

*Syllabus Booklet*

**Department of Economics**

**Master of Arts**

**Economics**



*(Semester-wise Syllabus as per CBCS)*

*Central University of Haryana  
Villages Jant-Pali, Mahendergarh  
Haryana-123031*

## Course Structure

| <b>Semester I</b>   |   |  |   |   |   |        |
|---------------------|---|--|---|---|---|--------|
| S.No.               | Paper<br>Nomenclature                                     | Course Code                              | L | T | P | Credit |
| 1.                  | Microeconomic Theory-I                                    | SAHS ECO 01 101 C<br>3104                | 3 | 1 | 0 | 4      |
| 2.                  | Macroeconomic Theory- I                                   | SAHS ECO 01 102 C<br>3104                | 3 | 1 | 0 | 4      |
| 3.                  | Economic Growth and Development-I                         | SAHS ECO 01 103 C<br>3104                | 3 | 1 | 0 | 4      |
| 4.                  | Mathematics for Economic Analysis                         | SAHS ECO 01 104 C<br>3104                | 3 | 1 | 0 | 4      |
| 5.                  |   | <i>To be taken from other department</i> | 3 | 1 | 0 | 4      |
| <b>Semester II</b>  |   |  |   |   |   |        |
| 1.                  | Microeconomic Theory-II                                   | SAHS ECO 01 201 C<br>3104                | 3 | 1 | 0 | 4      |
| 2.                  | Macroeconomic Theory- II                                  | SAHS ECO 01 202 C<br>3104                | 3 | 1 | 0 | 4      |
| 3.                  | Economic Growth and Development-II                        | SAHS ECO 01 203 C<br>3104                | 3 | 1 | 0 | 4      |
| 4.                  | Statistical Methods                                       | SAHS ECO 01 204 C<br>3104                | 3 | 1 | 0 | 4      |
| 5.                  | Contemporary Issues in Indian Economy (Compulsory)        | SAHS ECO 01 205 GE<br>2002               | 2 | 0 | 0 | 2      |
| 6.                  | <i>Any one of the following three courses (Electives)</i> |  | 3 | 1 | 0 | 4      |
|                     | Agricultural Economics                                    | SAHS ECO 01 201 DCEC<br>3104             |   |   |   |        |
|                     | Labour Economics  | SAHS ECO 01 202 DCEC<br>3104             |   |   |   |        |
| <b>Semester III</b> |   |  |   |   |   |        |
| 1.                  | International Economics-I                                 | SAHS ECO 01 301 C 3104                   | 3 | 1 | 0 | 4      |
| 2.                  | Econometrics-I  | SAHS ECO 01 302 C 3104                   | 3 | 1 | 0 | 4      |
| 3.                  | Public Economics-I  | SAHS ECO 01 303 C 3104                   | 3 | 1 | 0 | 4      |
| 4.                  | Seminar Paper (Compulsory)                                | SAHS ECO 01 304 DCEC<br>0202             | 0 | 2 | 0 | 2      |
| 5.                  |   | <i>To be taken from other department</i> | 3 | 1 | 0 | 4      |
| 6.                  | <i>Any one of the following two courses</i>               |  | 3 | 1 | 0 | 4      |
|                     | Environmental Economics                                   | SAHS ECO 01 305 DCEC<br>3104             |   |   |   |        |

|                    |  |                           |   |   |   |   |
|--------------------|--|---------------------------|---|---|---|---|
|                    | Industrial Economics   | SAHS ECO 01 306 DCEC 3104 |   |   |   |   |
| <b>Semester IV</b> |  |                           |   |   |   |   |
| 1.                 | <b>Skill Enhancement Elective Course (Compulsory and Exclusively for Economics Students)</b> |                           |   |   |   |   |
| 2.                 | International Economics-II   | SAHS ECO 01 401 C 3104    | 3 | 1 | 0 | 4 |
| 3.                 | Econometrics-II  | SAHS ECO 01 402 C 3104    | 3 | 1 | 0 | 4 |
| 4.                 | Public Economics-II  | SAHS ECO 01 403 C 3104    | 3 | 1 | 0 | 4 |
| 5.                 | Dissertation   | SAHS ECO 01 404 C 0012    | 0 | 0 |   | 6 |
| 6.                 | <i>Any one of the following two courses</i>  |                           |   |   |   |   |
|                    | Research Methodology   | SAHS ECO 01 405 DCEC 3104 | 3 | 1 | 0 | 4 |
|                    | Advanced Econometrics  | SAHS ECO 01 406 DCEC 3104 | 3 | 1 | 0 | 4 |

| <b>List of Generic Elective Course (GEC) offered by the department to students of other departments</b> |                             |                         |   |   |   |        |
|---|-----------------------------|-------------------------|---|---|---|--------|
| S.No.   | Paper Nomenclature          | Course Code             | L | T | P | Credit |
| <i>Offered in Semester I</i>  |                             |                         |   |   |   |        |
| 1.  | Basic Economics             | SAHS ECO 01 101 GE 3104 | 3 | 1 | 0 | 4      |
| 2.  | Indian Economy              | SAHS ECO 01 102 GE 3104 | 3 | 1 | 0 | 4      |
| <i>Offered in Semester III</i>  |                             |                         |   |   |   |        |
| 1.  | History of Economic Thought | SAHS ECO 01 301 GE 3104 | 3 | 1 | 0 | 4      |
| 2.  | Development Economics       | SAHS ECO 01 302 GE 3104 | 3 | 1 | 0 | 4      |

# **Semester – I**

## **Detailed Syllabus**

## **Microeconomic Theory-I**

Nature and scope of microeconomics; circular flow of economic activity, positive and normative economics, theorizing and modeling; theory of consumer behavior: cardinal utility, indifference curve, revealed preference theory, derivation of consumer demand, Slutsky's theorem (substitution and income effect); market demand; elasticities of demand, relation between revenue and price elasticity, constant elasticity demand function; consumer surplus, indirect utility function.

Consumer behaviour under risk and uncertainty: concept of certainty, risk, and uncertainty, measurement of risk, attitudes towards risk, risk aversion, risk loving and risk neutral, risk aversion and indifference curves, reducing risk and uncertainty, insurance and gambling.

Theory of production: diminishing law of variable proportions, law of returns to scale, marginal rate of technical substitution, elasticity of substitution, factor intensity, efficiency of production, multi product firm, production possibility curve: properties and empirical significance of Cobb-Douglas(C-D), constant elasticity of substitution (CES) and trans-log (TL) production functions; Traditional and modern theories of cost, total, fixed and variable costs, short run and long run cost, relation between average and marginal costs, 'envelope' and L-shaped curves.

Theory of firm: price and output determination under perfect competition, short run and long run equilibrium of the firm and industry, supply curve, efficiency implications of perfect competition, determination of price and output under monopoly; short run and long run equilibrium, price discrimination, regulated monopoly and monopoly control.

**Suggested reading: Refers to Appendix-I**

## **Macroeconomic Theory-I**

Introduction, measurement of national income: product approach, income approach, expenditure approach; measures of aggregate income: concept of gross, net, national, domestic, market prices and factor costs, concept of value added; methodology of estimation of national income in India; GDP deflator, consumer and producer price index.

Classical macroeconomics; Say's law, equilibrium output and employment, New classical models of output determination, Keynes model of income determination,

Consumption function: average and marginal propensity to consume, consumption hypothesis; permanent income hypothesis, relative income hypothesis, life cycle hypothesis.

Savings and investment; business fixed investment, residential investment, inventory investment, marginal efficiency of investment (MEI), marginal efficiency of capital (MEC), saving and investment functions, determination of interest rates, multiplier concept, acceleration principle and its implications, business cycles; meaning and phases of the business cycle, interaction of multiplier and accelerator; Business cycles; Samuelson model, Hicks model, Keynesian model and Kaldor model.

Introduction to economic fluctuations: time horizons in macroeconomics, aggregate demand, aggregate supply, stabilization policy.

**Suggested reading: Refers to Appendix-I**

## **Economic Growth and Development-I**

Meaning and measurement of economic development; economic growth and development, economic development and welfare, meaning of economic under development, characteristic of under developed economies, vicious circle of poverty; measurement of development; conventional, human development index, and quality of life indices, concept of sustainable development.

The big push theory, critical minimum effort thesis, stages of economic growth, concept of take off into self-sustained growth, balanced versus unbalanced growth, balanced growth, unbalanced growth, Malthus Theory of population, factors in economic development, theories of development: Lewis model, Renis-Fei model.

Neo-classical model of economic growth; short run versus long run, three determinant of growth, basic growth equation, conditions for steady state growth, stability of steady state growth, sources of growth, technical progress and neutrality of technical change.

Economic development and planning models: meaning of economic planning, planning versus price mechanism, main elements of plan and plan models; Harod-Domar model, Mahalanobis model and development plans in India.

**Suggested reading: Refers to Appendix-I**

## **Mathematics for Economic Analysis**

Concepts of sets subset and bounded set, set operations, convex set, identification of convex set in budget line statement, production possibility frontier, indifference and isoquant curves, Cartesian product, relations and functions, idea of polynomial, exponential, logarithmic and trigonometric functions; Solution of linear and quadratic equations; limit and continuity of functions (single variable);

Concept of a derivative and rules of differentiation: monotonicity, concavity and convexity of functions of a single variable; necessary and sufficient conditions for a maximum and minimum: applications to economics, total to marginal magnitudes, elasticities.

Idea of integration: definite and indefinite integral, rules of integration, applications in economics, relation between marginal and total magnitudes, relations between cost curves, consumer surplus.

Definitions of vector and matrix: addition and multiplication of matrices, transpose and inverse of a matrix, minors and co-factors of a matrix, determinant of a matrix, rank of a matrix, simultaneous system of equations, Cramer's rule, solution of homogeneous and non homogeneous system of equations; signs of quadratic forms with and without constraints, positive definite, negative definite, positive semi definite, negative semi- definite.

Functions of several variables: production functions, utility functions, cost functions; partial and total derivatives; implicit functions and their derivatives. Homogeneous functions;

Euler's theorem; degrees of homogeneity of production functions, cost functions, demand, functions and their economic interpretation,

Necessary and sufficient conditions for stationary values without constraints; necessary and sufficient conditions for stationary values with linear constraints- the Lagrange method; constrained maximization of utility.

Difference equation: solutions of linear first and second order difference equations with constant coefficients and constant terms.

**Suggested reading: Refers to Appendix-I**



## **Semester: II**

## **Detailed Syllabus**

## **Microeconomic Theory-II**

Monopolistic competition; price and output decisions under monopolistic competition, equilibrium with product differentiation and selling costs, excess capacity under monopolistic and imperfect competition, criticism of monopolistic competition; non-collusive oligopoly, Cournot, Bertrand, Chamberlin, and kinked demand model, collusive and non-collusive oligopoly behavior; cartels and mergers, price leadership and basing point price system.

A critique of Neoclassical theory of the firm; Alternative theories of the firm: Baumol's sales revenue maximization model, Williamson model of managerial discretion, Marris model of managerial enterprise, Bain's limit pricing theory, the behavioral model of Cyert and March.

Neoclassical theory of factor pricing: marginal productivity theory, product exhaustion theorem, elasticity of technical substitution, technical progress and factor shares, theory of distribution in imperfect product and factor markets, determination of rent, wages, interest and profits.

General equilibrium theory: Walras general equilibrium model, graphical illustration of existence, uniqueness and stability of equilibrium; Welfare economics: criteria of social welfare, the Pareto-optimality criterion, Kaldor Hicks compensation criterion; Bergson's social welfare function, criterion Arrow's impossibility theorem; Game theory: zero-sum and non-zero-sum game, pure and mixed strategy, dominant strategy, Nash equilibrium.

**Suggested reading: Refers to Appendix-I**

## **Macroeconomic Theory-II**

Money: definition, components of money stock, demand for money, transaction motive, precautionary motive, speculative motive, quantity theory of demand for money, Cambridge quantity theory, Baumol and Tobin demand for money, inflation and interest rates, nominal interest rate and demand for money, Keynesian liquidity approach, determinants of money stock, money multiplier.

Goods market and IS curve, money market and LM curve, equilibrium, explaining fluctuations with the IS-LM model, IS-LM – fiscal and monetary policy. Aggregate demand in the open economy, Mundell-fleming model, exchange rate: determination, flexible and fixed exchange rate system, monetary and fiscal policy in flexible and fixed exchange rate system.

Inflation and its effects; effect on distribution of income and wealth, effect on output, employment and growth, causes and types of inflation; demand pull inflation, cost push inflation, structural inflation, policies to control inflation, tradeoff between inflation and unemployment, Philips curve: adaptive and rational expectations.

New macroeconomics; Lucas imperfect information, model, new Keynesian model of price stickiness, rational expectations, random walk of GDP.

Central banking and monetary controls; functions of a central bank; monetary policy: objectives of monetary policy, policy making process, implications of targeting monetary aggregates and interest rate.

**Suggested reading: Refers to Appendix-I**

## **Economic Growth and Development-II**

Role of education, knowledge, and governance in economic development; trade and development; trade as engine of growth; Perbisch, Singer and Myrdal views, gains from trade and less developed countries (LDC), role of foreign direct investment(FDI) and multinational corporation (MNC) in economic development.

Concept and measures of poverty; head count ratio, income gap ratio, Sen's poverty index; concept and measures of inequality; Lorenz curve and Ginni's coefficient; growth and new industrial policy; privatization and disinvestments; labour market reforms; state and state failures; issues of good governance.

Economic development and environmental degradation: environmental Kuznet's curve, preservation and irreversibility of environmental change, Krutilla-fisher equation, energy and development.

Solow model: Basic Solow model, technology and Solow model, Solow model with human capital; Economics of ideas; Economic growth: Romer model,

Endogenous growth: mechanics of endogenous growth, the deeper economics of endogenous growth, convergence, population growth and Malthus, Lessons from Asian tigers, natural resources as limits to growth, neoclassical versus endogenous growth theory.

**Suggested reading: Refers to Appendix-I**

## **Statistical Methods**

Data and data types, representation of data; Measures of central tendency from grouped and ungrouped data: arithmetic mean, median, mode, geometric mean, and harmonic mean, measures of dispersion from ungrouped data, range, mean deviation, quartile deviation, standard deviation and coefficient of variation.

Measures of Skewness and Kurtosis: moments about origin, arithmetic mean, and an arbitrary value; concepts and computation of Skewness and Kurtosis.

Correlation and regression: method of least squares, estimation of parameters of a regression equation; simple, partial, and multiple correlation coefficients.

Probability and probability distribution: concepts, addition and multiplication rules of probability, mathematical expectation; theoretical distributions: binomial, normal, and Poisson distribution.

Sampling and sampling distribution: sample and population, sampling and non sampling errors, sampling techniques.

Estimation and hypothesis testing: point and interval estimation, properties of estimator; consistency, sufficiency, unbiasedness, and efficiency, null and alternative hypotheses, degrees of freedom, Type-I and Type-II errors; level of significance; small and large sample tests;  $t$ ,  $\chi^2$ ,  $F$  and  $Z$ .

**Suggested reading: Refers to Appendix-I**

## **Contemporary Issues in Indian Economy**

Changing structure of Indian economy, Imbalance in occupational pattern and contribution to GDP, Determinants of acceleration in growth rate of GDP in India, Behaviour of saving and investment in recent years. Infrastructure bottlenecks in Indian economy, impact of institutional factors on development of Indian economy.

Stagnancy in productivity in agriculture sector and trends in its diversification; Issues of competitiveness of Indian manufacturing sector, emergence of knowledge intensive industries in India.

Centre-State finance relations; Recent Finance Commission, NITI Ayog; other sources of transfer; Tax revenue of the central and state governments; evaluation of Indian tax structure; Goods and services tax in India.

Recent foreign trade policy in India; Composition and Direction of India's foreign trade, Indian government's policy towards foreign capital; foreign investment inflows, foreign aid and India's external debt.

**Suggested reading: Refers to Appendix-I**

## **Agriculture Economics**

Nature and scope of agricultural economics; economic development with unlimited supplies of labour; Lewis-Fei-Ranis model; Lewis versus the Harris-Todaro view of underemployment in LDCs, wage spillover and unemployment in a wage-gap economy; measurement problems of surplus labour and disguised unemployment; theory of agricultural production, three stages of production function.

Agricultural labour force and productivity: farm size and productivity, supply functions and price responsiveness, contractual arrangements, employment and wages in rural markets; interdependence between agricultural and industry; terms of trade between agriculture and industry.

Rural credit markets and institutions in developing countries; rural infrastructure prospects and strategies for land reforms; some theoretical aspects of agricultural policies; agricultural diversification, food processing, and standardisation.

Agricultural development strategies: induced technical and institutional change, green revolution; microeconomics of the rural sector; the new development economics; risk and uncertainty in agriculture, environment and agricultural development; WTO and agriculture.

**Suggested reading: Refers to Appendix-I**

## **Labour Economics**

Labour - Its Characteristics; Role of Labour in Economic Development - W.A. Lewis and Ranis Fie; Mobility and productivity of labour.

Supply of Labour: Static Labor-Leisure Choice, Effects of Social Programs and Income Taxes, The Life-Cycle Model, Investments in Human Capital, Collective Models of Household Labor Supply, Occupational Choice; Demand of Labour: Static Cost, Profit and Labor Demand Functions, Elasticity of Derived Demand: the Hicks-Marshall Rules, Adjustment Costs and Dynamic Labor Demand; Equilibrium in Labour Market: Compensating Differences -- Adam Smith, Efficiency Wages, Segmented Labor Markets, Migration.

Employment and Development Relationship - Unemployment: Concept, Types, and Measurement, particularly in India; Public Sector and Employment in Agricultural Sector; Analysis of Educated Unemployment; Employment Policy in Five Year Plans and its Evaluation.

Classical, Neo-classical and Bargaining Theories of Wage Determination; Concepts of Minimum Wage, Living Wage and Fair Wage in Theory and Practice; Discrimination in Labour Markets; Productivity and Wage Relationship; Analysis of Rigidity in Labour Markets; National Wage Policy; Wages and Wage Boards in India; Bonus System and Profit Sharing.

Theories of Origin and Growth of Labour Movement - Growth, Pattern and Structure of Labour Unions in India, Achievements and Failures of Labour Unions; Industrial Relations - Industrial Disputes and industrial Peace; Causes of industrial Disputes and their Settlement and Prevention Mechanism.

Special Problems of Labour: Child Labour, Female Labour, Discrimination and Gender Bias in Treatment of Labour; Labour Market Reforms in India - Second National Commission on Labour; Globalisation and Labour Markets.

**Suggested reading: Refers to Appendix-I**



## **Semester -III**

### **Detailed Syllabus**

## **International Economics-I**

International economics: introduction, international trade and Nation's standard of living, current international economic problems; Trade theories: concept of international trade, basis for and gains from trade, trade based on Absolute Advantages, Comparative advantages, Comparative advantages and opportunity cost; standard theory of trade: production frontier with increasing costs, community indifference curve, equilibrium in isolation.

Demand and supply, offer curves and terms of trade: Equilibrium relative commodity price with trade - a partial equilibrium analysis, general equilibrium analysis, offer curves, terms of trade.

Factor endowments and Hecksher Ohlin Theory: factor intensity, factor abundance, factor price equalization, and income distribution, Stolper Samuelson theorem, Leontief paradox; Modern trade theory: economies of scale, imperfect competition, product differentiation.

International Trade Policy: Trade Restrictions; tariffs, partial equilibrium analysis of a tariff, theory of tariff structure, general equilibrium analysis of tariff in small country and large country, optimum tariff; non-tariff barriers: import quotas, other non-tariff barriers and new protectionism, political economy of protectionism, Uruguay round and outstanding trade problems.

**Suggested reading: Refers to Appendix-I**

## **Econometrics-I**

Introduction: Broad classification of economic relations, stochastic and non-stochastic relations, econometrics versus mathematical economics, econometrics versus statistics, concepts of econometric and mathematical models and their essential ingredients, functions of econometrics, essential steps of an empirical study.

The simple linear regression model: ordinary least squares (OLS) estimators and their properties, goodness of fit and tests of hypotheses, effect of changing scale and units of measurement of variables.

Multiple linear regression model: least squares estimators and their properties, coefficient of determination ( $R^2$ ) and adjusted coefficient of determination ( $R^2$ ) as measures of goodness of fit, commonly used functional forms, their choice and interpretation of coefficients, testing of hypotheses, testing individual coefficients, testing several coefficients jointly, testing linear combination of coefficients, computing  $R^2$ ,  $R^2$  and F-statistic when there is no intercept term, effect of omitting intercept term, effect of inclusion of irrelevant and exclusion of relevant variable in the model.

OLS assumption violations: Multi-collinearity, heteroscedasticity, and auto-correlation, detecting the problems, their consequences and solutions.

**Suggested reading: Refers to Appendix-I**

## **Public Economics-1**

Allocation of resources – Provision of public goods; Voluntary exchange models; Impossibility of decentralized provision of public goods (contributions of Samuelson and Musgrave); Demand revealing schemes for public goods – Tiebout model, theory of club goods; Stabilization Policy – Keynesian case of stabilization policy; Uncertainty and expectations; Failure of inter temporal markets; Liquidity preference; Social goals; Poverty alleviation; Provision of infrastructural facilities, removing distributional inequalities and regional imbalances.

Role of Government in an Economy - The Allocation, Distribution and The Stabilisation Functions; Private Goods, Public Goods, and Merit Goods; Market Failure - Imperfections, Decreasing Costs, Externalities; Wagner's law of increasing state activities; Wiseman-Peacock hypothesis; Pure theory of public expenditure; Structure and growth of public expenditure; Criteria for public investment; Social cost-benefit analysis – Project evaluation; Estimation of costs, discount rate; Reforms in expenditure budgeting; Programme budgeting and Zero base budgeting.

Theory of incidence; Alternative concepts of incidence – Allocative and equity aspects of individual taxes; Benefit and ability to pay approaches; Theory of optimal taxation; Excess burden of taxes; Trade-off between equity and efficiency; Theory of measurement of dead weight losses; The problem of double taxation.

**Suggested reading: Refers to Appendix-I**

## **Environmental Economics**

Conceptual background of environmental economics; review of microeconomics and welfare economics; Distinction between environmental economics and natural resource economics.

Relation between development and environmental stress; Environmental Kuznet's curve hypothesis – theory and empirical evidence; concept of sustainable development; indicators of sustainability; various approaches to environmental accounting. Sustainable development: Concepts; measurement

Issues of Environmental economics: Pareto optimality and market failure in the presence of externalities. Market failure; Pigouvian solution; Buchanan's theory; Coase's theorem and its critique; Pigouvian vs Coasian solution; Subsidies for Abatement of pollution-The case in the short and long run; choice between taxes and quotas under uncertainty; implementation of environmental policy.

Trans-boundary environmental problems; economics of climate change; trade and environment.

**Suggested reading: Refers to Appendix-I**

## **Industrial Economics**

Concept and organisation of firm ownership, control and objectives of a firm. Theories of Industrial Location; Weber and Sargent Florence, Factors Affecting Location, Market Structure; Seller's Concentration, Product Differentiation, Entry and Exit Conditions, Economies of Scale, Market Structure and Profitability. Market Structure and Innovation.

Product-Pricing Theories and Evidence, Investment Expenditure and Methods of Evaluating Investment Expenditure; Theories and Empirical Evidence on Mergers and Acquisitions (M & As), and Industrial Diversification. Growth and constraints on the Growth of the Firm, Concepts and Measurement of Productivity, Efficiency, and Capacity Utilisation.

Pattern of Industrialization; Public and Private, Large and Small Industries. Cost Benefit Analysis; Net Present Value (NPV); Internal Rate of Return (IRR); MNC and Transfer of Technology; Foreign Direct Investment (FDI) and Technology, Industrial Labour Problems, Reforms, Liberalisation, Disinvestment, Privatisation and Social Security Consideration.

Industrial finance; Owned, External, and other components of funds. Pole, nature, volume, and types of institutional finance; IDBI, IFCI, SFCs, SIDC, Commercial banks, Financial statements; balance sheet, profit and loss account, assessment of financial soundness, and ratio analysis. Development of small scale and cottage industries in India.

**Suggested reading: Refers to Appendix-I**

# **Semester IV**

## **Detailed Syllabus**

## **International Economics-II**

Economic integration: customs, unions and free trade area; trade creation, trade diversion, theory of second best, dynamic benefits from trade unions.

International trade and economic development: importance of trade to development, export instability and economic development, import substitution and export orientation.

Balance of Payment; The Current Account The Capital Account; Foreign exchange markets and exchange rates: exchange rate, spot, forward rates, foreign exchange risks, hedging and market, interest arbitrary and efficiency of foreign exchange markets; exchange rate determination: purchasing power parity, monetary approach to balance of payment.

Flexible and fixed exchange rates, balance of payment adjustments with fixed and flexible exchange rate, income adjustment mechanism, income determination in a closed economy and small open economy. Absorption approach, monetary adjustments, and open economy macroeconomics: adjustment policies, The IS-LM-BP model with flexible exchange rate.

International monetary system: past, present and future, gold standard, Bretton woods, International Monetary Fund, World Bank.

**Suggested reading: Refers to Appendix-I**



## **Econometrics-II**

Qualitative variables as explanatory variables: estimating the shift in intercept and slope coefficient, interpretation of dummy coefficient in log-linear model, estimating season effects, testing for structural change; qualitative dependent variables, Linear probability model, Logit, Probit and Tobit models.

Distributed lag models: lagged independent variables, impact multiplier, interim multiplier, and long-run multiplier, Koyck approach, partial adjustment model, adaptive expectation model, consequences of the presence of lagged dependent variables as regressors.

Simultaneous equation models; structural and reduced form of simultaneous equation models; simultaneous equation bias; identification problem; estimation procedures; indirect least squares (ILS), instrumental variables (IV), and two stage least squares (2SLS).

Forecasting: fitted values, ex-post, and ex-ante forecasts, evaluation of models, conditional and un-conditional forecasts, forecasting from time trends, forecasting from econometric models.

**Suggested reading: Refers to Appendix-I**

## **Public Economics-II**

Classical view of public debt; Compensatory aspect of debt policy; Burden of public debt; Sources of public debt; Debt through created money; Public borrowings and price level; Crowding out of private investment and activity; Principles of debt management and repayment.

Objectives of fiscal policy – full employment, anti-inflation, economic growth, redistribution of income and wealth; Interdependence of fiscal and monetary policies; Budgetary deficit and its implications; Fiscal policy for stabilization – Automatic vs discretionary stabilization; Alternative measures of resource mobilization and their impact on growth, distribution and prices; Balanced budget multiplier.

Principles of multi-unit finance; Fiscal federalism in India; Vertical and horizontal imbalances; Assignment of function and sources of revenue; Constitutional provisions; Finance Commission; Devolution of resources and grants; Theory of grants; Resource transfer from Union to States – Criteria for transfer of resources; Centre-State financial relations in India; Problems of states' resources and indebtedness; Transfer of resources from Union and States to local bodies.

**Suggested reading: Refers to Appendix-I**

## **Research Methodology**

Meaning and objectives of research, meaning and formulation of hypothesis, theory, models of a theory, testing of theories and models; Methodology versus methods of research: research problem and selection of research problem; review of literature and its role in selecting a research problem;

Meaning and need for research design: meaning of population, sample and sample size, meaning, types and characteristics of sample design, random and non-random sample, stratified and multistage random samples, systematic samples.

Methods of data collection: primary and secondary data sources, brief information about databases of Indian economy, nature of cross section, time series and panel data, diagrammatic and tabular presentation of data, pie chart, bar diagram, histogram, scatter diagram, tracing of curve, one way and two way tables.

Analysis of data: Hypothesis testing: parametric and non-parametric tests of hypothesis; correlation and regression analysis,

Multivariate analysis techniques: factor analysis, cluster analysis, multidimensional scaling, discriminant analysis.

Report writing: structure, types and importance of report writing, guidelines for effective report writing.

**Suggested reading: Refers to Appendix-I**

## **Advanced Econometrics**

Pooled Cross section and panel data models; Pooling time series and cross section data; fixed effects; random effects, dynamic models.

Time series models, difference equations and their solutions, solving homogeneous difference equations, particular solutions for deterministic process, the method of undetermined coefficients.

Stationary time series models: stochastic difference equation models, ARMA models, stationarity, the autocorrelation function, the partial autocorrelation function, sample autocorrelations of stationary series, Box-Jenkins model selection, and seasonality.

Modeling Economic Time Series: Trends and Volatility: ARCH process, GARCH model, ARCH-M model; Testing for Trends and Unit Roots: Unit root processes, Dicky-Fuller tests, Augmented Dicky-Fuller test, Phillips Perron test.

Introduction to VAR model, estimation and identification, the Impulse response function, structural VAR. Co-integration and Error Correction Models: Testing for co-integration, The Engle Granger methodology, Johansen methodology, ARDL bounds-testing approach.

**Suggested reading: Refers to Appendix-I**

# General Elective Courses

## Basic Economics

**Microeconomics:** Economics-Meaning, Nature and Significance, Central problems of an economy: what, how and for whom to produce; concepts of production possibility frontier and opportunity cost, concept of utility and consumer's equilibrium, law of diminishing marginal utility, demand and supply concept with their shifts in curves, concept of elasticity (price & income) and factors affecting price and income elasticity, basic concept of cost ; total, fixed & variable cost, marginal , basic concept of revenue ; Revenue - total, average and marginal revenue - meaning and their relationships, definition of markets : perfect competition , imperfect competition and monopoly.

**Macroeconomics:** Some basic concepts: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation, Concept of national income including GDP, NNP, NDP, factor cost, and market cost, Concept of Disposable Income (gross and net), Private Income, Personal Income and Personal Disposable Income, Money; concept and functions. Concepts and function of central bank. Concept of budget, Concept of monetary and fiscal policy.

**Growth and Development:** Concept of growth, concept of development, different between growth and development, determinants of economic growth and development, different economic system, role of government in economic growth and development, Role of education, knowledge, and governance in economic development; trade and development, concept of sustainable development, characteristics of underdeveloped countries, Concept and measures of poverty; head count ratio, income gap ratio.

**International Economics:** International economics- meaning and subject matter, relevance of international economics in present, international trade and its role in economic development, introduction of world's fastest economies, Basic concepts of absolute and comparative advantage theory, concept & role of FDI, FII and MNCs in economic growth, Introduction of international organizations; WTO, IMF, World Bank.

**Suggested reading: Refers to Appendix-I**

## **Indian Economy**

Characterization of Indian Economy as a Developing Economy, Output of the economy and its composition; Rationale, Features and Objectives of Indian Economic Planning, Vision and Strategy for 12<sup>th</sup> Five Year Plan, Economic Reforms in India, Macroeconomic Stabilisation, Structural Reforms, Performance of Indian Economy since Economic Reforms.

Capital Requirement and Economic Growth; Domestic Savings and Capital Formation; Concept and Incidence of Poverty in India.

Role, nature and cropping pattern of agriculture in India; public and private investment in agriculture; W.T.O. and Indian agriculture; causes and measures of low productivity in Indian agriculture; land reforms, agricultural inputs and green revolution; importance, sources, and availability of agricultural finance; agricultural marketing in India; evaluation of government's agricultural policy; agricultural subsidies, public distribution system.

Problems of small scale and cottage industries and government policy in India; industrial policy in pre and post reform period in India; evaluation of privatisation and disinvestment policy in India; private sector in the post liberalisation period.

Monetary Policy of the Reserve Bank of India and its Appraisal; Fiscal Policy in India; Fiscal Imbalance, Deficit Finance and Fiscal Responsibility in India; Growth and Structure of India's Foreign Trade, the Pre and Post 1991 Period Balance of Payments Situation in India.

**Suggested reading: Refers to Appendix-I**

## **History of Economic Thought**

**Early Period:** History of economic thought and economic history, Methodological approaches to economic thought, importance of history of economic thought, Contributions of Plato and Aristotle.

**Mercantilism and Physiocracy:** Factors of classical economics-Adam Smith on value and economic growth, Ricardo on distribution and economic growth, Malthus theory of population and economic growth.

**New Classical:** Wicksell on General theory of capital, Marshall on value and Distribution, Weiser on theory of alternative costs and imputation.

**Modern Economics:** Keynes General theory of employment, interest and money, Friedman on money and consumption, Schumpeter on the role of entrepreneur and innovation.

**Suggested reading: Refers to Appendix-I**

## **Development Economics**

**Economic Development:** Meaning and measurement, Features of underdeveloped economies, developing economies, determinants of economic development, Economic and noneconomic factors of development. Obstacles in growth and development. Arguments on Growth Vs Development, Sen's View, Role of state in economic development. Indicators of Development

**Social and Institutional Aspects of Development:** Absolute and Relative, causes of poverty, trends in poverty, economic inequality, Kuznet inverted 'U' curve, Population problem and growth pattern - Theory of demographic transition; demographic dividend.

**Development Strategies:** Vicious circle of poverty; Theory of balanced and unbalanced growth; Rodan's big push; critical minimum effort thesis; import substitution and export promotion; investment allocation criteria, choice of technique.

**Indian Development Experience:** Growth and development experience of India since independence, Human development and quality of life, The population and economic development, occupational distribution of labour force; Poverty and Income distribution in India, Problems of unemployment and Rising prices.

**Suggested reading: Refers to Appendix-I**



# Appendix-I

## Suggested Readings

### Microeconomic Theory-I & II:

A. Koutsoyiannis. (1979). “Modern Microeconomics”, International Edition, Palgrave Macmillan.

Jehle & Renne. (2011). Advanced Microeconomic Theory, Pearson Education, India.

Mas-Colell, Andreu, Michael D. Whinston and Jerry R. Green (1995), Microeconomic Theory, OUP, New York.

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### **Economic Growth and Development-I & II:**

Aggarwal and Singh (1958): The Economics of Underdevelopment. Oxford University Press, New Delhi.

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Meier and Rauch: Leading Issues in Economic Development (8<sup>th</sup> edition), OUP.

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Todaro, M.P. and Smith, S.C.: Economic Development (8<sup>th</sup> Edition), Pearson.

Basu, Kaushik: Analytical Development Economics. The Less Developed Economy Revisited, OUP.

Chakravarty, S. (1981): Development Planning: The Indian Experience. Oxford University Press, New Delhi.

### **Mathematics for Economic Analysis-I:**

Chiang, Alpha, C: Fundamental Methods of Mathematical Economics, 4<sup>th</sup> Edition, McGraw-Hill, 2008.

Mukherjee B and V Pandit,(1982)Mathematical Methods for Economic Analysis Allied Publishers Pvt Ltd.

Knut Sydsaeter and Peter J. Hammond, Mathematics for Economic Analysis, Prentice Hall.

Peter N. Hess, Using Mathematics in Economic Analysis, Prentice Hall.

Akira Takayama, "Mathematical Economics", Cambridge University Press, 2nd Edition.

Henderson and Quandt, (1956) "Microeconomic Theory: A Mathematical Approach"

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### **Statistical Methods:**

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### **Contemporary Issues in Indian Economy:**

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Reserve Bank of India, Handbook of Statistics on Indian Economy

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### **Labour Economics:**

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### **Environmental Economics:**

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Maureen L. Cropper and Wallace E. Oates, (1992) "Environmental Economics: A Survey", Journal of Economic Literature, Volume 30, pp. 675-740.

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### **Industrial Economics:**

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### **Advanced Econometrics:**

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