



UNIVERSITY OF HYDERABAD

SCHOOL OF ECONOMICS

Course: IMA

Semester: I

Course No. EC 101

Core/ Optional: Core

No. of Credits: 4 (Four)

Lectures: 4 Sessions/ week (50 minutes/
session)

Title of the Course:

Introduction to Economics

Course Outline:

- Defining scarcity and presenting economic systems as scarcity of various resources.
- Building blocks of modern economy – agents, resources and classification of goods.
- Microeconomic analysis – consumer equilibrium, producer equilibrium, market equilibrium, general equilibrium and possible disequilibrium situations.
- Macroeconomic analysis – circular flow and national income, issues related to growth, unemployment and inflation.

Readings:

- Samuelson, P A and Nordhus, WD (1998): Economics, 16th edition. Tata McGraw – Hill Publishing Company Limited.
- Mankiv, N.G. (2002): Principles of Economics, Thomson, South Western.

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Course: IMA

Semester: III

Course No. EC 201

Core/ Optional: Core

No. of Credits: 4 (Four)

Lectures: 4 Sessions/ week (50 minutes/
session)

Title of the Course

Basic Mathematics for Economics

Mathematics is an essential tool for practice of economics today. This is an introductory level course in mathematics. It aims to train the students in basic concepts of mathematics and their use in economic theories and models based on these theories. The main components of the course focus on solving systems of linear equations, and solving optimization problems.

Pre-requisites : None

Course Outline

- I. **Preliminary:** Number system; set theory; Constants and variables; Graph of a function.
- II. **Matrix algebra:** Different kinds of matrices, Matrix operations – addition, multiplication, transpose; singular matrices and matrix inversion. Linear independence of vectors and basis of a vector space. Determinants and operations with determinants. Eigen vectors and eigen values. Orthogonal matrices and orthogonal diagonalization of a matrix. Positive/Negative definite/semi-definite matrices. Solving system of linear equations; linear transformations
- III **Functions, continuity and differentiation:** Functions of one and several variables, scalar and vector valued functions; Limit of a function and its continuity; Concept of derivative of a function; Rules of derivation; Higher order derivatives of a function of one variable; Functions of several variable and partial derivatives (of first and higher orders); Hessian matrix; Linear, convex and concave functions; Derivatives for a vector valued function; Jacobian matrix and its uses; Total differentiation; Implicit function theorem.

IV Integration

Concept of integration, simple rules of integration, application to consumer's surplus and producer's surplus.

V Maxima and Minima (Free optimization)

Unconstrained maxima and minima with single explanatory variable.

Suggested Text Books:

1. Chiang, A.C., *Fundamental Methods of Mathematical Economics*, McGraw Hill, 1988
2. Baruah, Srinath, *Basic Mathematics and its Application in Economics*, Macmillan, 2006
3. Allen, R.G.D. , *Mathematical Analysis for Economists*, Macmillan, 1976
4. Yamane,Taro, *Mathematics for Economists: An Elementary Survey*, 2nd Edition, Prentice Hall of India, New Delhi., 1985.
5. Novshek, W., *Mathematics for Economists*, Academic Press, New York, 1993.
6. Intriligator, M., *Mathematical Optimization and Economic Theory*, Englewood Cliffs, N.J. Prentice Hall, 1971.
7. Mukherji, B. and V. Pandit, *Mathematical Methods for Economic Analysis*, 2nd Edition, Allied Publishers, 1989
8. Simon, C. P. and L. Blume, *Mathematics for Economists*, Norton and Company, 1994
9. Hoy, M., *et. al.*, *Mathematics for Economics*, Addison-Wesley, 1996

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Course: IMA

Course No. EC 251

Semester: IV

Core/ Optional: Core

No. of Credits: 4 (Four)

Lectures: 4 Sessions/ week (50 minutes/ session)

Title of the Course: **Basic Statistics**

This is an introductory level course in statistics. It aims to build foundation for advanced courses in statistics as well as for courses in econometrics. The students will learn first a meaningful way of understanding and presenting data and to recognize patterns. Elements of probability as basic to all statistical inference are to be dealt with rigorously. Theory of sampling and tests of hypothesis form the core of this course. Some basic applications of statistical inference are learnt through simple regression analysis. Finally some typical features encountered in time series data are discussed. Throughout the course emphasis will be on developing an understanding of what the data can tell.

Semester : I semester of MA and VII semester of IMA

Credits : 4

Pre-requisites : None

Course Outline

- I. Understanding the Data - Data Presentation and Descriptive Statistics: Meaning, motivation, uses of statistics. Classification of data; Graphical presentation, such as bar diagram, line diagram, pie chart, histogram, ogive, time-series plots etc; Central tendency, dispersion, skewness, kurtosis, and moments.
- I. Probability Theory: Probability concepts; Axiomatic probability: laws of probability, conditional probability and independence; Random variable; Expectation; Moment generating function and moments; Discrete and continuous probability distributions, cdf and pdf of some theoretical distributions such as Binomial, Poisson and Normal distributions.
- I. Theory of Sampling: Parameters and estimators; Properties of estimators (unbiasedness, efficiency, consistency and sufficiency); Census & sample; Systematic and sampling errors; Sampling techniques (both probability and non-probability based); Meaning of sampling distribution: z, t, F, Chi-square (χ^2) statistic; Point and interval estimates of parameters.
- V. Tests of Hypothesis: Basic definitions; Type I and Type II errors, level of significance in hypothesis testing, OC curves and power of a test; Tests based on z, t, F and χ^2 statistic, Goodness-of-fit test, contingency tables and test for independence; Analysis of variance.
- V. Correlation and Simple Regression Analysis (2-variable regression): Scatter plots, curve fitting; Linear regression - OLS estimation of relationship between variables, correlation and covariance; Assumptions and properties of OLS estimators; Introduction to violation of assumptions – autocorrelation, heteroskedasticity, multicollinearity and specification errors.
- I. Understanding Time Series Data: Estimation of trend by free hand, moving averages and least square methods; Growth curves, adjustments for seasonal variation, cyclical fluctuations, linear & non-linear relationships.
- I. Index Numbers: Types of index numbers and their properties, common index numbers used in economics.

Core Readings

David S. Moore (1997): *Active Practice of Statistics: A text for multimedia learning*, (New York: W. H. Freeman & Co.)

John W. Tukey (1977): *Exploratory Data Analysis* (Reading, Mass.: Addison-Wesley)

Alexander M. Mood, Franklin A. Graybill & Daune C. Boes (1974): *Introduction to Theory of Statistics*.

Wilfrid J. Dixon & Frank J. Massey, Jr. (1983): *Introduction to Statistical Analysis*, (Singapore: McGraw-Hill.5 .

Donald L. Harnett (1977): *Introduction to Statistical Methods*, (Mass.: Addison-Wesley Publishing Co.).

Johne Freund (1981): *Modern Elementary Statistics*, (new Delhi: Prentice-Hall of India).

Frederick E. Croxton, Dudley J. Cowden & Sydney Klien (1973): *Applied General Statistics*, (New Delhi: Prentice-Hall).

Murray. R. Spiegel (1992): *Theory & Problems of Statistics*, (London: McGraw-Hill Book Co.).

A.L. Nagar & R.K. Das (1977): *Basic Statistics*, (Delhi: Oxford Univ. Press).

A.L. Nagar, V.N. Pandit & Balvir Singh (1979): *Elementary Statistics*, (Delhi: Oxford Univ. Press).



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SCHOOL OF ECONOMICS

Course: IMA

Course No. EC 301

Semester: V

Core/ Optional: Core

No. of Credits: 4 (Four)

Lectures: 4 Sessions/ week (50 minutes/ session)

Title of the Course: **Principles of Micro Economics**

COURSE OBJECTIVES:

This paper analyses the economic behaviour of individuals, firms and markets. It is mainly concerned with the objective of equipping the students in a rigorous and comprehensive manner with the various aspects of consumer behaviour and demand analysis, production theory and behaviour of costs, the theory of traditional markets and equilibrium of firm in modern non-profit maximising framework.

Module 1: Introduction and Basic Concepts

Basic economic problem- Choice and scarcity. Techniques of equilibrium, techniques of optimisation.

Module 2: Mechanics of Determining Individual pricing (Demand analysis)

Theory of Consumer Behaviour- Utility, indifference curve, objective function of consumer [income and substitution effects, Slutsky's theorem, compensated demand curve] and their applications; Revealed preference theory; consumer surplus; Recent developments in demand ; Elasticities [price, cross, income] of demand-theoretical aspects and empirical estimation ; Elasticity of supply; Elementary theory of price formation – demand and supply equilibrium; Cobweb theorem.

Module 3: Theory of production and costs

Production function –short period and long period; law of variable proportions and returns to scale; Isoquants – least cost combination of inputs; Returns of factors; Economies of scale; Elasticity of substitution; Euler's theorem; Technical progress and production function; Cobb-Douglas Production function. Derivation of cost functions from productions functions; Economies of scope, theory of learning curves.

Module 4: price and output determination


Marginal analysis as an approach to price and output determination; perfect competition, short run and long run equilibrium of the firm and industry, price and output determination, supply curve, monopoly-short run and long run equilibrium, price discrimination, welfare aspects of monopoly control and regulation; Monopolistic competition

Reading List

1. **Varian, Hal R., *Intermediate Microeconomics*, 1990, 5th Edition, W.W. Norton and Company (Varian -5).**

2. Varian, Hal R., *Microeconomic Analysis*, 1992, 3rd Edition, W.W. Norton and Company (Varian - 3).
3. Henderson & Quandt, 1988, *Microeconomic Theory - A Mathematical Approach*, McGraw Hill. (Henderson).
4. Layard, P.R.G and Walters, A.A., 1978, *Microeconomic Theory*, McGraw Hill (Layard).
5. Mascolell, A., et. al., 1995, *Microeconomic Theory*, Harvard University Press (Mascolell)
6. Russell, R.R. and M. Wilkinson, 1979, *Microeconomics: A Synthesis of Modern and Neo- Classical Theory*, John Wiley, New York. (Russell)
7. McKenna, C.J., 1986, *The Economics of Uncertainty*, Wheat Sheaf Book (Mckenna) Harry Townsend (ed.), 1965, *Price Theory*, Penguin Education (Townsend)

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	UNIVERSITY OF HYDERABAD SCHOOL OF ECONOMICS
Course: IMA Semester: V	Course No. EC 302 Core/ Optional: Core No. of Credits: 4 (Four) Lectures: 4 Sessions/ week (50 minutes/ session)
Title of the Course : Principles of Macro Economics	

Pre-requisite: Basic Mathematics for Economics

Course objective:

The course deals with the definition, measurement and dynamics of macroeconomic aggregates in a modern economy. As far as possible, the models will be presented in graphical forms, with emphasis on proper grasping of concepts. Data and examples from Indian economy shall be employed as illustrations.

Course outline:

1. Preliminaries: Flow and stock variables; Concepts of equilibrium – distinction between stock equilibrium and flow equilibrium; Introduction to conceptual framework of macroeconomic models – interplay of four markets, viz. labour market, goods market, capital market and money market.
2. National Income Accounting: National income accounts of closed and open economies – circular flow model of an economy with injections and leakages; Various national income and related concepts and their inter-relationships; Aggregate consumption, saving and investment; Ex-ante and Ex-post : distinction between identity and equilibrium; National income statistics of India : Sources and methods and the structure of Indian economy through National Accounts Statistics.
3. Money : Nature and functions of money; Types of money and their definitions; Supply of money – simple money multiplier.

4. Classical Theories: Classical model of determination of output and employment in the short run: Say's Law of markets; Quantity theory of money; The classical dichotomy; The real balance effect; Self-regulation of markets and full employment; classical theory of rate of interest and Wicksell's version of the quantity theory.
5. Keynesian theory: Keynes' critique of the classical theories (self-regulation of markets, classical dichotomy and full-employment equilibrium) – uncertainty, expectations and market rigidities; Theory of effective demand – consumption function and expenditure multiplier; Liquidity preference theory; Investment – marginal efficiency of capital; The IS-LM model. Rigidities and unemployment equilibrium (sticky wages, investment pessimism, liquidity trap etc); Pigou effect and its critique. Acceleration principle – the super multiplier and fluctuations in aggregate output.
6. Theories of consumption function – absolute income, relative income and permanent income hypotheses; consumption bubbles.
7. Inflation : Types of inflation; Impact of inflation on macroeconomic activity; Cost-push and demand pull theories of inflation; Inflation in Indian economy over the years.
8. Fiscal and monetary policies : Understanding government budget and various concepts of deficit; Taxes and government expenditure – understanding classifications; Instruments of monetary policy and transmission mechanism.

Core Readings:

Ackley, G (1987): Macroeconomic Theory and Policy (Macmillan, New York).

Branson, William H (1989): Macroeconomic Theory and Policy (Harper and Row: New York).

Feldrer, Bernhard and Homburg, Stefan (1987): Macroeconomics and New Macroeconomics, (Springer-Verlag: New York).

Hicks, J R, Mukherjee, M and Ghosh, S K (1984): The Framework of Indian Economy, (OUP: New Delhi).


Hillier, Brian (1986): Macroeconomics – Models, Debates and Developments, (Basil Blackwell).

Keynes, J M (1936): The General Theory of Employment, Interest and Money, (Macmillan: London).

Lindauer, J ed. (1968): Macroeconomic Readings, (Free Press : New York).

Mueller, M G, ed. (1978): Readings in Macroeconomics, (Surjeet Publications : Delhi).

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	UNIVERSITY OF HYDERABAD SCHOOL OF ECONOMICS
Course: IMA Semester: VI	Course No. EC 351 Core/ Optional: Core No. of Credits: 4 (Four) Lectures: 4 Sessions/ week (50 minutes/ session)
Title of the Course : Principles of Political Economy	

Objective: At the end of the course, the student should be able to appreciate Political Economy as a system of economy theory with a structure distinctive from that of mainstream(neoclassical) economics. The focus is on Smith, Ricardo and Marx. The explanatory power and logical consistency of Political Economy are demonstrated with reference to questions of economic growth, distribution and prices.

Unit 1: Systems of economics – Origin and purpose of Political Economy – Methodology – Different concepts of wealth - The surplus approach –Tableau Economique of Francois Quesnay.

Unit 2: Adam Smith’s growth propositions – Division of Labour and aggregate demand — Concept of the invisible hand – Distribution and value in Smith


Unit 3:Ricardo on distribution and value –Rent – Intensive and extensive margins – Theory of wages in classical economics –Relation between wages and profits – Sraffa’s critique of Marshallian theory and reconstruction of Classical Political Economy.

Unit 4: Marx’s methodology – Labour and value – Commodity Fetishism – origin of surplus value – simple reproduction – Organic composition of capital – Industrial reserve army.

Core Readings:

- Smith, Adam. (1776). *An inquiry into the nature and causes of the wealth of nations*, The Glasgow edition. (Selected chapters)
- Ricardo, David. (1817). *Principles of Political economy and Taxation*, the Sraffa edition. (selected chapters)
- Sraffa, Piero. (1960). *Production of Commodities by means of Commodities*, Cambridge University Press, Cambridge.
- Roncaglia, Alessandro. (2005). *The Wealth of Ideas*. Cambridge University Press, Cambridge
- Sweezy, Paul (1970). *The Theory of Capitalist development: Principles of Marxian Political economy*. Modern Reader Paperbacks, New York

*A detailed reading list, including articles and reference material, will be circulated later for each unit.

	UNIVERSITY OF HYDERABAD SCHOOL OF ECONOMICS
Course: IMA Semester: VI	Course No. EC 352 Core/ Optional: Core No. of Credits: 4 (Four) Lectures: 4 Sessions/ week (50 minutes/ session)
Title of the Course: Introduction to the Indian Economy	

Module: 1 Major features of Indian Economy at Independence.
Population – The factor endowment's approach to development.
Surplus labour and wage goods model.
Post- Independence Development planning and Rational for Protectionism

Module: 2 Agricultural sector in Indian Economy.
Land reforms and green revolution.
Agrarian Economy in Transition.
Poverty, Inequality, PDS and food security.
Inclusive growth.
Micro finance for inclusive growth.

- Module: 3 Importance of industrialization.
Industrial stagnation.
Strategy of industrial Development industrial policy Reforms since 1991.
Reservation Policy relating to Small Scale industries.
Public sector reforms, Privatization and Disinvestment.
- Module: 4 Exhaustion of import substitution Trade liberalization.
- Module: 5 Fiscal and Monetary policy, Financial sector reforms, linkage between Real and financial sector, Infrastructure and Economic Development, FDI.

Readings:

1. Datt R & K.P.M Sundharam, "Indian Economy", S. Chand & co. Ltd, New Delhi.
2. Misra S.K & V.K Pure, "Indian Economy", 29th revised edition, Himalayan publication House, Mumbai.
3. Kapila Uma (ed), "Indian Economy since independence", 21st edition, Academic Foundation.
4. Chakravarthy, Sukhamoy (1987) Development Planning: The Indian Experience, Clarendon Press Oxford.
5. Chakravarthy, Sukhamoy (1998) Writings on Development, Oxford University Press, New Delhi.
6. Debraj Ray: Development Economics, Oxford University Press.

