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

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