

**COURSE OF STUDIES
FOR M.A. IN ECONOMICS
WITH EFFECT FROM 2013-14**



CENTRE FOR ECONOMICS
SCHOOL OF DEVELOPMENT STUDIES
CENTRAL UNIVERSITY OF ORISSA
KORAPUT, ODISHA, INDIA



SYLLABUS OUTLOOK

SEMESTER-I

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**ELECTIVE PAPERS FOR SEMESTER-III**

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1	FINANCIAL ECONOMICS-I	30-31
2	AGRICULTURAL ECONOMICS-I	32-33
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ELECTIVE PAPERS FOR SEMESTER-IV

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Note: Any two elective for specialization should be opt by the students during third semester

Scheme of Assessment

- A. The students will be evaluated on the basis of a written examination at the end of each Semester and continuous Internal Assessment during the Semester. Each end Semester Question Paper: shall be of three hours duration and 50 marks. The Internal Assessment for each Course will be of 50 marks ---- 25 marks for Mid-Semester Examination (one hour duration) and the other 25 marks for continuous assessment during the Semester.
- B. Dissertation (4 credits)
To Prepare and submit a dissertation on any subject of contemporary economic interest, but based on the primary data to be personally collected by the candidate.
- C. Each Course in the Semester shall be of four credits and 100 marks. Total will be of 80 credit for the successfully completion of MA in Economics.
- D. Attendance Requirements
Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.
- E. Evaluation Scheme
- Mid Term Examination 25 percent
 - End Term Examination 50 percent
 - Continuous Internal Assessment (CIA) 25 percent
 - Class Test & Participation 5 percent
 - Assignment 20 percent (Seminar Project/GD/Surprise Test/Presentation)



SEMESTER-I

PAPER: MICROECONOMICS-I CODE: ECO-C311

OBJECTIVES

The course is intended to provide a good understanding and base to the students in applying the concepts and methods of microeconomics in the practical field. The broad objectives of the course is to equip the students themselves in a comprehensive manner with the various aspects of the traditional Microeconomic theory as well as the latest developments in this field and the applications of theories in analyzing current economic problems and to develop the ability to synthesize knowledge .

MODULE-I: DEMAND ANALYSIS

Cardinal Utility Approach - Law of Diminishing Marginal Utility, Consumer's equilibrium, Derivation of Demand Curve, Law of Demand. Ordinal Utility Approach - Indifference curve, Properties Consumer's equilibrium, Price, income & substitution effects, Derivation of Demand Curve. Revealed Preference Theory of Demand. Recent Development in Demand Theory - Hicksian Revised Theory, Lancaster's Characteristics of Goods approach; Consumer's Choice under Risk and Uncertainty. Demand and Supply Equilibrium; Cobweb theorem.

MODULE-II: CONSUMER SURPLUS AND ELASTICITY OF DEMAND

Consumer Surplus - Meaning, Marshall's Measurement of Consumer Surplus, Measurement of Consumer Surplus through indifference Curve analysis; Critical Evaluation. Elasticity of Demand -Meaning, Price Elasticity of Demand, Measurement of Price elasticity, Income Elasticity of Demand, Cross Elasticity of Demand, Numerical Problems.

MODULE-III: THEORY OF PRODUCTION, COST AND REVENUE

Economies of Scale-Internal Economies and Diseconomies, External Economies and Diseconomies. Production Possibility Curve. Production Function Law of Variable Proportions, Returns to Scale. Isoquants - Properties , Producer's equilibrium, Linear Homogenous Production Function. Cobb - Douglas Production Function. Cost Concepts, Short Run and Long Run Cost Curves. Derivations of cost functions. AC & MC Relationship, Revenue Concepts-Average, Marginal and Total Revenue, Numerical Problems.

MODULE-IV: PERFECT COMPETITION, MONOPOLY AND MONOPOLISTIC COMPETITION

Perfect Competition; Features, Price Determination, Equilibrium of the Firm and Industry. Monopoly - Price and Output Determination. Comparison between Monopoly equilibrium and Perfect Competition Equilibrium, Discriminating Monopoly-Price Discrimination Equilibrium under Discriminating Monopoly. Bilateral Monopoly and Monopsony. Regulation of Monopoly-Through Taxation, and Price Regulation. Monopolistic Competition - Price and Output



Determination. Critique of Chamberlin's Theory of Monopolistic Competition. Excess Capacity under Monopolistic Competition. Selling Cost.

MODULE-V: ALTERNATIVE THEORIES OF THE FIRM, FACTOR PRICING

Critical evaluation of marginal analysis; Baumol's Model of Sales Revenue Maximization. Williamson's Managerial Model managerial discretion. Full cost pricing rule. Bain's limit pricing theory and its recent developments; Bhagawati model.

REFERENCES

- Walter Nicholson, Christopher M. Snyder, Microeconomic Theory Basic Principles and Extensions, Cengage Learning.
- Hugh Gravelle, Ray Rees, Microeconomics, Pearson Education Ltd Jehle and Reny, Advanced Microeconomic Theory, Pearson India.
- Layard, P.R.G. and A.W. Walters (1979), Microeconomic Theory, McGraw Hill.
- Varian, H. (2000) Microeconomic Analysis, W.W. Norton.
- James M. Henderson and Richard E. Quandt, Microeconomic Theory- A Mathematical Approach, McGraw Hill Book Co.
- Baumol, W.J. (1982), Economic Theory and Operations Analysis, Prentice Hall of India, Delhi.
- Broadway, R.W. and N. Bruce (1984). Welfare Economics, Basil Blackwell, London.
- Henderson, J.M. and R.E. Quandt, Microeconomic Theory: A Mathematical Approach, Mc Graw Hill, Delhi.
- Koutsoyiannis, A. (1979), Modern Microeconomics, (2nd Edition), Macmillan Press, London.
- Nath, S.K. (1969), A Reappraisal of welfare economics, Routledge of Kegan Paul, London.
- Pyndyck, R.S. & D.L. Rubinfeld (1999), Microeconomics, (3rd Edition) Pentice Hall of India.
- Roychowdhury, K.C. (1980), Microeconomics, Tata McGraw Hill, New Delhi.
- Sen, A.K. (1970), Collective Choice and Social Welfare, Holden Day Inc.

PAPER: MACROECONOMICS-I CODE: ECO-C312

OBJECTIVES

Macroeconomics is the study of aggregates. The aggregate analysis has assumed such a great significance in recent times that a prior understanding of macroeconomic theoretical structure is considered essential for the proper comprehension of the different issues and policies. It will equip the students to understand systemic facts and latest theoretical developments for empirical analysis.

MODULE-I: NATIONAL INCOME AND ACCOUNTS

Circular Flow of Income in two-, three- and four-sector economy; Measurement of National Income; different forms of national income accounting — social accounting, input-output accounting, flow of funds accounting and balance of payments accounting.



MODULE-II: CONSUMPTION FUNCTION

Keynes' psychological law of consumption — implications of the law; short-run and long-run consumption function; Empirical evidence on consumption function; Income-consumption Relationship-absolute income, relative income, life cycle and permanent income hypotheses.

MODULE-III: INVESTMENT FUNCTION

Determinants of investment- Marginal efficiency of capital and Rate of interest ;Marginal efficiency of investment and level of investment; The accelerator and investment behavior; The investment multiplier ;Multiplier- accelerator interaction.

MODULE-IV: DEMAND FOR MONEY

Classical approach to demand for money — Quantity theory approach, Fisher's equation, Cambridge quantity theory, Keynes's liquidity preference approach, transaction, precautionary and speculative demand for money — aggregate demand for money, Post-Keynesian approaches to demand for money — Patinkin and the Real Balance Effect, Approaches of Baumol and Tobin; Friedman and the modern quantity theory.

MODULE-V: NEO-CLASSICAL AND KEYNESIAN SYNTHESIS

Neo-classical and Keynesian views on interest; The IS-LM model; Extension of IS-LM model with government sector; Relative effectiveness of monetary and fiscal policies; Extension of IS-LM models with labor market and flexible prices.

REFERENCES

- Ackley,G. (1978), *Macroeconomics Theory and Policy*, Macmillan, New York.
- Blackhouse, R. and A. Salansi (Eds.) (2000), *Macroeconomics and the Real World (2 Vols.)*, Oxford University Press, London.
- Branson, W.A. (1989), *Macroeconomic Theory and Policy*, (3rd Edition), Harper and Row, NY.
- Dornbusch, R. and F. Stanley (1997), *Macroeconomics*, McGraw Hill, Inc., New York.
- Hall, R.E. and J.B. Taylor (1986), *Macroeconomics*, W.W. Norton, New York.
- Heijdra, B.J. and V.P. Fredericck (2001), *Foundations of Modern Macroeconomics*, Oxford University Press, New Delhi.
- N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
- Levacic R and Rebmann A “Macro Economics- An introduction to Keynesian –neo-classical controversies”,second edition,Macmillan,London.
- Romer, D.L. (1996), *Advanced Macroeconomics*, McGraw Hill Company Ltd., New York.
- Scarfe, B.L. (1977), *Cycles, Growth and Inflation*, McGraw Hill, New York.
- Shapiro, E. (1996), *Macroeconomic Analysis*, Galgotia Publications, New Delhi.
- Surrey, M.J.C. (Ed.) (1976), *Macroeconomic Themes*, Oxford University Press, Oxford.



PAPER: MATHEMATICS FOR ECONOMICS

CODE: ECO-C313

OBJECTIVES

The objective of this course is to train students in the use of the most common mathematical tools and techniques encountered in economics. Broadly, the topics covered are matrix algebra, determinant and calculus. For the convenience in understanding of applications, some examples of economic applications, as given in respective units, will be discussed in the class. In addition to the books suggested below, students may consult any intermediate mathematics books for the topics covered in this course.

MODULE-I: INTRODUCTION AND REVIEW

Introduction and importance of mathematics for economics, Review of the number system, algebraic expressions, elementary co-ordinate geometry, theory of sets, relations and functions, different forms of functions, solution of linear and quadratic equations, theory of graphs and limit of a function at a point.

MODULE-II: MATRIX ALGEBRA AND DETERMINANT

Matrices Elementary operations, types, Rank of matrix; matrix inversion; Solution of simultaneous equations; Characteristic roots and Eigen vectors. Cramer's rule, vectors, partitioned matrix, the evaluation and properties of determinants.
Some applications in economics (SAE) partial equilibrium market model, national income model, external sector model, static and dynamic open input-output models.

MODULE-III: DIFFERENTIAL CALCULUS

Principles of differentiation; rules of differentiation; differentiation of implicit functions; Partial and total differentiation; application of optimisation--- maxima and minima without constraints; maxima and minima subject to constraints, Economic application of differentiation, partial differentiation.

SAE; derivation of marginal functions- revenue, cost etc., derivation of point elasticity, tax yield and income multiplier, problems relating to indifference curve, isoquant, production function and Euler's theorem, comparative static analysis of market model, national income model and input-output model, determination of partial elasticities of demand.

MODULE-IV: INTEGRAL CALCULUS

Dynamics and integration; Principles of integration; Indefinite and definite integrals; Application of integrals in economics, Consumer surplus and producer surplus.

MODULE-V: LINEAR PROGRAMMING AND INPUT-OUTPUT ANALYSIS

Linear programming Concept and formulation of LP problems, Solutions Graphical and Simplex methods, Dual formulation and interpretation; transportation problem North West corner method, Least cost method and Vogel's approximation method Static Input-Output Analysis Open and closed models.

**REFERENCES**

- Allen, R.G.D. (1967) *Mathematical Analysis for Economists*, Macmillan.
- Budnick, F.S. (1993) *Applied Mathematics for Business, Economics and Social Sciences*, McGraw Hill.
- Chiang, A.C. (2005) *Fundamental Methods of Mathematical Economics*, McGraw Hill, ND.
- Dorfman, Samuelson and Solow (1958) *Linear Programming and Economic Analysis*, McGraw Hill,
- Henderson (2003) *Microeconomic Theory- A Mathematical Approach* (3e), McGraw Hill.
- Hoy, Livernois, Mckenna, Rees and Stengos (2004) *Mathematics for Economics*, Prentice Hall, ND.
- Baumol, W.J. (1977) *Economic Theory and Operations Analysis*, Prentice Hall, ND.
- Handry, A.T. (1999) *Operation Research*, Prentice Hall, ND.
- Nicholson, R.H. (1986) *Mathematics for Business and Economics*, McGraw Hill, NY.
- Samuelson, P.A. (2005) *Micro Economics* (18e), McGraw Hill, International Edition.

**PAPER: INDIAN ECONOMY
CODE: ECO-C314****OBJECTIVES**

The objective of this paper at the postgraduate level would be to sharpen the analytical faculty of the student, by highlighting an integrated approach to the functioning aspects of the Indian economy, keeping in view the scope for alternative approaches. Such an analysis is essential because the Indian economy is a unique amalgam of alternative competing and often conflicting theories and a proper understanding of its working is imperative if the student is to comprehend the ramifications that underlie most of the observed phenomena in the Indian economic set-up.

MODULE-I: ECONOMIC DEVELOPMENT AND PLANNING IN INDIA

Factors affecting economic development in India. Problems of poverty, inequality and unemployment and various programmes of the govt. Planning in India. Objectives and strategy of planning; Failures and achievements of Plans; Recent Plan –objectives, allocation and targets. Developing grass-root organizations for development – Panchayat, NGOs and pressure groups.

MODULE-II: DEMOGRAPHIC FEATURES, RESOURCE BASE AND INFRASTRUCTURE

Broad demographic features of Indian population; Theory of demographic transition and its applicability in Indian context; Population Policy; migration and urbanization; Resource Base in India Physical Infrastructure-Energy, Transport, Communication; Social Infrastructure- Education and Health; Issues and policies in financing infrastructure development; Growth of the Service Sector.



MODULE-III: ISSUES IN AGRICULTURE, INDUSTRIAL & SERVICE SECTOR OF INDIA

The Agricultural sector: role of agricultural sector in India's economic development, critical evaluation of Land reforms in India and recent initiative; need for second Green revolution; Issues in food security-policies for sustainable agriculture; New Agricultural Policy, PDS system.

Industrial sector: role of industrial sector in India's economic development, scenario since Industrial policy of 1991; Public Sector enterprises and their performance; Privatization and disinvestment debate; Problem of sick units in India and government policy; revival of Small-scale sector; Land acquisition, SEZ and Industrialization. Issues relating to service led-growth. Inclusive growth in 11th and 12th five year plans.

MODULE-IV: FINANCIAL, FISCAL AND EXTERNAL SECTOR REFORMS OF INDIA

Issues relating to reforms in banking, insurance, pensions, exchange rate and capital market. Structure and direction of foreign trade; Balance of payments; export-import policy and trade liberalization; Latest foreign trade policy; foreign exchange management-FERA AND FEMA; Foreign capital and MNCs in India; Rationale for reforms and LPG policy; W.T.O. and its impact on Indian Economy. Profile of Fiscal reforms; reforms with respect to state finance, Issues relating to deficit growth, FRBM Act and fiscal prudence.

MODULE-V: ODISHA ECONOMY AND ITS GROWTH AND DEVELOPMENT

A macro glance of Odisha; Economic characteristics of Odisha, Odisha Economy in relation to India and major states in recent decades in terms of indicators on - per capita SDP, per capita consumption (rural and urban), income growth, human development; policies relating to social sector; natural resource base in Odisha; Agriculture and allied sector in Odisha and policies initiated by government, industrial development; problems and prospects of agriculture, industry and social sector in Odisha, state of public finance in Odisha.

REFERENCES

- Datt, R. and K.P.M. Sundharam , "Indian Economy", S. Chand & Company Ltd., New Delhi.
- Kapila U , "Indian economy since independence", academic foundation, New Delhi.
- Misra, S.K. and V.K. Puri, "Indian Economy: Its Development Experience", Himalaya Publishing House, Mumbai.
- Government of India, Economic Survey (Annual), Economic Division, Ministry of Finance, Delhi.
- Economic survey (annual), planning and coordination department, directorate of economics and statistics, government of Odisha.
- Reserve bank of India Bulletin.
- Panda, Raj Kishore (ed.) (2009), Orissa's Economic Development, Serials Publications, Delhi.
- Rangarajan, C. (1998), Indian Economy Essays on Money and Finance, UBS, New Delhi.
- Nayyar, D. (Ed.)(1997), Trade and Industrialization, Oxford University Press, New Delhi.



Byres, T. J. (Ed.)(1997), The State, Development Planning and Liberalization in India, Oxford University Press, New Delhi.

Gupta, S.P. (1998), Post-Reform India Emerging Trends, Allied Publishers, New Delhi.

PAPER: ENVIRONMENTAL ECONOMICS CODE: ECO-C315

OBJECTIVES

The objective of the course is to introduce different aspects of the sub discipline of environmental economics to the students of MA program. It is expected to enable students to understand the economics of the relationship between economic activities and environmental impacts. It builds on the knowledge of students in micro-economics and public economics. However it also touches upon some macro-issues like the incorporation of environmental impact in growth accounting and also concepts on sustainable development. The economic assessment of environmental impacts and the economics of policies and institutions which have a bearing of environmental management are also covered in the course.

MODULE-I: INTRODUCTION, THE ECONOMY AND ENVIRONMENT

Introduction, Welfare economics and Environment; Pareto optimality and competitive equilibrium, Fundamental theorems of welfare economics; Externalities and market inefficiency, Economic activity and environment quality – interactions and tradeoffs; Roots of environmental degradation – consumers and producers surplus, Market and government failure and environment degradation.

MODULE-II: ENVIRONMENTAL VALUATION

Measurements of environmental values – use values; option values and non- use values; valuation methods – methods based on observed market behaviour; hedonic property values and household production models (travel cost method and household health production function. Methods based on response to hypothetical markets, contingent valuation methods.

MODULE- III: ENVIRONMENTAL REGULATIONS

Environmental regulations – promoting coasian markets; pigouvian taxes and subsidies, command and control verses market based instruments. Coase's bargaining solution and collective action; informal regulation and new model of pollution control. Ministering and enforcement of environmental regulation, Environmental institutions and grass root movements. International trade and environment in WTO regime.

MODULE-IV: SUSTAINABLE DEVELOPMENT

Natural resource management and sustainable development – theories of optimal use of exhaustible and renewable resources; integrated environmental and economic accounting and measurement of environmentally corrected GDP policies for sustainable development.



MODULE-V: ENVIRONMENTAL MANAGEMENT IN INDIA

Mechanism for environment regulation in India; environmental protection laws and their implementation, Micro planning for environment preservation – water sheds joint forest management and self-help groups.

REFERENCES

Nick Hanley, Jason F. Shogren and Ben White, Environmental Economics- In Theory and Practice, MacMillan Press Ltd.. Hampshire.

Murty. M.N, Environment, Sustainable Development and Well-being, Oxford University Press, New Delhi.

Fisher, A.C, Environmental and Resource Economics, Edward Elgar Publishing Ltd, Aldershot.

Bhattacharya RN, Environmental Economics An Indian Perspective (E), Oxford University Press, New Delhi,2011.

Singh K and Shishodia A. Environmental Economics: Theory and Application , Sage Publication, new Delhi, 2007-2012.

Robert Dorfman and Nancy Dorfman, Economics of the Environment, Selected Reading III Edtn., W.W Norton & Company, New York.

Murty. M.N, Environment, Sustainable Development and Well-being, Oxford University Press, New Delhi.

Fisher, A.C, Environmental and Resource Economics, Edward Elgar Publishing Ltd, Aldershot.

Henk Folmer , H. Landis Gabel and Hans Opschoor, Principles of Environmental and Resource Economics, Edward Elgar, Aldershot.

Tom Tietenberg, Environmental and Natural Resource Economics, V Edtn., Addison- Wesley, Massachusetts.

David Pearce, Economics and Environment- Essays on Ecological Economics and Sustainable Development, Edward Elgar, Cheltenham.

Tom Tietenberg, Environmental and Natural Resource Economics, IV Edition, Harper Collins Publishers, New York.



SEMESTER-II

PAPER: MICROECONOMICS-II CODE: ECO-C321

OBJECTIVES

This course is intended to acquaint the student in decision making in the context of market interdependence, complexity, uncertainty and informational asymmetry; give insights into developments in the areas of general equilibrium and welfare economics; and to equip the student to apply microeconomic principles in the areas of exchange and welfare.

MODULE-I: OLIGOPOLY AND ECONOMIC BEHAVIOUR OF FIRM

Oligopoly–Price and Output Determination; Non-collusive oligopoly Homogeneous Product–Cournot, Bertrand & Stackelberg model; Non-homogeneous Product; Chamberlin’s model & the kinked demand curve; Collusive models–Cartels, Mergers and Price leadership.

MODULE-II: GAME THEORY AND INFORMATION ECONOMICS

Game Theory: Normal form games dominant strategy equilibrium and Nash equilibrium in pure strategies, Nash equilibrium in mixed strategy; Extensive form games, Nash equilibrium under perfect information, sub-game perfection. Asymmetric information the market for Lemons, the Principal Agent Problem and Moral Hazard, Adverse Selection, Market Signaling.

MODULE-III: THEORY OF DISTRIBUTION

Marginal productivity theory, Product exhaustion theorem; Elasticity of technical Substitution, technical progress and factor shares; Modern Theory of distribution; Rent & Interest determination, Wage Determination under Collective Bargaining, Fixation of Minimum Wage, Dynamic Theory of Profit, Innovation Theory, Risk and Uncertainty Theory. Macro theories of distribution–Ricardian, Marxian, Kalecki and Kaldor’s.

MODULE-IV: WELFARE ECONOMICS

Pigovian welfare economics; Pareto optimal conditions; Value judgement; Social welfare function; Compensation principle; Inability to obtain optimum welfare–Imperfections, market failure, externalities, decreasing costs, uncertainty and non-existent and incomplete markets; Theory of second best–Arrow’s impossibility theorem; Rawl’s theory of justice equity– efficiency trade off.

MODULE-V: GENERAL EQUILIBRIUM

Partial and General Equilibrium, Walrasian excess demand and input output approaches to general equilibrium, Existence, Stability and uniqueness of equilibrium and general equilibrium Coalition and monopolies; Production without consumption – one sector model, homogeneous functions, income distribution, production without consumption – two sector model, relationship between relative commodity and factor prices. Input-Output analysis.



REFERENCES

- Walter Nicholson, Christopher M. Snyder, Microeconomic Theory: Basic Principles and Extensions, Cengage Learning.
- Hugh Gravelle and Ray Rees, Microeconomics, Pearson Education Ltd.
- Jehle and Reny, Advanced Microeconomic Theory, Pearson India.
- Layard, P.R.G. and A.W. Walters (1979), Microeconomic Theory, McGraw Hill.
- Varian, H. (2000) Microeconomic Analysis, W.W. Norton.
- James M. Henderson and Richard E. Quandt, Microeconomic Theory- A Mathematical Approach, McGraw Hill Book Co.
- Henderson, J.M. and R.E. Quandt (1980), Microeconomic Theory; A Mathematical Approach, Mc Graw Hill, New Delhi.
- Koutsoyiannis, A. (1979), Modern Microeconomics, (2nd Edition), Macmillan Press, London.
- Kreps, David, M. (1990). A course in microeconomic theory Princeton university press.
- Laidler David (1977). Introduction to microeconomics, Philip Allan Publishers.
- Little, I.M.D. (1957), A Critique of Welfare Economics (second edition) Oxford University Press, London.
- Nath, S.K. (1969), A Reappraisal of welfare economics, Routledge of Kegan Paul, London.
- Pyndyck, R.S. & D.L. Rubinfeld (1999), Microeconomics, (3rd Edition) Pentice Hall of India.
- Roychowdhury, K.C. (1980), Microeconomics, Tata Mc Graw Hill, New Delhi.
- Sen, A.K. (1970), Collective Choice and Social Welfare, Holden Day Inc.
- San Fransico. Stigler, G. (1996), Theory of Price, (4th Edition), Prentice Hall of India, New Delhi.
- Weintrub, E.R. (1974), General Equilibrium Theory, Macmillan, London.
- Stonier, A.W and Hague (1972) A Text Book of Economic Theory, ELBS, London.

PAPER: MACROECONOMICS-II

CODE:-ECO-C322

OBJECTIVES

Macroeconomics is the study of aggregates. The aggregate analysis has assumed such a great significance in recent times that a prior understanding of macroeconomic theoretical structure is considered essential for the proper comprehension of the different issues and policies. It will equip the students to understand systemic facts and latest theoretical developments for empirical analysis.

MODULE-I: SUPPLY OF MONEY

Financial intermediation; a mechanistic model of bank deposit determination; a behavioral Model of money supply determination, A demand determined money supply process; RBI approach to



money supply; High powered money and money multiplier; money supply determination in an open economy; control of money supply.

MODULE-II: MACROECONOMICS IN AN OPEN ECONOMY

Mundell-Fleming model — Asset markets, expectations and exchange rates; fixed v/s flexible exchange rates; monetary approach to balance of payments-monetary analysis under a fixed exchange rate; monetary analysis under a flexible exchange rate; policy implication of the law of one price; policy implication of a small open economy model.

MODULE-III: THEORY OF INFLATION

Classical, Keynesian and Monetarist approaches to inflation; Structuralist theory of inflation; Philips curve analysis — Short run and long run Philips curve; Samuelson and Solow — the natural rate of unemployment hypothesis; Tobin's modified Philips curve; Adaptive expectations and rational expectations; Policies to control inflation.

MODULE-IV: BUSINESS CYCLES

Meaning and nature of business cycle; Theories of Schumpeter, Kaldor, Samuelson and Hicks, Goodwin's model; Control of business cycles — relative efficacy of monetary and fiscal policies.

MODULE-V: NEW CLASSICAL MACROECONOMICS

The new classical critique of micro foundations, the new classical approach; Policy implications of new classical approach; criticisms of new classical — empirical evidence.

REFERENCES

- Ackley, G. (1978), *Macroeconomics Theory and Policy*, Macmillan, New York.
- Blackhouse, R. and A. Salansi (Eds.) (2000), *Macroeconomics and the Real World* (2 Vols.), Oxford University Press, London.
- Branson, W.A. (1989), *Macroeconomic Theory and Policy*, (3rd Edition), Harper and Row, NY.
- Dornbusch, R. and F. Stanley (1997), *Macroeconomics*, McGraw Hill, Inc., New York.
- Hall, R.E. and J.B. Taylor (1986), *Macroeconomics*, W.W. Norton, New York.
- Heijdra, B.J. and V.P. Fredericck (2001), *Foundations of Modern Macroeconomics*, Oxford University Press, New Delhi.
- Jha, R. (1991), *Contemporary Macroeconomic Theory and Policy*, Wiley Eastern Ltd., Delhi.
- N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010
- Levacic R and Rebmann A "Macro Economics- An introduction to Keynesian –neo-classical controversies", second edition, Macmillan, London.
- Romer, D.L. (1996), *Advanced Macroeconomics*, McGraw Hill Company Ltd., New York.
- Scarfe, B.L. (1977), *Cycles, Growth and Inflation*, McGraw Hill, New York.



Shapiro, E. (1996), Macroeconomic Analysis, Galgotia Publications, New Delhi.

Surrey, M.J.C. (Ed.) (1976), Macroeconomic Themes, Oxford University Press, Oxford.

PAPER: STATISTICS FOR ECONOMICS

CODE: ECO-C323

OBJECTIVES

The objective of this course is to train students in the use of the most common statistical tools and techniques encountered in economics for analysis of data with valid logic and inferences. Broadly, for the convenience in understanding of applications, some examples of economic applications, as given in respective units, will be discussed in the class. In addition to the books suggested below, students may consult any statistical books for the topics covered in this course.

MODULE-I: INTRODUCTION DATA PRESENTATION AND DESCRIPTIVE STATISTICS

Introduction and Importance of Statistics in Economics; Sources and limitation of Secondary Data; Need for collecting Primary data, Graphical Presentations of data; Descriptive statistics-measures of central tendency, Dispersion and Skewness.

MODULE-II: CORRELATION AND REGRESSION

Meaning, Assumptions and limitations of Simple Correlation and Regression, Pearson's product moment formula and Spearman's rank correlation; concept of least squares and lines of regression; Method of estimating non-linear regression - exponential, double logarithm & hyperbolic functions. Standard error of estimates, Partial and multiple correlations, Co-efficient of determination.

MODULE-III: PROBABILITY AND DISTRIBUTION

Probability theory---different concepts and approaches, Laws and axiom of probability, Conditional probability and concept of interdependence; Bay's theorem and its applications; Concept of random variable, Probability distribution Bi-nominal, Poisson, and Normal.

MODULE-IV: SAMPLING, THEORY OF ESTIMATION AND HYPOTHESIS

Concept of an estimator and its sampling distribution, Properties of a good estimator; Formulation of statistical hypotheses --- Null and alternative ; Goodness of fit ; Confidence interval and level of significance ; Hypothesis testing based on Z, t , F and Chi -square tests ; Errors of Types I and II.

MODULE-V: INDEX NUMBERS, TIME SERIES

Lasperes and Paasches index numbers, Chain base index numbers, Fishers test for index numbers. Time series Components, Approaches to time series, Estimation of seasonal and cyclical variations. Forecasting Types and approaching to forecasting, forecasting techniques.



REFERENCES

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- Murray R. Spiegel (1992). Theory and Problem of Statistics, Schaum's Outline Series, Metric edition.
- Gupta S C (1981), Fundamentals of Statistics Himalaya Pub House.

PAPER: PUBLIC ECONOMICS CODE: ECO-C324

OBJECTIVES

Role and functions of the Government in an economy have been changing with the passage of time. The term 'Public Finance' has traditionally been applied to the package of those policies and operations which involve the use of tax and expenditure measures while budgetary policy is an important part to understand the basic problems of use of resources, distribution of income, etc. There are vast array of fiscal institutions — tax systems, expenditure programmes, budgetary procedures, stabilization instruments, debt issues, levels of government, etc., which raise a spectrum of issues arising from the operation of these institutions. This PAPER: combines a thorough understanding of fiscal institutions with a careful analysis of the issues which underline budgetary policies in general and Indian experience in particular.

MODULE-I: INTRODUCTION AND ALLOCATION OF RESOURCES

Introduction: public finance vs. private finance, fiscal functions- allocation, distribution and stabilization role of government; public goods, - pure and partial public goods, private goods and merit goods, Market failure - imperfections, decreasing costs, externalities; fundamental principle of public finance – Maximum Social Advantage, Theory of second best

Allocation of resources-provision of private and 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.



MODULE-II: PUBLIC EXPENDITURE

Wagner's law of increasing state activity, Peacock- Wiseman Hypotheses, cannons of public expenditure, effects of public expenditure on production, distribution and economic activities, public sector pricing policy, trends and pattern of public expenditure in India; Criteria for public investment; Social cost-benefit analysis — Project evaluation, Estimation of costs, discount rate.

MODULE-III: TAXATION

Sources of public revenue, direct and indirect taxes, effects of tax on production, distribution and economic activities. Principle of taxation – Benefit theory, Ability to pay theory, Theory of optimal taxation-The Inverse Elasticity Rule and the Ramsey Ruleshifting and incidence of taxation, taxable capacity, features of Indian tax system, trends in tax revenue of the government, problem of double taxation. Tax evasion and the black economy; Tax reforms in India.

MODULE-IV: PUBLIC DEBT

Sources of public borrowing, importance of public borrowing, effects of public debt, tax vs. debt, burden of public debt- classical vs. others, shifting of debt burden, intergenerational shifting, Public Borrowings and Price Level; Crowding Out of Private Investment and Activity principles of debt management; methods of debt redemption, trends and pattern of public debt in India. Issues in Debt Management in India.

MODULE-V: BUDGETARY POLICY AND FISCAL FEDERALISM

Budgetary Policy: Balanced vs. unbalanced budget, budget as an instrument of economic policy, Objectives of fiscal policy — full employment, anti-inflation, economic growth, redistribution of income and wealth; Interdependence of fiscal and monetary policies; Budgetary deficits and its implications; Fiscal policy for stabilization — automatic vs. discretionary stabilization; Zero based budgeting; salient features of the most recent union budget of India.

Fiscal Federalism: Fiscal federalism in India; Resource transfer from Union to States — Criteria for transfer of Resources; Centre-State financial relations in India; Finance Commission and The recent most report of the Finance commission of India.

REFERENCES

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Shoup, C.S. (1970), Public Finance, Aldine, Chicago.

Shome, P. (Ed.) (1995), Tax Policy Handbook, Tax Division, Fiscal Affairs Department, International Monetary Fund, Washington D. C.

PAPER: ECONOMICS OF GROWTH AND DEVELOPMENT

CODE: ECO-C325

OBJECTIVES

Economics of growth and development is an exciting and challenging branch of Economics. In a fast moving global economic order there is a persistent demand to synchronize the approaches, theories and development issues for a better understanding of the problems of the developing economies. This synchronization necessitates considerable restructuring and continuous adaptation in tune with the specific socio-economic settings of these countries. The policies and programmers should empower the people to make development more sustainable and equitable.

MODULE-I: INTRODUCTION TO ECONOMIC GROWTH AND DEVELOPMENT

Difference between economic growth and development, Factors affecting economic growth capital, labour and technology, Measurement of development and development gap GDP, Per capita income, Indicators of economic development: HDI, PQLI, A critical analysis of the most recent Human Development Report, Criticism of Human Development Index (HDI) as a measure of economic development. Sustainable Development; its indicators and obstacles.

MODULE-II: THEORIES OF ECONOMIC GROWTH

Growth models- Harrod-Domar; Neo-classical growth models- Solow and Meade; Joan Robinson's growth model; Growth models of Kaldor and Pasinetti, Optimal savings and Ramsey's Rule, Golden Rule of Capital Accumulation. Models with Endogenous Growth, One sector growth models- The AK model, learning by doing and knowledge spillover; two-sector model of Ujawa-Lucas.

MODULE-III: THEORIES OF ECONOMIC DEVELOPMENT

Classical theory of development-contributions of Adam Smith, Ricardo & Malthus; Karl Marx and development of capitalist economy - theory of social change, surplus value and profit; Immutable laws of capitalist development; Crisis in capitalism - Schumpeter and capitalistic development; innovation - role of credit, profit and degeneration of capitalism; Structural analysis of development; imperfect market paradigm.

MODULE-IV: SECTORAL ASPECTS OF DEVELOPMENT

Role of agriculture in economic development; Efficiency and productivity in agriculture, New technology and sustainable agriculture; Globalization and agricultural growth; Rationale and



pattern of industrialization in developing countries; Role of Industries in economic growth. The choice of technology; Efficiency of small-scale vs. large-scale production; Terms of trade between agriculture and industry; Infrastructure and its importance; Labour markets and their functioning in developing countries. International trade as engine of growth; Static and dynamic gains from trade; Prebisch, Singer and Myrdal thesis vs. free trade; Export-led growth; Dual gap analysis; Balance of payments; Tariffs and effective protection; Post-GATT international economic order; WTO and developing countries.

MODULE-V: MACROECONOMIC POLICIES AND PLANNING AND DEVELOPMENT

Role of monetary and fiscal policies in developing countries-Prior savings, inflation and growth-Empirical evidence; External resources-FDI & FII, aid vs. trade, technology inflow; MNC activity in developing countries; Borrowings-domestic and external; Burden of borrowing-IMF and World Bank policies in developing countries. Need for investment criteria in developing countries-present vs future, alternative investment criteria. Cost benefit analysis, shadow prices, project evaluation. Rationale and types of planning; democratic, decentralized and indicative planning, micro-level planning; Review of Indian Plan models and planning.

REFERENCES

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SEMESTER-III

PAPER: INTERNATIONAL ECONOMICS CODE: ECO-C331

OBJECTIVES

The aim of this course is to provide students with grounding in the principles of international economics so that they understand the world trade and payment system. The course covers the pure theory of trade and extensions thereof, customs union, and balance of payments adjustment policies under alternative exchange-rate regimes. Next open-economy macroeconomics, including the determination of the exchange rate, is discussed. The consequences of capital mobility are explored and the possibility of international macroeconomic policy coordination considered. Finally, political economy issues in trade and current scenario are introduced.

MODULE-I: INTRODUCTION OF INTERNATIONAL ECONOMICS

National specialization, growing intra-regional trade, production sharing, transnational integration, changing world, strategic alliance, international inequality, domestic politics and international trade. International Economic Gap and NIEO, Globalisation, Global trade.

MODULE-II: THE PURE THEORY OF INTERNATIONAL TRADE

The pure theory of international trade – theories of absolute advantage, comparative advantage and opportunity costs, modern theory of international trade; theorem of factor price equalization; Heckscher-Ohlin Theory of International Trade. Role of dynamic factors, i.e., changes in tastes, technology and factor endowments in explaining the emergence of trade; the Rybczynski theorem.

MODULE-III: TRADE POLICY AND ECONOMIC INTEGRATION

Gains from trade and their distribution, Concept of terms of trade, their uses and limitations, Hypothesis of secular deterioration, Trade as an engine of economic growth, The theory of interventions – tariffs, quotas and non – tariff barriers. Economic effects of tariffs & quotas, Free Trade and Efficiency, Free Trade Areas versus Customs Union, Trade Creation and Trade Diversion. Rationale and economic progress of SAARC, SAPTA and ASEAN.

MODULE-IV: INTERNATIONAL MONETARY ECONOMICS

Balance of Payments, Components of balance of payments; equilibrium and disequilibrium in the balance of payments; Critical review of the monetary approach to the theory of balance of payments adjustment; Foreign Exchange Market /Rates, Macro Economic Policy Coordination under Fixed Exchange Rates, Open-Economy Macroeconomics, Foreign Trade and National Income, Macro Economic Policy Coordination under Floating Exchange Rates.



MODULE-V: INTERNATIONAL ECONOMIC ORGANISATION AND CURRENT SCENARIO

International Economic Organisation (IMF, ADB, WTO & WORLD BANK), International factor movement, Trade policy and performance in India-Speculative Attacks and Currency Crisis Proximate causes of recent financial crisis and comparison with previous crises. First generation speculative attack models, Second generation speculative attack models, Currency and banking crisis, Optimal reserve holdings.

REFERENCES

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- Paul Krugman, *Strategic Trade Policy and the New International Economies*.
- Soderstein, B.O., *International Economics*.
- Staffan, B. Linder, *An Essay on Trade and Transformation*.
- Ted Walther, *International Economics – World Economic Problems*.
- Govt. of India, Report of the Committee on Trade Policies.
- C. Paul Hallwood and Ronald MacDonald, *International Money and Finance*, Blackwell, 2000.
- Cherunilam F, *International Economics*, Fifth Edition, the Tata McGraw-Hill Companies, 2011.

PAPER: RESEARCH METHODOLOGY CODE: ECO-C332

OBJECTIVES

The objective of this subject is to enable the students to know the major concepts and methods in methodology. The students at the post-graduate level are expected to know research methods and data analysis so that they can be employed in any business and industrial undertakings as research / economic analyst. This also helps the students who go for further research such as M.Phil and Ph.D. However, the subject is to be treated at primary level and not in depth.

MODULE-I: RESEARCHER'S APPROACHES

Problems of Research in Social Sciences, meaning and objectives of research, types of research, need and significance of research, research methods versus research methodology. Formulation of a Research problem, meaning and need of research design, features of a good design-different research designs for exploratory, descriptive, diagnostic and experimental research. Review of literature. Method of writing a research proposal.



MODULE-II: COLLECTION OF DATA

Primary and secondary data, Methods of collection of Primary Data Pilot Survey, Personal Investigation, Indirect oral investigation, Information received through local agents and correspondents, mailed questionnaire - secondary data Sources, Limitations of Secondary Data, precautions in the use of Secondary Data. Coverage of secondary data available from Census, NSSO, CSO, NFHS, RBI and Planning Commission. Field survey methodology- questionnaire design, difference between questionnaires and schedules, sampling design-sample size and its determination, collection of sensitive information. Case study method.

MODULE-III: PROCESSING AND ANALYSIS OF DATA

Editing, coding, classification, objects, rules, tabulation, preparation of a statistical table, requisite of a good table. Types of Tables Format of a simple one way table, three way table. Analysis of qualitative data. Multiple Regression and Correlation Analysis.

MODULE-IV: TESTING OF HYPOTHESIS

Research questions and hypothesis, definition of Hypothesis, characteristics, source of Hypothesis, problems in formulating Hypothesis, Importance of hypothesis, prerequisites for testing of Hypothesis, testing of Hypothesis, statistical Hypothesis - simple and composite, Null Hypothesis, Types of errors in testing of Hypothesis, level of significance.

MODULE-V: REPORT WRITING

Reporting requirements and mechanics of dissertation writing, significance of report writing, different steps in writing report. Rules for bibliography and references writing-APA & MLA method. Roles of Computer in Research and Reporting. Steps for writing dissertation.

REFERENCES

Anderson Thesis and Assignment writing.

Cohen, M.R. and Nagal Introduction to Logic and Scientific methods Book-II.

Good and Halt Methods in Social Research.

Kurien C.T.A Guide to Research in Economics.

Popper Karl Logic and Scientific Discoveries.

Robbin, L The Nature and Significance of Economic Science.

Kothari, C.R. Research Methodology.

Guidelines for writing a research proposal, available from ICSSR website; Desai & Potter.

Bernard, H. R. (2010), Analysis of Qualitative Data, Sage, UK.

Bhaumik, S.K (2007), 'Methodological Issues in Field Surveys' in K K Bagchi (ed.).

Research Methodology in Social Sciences: A practical Guide, Abhijit Publications, Delhi.

Bryman, Alan (2004), Social Research Methods , Oxford University Press, Oxford, 2nd edition.

Somekh, B and C Lewin (2005), Research Methods in Soc. Sciences, Vistaar Publications, Delhi.



Fink, Arlene & J kosecoff (1998), How to Conduct Surveys A step by step Guide, Sage, UK.

For data base-visit the websites of RBI, NSSO, Census, Planning Commission etc.

PAPER: BASIC ECONOMETRICS

CODE: ECO-C333

OBJECTIVES

The basic objective of this course is to acquaint students with elementary concepts and techniques of econometrics. It is intended to expose students to the art of performing estimation, analyzing and interpretation of the estimated econometric model. While some mathematical derivations will be presented, the emphasis will be on gaining an intuitive understanding of the principles of econometric analysis. Examples of applications in economics will be drawn mainly from single equation modeling in some cases.

MODULE-I: INTRODUCTION AND SCOPE OF ECONOMETRICS

Scope and importance Econometrics steps, importance and limitations of econometrics applications, variables, parameter and constant, sample and population, types of data and functions.

MODULE-II: SIMPLE REGRESSION MODEL

Two variable linear regression model (2VLRM) analysis, error term and white noise error, PRF and SRF, CLRM and its assumptions, OLS method of estimation, properties of estimators and SRF, BLUE, GLS method, ANOVA, statistical inference, goodness of fit, normality assumptions, maximum likelihood estimation, regression without intercept term, scaling, growth rate calculation, reporting and interpretation of estimated results.

MODULE-III: MULTIPLE REGRESSION MODEL

3VLRM, estimation, properties of estimators, interpretation, partial regression coefficients, r , R^2 and R^2 , inferences, $TSS = ESS+RSS$, CLRM assumptions on K-VLRM in matrix form, GLS in matrix form, spherical and non-spherical disturbances.

MODULE-IV: VIOLATION OF CLRM ASSUMPTIONS

Multicollinearity problem types, causes, consequences, detection and remedial measures, Autocorrelation problem causes, AR scheme, consequences, detection and remedies, Heteroscedasticity problem patterns, consequences, detection and remedial measures.

MODULE-V: SIMULTANEOUS EQUATIONS MODEL

Simultaneous equations model (SEM) SF, RF and FF, SEM in matrix form, identification-order and rank conditions, estimation techniques; regression on dummy variables.

REFERENCES

- Gujarati, Damodar N., *Basic Econometrics*, 4th Edition, TATA McGraw Hill Publishing, 2004.
- Wooldridge, Jeffrey M., *Introductory Econometrics: A Modern Approach*, Third edition, Thomson South-Western, 2007.



- Johnstone, J., *Econometrics Methods*, 3rd Edition, McGraw Hill, New York, 1994.
- Ramanathan, Ramu, *Introductory Econometrics with Applications*, Harcourt Academic Press, 2002 (IGM Library Call No. 330.0182 R14I).
- Koutsoyiannis, A. *The Theory of Econometrics*, 2nd Edition, ESLB, 1977 (330.0182 K84T).
- Greene, W.H., *Econometric Analysis*, 4th edition, Prantice Hall, 2000.
- Pindyck, Robert S. and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts*, 1976, International Student edition, McGraw-Hill (330.0182/P65E).
- Cheng, Hsian (1986) *Analysis of Panel Data*, Cambridge University Press.
- Cryer JD and Chan KS (2008), *Time Series Analysis with Applications in R*, 2nd edition. Springer-Verlag, NY.



SEMESTER-IV

PAPER: INDUSTRIAL ECONOMICS

PAPER: CODE: ECO-C341

OBJECTIVES

In the contemporary world with globalization and liberalization more and more attention is being given to industry. The objective is to provide a thorough knowledge about the economics of industry in a cogent and analytical manner, particularly in the Indian context. This course intends to provide knowledge to the students on the basic issues such as productivity, efficiency, capacity utilization and debates involved in the industrial development of India.

MODULE-I: ORGANIZATIONAL FORM AND ALTERNATIVE MOTIVES OF THE FIRM

Types of organizational forms: private sector-single proprietorship, partnership and joint stock Company; public sector firms-departmental organization, government companies and public corporation; joint sector; choice of form of organization;
Formation of company: promotion, promoter, Incorporation, commencement of business;
Business motive-profit maximization, sales maximization, growth maximization, managerial motivation; Evaluation of goals.

MODULE-II: THEORIES OF INDUSTRIAL LOCATION

General determinants of industrial location; advantages and disadvantages of localization; Decentralization of industries and its advantages; Approaches to industrial location analysis - Alfred Weber's theory; sergeant Florence's theory of industrial location, market area theory; industrial location trends in India.

MODULE-III: MARKET AND INDUSTRIAL EFFICIENCY

Market structure and market conduct; Product differentiation and advertisement, Research & Development and Innovation; Market concentration, its measurement and effects on market Performance; Diversification, Integration and Merger.
Meaning of economic efficiency; measurement of efficiency level; optimum Firm; factors determining efficiency and firm size; limits and obstacles to the size of firm-a synthesis on the size of firm, efficiency and decision making process.

MODULE-IV: INDUSTRIAL FINANCING

Need for finance; types of finance; sources of finance; choice of funding-external versus internal sources, Institutional finance with special reference to IFCI, ICICI, IDBI; Critical assessment of role played by public sector financial institutions.

MODULE-V: SOME LARGE SCALE INDUSTRIES AND SMALL SCALE INDUSTRIES IN INDIA

Some large scale industries in India-Iron and steel, cotton textiles, sugar, cement and engineering goods industries; small scale industries in India policies and program for the development of



small scale industries; financial assistance through public financial institutions- NSIC, SIDBI, SFC, SIDC, IDBI, Khadi and village industries commission.

REFERENCES

Donald A hay and D J Morris, Industrial Economics theory and evidence.

R R Barthwal, Industrial economics ,new Age international publisher.

SSM desai and Nirmal Valerao ,Industrial economy of India, Himalaya Publishing Home.

K V Sivaya and V B M Da , Indian industrial economy, sultan chand.

I J Ahluwalia Industrial growth in india, oxford university press, 1985.

Ranjana Seth ,Industrial Economics, Ane Books Pvt Ltd.

Mishra and Puri, Indian economy, Himalaya publisher.

Singh, A and A.N. Sandhu (1988), Industrial Economics, Himalaya Publishing House, Bombay.

Cherunilam, F. (1994) , Industrial Economics Indian Perspective (3rd Edition), Himalaya Publishing House, Mumbai.

PAPER: ECONOMICS OF HEALTH AND EDUCATION CODE: ECO-C342

OBJECTIVES

This course is meant to provide some insights into the application of economic theory in the design and implementation of public policy related to the management of health and education. The main purpose of this paper is to introduce a course on health & education, as it would help the students to understand the strength of education & health in the process of economic development.

MODULE-I: INTRODUCTION TO ECONOMICS OF HEALTH AND EDUCATION

Definition and scope of economics of health- the concept of health and health care- the role of health in economic development–health as human capital determinants of health-poverty ,malnutrition; Economic dimensions of health care- Demand and supply of health care.

Definition and scope of economics of education- Human capital the concept; Historical developments in the human capital theory; components of human capital; PQLI and HDI- investment in human capital – contribution of education to economic growth.

MODULE-II: ECONOMICS OF HEALTH

Distinction between health and health care- Nature of health care as an economic commodity- Demand for health and Supply of health-Opportunity costs and problems of rationing health care. Costs and efficiency- Costs fixed, marginal and average costs. Efficiency - technical and allocative efficiency, and of various types of equity. Market System and health care needs-



Market failure and the role of government – how insurance markets work, and how they can fail for health care.

MODULE-III: FINANCING HEALTH CARE

The economics of financing health care and different approaches taken by governments in different countries-Options for financing health care in developing countries- The rationale of government funding and regulation of health care- Delivery of health care -decentralization and the role of the private/public mix.- health system reforms. The future of Health Sector reforms in developing countries like India. Government, health and medical care-Reasons for govt. intervention-Relationship between health insurance and medical services- health care financing-pricing and subsidies to health sector–health care expenditure in India and Role of NGOs in health care –inequalities of health and health care in India with special reference to Odisha.

MODULE-IV: ECONOMICS OF EDUCATION

Education as an instrument for economic growth, Human Capital vs Physical Capital, Components of Human capital, Private demand and social demand for education, Determinants of demand for education. Cost of education-Expenditure on education, Private costs and social costs and wastage and stagnation, Benefits of education–Direct and indirect benefits, Private and social benefits, Resource Mobilisation and Utilisation, Pricing and Subsidies, Effects of educational financing on income distribution. Formal and non-formal education-Special characteristics of education- Implications for economic analysis- Role of the state–Education.

MODULE-V: INDIAN EDUCATION SYSTEM

Indian Education system –Rationale of government funding and regulation of education-Alternative method of financing education- Resource allocation to primary, secondary and higher education-Problems of education system in India, Efficiency, equity and distributional aspects Implications for gender and social groups- Role of private and public sectors, Union and State governments- Special programmes for education. Educational system and its problems in Odisha.

REFERENCES

- Becker, G.S, (1972)- Human Capital, 2nd edn, NBER, New York.
- Baru, R. V., -Private Health Care in India.
- Henderson, J.W, -Health Economics and Policy.
- Folland- Goodman-Stano- The economics of health and health care.
- Panchamukhi, P.R, -Economics of Health A trend report in ICSSR, A survey of Research in Economics, vol.V1, Allied Publishers, Delhi.
- World Bank(1983), The World Development Report Investing in Health, Oxford University Press.
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- Baru R.V Private Health Care in India - Social Characteristics and Trends (Sage, New Delhi, 1998).



- Becker G.S Human Capital (National Bureau of Economic Research, New York, 1974).
Berman P & Khan M.E Paying for India's Health Care (Sage, New Delhi, 1993).
Berman P (Ed) Human Health Sector Reform in Developing Countries - Making Health. Development Sustainable (Harvard Series on Population and International Health, Boston 1995).
Bhatia A.K Tourism Development - Principles and Practices (Sterling, New Delhi 1996).
Blaug M Introduction to Economics of Education (Penguin, London, 1972).

PAPER: DISSERTATION

CODE: ECO-C343

OBJECTIVES

Students who complete their post-graduation in Economics are mentally equipped to pursue research in the same discipline. It is generally accepted that research is nothing but extension and application of knowledge in a certain specialized field. Therefore regular students who do their post-graduation will be given an opportunity to get exposed to a few elements of social research and also they are expected to complete a small research project under the expert guidance and supervision, Elementary knowledge of research methodology shall consolidate and deepen their understanding of various branches of Economics. Preparing a small dissertation is intended to train them in scientific thinking and art of systematic presentation. It is essentially a job-oriented exercise to enable them to take up the exciting field of social and economic research.

SCHEME OF DISSERTATION

Part I

Students shall submit a dissertation of minimum 8000 words & maximum 10,000 words in three copies to the Head of the Department on or before 30th April of the concerned academic year. The dissertation shall be prepared under the guidance of an internal postgraduate recognized teacher.

Part II

An internal supervisor shall assess each dissertation out of 50 marks, based on the Methodology, analysis, contents and quality of the dissertation.

Part III

A viva voce examination of each candidate shall be held where he/she will have to make a presentation of the dissertation and defend the research. A panel of two referees shall be formed out of whom one shall be an internal examiner. The viva voce shall carry 50 marks. Internal & external examiners shall give out of 25 marks each. The copies of dissertation and the record of the internal course shall be maintained by the centre for two more academic years for inspection. The Marks obtained to project work shall be included in the statement of marks of all students.

*External examiner appointed by the CE, CUO, Koraput.

DISSERTATION FORMAT

Master of Arts in Economics

General Guidelines

1. Selection of a Topic
2. Pilot Survey, if needed
3. Significance of the Study
4. Review of Literature
5. Research Gap (Optional)
6. Conceptual Framework
7. Formulation of Research Questions /Issues
8. Research objectives
9. Hypotheses (Optional)
10. Coverage (Universe/ Sample & period of study)
11. Data source (Primary/Secondary)
12. Tools of analysis (Analytical Framework)
13. Social Relevance of the study
14. Limitations of the study
15. Chapter outlines
16. Introductory chapter
17. Result Chapter
18. Conclusion Chapter
19. Bibliography/References & Webliography
20. Appendices

1.1 Structure of the Report

Title Page/Cover Page

- a. Title page
- b. Title of the dissertation/project
- c. Name of the candidate
- d. Name and designation of the supervisor.
- e. Degree for which project is submitted.
- f. Name of the Centre
- g. Month and year the project is presented
- h. Declaration of the student & supervisor

- 1.2 Preface
- 1.3 Table of contents
 - a. List of Tables
 - b. List of Figures
 - c. Glossary.
 - d. List of abbreviations
 - e. Acknowledgment
6. Double line Page Border 65

1.4 Abstract/ Summary (One page)

1.4. The Main Text

- I. Introductory Chapter: Items 3 to 15 mentioned above
- II. Other Chapters - Analysis, Results Interpretation
- III. Conclusion Chapter: Conclusions, Recommendations & Summary

1.5 End Notes (after each Chapter)

1.6 Bibliography or References (at the end of the thesis)

1.7 Appendices

- a. Questionnaire
- b. Interview Schedule
- c. Observation Schedule (optional)
- d. Coding Frame (optional)
- e. Letters sent to sample members (optional)
- f. Any Other

Length of the Project

1. Report length 50 to 60pages excluding Appendix and Certificates
2. Alignment Justify
3. Font: Times New roman
4. Font size: 12
5. Line spacing: 1.5



ELECTIVE PAPERS FOR SEMESTER-III

PAPER: FINANCIAL ECONOMICS-I CODE: ELECTIVE

OBJECTIVES

In this course Students will learn about the theoretical and policy dimensions of financial economic thought. The positive and significant role of financial in the process of growth and development has been very well recognized in the literature and indeed has become more important during the last two decades as the financial systems of different countries have become integrated in the process of globalization. India is no exception and has taken far reaching measures since 1991 in this direction. It is, therefore, essential that the student of economics should be well conversant with the theory and practice of different financial market to understand and analyse the interconnection between the monetary forces and real forces, their developmental role and limitations in shaping and influencing the monetary and related policies both at the national and international levels.

MODULE-I: BASIC CONCEPTS IN FINANCE

Introduction to Financial Economics Money and finance, financial intermediation and financial intermediaries, the structure of the financial system, Financial Markets Financial Instruments, Equilibrium in Financial Markets, Financial System and Economic Development. Time Value of Money Future Value, Net Present Value, Present value and Rate of Return; Multi period Compounding, Applications. Criteria to evaluate assets Risk and financial assets, Types of risk, Measurement of Risk and Return of an asset; Measurement of Risk and Return of a Portfolio; Determinants of Beta; Risk-Return trade off.

MODULE-II: STRUCTURE OF INTEREST RATES

Structure of Interest rates, Theories of interest rate determination, Level of interest rates, Long period and Short period rates, Spread between lending and deposit rates, Administered interest rates, Appropriate interest rate policy. Ratio Analysis Different Kinds of Financial Ratios, Calculation and its importance in financial analysis. Investment Criteria Internal Rate of Return, Rate of interest Compounded and Effective Annual Rates of Interest.

MODULE-III: BANKING INSTITUTIONS & NBFIS

Commercial Banks Profitability and efficiency of Banks, Development Banks-Role and functions, Investment banking and Merchant banking, Definition and Types of NBFIs UTI, Mutual Funds Valuation (NAV), UTI and Other Mutual Funds; Insurance Companies, Provident Funds and Pension Funds, Growth and impact of NBFIs, Control of NBFIs.



MODULE-IV: REGULATORY AND PROMOTIONAL INSTITUTIONS

The Reserve Bank of India Roles and Functions, Monetary Policy of the RBI, Techniques of Monetary Control, Recent Policy Developments, Liquidity Adjustment Facility (LAF), The Securities and Exchange Board of India Genesis, Organizations, Objectives and Functions, Performance of SEBI, IRDA and its role in financial markets, Financial Sector reforms in India.

MODULE-V: FINANCIAL MARKETS

Role and structure of money market and capital market – features of a developed money market, call money market. Treasury bill market, commercial bill market including commercial PAPER: and certificate of deposits, discount market–Government securities market – markets for derivatives features and options and other derivatives types, uses and pricing of derivatives – Primary and secondary market for securities; SEBI its impact on the working of capital market in India.

REFERENCES

- Avadhani, V. A. (2003) security Analysis and Portfolio Theory, Himalaya Publishing House, Mumbai.
- Bhole,L. M. (1999) Financial Institutions and Markets, Tata McGraw Hill Company Ltd. Delhi.
- Pilbeam, K (2010), Finance & Financial Markets, Palgrave Mc Millan.
- Prasana Chandra, Financial Management, Theory and Practice, Tata McGraw Hill, New Delhi.
- Pandey, I. M. Financial Management, Vikas Publishing House, New Delhi.
- Harker P. T. and S. A. Zenios (2000) (Eds) Performance of Financial Institutions, Cambridge University Press, Cambridge.
- Johnson , H. J. (1993) Financial Institutions and Markets, McGraw Hill, New York.
- Khan M. Y. (1996) Indian Financial System Tata McGraw Hill, New Delhi.
- Prasad, K. N. (2001), Development of India’s Financial System, Sarup & Sons, New Delhi.
- Hanson, J.A. and S. Rathuria (Eds.) (1999) India. A Financial Sector for the Twenty First Century, Oxford University Press, New Delhi.
- Harker, P.T. and S.A. Zenias (2000) (Ed.), Performance of Financial Institutions, Cambridge University Press, Cambridge.
- Johnson, H.J. (1993) Financial Institutions and Markets, Mc Graw Hill, New York.
- Prasad, K.N. (2001). Development of India Financial System. Sarup & Sons, New Delhi.



PAPER: AGRICULTURAL ECONOMICS-I

CODE: ELECTIVE

OBJECTIVES

The objective of this course is to provide a detailed treatment of issues in agricultural economics to those intending to specialize in this area. Its objective is to familiarize students with policy issues that are relevant to Indian agricultural economics and enable them to analyze the issues, using basic micro-economic concepts.

MODULE-I: AGRICULTURE AND ECONOMIC DEVELOPMENT

Role of agriculture in economic development; Interdependence between agriculture and industry; Features of pre capitalist and capitalist agriculture; Traditional agriculture and its modernization Approaches of Schultz, Mellor and Boserup.

MODULE-II: AGRICULTURAL PRODUCTION AND PRODUCTIVITY

Agricultural production — Resource use and efficiency; Production function analyses in agriculture; Factor combination and resource substitution; Cost and supply curves; Size of farm and productivity debate.

MODULE-III: DIVERSIFICATION OF RURAL ECONOMIC ACTIVITIES

Livestock economics-Livestock resources and their productivity; Problems of marketing; White revolution; Fishery and poultry development; Forestry, horticulture and floriculture; Issues and problems in rural industrialization and development of agro-based industries.

MODULE-IV: LAND REFORMS AND LAND POLICY

Principles of land utilization; Land distribution — Structure and trends; Land values and rent; Land tenures and farming systems — Peasant, capitalist, collective and state farming; Tenancy and crop sharing-Forms, incidence and effects; Land reform measures and performance; Women and land reforms; Problems of marginal and small farmers.

MODULE-V: RURAL CREDIT SYSTEM

Institutional sources of finance Cooperative, RRB and Commercial Banks; Role of NABARD; Self-Help Group; Informal credit sources.
Rural indebtedness and farmer suicide; Interlink age of land, labour and credit markets in Agriculture.

REFERENCES

- Drummond, H. Evan and John W. Goodwin 2004 Agricultural Economics, Pearson Delhi.
Ellis Frank, 1988, Peasant Economics, Cambridge University Press.
Lekhi R.K. and Joginder Singh Agricultural Economics An Indian Perspective, Kalyani Publisher.
Heady Earl O and John L. Dillon, 1960, Agricultural Production Functions, Kalyani Publisher.
Soni, R.N. Leading Issues in Agricultural Economics, Vishal Publishing.



- Bilgrami, S.A.R. (1996), Agricultural Economics, Himalaya Publishing House, Delhi.
Government of India, Economic Survey (Annual), New Delhi.
Rudra, A. (1982), Indian Agricultural Economics Myths and Reality, Allied Publishers, Delhi.

PAPER: ADVANCE MATHEMATICAL ECONOMICS-I

CODE: ELECTIVE

OBJECTIVS

The objective of this course is to train students in the use of the most common advance mathematical tools and techniques encountered in economics. For the convenience in understanding of applications, some examples of economic applications, as given in respective units, will be discussed in the class. In addition to the books suggested below, students may consult any intermediate mathematics books for the topics covered in this course.

MODULE-I DIFFERENTIAL CALCULUS

Principles of differentiation; rules of differentiation; differentiation of implicit functions; Partial and total differentiation; maxima and minima without constraints; maxima and minima subject to constraints, Economic application of differentiation--Unconstrained maxima and minima with single explanatory variable SAE--Cost minimization, revenue maximization, profit maximization and equilibrium of a firm. Unconstrained maxima and minima with more than one explanatory variable. SAE--consumer's utility maximization, discriminating monopoly, multi-product equilibrium, multi-plant equilibrium, equilibrium of a firm with advertisement and subsidy. (Hessian determinant), Optimization with a single constraint – Lagrange's multiplier method, Lagrangian function, application to consumer's equilibrium in commodity market and producer's equilibrium in factor market.

MODULE-II: INTEGRAL CALCULUS

Dynamics and integration; Principles of integration; Indefinite and definite integrals; Application of integrals in economics Consumer surplus and producer surplus; Domar Growth Model.

MODULE-III: DIFFERENTIAL EQUATION AND DIFFERENCE EQUATION

Concepts, Solutions of first and second order linear and non-linear differential equations-homogeneous and non-homogeneous cases; Applications differential equations applied to market equilibrium Concepts, Solutions of first order and second order difference equations; Applications difference equations applied to market equilibrium equations applied to market equilibrium Cobweb model.

MODULE-IV: INPUT-OUTPUT ANALYSIS

Static Input-Output Analysis Open and closed models, Static open model, Hawkins-Simon theorem, a linear programming interpretation, Theorem on non-substitution- Samuelson's version, closed systems, Leontief dynamic system- causal indeterminacy in dynamic Model,



MODULE-V: GAME THEORY

Concept of game, pay-off matrix, pure and mixed strategies, Two person Zero-sum game- saddle point solution, Prisoners' dilemma, Non-constant sum game, Cooperative and non-cooperative games, Nash equilibrium.

REFERENCES

- Chiang, Alpha C. (2005) Fundamental Methods of Mathematical Economics, 4th edition, McGraw-Hill.
- Allen, R. G. D. (1959) Mathematical Economics, Second edition, Macmillan.
- Allen, R.G.D. (1967) Macro-Economic Theory A Mathematical Treatment.
- Chiang, Alpha C. (1999) Elements of Dynamic Optimization. Long Grove, IL Waveland Press.
- Yamane, Taro (1985) Mathematics for Economists, Second edition, Prentice Hall.
- Simon C and L. Blume , Mathematics for Economists, Viva books, 2009.
- Dorfman, samuelson and Solow, Linear programming and Economic Analysis, Dover, 1958.
- Dimitri Bertsekas, Non-Linear Programming, Atlanta Scientific, 2000.
- Ravindran, A., D.T. Phillips and J.J. Solberg, *Operations Research Principles and Practice*. 1987, 2/e, John Wiley and Sons.
- Taha, H.A., *Operations Research An Introduction*, 1976. 4/e, Macmillan Pub. Co.
- Gopal, M., *Modern Control System Theor*, 1993, Wiley Eastern.

PAPER: ADVANCE ECONOMETRICS-I CODE: ELECTIVE

OBJECTIVES

The basic objective of this course is to acquaint students with elementary concepts and techniques of econometrics. It is intended to expose students to the art of performing estimation, analyzing and interpretation of the estimated econometric model. While some mathematical derivations will be presented, the emphasis will be on gaining an intuitive understanding of the principles of econometric analysis.

MODULE-I: INTRODUCTION AND SCOPE OF ECONOMETRICS

Scope and importance Econometrics steps, importance and limitations of econometrics applications, variables, parameter and constant, sample and population, types of data and functions.

MODULE-II: SIMPLE REGRESSION MODEL

Two variable linear regression model (2VLRM) analysis, error term and white noise error, PRF and SRF, CLRM and its assumptions, OLS method of estimation, properties of estimators and



SRF, BLUE, GLS method, ANOVA, statistical inference, goodness of fit, normality assumptions, maximum likelihood estimation, regression without intercept term, scaling, growth rate calculation, reporting and interpretation of estimated results.

MODULE-III: MULTIPLE REGRESSION MODEL

3VLRM, estimation, properties of estimators, interpretation, partial regression coefficients, r , R^2 and R^2 , inferences, $TSS = ESS + RSS$, CLRM assumptions on K-VLRM in matrix form, GLS in matrix form, spherical and non-spherical disturbances.

MODULE-IV: VIOLATION OF CLRM ASSUMPTIONS

Multicollinearity problem types, causes, consequences, detection and remedial measures, Autocorrelation problem causes, AR scheme, consequences, detection and remedies, Heteroscedasticity problem patterns, consequences, detection and remedial measures.

MODULE-V: SIMULTANEOUS EQUATIONS MODEL

Simultaneous equations model (SEM) SF, RF and FF, SEM in matrix form, identification-order and rank conditions, estimation techniques; regression on dummy variables, regression on dummy dependent variable models-logit, probit and tobit models.

REFERENCES

- Wooldridge, Jeffrey M., *Introductory Econometrics: A Modern Approach*, Third edition, Thomson South-Western, 2007.
- Johnstone, J., *Econometrics Methods*, 3rd Edition, McGraw Hill, New York, 1994.
- Ramanathan, Ramu, *Introductory Econometrics with Applications*, Harcourt Academic Press, 2002 (IGM Library Call No. 330.0182 R14I).
- Koutsoyiannis, A. *The Theory of Econometrics*, 2nd Edition, ESLB, 1977 (330.0182 K84T).
- Greene, W.H., *Econometric Analysis*, 4th edition, Prantice Hall, 2000.
- Intriligator, M.D. *Econometric models, Techniques and Applications*, 1978, North Holland (330.0182/I8E).
- Pindyck, Robert S. and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts*, 1976, International Student edition, McGraw-Hill (330.0182/P65E).
- Gujarati, Damodar N., *Basic Econometrics*, 4th Edition, TATA McGraw Hill Publishing, 2004.



ELECTIVE PAPERS FOR SEMESTER-IV

PAPER: FINANCIAL ECONOMICS-II CODE: ELECTIVE

OBJECTIVES

In this course Students will learn about the theoretical and policy dimensions of financial economic thought. The positive and significant role of financial in the process of growth and development has been very well recognized in the literature and indeed has become more important during the last two decades as the financial systems of different countries have become integrated in the process of globalization. India is no exception and has taken far reaching measures since 1991 in this direction. It is, therefore, essential that the student of economics should be well conversant with the theory and practice of different financial market to understand and analyse the interconnection between the monetary forces and real forces, their developmental role and limitations in shaping and influencing the monetary and related policies both at the national and international levels.

MODULE-I: ANALYSIS OF FINANCIAL AND INSURANCE MARKETS

Fundamental analysis, Technical Analysis, Efficient market hypothesis. Functioning of different financial markets-money market, stock market, bond market, forwards market, futures & options market, currency futures and currency options market, foreign exchange market, commodity futures market etc. Functioning of the insurance sector-insurance as a risk management technique-risk management techniques-non insurance method.

MODULE-II: INTERNATIONAL FINANCIAL MARKETS

Reforms in International monetary system for developing countries – Lending operation of world bank and its affiliates – Working of IDA and IFC; The Growth of Regional financial institutions; Asian Development Bank and its lending activities; Asian Development Bank and India, Euro-dollar and Euro-Currency markets; their developmental role and regulation at the International level. Factors affecting exchange rate volatility; capital mobility, inflation, monetary policy, FDI, FII, etc.

MODULE-III: SECURITY MARKETS AND VALUATION OF SECURITIES

Supply of Securities, Characteristics, Govt. Bonds, Pure Discount Bonds, Coupon Paying Bonds, Govt. securities market, Primary and secondary market for securities; Fundamentals of Valuation of Securities Valuation of Bonds and Stocks; Bond/Yield, Yield to Maturity. Equity Valuation Dividend Discount Model, The Cost of Capital Debt and equity; Cost of Debt, Cost of Preference Capital and Equity Capital; Capital asset Pricing Model (CAPM). The Arbitrage Pricing Theory, Its Alternative Approach and Importance in Finance.

MODULE-IV: DERIVATIVE MARKETS

Markets for derivatives, Types, uses and pricing of derivatives; Future Contracts and Forward Contracts; Future and forward Markets, Origin of Future Trading; Future Prices Relation between



Spot and Future Prices, Commodity Future; Financial Future; Hedging in Futures.Options. The Put Option and Call Option; Option Pricing, the Pay-Offs From Buying and Selling Options. Option Pricing Models: The Binomial Model. Swaps Currency and Interest Rate Swaps; Equity and Commodity Swaps.

MODULE-V: CORPORATE FINANCE

Capital Budgeting-Net present value and other investment criteria, Capital Structure-Financial leverage & capital structure policy, Modigliani-Miller Propositions. Short-term financial planning- net working capital, operating cycle & cash cycle, alternative financial policies for current issues, cash budget, short term borrowing, cash & liquidity management. Dividends & dividend policy-basis issues, cash dividends,& dividend payments, stock repurchase, stock splits and stock dividends.

REFERENCES

- Brahmaiah, B. and Subba Rao, P. (2003), Financial Future and Options, Himalaya Publishing House, Mumbai.
- Gardener D. C. (2003), Derivatives, Macmillan India Limited, New Delhi.
- John C. Hull, (2005), Options Futures and other Derivatives, Prentice Hall, New Delhi.
- Khan, M. Y. and Jain, P. K. (2004), Financial Management, Text, Problems and Cases, Tata McGraw Hill Company Ltd. New Delhi.
- Pilbeam, K (2010), Finance & Financial Markets, Palgrave Mc Millan.
- Cuthbertson, K, (1996) Quantitative Financial Economics Stocks, Bonds and Foreign Exchange, John Wiley and Sons, USA.
- Eichberger J. and I.R. Harper (1997) Financial Economics, Oxford University Press, New York.
- Tuckman, B. (1995), Fixed Income Securities – Tools for Today’s Markets, Wiley Frontiers in Finance.

PAPER: AGRICULTURAL ECONOMICS-II CODE: ELECTIVE

OBJECTIVES

The objective of this course is to provide a detailed treatment of issues in agricultural economics to those intending to specialize in this area. Its objective is to familiarize students with policy issues that are relevant to Indian agricultural economics and enable them to analyze the issues, using basic micro-economic concepts.

MODULE-I: AGRICULTURAL MARKETING

Agricultural markets and marketing efficiency — Marketing functions and costs; Market structure and imperfections; Regulated Markets; Marketed and marketable Surplus; State policy with respect to agricultural marketing; Warehousing; market efficiency; Contract farming; futures market.



MODULE-II: AGRICULTURAL PRICE POLICY AND AGRICULTURAL INSURANCE

Objectives of agricultural price policy — Instruments and evaluation; role of Commission on Agricultural Cost and Prices; Terms of trade between agricultural and non-agricultural prices; Food security and Public Distribution System; Risk and uncertainty in agriculture Taxation and crop insurance, Agricultural insurance scheme-National Agricultural Insurance Scheme and Weather Based Crop Insurance Scheme.

MODULE-III: RURAL LABOUR MARKET

Rural labor supply; Interlocking of factor markets; Mobility of labor and segmentation in labor markets; marginalization of rural labor; Nature, extent and trends in rural unemployment; Agricultural wages in India; Male-female wage differences; Non-agricultural rural employment —Trends and determinants.

MODULE-IV: AGRICULTURAL GROWTH IN INDIA

Recent trends in agricultural growth in India; Cropping pattern shifts; Supply of inputs — Irrigation, power, seed and fertilizers; Pricing of inputs and role of subsidies; Distribution of gains from technological change; Role of Public investment and capital formation in Indian agriculture; Sustainable agriculture — indigenous practices; Bio-technological practices and growth potential.

MODULE-V: AGRICULTURE AND EXTERNAL SECTOR

International trade in agricultural commodities; Nature and features of agri-business; Role of MNCs; Globalization of Indian economy and problems and prospects of Indian agriculture; Impact of World Trade Organization on Indian agriculture.

REFERENCES

- Drummond, H. Evan and John W. Goodwin 2004 Agricultural Economics, Pearson Delhi.
- Lekhi R.K. and Joginder Singh Agricultural Economics: An Indian Perspective, Kalyani Publisher.
- Soni, R.N. Leading Issues in Agricultural Economics, Vishal Publishing.
- Bilgrami, S.A.R. (1996), Agricultural Economics, Himalaya Publishing House, Delhi.
- Government of India, Economic Survey (Annual), New Delhi.
- Rudra, A. (1982), Indian Agricultural Economics Myths and Reality, Allied Publishers, New Delhi.
- Gulati, A. and T. Kelly (1999), Trade Liberalisation and Indian Agriculture, Oxford, Delhi.
- Dantwala, M.L. et.al (1991), Indian Agricultural Development Since Independence, Oxford & IBH, Delhi.



PAPER: ADVANCE MATHEMATICAL ECONOMICS-II

CODE: ELECTIVE

OBJECTIVES

The objective of this course is to train students in the use of the most common advance mathematical tools and techniques encountered in economics. For the convenience in understanding of applications, some examples of economic applications, as given in respective units, will be discussed in the class. In addition to the books suggested below, students may consult any intermediate mathematics books for the topics covered in this course.

MODULE-I: LINEAR PROGRAMMING

Linear programming Concept and formulation of LP problems, Solutions Graphical and Simplex methods, Dual formulation and interpretation; transportation problem North West corner method, Least cost method and Vogel's approximation method, method of a linear programming, problem-its optimal solution (primal and dual).

MODULE-II: NON-LINEAR PROGRAMMING

Nature, Kuhn-Tucker conditions, the constraint Qualification, KTST, AEST, Economic application, Kuhn Tucker optimality conditions – Duality in nonlinear programming – Integer programming – Algorithms for integer programming.

MODULE-III: DYNAMIC PROGRAMMING

Dynamic programming – Bellman's optimality principle, stochastic and deterministic problems, finite and infinite horizon problems – Formulation and solution – Applicability of dynamic programming.

MODULE-IV: DYNAMIC ANALYSIS-INTEGRATION AND DIFFERENTIAL EQUATION

Dynamic Optimization Discrete Time and Continuous Time. First order differential equations – definition and concept, general formula for first order linear differential equations, exact differential equations and partial integration, rules for integrating functions, lagged income determination model, Cobweb Theorem.

MODULE-V: SIMULATIONS

Basic concepts, examples of simulation models, techniques for generating random deviates, design of simulation experiments, optimization of simulation parameters.

REFERENCES

Chiang, Alpha C.(2005) Fundamental Methods of Mathematical Economics, 4th edition, McGraw-Hill.

Allen, R. G. D. (1959) Mathematical Economics, Second edition, Macmillan.



- Allen, R.G.D. (1967) Macro-Economic Theory A Mathematical Treatment.
- Chiang, Alpha C. (1999) Elements of Dynamic Optimization. Long Grove, IL Waveland Press.
- Yamane, Taro (1985) Mathematics for Economists, Second edition, Prentice Hall.
- Simon C and L. Blume , Mathematics for Economists, Viva books, 2009.
- Dorfman, Samuelson and Solow, Linear programming and Economic Analysis, Dover, 1958.
- Dimitri Bertsekas, Non-Linear Programming, Atlanta Scientific, 2000.
- Ravindran, A., D.T. Phillips and J.J. Solberg, *Operations Research Principles and Practice*. 1987, 2/e, John Wiley and Sons.
- Taha, H.A., *Operations Research An Introduction*, 1976. 4/e, Macmillan Pub. Co.
- .Gopal, M., *Modern Control System Theor*, 1993, Wiley Eastern.

PAPER: ADVANCE ECONOMETRICS-II

CODE: ELECTIVE

OBJECTIVES

The basic objective of this course is to acquaint students with elementary concepts and techniques of advance econometrics. It is intended to expose students to the art of performing estimation, analyzing and interpretation of the estimated econometric model. While some mathematical derivations will be presented, the emphasis will be on gaining an intuitive understanding of the principles of econometric analysis.

MODULE-I: INTRODUCTION AND DUMMY VARIABLE REGRESSION MODEL

Introduction, dummy variable technique – testing structural stability of regression models comparing to regression, interaction effects, seasonal analysis, use of dummy variables, regression with dummy dependent variables the LPM, Logit, Probit and Tobit models – applications, LIMDEP Model.

MODULE-II: AUTOREGRESSION MODEL

Autoregressive and distributed lag models –Koyak model, Partial adjustment model, Adaptive expectations, Instrumental variables; problem of auto-correlation – application; Almon approach to distributed – lag models; Error correlation mechanism. Causality test, granger test and Sim's test.

MODULE-III: SIMULTANEOUS EQUATION MODEL

Simultaneous equation models Introduction & examples the simultaneous bias and inconsistency of OLS estimators; the identification problem; rules of identification – order and rank condition, Methods of estimating Simultaneous equation system. Simulation Equation – Bias – Identification – ILS – 2SLS – 3 SLS.

MODULE-IV: TIME SERIES

Time Series – ARMA, ARIMA – Diagnostic Test – Casualty Test, Co integration Test – Correcting Mechanism.

MODULE-V: MULTIVARIATE ANALYSIS

Multivariate Analysis, Ridge Regression, Solution to Multi-collinearity, Lag Models Koyacks Distributed Lag Models, Instrumental Variables, Other Estimates GLSE, SURE, LIMLE, FIMLE, Other Transformation Specification Errors – RESET (Regression, Specification Error Test) – Box-Cox Test.

REFERENCES

- Gujarati, Damodar N., *Basic Econometrics*, 4th Edition, TATA McGraw Hill Publishing, 2004.
- Wooldridge, Jeffrey M., *Introductory Econometrics A Modern Approach*, Third edition, Thomson South-Western, 2007.
- Johnstone, J., *Econometrics Methods*, 3rd Edition, McGraw Hill, New York, 1994.
- Ramanathan, Ramu, *Introductory Econometrics with Applications*, Harcourt Academic Press, 2002 (IGM Library Call No. 330.0182 R14I).
- Koutsoyiannis, A. *The Theory of Econometrics*, 2nd Edition, ESLB, 1977 (330.0182 K84T).
- Greene, W.H., *Econometric Analysis*, 4th edition, Prantice Hall, 2000.
- Intriligator, M.D. *Econometric models, Techniques and Applications*, 1978, North Holland (330.0182/I8E).
- Pindyck, Robert S. and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts*, 1976, International Student edition, McGraw-Hill (330.0182/P65E).
- Maddala, G.S., *Limited Dependent and Qualitative Variables in Econometrics*, Cambridge Univ Press.

