

Core Paper - 1

EMT 101: MICROECONOMIC THEORY- I

The microeconomic theory is to analyze how individual decision-makers, both consumers and producers, behave in a variety of economic environments. The common goal in all of these issues is to identify the incentives of the various participating agents and the trade-offs that they face. Microeconomics is a branch of economics that studies the behavior of individuals and firms in making decisions regarding the allocation of scarce resources and the interactions among these individuals and firms. Microeconomics shows conditions under which free markets lead to desirable allocations. The fundamental concepts of supply and demand, rational choice, efficiency, opportunity costs, incentives, production, profits, competition, monopoly, externalities, and public goods will help you to understand the world around you.

Course Objectives

The objective of this course is to provide the basic knowledge of decision making, production of products, different market structure and pricing structure of the firms with the study of the subject in a Master's programme.

Unit 1: Theory of Individual Decision Making

Theory of Demand - Consumer equilibrium under Indifference Curve Analysis – Applications of Indifference Curves - Slutsky Theorem – Revealed Preference Hypothesis - Choice under Uncertainty- Recent Developments in the Theory of Market Demand.

Unit 2: Theory of Production and Cost

Concepts of Production Function – Homogeneous Production Function - Least Cost Combinations of Factors – Cobb-Douglas and CES Production Functions – Frontier Production Function - Properties - Laws of Returns to Scale - Theory of Cost – Traditional and Modern theories of Cost.

Unit 3: Traditional Market Structures

Perfect Competition - Equilibrium, Short Run and Long Run considerations, Efficiency and Welfare – Monopoly – Price and output determination - Price Discrimination - Welfare and Output.

Unit 4: Modern Theories of Market

Monopolistic competition – Collusive and Non- Collusive Oligopoly: Cournot, Bertrand Stackelberg models - Nash equilibrium - Kinked Demand curve and Price Leadership models.

Unit 5: Limit Pricing and Managerial Theories of Firm

Bain's Limit Pricing: Recent developments – Sylos-Labini and Franco Modigliani Models - Baumol's Sales Maximisation: Static single product model with and without advertisements – Marris' model of Managerial Enterprise.

TEXT AND REFERENCE BOOKS:

- 1) J.M. Henderson and R.E. Quandt (2003) *Micro-economic Theory: A Mathematical Approach*, Tata McGraw Hill publishing company Ltd.
- 2) Hal R. Varian (1995), *Intermediate Micro-economics: A Modern Approach*, East West Press.
- 3) A. Deaton and J. Muellbauer (1987) *Economics and Consumer Behaviour*, Cambridge University Press.
- 4) A. Koutsoyiannis, (1979), *Modern Micro-economics*, London: Macmillan.

Learning Outcomes

After successfully completing the course MICROECONOMIC THEORY:

At the end of the programme, the students will the goal of microeconomics is to analyse the market mechanisms that establish demand structure of the goods, consumer preferences a select the goods, and demand structure in the market demand. The relative prices among goods and services and allocate limited resources among alternative uses. The concepts of production function, homogeneous production function, the Cobb-Douglas and CES Production Functions, Theory of Cost and traditional and modern theories of cost. The perfect Competition in the equilibrium, short run and long run considerations and price discrimination in the market. The major goals of microeconomic policy are efficiency, equity and growth. Economic growth is often treated as a macroeconomic issue, but it is closely related to the micro-behaviour of the economy and the functioning of markets.

Core Paper -2

EMT 102: MACROECONOMIC THEORY-I

Macroeconomics refers to the study of the overall performance of the economy. While microeconomics studies how individual people make decisions, macroeconomics deals with the overall aggregate effect of microeconomics. Macroeconomics is crucial for the government to understand and predict the long-term consequences of their decisions. The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more. The objectives are Full employment. Price stability. A high, but sustainable, rate of economic growth. Keeping the balance of payments in equilibrium.

Course Objectives

The objective of this course is to provide the basic knowledge of the study of the aggregate economy. The primary goals of macroeconomics are to achieve stable economic growth and maximize the standard of living. The basic concepts in macroeconomics and the concepts of National Income, measurement of National Income and factors determining national income and problems in Estimation of National Income. The theory of Employment, consumption Function, investment Multiplier and Accelerator, IS-LM model with Government sector, Monetary and Fiscal Policies and effect of IS and LM curves; Kinds of investment and determinations of investment; the monetary policy and fiscal policy are tools used by the government to control economic performance and reach macroeconomic goals.

Unit 1: Macro-Economics

Micro and Macroeconomics - Basic Concepts in Macroeconomics – Stocks and Flows - Statics, Comparative statistics and Dynamics – Micro Foundations of Macroeconomics – Circular flow of National income.

Unit 2: National Income

Definition – Concepts of National Income – Measurement of National Income – Factors determining National income – National Income and Social Accounting - Methods of Estimation – Problems in Estimation of National Income – National Income and Economic Welfare.

Unit 3: Classical and Keynesian Economics

Classical Theory of Employment – Critique of Classical Theory – Basic Keynesian Model – Consumption Function – Investment Multiplier – Accelerator – Interaction between Multiplier and Accelerator - Integration of Monetary theory and Value theory – Don Patinkin theory – The Real Balance Effect – Pigou Effect.

Unit 4: Neo-Classical and Keynesian Synthesis

The IS-LM model – Extension of IS & LM model with government sector – Relative effectiveness of Monetary and Fiscal Policies –Shifts in IS and LM curves.

Unit 5: Savings & Investment

Kinds of investment – Determinations of investment - Investment demand and Output growth – Marginal Efficiency of Capital – Tobin's 'Q' Theory – Lags in Investment demand.

TEXT AND REFERENCE BOOKS:

- 1) Edward Shapiro, Macroeconomic Analysis, Galgotia Publications, New Delhi.
- 2) Keynes, J.M. 1936, General theory of Employment, Interest and Money.
- 3) Gardener Ackley, 1978, Macro-economic Theory - Theory and policy, Macmillan, New Delhi.

Learning Outcomes

After successfully completing the course MACROECONOMIC THEORY:

At the end of the programme, the students will the goal of macroeconomics is to analyze the concepts and measurement of National Income, factors determining national income and problems in Estimation of National Income. The theory of Employment, consumption Function, investment Multiplier and Accelerator, IS-LM model with Government sector, Monetary and Fiscal Policies and effect of IS and LM curves; Kinds of investment and determinations of investment; the monetary policy and fiscal policy are tools used by the government to control economic performance and reach macroeconomic goals. The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more. The macro economy of a country is affected by many forces, and as such, economic indicators are invaluable to assessing different aspects of performance.

Core Paper - 3

EMT 103: MATHEMATICAL METHODS

Mathematical economics is a method of economics that utilizes math principles and tools to create economic theories and to investigate economic quandaries. Mathematics permits economists to construct precisely defined models from which exact conclusions can be derived with mathematical logic, which can then be tested using statistical data and used to make quantifiable predictions about future economic activity.

Course Objectives

The M.A in Econometrics includes two courses in basic mathematics – one in each semester of I and II semester. This is the first of these two courses.

- ✓ The course is designed to build the mathematical foundations of the students by equipping them with basic mathematical methods that are essential for learning and working with economic theories and models.
- ✓ This course also introduces the Mathematical tools such as Basic Algebra, Sets operations, functions which is more important in economic functional relations, differential equations and Matrices and Determinants.

Unit 1: Basic Concepts and Set Theory

Exponents – Polynomials – Factorization of Equations — Sets - Meaning, Definition, Types of sets, set operations – Ordered Sets – Linear Point Sets - Cartesian product – Relation – Functions.

Unit 2: Functions and Limits

Functions - Type of Functions – Increasing and Decreasing – Implicit and Explicit – Constant, Linear, Quadratic, Logarithmic and Exponential functions – Graphical Representations of Functions – **Economic Applications of Functions** - **Limits:** Concepts of a Limit of a Function – Theorems on Limits of Functions – Evaluations of Limits in Simple Cases – Limits and Continuity of Functions.

Unit 3: Differential Calculus and Economic Applications (One Variable)

Differential Calculus: Meaning – Process of Differentiation – Rules of Differentiation – Differentiation of Logarithmic and Exponential Functions – Higher Order Derivatives – Maximum and Minimum Points – Points of Inflection - **Economic Applications:** Marginal concepts, Price and cross Elasticity of demand – Relationship among Total, Marginal, Average concepts – Optimizing Economic functions.

Unit 4: Integration and Economic Applications

Concept of an Indefinite Integral – Standard Integral Formula – Rules of Integration – Methods of integration – Concept of a Definite Integral – Area under a Curve – Fundamental theorem of Calculus – Properties of Definite Integral – Area between Curves; **Economic Applications:** Total Functions from Marginal Function – Consumer's and Producer's Surplus.

Unit 5: Matrices and Determinants

Matrices: Concept of a Matrix – Types of Matrices – Matrix Operations – **Determinants:** Properties of Determinants – Minors and Co-Factors – Evaluation of Determinants of Second and Third Order - Inverse of a Matrix – Solutions of Simultaneous Linear Equations involving two or three Variables by Matrix Inverse Method and Cramer's Rule – Characteristic roots and equations – Concept of a Quadratic form – Rank of a Matrix – Concept of g-inverse and c-inverse.

TEXT AND REFERENCE BOOKS:

- 1) Allen, RGD : Mathematical Analysis for Economists
- 2) Mehta, BC and Madanani GMK: Mathematics for Economists, Sultan Chand and Sons, Delhi
- 3) Taro Yamane: Mathematics for Economists (An Elementary Survey), Prentice Hall of India Private Ltd, New Delhi
- 4) Alpha C. Chang: Fundamental Methods for Mathematical Economics
- 5) Barry Bressler: A Unified introduction of Mathematical Economics.
- 6) Dowing, Edward T: Introduction to Mathematical Economics, (2/ed.), Schaum's Outlines, Mc. Graw Hill, 1980
- 7) Bose, D : An Introduction to Mathematical Economics, Himalaya Publishing Company, Delhi.

Learning Outcomes

After successfully completing the course the graduate is able to:

Formulate mathematical models describing the dynamics of economic systems solve independently primary analytical tasks based on non-trivial econometric analysis of underlying data use with erudition advanced econometric tools and techniques for processing relevant data assess critically the adequacy of using econometric and statistical tools and techniques in economy and other scientific disciplines.

Core Paper - 4

EMT 104: PRACTICAL – I: MATHEMATICS AND STATISTICS

Statistics and mathematics are everything to economics. In fact, Statistics and Mathematics, the economic field wouldn't even exist. Economists need statistics to represent data, to track and store information, to identify trends, to attribute value and mathematics to calculate those figures. The versatility of statistical methods opens the door for graduates into the world of financial economics or business economics. Students may profile their specialization within the selection of thesis topic and supervisor. Graduates are well prepared for the further study of contemporary economic theory based on advanced quantitative methods.

Course Objectives

This is a course on Practical approach of the Mathematical and statistical methods for economics. The main objectives of the course follow;

- ✓ The main objective of this study programme is thus to promote the analytical skills of the practical knowledge of calculating descriptive statistics. These knowledges can be used to solve complex analytical tasks based on statistical analysis of the underlying socio-economic data.
- ✓ To solve the tasks of formulating and estimating economic models using statistical methods such as Correlation and Regression.
- ✓ This course an underlaying of practical knowledge of Probability, and Testing of Hypothesis.

This course is extension of practical practices of Mathematical and Statistical methods what we mentioned in the courses of EMT103 and EMT 105

Concepts are covered in this Practical course follows;

- Descriptive Statistics: Mean, Median, Mode, Range, Quartile Deviation and Standard Deviation and Coefficient of Variation.
- Probability: Binomial, Poisson, Normal and Log-Normal Distribution
- Correlation and Regression Analysis
- Testing of Hypothesis: Small sample tests based on t, F and Chi-square distributions.
- Matrices: Inverse of a Matrix, System of Simultaneous Linear Equations and Cramer's Rule method.

Learning Outcomes

After successfully completing the course the graduate is able to:

After completing this course student can solve system of linear equations. Statistics is the core around which economic inferences are built. Student can identify the relationship between the economic variables and test their significance which are key factor for economic analysis and policy making or business decisions.

Compulsory Foundation

EMT 105 STATISTICAL METHODS

The Statistical Methods in Economics study programme offers students a superior knowledge of the primary quantitative tools and techniques used in economics and a very good knowledge of current trends of microeconomic and macroeconomic modelling. Attention is also paid to the development of skills in data mining and other advanced applied statistics techniques.

Course Objectives

This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. The main objectives of the course follow;

- ✓ The main objective of this study programme is thus to cultivate the analytical skills that can be used to solve complex analytical tasks based on a non-trivial statistical analysis of the underlying data.
- ✓ To solve the tasks of formulating and estimating economic models using statistical methods.
- ✓ This course an underlying of descriptive statistics, Probability, Sampling methods, Correlation and Regression Analysis and Testing of Hypothesis.

Unit 1: Basics:

Measures of Central Tendency – Measures of Dispersion – Coefficient of Variation, Skewness and Kurtosis – Numerical problems.

Unit 2: Probability and Distributions:

Probability: Concept of Probability – Axioms of Probability – Addition and Multiplication theorems – Bayes's Theorem - **Distributions:** Random Variables – Distribution Function – Probability Density Function - Mathematical Expectation – Binomial, Poisson, Normal and Lognormal distributions – Mean and Variance - Chief characteristics of Normal Distribution.

Unit 3: Estimation and Testing of Hypothesis:

Estimation: Introduction – Point and Interval Estimation - Estimators and their Properties: Consistency, Unbiasedness, Efficiency and Sufficiency - Method of estimation – Method of Least Squares and Method of Maximum Likelihood. **Tests of Hypothesis:** Statistical Hypothesis – Critical Region – Best Critical region – The Most Powerful Test - Types of errors - Large sample tests for means and proportions - Small sample tests based on t, F and Chi-square distributions.

Unit 4: Sampling Theory:

Need for sampling – Census Vs. Sampling - Types of sampling – Simple random sampling – Stratified random sampling – Systematic sampling – Two Stage sampling.

Unit 5: Correlation and Regression:

Simple Correlation – Computation – Properties - Rank Correlation - Regression Lines - Numerical problems – Concept of Partial and Multiple Correlations.

TEXT AND REFERENCE BOOKS:

- 1) S.C. Gupta and V.K. Kapoor: Elements of Mathematical Statistics.
- 2) Wonnacott & Wonnacott: Introduction to Statistical Methods.
- 3) Alexander M.Mood, Franklin A. Graybill and Duance C. Boes: Introduction to the Theory of Statistics. Third Edition. McGraw-hill Statistics Series, 1988.
- 4) S.P. Gupta: Introduction to Statistical Methods.
- 5) S.P. Gupta: Elements of Statistics.

Learning Outcomes

After successfully completing the course the graduate is able to:

After completing this course student can formulate Statistical Methods describing the dynamics of economic systems such as production function analysis and solve econometric analysis of underlying data use with knowledge advanced econometric tools and techniques can solve easily.

Elective Foundation

EMT 106: HUMAN VALUES AND PROFESSIONAL ETHICS – I

Human values are the virtues that guide us to take into account the human element when we interact with other human beings. It is with those human values that one becomes truly able to put into practice his/her ethical values, such as justice, integrity, and refusal of violence and ban to kill – even in a crisis situation. To create an awareness on Management Ethics and Human Values. To inspire Moral and Social Values and Loyalty. To appreciate the rights of others. The prime objective of the Professional Ethics is to develop ability to deal effectively with moral complexity in students. To understand the moral values that ought to guide the Engineering profession, (b) To resolve the moral issues in the profession, and (c) To justify the moral judgment concerning the profession.

Course Objectives

This is a course on human values and professional ethics. The main objectives of the course is nature of ethics, relation to Religion, Politics, Business, Legal, Medical and Environment; Nature of Values- Good and Bad, analysis of basic moral concepts- right, ought, duty, obligation, justice, responsibility and freedom; the Ahimsa (Non- Violence), Satya (Truth), Brahmacharya (Celibacy), Asteya (Non-possession) and Aparigraha(Non- stealing). Purusharthas(Cardinal virtues)-Dharma (Righteousness), Artha(Wealth), Kama (Fulfillment Bodily Desires). Moksha(Liberation); the Four Noble Truths and Gandhian Ethics; and lastly crime and Theories of punishments are reformatory, retributive and Deterrent.

REFERENCES:

- 1) John S Mackenzie: A manual of ethics.
- 2) "The Ethics of Management" by Larue Tone Hosmer. Richard D. Irwin Inc.
- 3) "Management Ethics' integrity at work' by Joseph A. Petrick and John F. Quinn. Response Books: New Delhi.
- 4) "Ethics in Management" by S.A. Sherlekar, Himalaya Publishing House.
- 5) Harold H. Titus: Ethics for Today
- 6) Maitra, S.K: Hindu Ethics
- 7) William Lilly: Introduction to Ethics
- 8) Sinha: A Manual of Ethics
- 9) Manu: Manava Dharma Sastra or the Institute of Manu: Comprising the Indian System of Duties: Religious and Civil (ed.) G.C.Halighton.
- 10) SusrptaSamhita: Tr.KavirajKunjanlal, KunjalalBrishagratha. Chowkarnba Sanskrit series. VolII and III, Varnasi, Vol I 00,16'20,21-32 and 74-77 only.

- 11) CarakaSamhita :Tr.Dr. Ram Karan Sarma and VaidyaBhagavan Dash, Chowkambha Sanskrit Series office. Varanasi I, 11.111 VolIIPP 183-191.
- 12) Ethics, Theory and Contemporary Issues. Barbara Mackinnon Wadsworth/Thomson Learning, 2001.
- 13) Analyzing Moral.Issues, Judith A. Boss. May Field Publishing Company - 1999.
- 14) An Introduction to Applied Ethics (Ed.) John H.Piet and Ayodhya Prasad. Cosmo Publications
- 15) Text Book for Intermediate First Year Ethics and Human Values. Board of Intermediate Education- Telugu ~ Akademi, Hyderabad.
- 16) I.C Sharma Ethical Philosophy of India. Nagin& co Julundhar

Learning Outcomes

After successfully completing the course the graduate is able to:

Honesty, open disclosure and sincerity are all characteristics of ethical behavior. Many organizations include a commitment to ethical behavior in their code of conduct. The professionals can adopt a personal code of conduct and make the same commitment on an individual basis. Professional ethics are accepted standards of personal and business behavior, values and guiding principles. The codes of professional ethics are established by professional organizations to help to guide members in performing their job functions according to sound and consistent ethical principles. The principles are beneficence, non-maleficence, autonomy, justice; truth-telling and promise-keeping.