbers; splicing, base shifting; use of index numbers for deflating other series.Time Series Analysis: Concept and uses; Components of time series; Methods of moving averages and least squares.

Readings:
1. Nagar, A.L. and R.K. Das (1983), Basic Statistics, Oxford University Press, New Delhi
2. Gupta, S. P. (2005), Statistical Methods, S. Chand & Sons, New Delhi
3. Freund, John E. (1979), Modern Elementary Statistics, Prentice Hall of India, New Delhi.
4. Speigal, M.R. (1992), Theory and Problems of Statistics, McGraw Hill Book, London.
5. Thukral, J. K. (2010), Business Statistics, Taxmann Publications, New Delhi
6. P.H. Karmel and M. Polasek (1978), *Applied Statistics for Economists,* 4th edition, Pitman, Australia
7. Allen Webster (1997), *Applied Statistics for Business and Economics: an Essential Version*, 3rd edition, McGraw-Hill
8. Lind, Douglas A., William G. Marchal, and Samuel A. Wathan(20060, *Business Statistics for Business & Economics*, 5th ed. Boston: McGraw-Hill Irwin.

Other Books
1. Allen, R.G.D. (1949), *Statistics for Economists*, Hutchinson's University Library, London, UK.
2. Croxton, F.E., D.J. Cowden and S. Klein (1973), Applied General Statistics, Prentice Hall, New Delhi.
3. Gupta, S.C. and V.K. Kapoor (1993), Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.
4. Freund John E. and Ronald E. Walpole (1987), Mathematical Statistics, Prentice-Hall of India, New Delhi.

BES-C-303: INDIAN ECONOMY

Unit- 1: Concept of Developed and Developing Economies
➢ Characteristics of a developing economy – basic features of Indian economy at the time of independence Population and Economic Development - Demographic trends of India – Occupational Structure - Population policy, Employment in organised and unorganised sectors , Issues in Indian Planning – Objectives and critical evaluation of each plan. Centre-State relationship

Unit-2: Perspective of India's Agricultural and Industrial Economy
➢ Importance of Agriculture in Indian economy – trends in agriculture production and productivity, Green Revolution and Food Security, Agriculture Price Policy, Sources of Agricultural Finance and Sustainable Agricultural Growth, Industrial Policy – pre and post 1991 and trends in India's industrial growth and productivity, Small vs. large industry, public vs. private sector industries, disinvestment strategies, Policy issues and future prospects: infrastructure, technology and regional imbalances

Unit-3: Contemporary Issues
➢ Macro-economic stabilisation – fiscal and monetary policies, Globalisation and its impact on the Indian economy with special reference to global financial crisis, 2007-08, India and the World Economics, India's foreign trade and investment policies,

References:
1. Bansil, P.C, *Agricultural Problems of India*, Vikas Publishing House Pvt. Ltd.
2. Datt, R. and Sundharam, K.P.M, *Indian Economy*, S. Chand & Company Ltd, New Delhi.
3. Kapila, U. (2008-09), *Indian Economy Since Independence*, Academic Foundation, New Delhi.
4. Mookherjee, D. (1997), *Indian Industry: Policies and Performance*, Oxford University Press,

Detailed Readings:
1. Acharya, S. (2002), *India: Crisis, Reforms and Growth in the Nineties*, Working Paper No. 139, Centre for Research on Economic Development and Policy Reform, Stanford University.
2. Ahluwalia, I.J. and Little, I.M.D. (Eds.) (1999), *India's Economic Reforms and Development (Essays in Honour of Manmohan Singh)*, Oxford University Press, New Delhi.
3. Basu, S.C. and Gulati, A. (2005), *Economic Reforms and Food Security: The Impact of Trade and Technology in South Asia*, Routledge.
4. Bhagwati, J.N.(1993), *India in Transition: Freeing the Economy*, Clarendon Oxford.
5. Bhalla, G.S. and Singh, G. (2001), *Indian Agriculture: Four Decades of Development*, Sage Publications.
6. Glinskaya, E. and Lokshin, M. (2005), *Wage Differentials Between The Public And Private Sectors in India*, The World Bank.
7. Mattoo, A. and Stern, R.M. (2003), *India and the WTO*, World Bank Publication.
8. Mohan, T.T.R. (2005), *Privatisation in India: Challenging Economic Orthodoxy*, Routledge.

9. Rao, C.H.H. (2005), *Agriculture, Food Security, Poverty and Environment: Essays on post-reforms India*, Oxford University Press.
10. Sengupta, D., Chakraborty, D. and Banerjee, P. (2006), *Beyond the Transition of WTO: An Indian Perspective on Emerging Issues*, Academic Foundation.

BES-AE-301: ECONOMICS OF EDUCATION

Unit- I: Economics of Education
  ➢ Meaning and Scope of Economics of Education, Education - Human Resource Development – Economic Development Linkages

Unit -2: Education Planning and Finance
  ➢ Education planning techniques, Cost – Benefit Analysis, Theories of Public Expenditure, Resource Mobilisation and Utilisation, Effects of Education on levels of earnings and value based education

Unit -3: Education in India
  ➢ Indian perspective to education, Sarva Shiksha Abhiyan, Right to Education and Legislations relating to Right to Education with special reference to Constitutional provisions/Preamble. Higher Education in India: Issues, Concerns and New Directions

References:
1. Belfield, C.R. (2000), *Economic Principles for Education: Theory and Evidence*, Edward Elgar Publishing.
2. Deka, B. (2000), *Higher Education in India: Development and Problems*, Atlantic Publishers &Dist.
3. Jha, P., Das, S., Mohanty, S.S. and Jha, N.K. (2008), *Public Provisioning of Elementary Education in India*, Sage Publications India Pvt. Ltd.

Detailed Readings:
1. Agarwal,A.K. (2005), *Development of Educational Systems in India*, AnmolPublicatonsPvt. Ltd.
2. Checchi, D. (2006), *The Economics of Education: Human Capital, Family Background and Inequality*, Cambridge University Press.
3. Gupta, N.L. (2000), *Human Values in Education*, Concept Publishing Company.
4. Harris, I.M. and Morrison, M.L., Peace Education, McFarland, 2003.
5. *Higher Education in India: Issues, Concerns and New Directions* (December 2003). Recommendations of UGC golden jubilee Seminars-2003, held at eleven universities in India.
6. Kashyap, S.C. (2006), *The Constitution of India*, Universal Law Publishing.
7. Kumar, B. and Hansara, B.S. (2000), *Extension Education for Human Resource Development*, Concept Publishing Company, 2000.
8. Pathak, R.P. (2007), *Education in the Emerging India*, Atlantic Publishers &Dist.
9. Sharma, R.N. and Sharma, R.K. (2004), *Problems of Education in India*, Atlantic Publishers &Dist.
10. *World Development Report 1980*, World Bank Publications

BES-C-401: MACROECONOMICS-II

Unit.-1: Theories of Consumption & Investment
➢ General theories of spending behaviour, Absolute Income hypothesis, Relative income hypothesis, Permanent Income hypothesis, Life Cycle hypothesis Motivation, for investment, Marginal efficiency of capital supply price expected income streams, Marginal efficiency of capital and rate interest, acceleration principle.

Unit-2: Keynesian Theory of Money and Interest
➢ Keynesian Theory of Interest, Determination of rate of interest,Changes in the levels of income,speculative,Demand and Money supply and their effect on equilibrium rate of interest Liquidity trap and policy Implications. IS and LM Curve Analysiss,The General Equilibrium of Product and Money Market Relative,Effectiveness of Monetary and Fiscal Policies.

Unit-3: Theory of Inflation and Business Cycle
➢ Types and Theories of Inflation, Demand pull and cost push inflation, The Philips curve, trade of between inflation and unemployment, Concept and Phase of Business cycle, Innovation Theory, Keynesian Theory, Monterey Theory.

Basic Readings:
1. Macroeconomics Rudiger Dornbush,Stanley Fischer,Richard Startz, Eleventh Edition.
2.Macro Economy Today Bradley R.Schiller,Tata Mcgraw-Hill, Eleventh Edition.
3. Macroeconomics N. Gregory Mankiw, First Indian Reprint 1992.
4.Macroeconomic Theory and Policy,William H.Branson, Second Edition.
5. Macroeconomics John Lindauer,Third Edition.
6. Macroeconomics Analysis and Policy,Lioyd G.Reynolds Sixth Edition.
7. Macroeconomics Theory and Policy, William J.Baumol,1973.
8.Shapiro E. Macro Economic Analysis Second Edition.
9. Wilfred Beckerman' An Introduction to National Income Analysis'.
10. S.K.Aggarwal National Income Accounting Latest Edition. Pvt. Ltd.
7. William Branson: Macro Economic Theory and Policy

BES-C-402: STATISTICAL METHODS – II

Unit-1: Uni-variate and Bi-variate Analysis
- Moments and moment generating function (m.g.f.), , Multivariate Statistics - joint, marginal and conditional distribution; Product moment – covariance, correlation, rank correlation , Simple linear regression; method of least squares; linear and exponential trend

Unit- 2: Introduction to Sampling Distributions
- Population versus sample, Methods of sampling, simple random sample, sampling distribution of sample mean for normal and non-normal populations, Chebyshev's inequality, law of large numbers, optimum size of sample, central limit theorem, Definition of z, chi-square, t and F statistics.

Unit-3: Introduction to Statistical Inference
- Properties of point estimator - unbiasedness, relative efficiency and consistency, Testing of Hypothesis - type I and type II errors, level of significance, power of a test, Use of z, chi-square, t and F statistics - large sample and small sample tests for mean, one tail and two tail tests for difference of means, Chi-square test for (i) Independence of two attributes, F-test for ratio of two variances, one-way analysis of variance.

Readings:
1. Freund John E. and Ronald E. Walpole (1987), Mathematical Statistics, Prentice-Hall of India, New Delhi.
2. Nagar, A.L. and R.K. Das (1983), Basic Statistics, Oxford University Press, New Delhi
3. Kapur, J.N. and Saxena, H.C. (1988), Elements of Mathematical Statistics, S. Chand & Sons, New Delhi
4. Speigal, M.R. (1992), Theory and Problems of Statistics, McGraw Hill Book, London.
5. P.H. Karmel and M. Polasek (1978), *Applied Statistics for Economists,* 4th edition,
6. Pitman, Australia
7. Lind, Douglas A., William G. Marchal, and Samuel A. Wathan. *Business Statistics for Business & Economics*, 5th ed. Boston: McGraw-Hill Irwin. 2006

Other Books
1. Allen, R.G.D. (1949), *Statistics for Economists*, Hutchinson's University Library, London, UK.
2. Croxton, F.E., D.J. Cowden and S. Klein (1973), Applied General Statistics, Prentice Hall, New Delhi.
3. Gupta, S.C. and Kapoor, V.K. (1988), Elements of Mathematical Statistics, S. Chand & Sons, New Delhi

BES-C-403: MONEY AND BANKING

Unit- 1: Money and Evolution
- Meaning, Definitions and Functions of Money - Classification of Money- Gresham's Law - RBI classification of Money. Theories of Money - Fisher's Quantity Theory of Money -Cambridge Approach (Marshall, Pigou, Robertson & Keynes), Measures of Money, Money Multiplier Analysis

Unit-2: Banking Sector- An overview

- Banking: Meaning and definition- Functions of Central Bank, Credit Control Methods by RBI, Reserve Money/High powered Money
- Functions of Commercial Banks - Concept of Credit Creation-Functions of RBI -, Role of Private Banks and a comparison- Role of Foreign Banks
- Recent developments in Banking Sectors- Social banking, Alternative Banking Strategy- Inclusive Banking

Unit- 3: Monetary Management
- International Monetary System- Monetary Policy in India- Instruments of Monetary policy in India- Fiscal Policy in India- Instruments of Fiscal Policy in India- Financial Sector Reforms in India, The Narasimhan Committee Report

References:
1. Chandler, L.V. The Monetary and Financial System
2. M.K. Lewis (2000), Monetary Economics, OUP
3. M.R. Baye, D.W. Jansen (1996), Money Banking and Financial Markets, AITBS, (Indian Edition)
4. Maurice Levi (1999), International Finance, Tata McGraw Hill
5. L.M. Bhole (1999), Financial Institutions and Markets, Tata Mcgraw Hill
6. R.B.I. Bulletin, Annual Report; Report on Currency and Finance
7. R.B.I. - Report of the Committee on the Financial System (Narasimham Committee Report I)
8. R.B.I. - Report of the Committee on Banking Sector Reforms (Narasimham Committee Report II) Summary in RBI Bulletin, July, 1998.
9. R.B.I - Report of the Working Group : Money Supply Analytics and Methodology of Compilation, 1998.
10. S.B.Gupta, Monetary Economics
11. Y.V. Reddy (2000), Monetary and Financial Sector Reforms in India UBSPD, New Delhi
12. K.P.M. Sundaram - "Money, banking & International Trade", Sultan Chand, 2010.

BES-CB-401: INTERNATIONAL FINANCE

Unit 1: The Foreign Exchange Market
- ➢ Foreign Exchange Market – Structure and Functions
- ➢ Foreign Exchange Market Products
- ➢ Foreign Exchange Market Trading
- ➢ Efficiency of Foreign Exchange Market
- ➢ Foreign Exchange Market in India

Unit 2: Balance of Payment and Exchange Rate Determination
- ➢ Balance of Trade and Balance of payment
- ➢ Fixed Exchange Rate System
- ➢ Flexible Exchange Rate System
- ➢ Floating Exchange Rate System
- ➢ Theories of Balance of Payment and Exchange Determination- PPP, Elasticity Approach, Income Absorption Approach, Monetary Approach

Unit 3: The International Monetary System
- ➢ Overview of the International Financial Market
- ➢ A Brief History of the International Monetary System
- ➢ The European Monetary System and Monetary Union
- ➢ Alternative Exchange Rate System
- ➢ Exchange Rate System and Policies in India

References:
1. Brian Tew : The Evolution of International Monetary System, Hutchinson, 1985
2. Alan C Shapiro: Multinational Financial Management, Seventh Edition, John Wiley & Sons, 2003
3. Richard M Levich: International Financial Markets, McGraw Hill International Edition, 2001
4. A.V. Rajwade: Foreign Exchange, International Finance and Risk Management, Academy of Business Studies, 1996

BES-C-501: DEVELOPMENT ECONOMICS

Unit-1: Growth and Development
  ➢ Growth and Development--Meaning, Evolution and Approaches, Determinants' of Growth, Indicators, Linkages. Human Development-- Approach and Indicators. Sustainable Development-Concept, Operational Rules and Indicators. Growth Models- Classical, Neo-Classical, Harrod-Domar.

Unit-2: Under-Development Determinants and Theories
  ➢ Under-Development Meaning, Determinants and Indicators, Partial Theories of Growth and Development-Vicious Circle of Poverty, Circular Causation, Unlimited Supply of Labour, Big Push, Balanced Growth, Critical Minimum Effort Thesis, Low Income Equilibrium Trap, Dualism-Technical, Behavioral and Social. Characteristics of Developing Countries.

Unit-3: Determinants of Development
  ➢ State and Markets; Capital-Human, Natural and Social and Manmade., Agriculture Industry and Services; Physical Infrastructure, Policies, Planning and Development Administration, Research and Development and Technology, Non-Economic Factors.

References:
1. Adelman, I. (1961), Theories of Economic Growth and Development, Stanford University, Stanford.
2. Aghion, P. and Peter Howit (2011), Economics of Growth, PHI Learning Pvt. Ltd., New Delhi.
3. Behrman, S. and T. N. Srinivasan (1995), Handbook of Development Economics, Vol. 1 to 3, Elsevire, Amsterdam.
4. Chari, Sharad and Staurt Corbridge (2008), The Development Reader, Routledge London.
5. Ghatak, S. (1986), An Introduction to Development Economics, Allen and Unwin, London.
6. Hayami, Y. (1997), Development Economics, Oxford University Press, New York.
7. Higgins, B. (1959), Economic Development, Norton, New York.
8. Kindleberger, C. P. (1977), economic Development, 3rd edi., McGraw Hill, New York.
9. Meier, G. M. (1995), Leading Issues in Economic development, Oxford University Press, New Delhi.
10. Myint, Hla (1971), Economic theory and under developed countries, Oxford University Press, New York.
11. Ray, Debraj (1988), Development Economics OUP, New Delhi.
12. Seers Dudley, (1969), The Meaning of Development, International Development Review, Vol. 11, No. 4. Pp.2-6
13. Sen , A. K. (1995), The Concept of Development, In Handbook of Development Economics, (eds.)Behrman, S. and T. N. Srinivasan Vol. 1 to 3, Elsevire, Amsterdam.
14. Sen , A. K. (), Development Which Way Now, In: Resources Values and Development, OUP, New Delhi.

15. Todaro, M. P. and Stephan C. Smith (2011), Economic Development, 5th edi. Pearson Education in South Asia.
16. Thirwal, A. P. (1999), Growth and development, 3rd edi. Macmillan, London.

BES-C-502: ECONOMETRICS – I

Unit 1: Simple Linear Regression Analysis
➢ Introduction to Econometrics; Two variable regression analysis-Population Regression function and Sample Regression Function; Significance of Stochastic Disturbance Term; Simple Classical Linear Regression Model (CLRM)- Assumptions, OLS estimation; Desirable Properties of OLS Estimators- Guass Markov Theorem; Hypothesis Testing, Goodness of Fit.

Unit 2: Multiple Regression Analysis
➢ Multiple Regression Equation; OLS estimation of Partial Regression Coefficients; Multiple Coefficient of Determination (R^2) and Adjusted R^2; Multiple and Partial Correlation Coefficients; Problem of Inferences and Hypothesis Testing.

Unit 3: Problems in OLS Estimation
➢ Problems in OLS Methods: Analysis of Residuals – Heteroschedasticity and Autocorrelation Problems – Consequences of applying OLS under Heteroscedasticity and Autocorrelation – tests and remedial measures for removal of Hetroscedasticity and autocorrelation; Multicollinearity-consequences, tests and remedial measures.

References:
1. Green W.H (2003), "Econometric Analysis", Prentice Hall, Pearson Education,New Delhi
2. 2.Gujrati, D (2007), "Basic Econometrics", McGraw Hill , 4th Edition, New Delhi
3. 3.Gujarati D (1992),"Essential Econometrics", McGraw Hill, Singapore
4. 4.Johnston, J. and Dinardo(1997), "Econometric Methods", 4th Edition, McGraw Hill, New York.
5. 5.Jhonston J (1985), "Econometric Methods", McGraw Hill, New York
6. 7.Kmenta J (1997), "Elements of Econometrics", Michigan Press New York
7. 8.Maddala (2001) , "Introduction to Econometrics", 3rd Edition. John Wiley, 2001.
8. 9.Wooldridge Jeffrey W.(2013), "Introductory Econometrics- A Modern Approach", Fourth Edition, Cengage India Private Limited, New Delhi

BES-C-503: INTERNATIONAL TRADE

Unit-1: Introduction to International Trade
➢ International trade, domestic, regional and intra regional trade, forces for and against economic integration need for separate theory of inter natural trade, production possibility curve, Offer curve terms of trade. Pure theory of international trade, Ricardo's comparative cost advantage Hecksher Ohlin trade model, Criticism Leontif Paradox.

Unit-2: International Trade Policies
➢ Free trade and economic protection, Tariff, Economic effects of tariff, partial and general equilibrium, import quota, Import substitution vs export promotion, Prebisch Singer Hypothesis General Agreement on Tariff and Trade (GATT), various rounds of trade negotiations and new issues under Uruguay Round issues under Doha Development Round.

Unit-3: Balance of Payment and International Monetary System

➢ Balance of payment, exchange rate determination, exchange rate liberalisation, disequilibrium in the balance of payments, adjustment mechanism, Bretton Wood monetary system and its break down and current scenario, world bank, organisation, function and its role in the development of developing countries.

Basic Readings:
1. Bo-Sodersten and S Goeffrey Reed, International Economics III Edition, 1994
2. Salvatore. D , International Economics, 1983
3. Haberler G, The Theory of International Trade, 1935
4. Kindleberger. C.P. , International Economics, 1976.
5. Ellsworth, P.T. International Economics, 1969

BES-CB-501: FINANCIAL ECONOMICS

Unit 1: Introduction to Financial Markets
- Financial Markets – Role and Functions
- Types of Financial Markets - Primary and Secondary Markets
- Financial Markets – Instruments and Transaction Mechanism in Spot Market
- Introduction to Derivatives Market – Forward, Futures and Options
- Transactions Mechanism in Derivative Markets
- Indian Financial Markets – Equity Market, Bond Market, Mutual Funds and Commodity Market
- Role of Stock Exchanges (NSE/BSE)
- Regulations of Indian Financial Markets and Role of SEBI

Unit 2: Stocks Market Analysis
- Fundamental Analysis of Stocks and Investment – Qualitative and Quantitative Analysis
- Different Types of Stocks and Valuation of Stocks
- Concept of Market Efficiency and Forms of Market Efficiency
- Modern Theory of Investment - Capital Asset Pricing Model
- Portfolio Diversification and Simple Portfolio Diversification Problem

Unit- 3: Bond Market Analysis
- Time Value of Money – Present Value and Future Value
- Annuity and Perpetuity, Compounding and Discounting
- Types of Bond – Pure Discount Bond, Coupon Bond, Consols
- Valuation of Bond
- Relationship between Government Bond and Corporate Bond
- Bond Price and Interest Rate
- Term Structure of Interest Rates and Yield Curve

References
1. Bodie, Robert c Merton and David Cleaton (2009), Financial Economics, Pearson
2. Elton, Gruber Brown, Goetzmann (2007), Modern Portfolio Theory and Investment Analysis
3. Prasanna Chandra (2010), International Analysis and portfolio Management, Tata McGraw Hill

BES-C-601: HISTORY OF ECONOMIC THOUGHT

Unit -1: Pre Classical and the Classical School

- Mercantilism: Main Principles, Physiocracy: Natural order, Agriculture and Product Net , Adam Smith – Division of Labour, theory of value, doctrine of laissez faire, David Ricardo – Theory of Value, Theory of Distribution, Malthus – Theory of Gluts, Theory of Population, John Stuart Mill - Principles of Political Economy

Unit-2: The Marxian Challenge and Marginal Revolution

- Karl Marx - A Contribution to the Critique of Political Economy, William Stanley Jevons - The Theory of Political Economy, Alfred Marshall - Principles of Economics, Eugen von Bohm-Bawerk - The Positive Theory of Capital

Unit 3: Contemporary School of Economic Thought

- Irving Fisher - The Purchasing Power of Money and its Determination and Relation to Credit Interest and Crises, John Maynard Keynes – Treatise on Money and The General Theory of Employment, Interest and Money, Milton Friedman – Resataement of the Quantity Theory of Money, George Akerlof – Information Asymmetry

Select References:

1. Hunt, E.K. and Lautzenheiser, M. (2011), *History of Economic Thought: A Critical Perspective*, M.E. Sharpe.
2. Medema, S.G. and Samuels, W.J. (2003), *The History of Economic Thought: A Reader*, Routledge.

Detailed Readings:

1. Ekelund, R.B. and Hebert, R.F. (1975), *A History of Economic Theory and Method,* McGraw-Hill.
2. Hajela, T.N. (2008), *History of Economic Thought*, Ane Books Pvt. Ltd.
3. Haney, L.H. (1922), *History of Economic Thought: A Critical Account of the Origin and Development of the Economic Theories of the Leading Thinkers in the Leading Nations*, Macmillan.
4. Landerth, H. and Colander, D.C. (2002), *History of Economic Thought, Houghton Mifflin*.
5. Robbins, L. (2000), *A History of Economic Thought: The LSE Lectures*, Princeton University Press.
6. Roncaglia, A. (2005), *The Wealth of Ideas: A History of Economic Thought*, Cambridge University Press.
7. Spiegel, H.W. (1991), *The Growth of Economic Thought*, Duke University Press.

BES-C-602: PUBLIC ECONOMICS

Unit-1: Meaning and Scope of Public finance
➤ Meaning and Scope of Public Finance- Distinction between Public Finance and Private Finance, Economic Activities and the State- Public Goods Vs Private Goods, Principle of Maximum Social Advantage

Unit-2: Public Revenue and Taxes
➤ Sources of Public Revenue- Division of Tax Burden-Taxes – Objectives of Taxation- Classification of Taxes - Canons of Taxation, Principles of Taxation. Ability, Benefit and cost of service- Impact, Incidence and shifting of Tax Burden- Theories of Tax Shifting– Effects of Taxation – Major Taxes in India. Value Added Tax in India -The concept of Goods and Service Tax (GST), Double Taxation,

Unit- 3: Public Expenditure and Public Debt
➤ Public Expenditure Meaning and Importance – Reasons for the Growth of Public Expenditure – Wagner's Hypothesis, Peacock - Wiseman Hypothesis, Canons of Public Expenditure – Effects of Public Expenditure. Public Debt: Meaning, Types of Public Debt, Debt Redemption.

References:
1. R.A Musgrave and PB Musgrave – Public finance – Tata Macgrail
2. Govinda Rao and Singh - Political Economy of Federalism in India – Oxford.
3. Shankar Acharya – Thirty Years of Tax Reforms in India (Article) EPW – 14-05-1995.
4. Bhatia HL – Public Finance – Vikas Publishing.
5. B.P.Tyagi - "Public Finance", Jai Prakash Nath, 2012.
6. S.K.Misra & V,K,Puri - "Indian Economy", Himalaya Publishing House, 2015.

BES-C-603: ECONOMETRICS – II

Unit 1: Review of Regression Analysis and Dummy Variable Regression Model
- Review of Simple and Multiple Regression Analysis
- Reviews of Violation of CLRM Assumptions
- Model Specification Problems and Model Selection - t – test, F-ratio, R^2, D-W Statistics
- Dummy Variable Regression Model – Model Specification and Applications

Unit- 2: Dynamic Econometric Model
- Distributed Lag Model (DLM) – Ad hoc Estimation
- Koyck Transformation and DLM
- Almon Approach to DLM
- Adaptive Expectation Model
- Partial (Stock) Adjustment Model
- Auto Regressive (AR) Model - Estimation
- Detecting and Correcting Autocorrelation Problem in AR Model

Unit- 3: Simultaneous Equation Model
- Simultaneous Equation Bias
- Identification Problem and Rules for Identification – Order and Rank Conditions
- Instrumental Variables Method (IVM)
- Indirect Least Square (ILS) Methods
- Two Stage Least Square (2SLS) Method
- Application to Macro Models (Examples)

References:
- D. Gujrati, Basic Econometrics, 4th Edition, McGraw-Hill/Irwin
- Stock and Watson, Introduction to Econometrics, Pearson Publication
- Cramer J.S., Empirical Econometrics.
- Deaton A.S. and J. Muellbauer, Economics and Consumer Behaviour.
- Klein L.R., Introduction to Econometrics
- Wallis K.F., Topics in Applied Econometrics.

BES-SE-601: COMPUTER APPLICATIONS IN ECONOMICS

Unit 1: Computer Fundamentals and Data
- Basics in Computer, Operating Systems and MS Office
- Disk operating systems, Operating system – Windows,
- Nature and Types of Data
- Tabulation and Graphical Representation of Data
- Descriptive Analysis of Data
- Introduction to Statistical Softwares - Eviews/SPSS

Unit 2: Data Analysis in Eviews/SPSS
- Measures of Central Tendency - Mean, Median and Mode
- Measures of Dispersion – Mean Deviation, Standard Deviation and Variance
- Measures of Skewness and Kourtosis
- Simple and Partial Correlation
- Analysis of Varaince

Unit 3: Regression Analysis in Eviews/SPSS
- Hypothesis Testing – t- test, F-test, Chi-Square Test
- Simple and Multiple Regression Analysis
- Dummy Variable Regression Analysis
- Auto-Regressive Model
- Simple Simultaneous Equation Model Estimation

References
1. Rajaraman, V. (1996), Fundamentals of Computers, Prentice Hall of India, New Delhi.
2. Kerns (1993), Essentials of Microsoft Windows, Word and Excel; Prentice Hall of India, New Delhi.
3. Allen, R.G.D., Statistics for Economics
4. D. Gujrati (2002), Basic Econometrics, 4th Edition, McGraw-Hill/Irwin
5. Enders, W. (2003), Applied Econometric Time Series", 2nd edition, 2003
6. Eviews Manuals
7. SPSS Manuals