

ECONOMICS
Course Structure

ECONOMICS (Core Courses & Open Elective)							
Semester	Course	Course No	Category	Credit	Marks/Grade		
					Continuous Assessments	End Semester	Total
I	Microeconomics-I	Eco/1/CC/01	CC	6	40	60	100
II	Microeconomics-II	Eco/2/CC/02	CC	5	40	60	100
	Rural Development	Eco/2/OE/O1	OE	2	40	40	100
III	Macroeconomics-I	Eco/3/CC/03	CC	5	40	60	100
	Entrepreneurship Development	Eco/3/OE/02	OE	2	40	40	100
IV	Macroeconomics-II	Eco/4/CC/04	CC	6	40	60	100
V	Indian Economy	Eco/5/CC/05	CC	5	40	60	100
	Public Finance	Eco/5/CC/06	CC	5	40	60	100
	Quantitative Techniques-I	Eco/5/CC/07	CC	5	40	60	100
	Optionals (Any one)						
	Agricultural Economics	Eco/5/CC/08A	CC	5	40	60	100
	Industrial Economics	Eco/5/CC/08B	CC	5	40	60	100
	Economic Development & Planning	Eco/5/CC/08C	CC	5	40	60	100
	Mathematical Economics-I	Eco/5/CC/08D	CC	5	40	60	100
VI	Environmental Economics	Eco/6/CC/09	CC	5	40	60	100
	Quantitative Techniques-II	Eco/6/CC/10	CC	5	40	60	100
	Financial Institutions & Markets	Eco/6/CC/11	CC	5	40	60	100
	Optionals (Any one)						
	History of Economic Thought	Eco/6/CC/12A	CC	5	40	60	100
	International Trade	Eco/6/CC/12B	CC	5	40	60	100
	Econometrics	Eco/6/CC/12C-	CC	5	40	60	100
	Mathematical Economics-II	Eco/6/CC/12D	CC	5	40	60	100
	Demography	Eco/6/CC/12E	CC	5	40	60	100
	Computer and Its Applications	Eco/6/CC/12F	CC	5	40	60	100

B.A ECONOMICS

					Marks		
Semester	Course	Course No	Category	Credit	Continuous Assessments	End Semester	Total
I	English	Course I	FC	4	40	60	100
	Microeconomics-I	Eco/1/CC/01	CC	6	40	60	100
	Elective I	Course I	CC	5	40	60	100
	Elective II	Course I	CC	5	40	60	100
	Total			20	160	240	400
II	Gender Sensitization	Course I	FC	3	40	60	100
	Microeconomics-II	Eco/2/CC/02	CC	5	40	60	100
	Elective 1	Course II	CC	5	40	60	100
	Elective 2	Course II	CC	5	40	60	100
	Rural Development	Eco/2/OE/01	OE	2	40	60	100
	Total			20	200	300	500
III	History of Science	Course I	FC	3	40	60	100
	Macroeconomics-1	Eco/3/CC/03	CC	5	40	60	100
	Elective 1	Course III	CC	5	40	60	100
	Elective 2	Course III	CC	5	40	60	100
	Entrepreneurship Development	Eco/3/OEA)2	OE	2	40	60	100
	Total			20	200	300	500
IV	Environmental Studies	Course I	FC	4	40	60	100
	Macroeconomics-II	Eco/4./CC/04	CC	6	40	60	100
	Elective 1	Course IV	CC	5	40	60	100
	Elective 2	Course IV	CC	5	40	60	100
	Total			20	160	240	400
V	Indian Economy	Eco/5/CC/05	CC	5	40	60	100
	Public Finance	Eco/5/CC/06	CC	5	40	60	100
	Quantitative Techniques-II	Eco/5/CC/07	CC	5	40	60	100
	Optionals (Any one)						
	Agricultural Economics	Eco/5/CC/08A	CC	5	40	60	100
	Industrial Economics	Eco/5/CC/08B	CC	5	40	60	100
	Economic Development & Planning	Eco/5/CC/08C	CC	5	40	60	100
	Mathematical Economics-I	Eco/5/CC/08D	CC	5	40	60	100
	Total			20	160	240	400
VI	Environmental Economics	Eco/6/CC/09	CC	5	40	60	100

Quantitative Techniques-II	Eco/6/CC/10	CC	5	40	60	100
Financial Institutions & Markets	Eco/6/CC/11	CC	5	40	60	100
Optionals (Any one)						
History of Economic Thought	Eco/6/CC/12A	CC	5	40	60	100
International Trade	Eco/6/CC/12B	CC	5	40	60	100
Econometrics	Eco/6/CC/12C	CC	5	40	60	100
Mathematical Economics-II	Eco/6/CC/12D	CC	5	40	60	
Demography	Eco/6/CC/12E	CC	5	40	60	100
Computer and Its Applications	Eco/6/CC/12F	CC	5	40	60	100
Total			20	160	240	400
Entire Programme			120	1040	1560	2600



Eco/1/CC/01

MICROECONOMICS -1

Credit 6

Objectives : The course introduces key concepts in Microeconomics
Outcome : At the end of the course, the learner will be able to understand the basic principles underlying market mechanism-how the forces of demand and supply brings equilibrium in the market for goods and services.

Module -1 : Introduction

Definition, nature and scope of economics; Methodology in economics; Basic economic problems; Basic postulates; Demand and supply-concept and determinants; Laws of demand and supply; Market equilibrium; Role of price mechanism.

Module - 2 : Consumer behavior

Utility - Cardinal and Ordinal approaches; Concept of consumer's equilibrium. Law of Equi-Marginal Utility; Concept and measurement of Elasticity of Demand-Price, Income and Cross. Indifference Curves and Budget line; Decomposition of Price Effect (Hicks and Slutsky methods); Giffen's Paradox. Engel's curve. Consumer's surplus.

Module - 3 : Theory of Production and Costs

Concept of production function; Isoquants, Isocost Line - Producer's Equilibrium; Law of variable proportion and Law of returns to scale - Economies of scale. Concept of Expansion path; Different concepts of cost and their interrelation.

Module - 4 : Market structure-I

Meaning, features and equilibrium (short run and long run) under Perfect competition and monopoly; Monopoly and economic efficiency; Price-discrimination; Notion of controlled and administered prices

Module-5 : Market structure-II

Meaning, features and equilibrium (short run and long run) under Monopolistic Competition and Oligopoly (kinked demand curve); Meaning and features of Duopoly; Monopsony- meaning.

Eco/2/CC/02

MICROECONOMICS -II

Credit 5

Objectives : The course introduces key concepts in Microeconomics
Outcome : The learners will understand how factor market works and the basic tools in welfare economics and trade theories.

Module -1 : Factor Pricing

Marginal Productivity theory of distribution; Theories of wage determination; Wages and collective bargaining; Wage differentials; Concept of rent - Scarcity, Differential and Quasi; Interest - Classical and Keynesian Theories; Profit - Innovation, risk and uncertainty theories.

Module - 2 : Factor Market

Meaning of factor market; Firm's demand for single and several variable factors; Determinants of firm's demand for factor services; Bilateral monopoly and Monopsony in Factor market; Factor-market equilibrium.

Module - 3 : Welfare Economics

Concept of Welfare Economics; Classical welfare economics; Pareto's criteria; Value judgment; Concept of Social welfare function; Compensation principle-Kaldor-Hicks.

Module - 4 : Investment Analysis

Payback Period; Net Present Value (NPV); Internal Rate of Return (IRR); Elements of Social cost benefit analysis

Module - 5 : International Trade Theories

International Trade and Inter-regional trade; Theories of Absolute Advantage, Comparative Advantage and Opportunity Cost; Hecksher-Ohlin theory of trade - its features, assumptions and limitations; Concept of tariffs and quotas.

BASIC READING

1. Bach. G.L (1977) Economics, Prentice Hall of India, New Delhi
2. Gauld, J.P and Edward P.L (1996) Microeconomic theory, Richard Irwin, Homewood
3. Healthfield and Wibe (1987). An Introduction to Cost and Production Functions, Mac Millan, London
4. Koutsoyanis, A. (1990) Modern Microeconomics, Macmillan
5. Lipsey R.G and K.A Chrystai (1999) Principles of Economics (9th edition) Oxford University Press, Oxford
- 6 Ray, N.C (1975) An introduction to Micro economics, Mc Millan company of India Ltd. Delhi
7. Stonier A.W. and DC Haque (1972) A Textbook of Economic Theory, ELBS & Longman Group, London
8. Varian, H.R (2000) Intermediate Microeconomics: A Modern Approach (5th ed.) East-West Press New Delhi

Eco/2/OE/OI

RURAL DEVELOPMENT

Credit 2

Objectives : To explain various issues relating to rural development and various schemes undertaken by central government

Outcomes : Understand various approaches in rural development schemes undertaken by the Government of India. It will provide comprehensive knowledge of socio-economic factors affecting the transformation of rural society

Unit I : Rural Development in the Indian context- Concepts and Principles, Schemes

Unit II: Disaster Awareness: Concept of disaster, disaster management, Role of Central and State government

Reading Lists

Eco/3/CC/03 MACROECONOMICS-I Credit 5

Objectives : Explain the process of calculating national income and its components, its fluctuations and the various theories behind consumption, investment and other business cycles

Outcomes : At the end of the course, the learner will be able to assess the workings of the economy and the role of investment and money.

Module - 1 : **National Income and Social Accounts**
Concepts and measurement of National Income; Circular flow of income with closed and open economy; National income identities with government and international trade; Concept of Green Accountings.

Module - 2 : **Output and Employment**
Say's law of markets and the Classical theory of employment; Keynes' objection to the classical theory; Aggregate demand and aggregate supply functions; The principle of effective demand and income determination.

Module - 3 : **Consumption Function**
Meaning of Consumption function; Average and Marginal propensity to consume; Factors influencing consumption spending; The relationship between consumption and income, the income multiplier; Keynesian theory of absolute income; Dusenberry's relative income hypothesis.

Module -4 : **Investment and Saving**
Equilibrium between investment and saving; Investment Multiplier and its effectiveness in Less Developed Countries (LDC's) ; Autonomous and induced investment; Marginal Efficiency of Capital (MEC), Marginal Efficiency of Investment (MEI) ; Concept of present discounted value; Savings and Investment - ex-post and ex-ante equality and equilibrium

Module - 5 : **Interest**
Meaning of Interest; Concept of Gross and Net interest; Classical, Neo-classical and Keynesian theories of interest.

Eco/3/OE/02 ENTREPRENEURSHIP DEVELOPMENT Credit 2

Objectives : To explain the role of entrepreneur in development and *highlight entrepreneurship development programme and legal frameworks for establishing* business units

Outcome : Be able to understand role of government in entrepreneurship development

Unit I: Entrepreneurship-Concepts, Roles and Functions; Entrepreneurship development programme; identification of business opportunities;

Unit II: MSMED Act, 2006, Legal requirements for establishment of a new business units; Sources of funds and venture capital. Incentives Scheme in North East India

Reading Lists

1. C.B. Gupta and Srinivasan: Entrepreneurial Development in India, Sultan Chand, New Delhi.
2. D.D. Mali: Entrepreneurship Development in North East, HE.
3. K. Natarajan and E. Gordon: Fundamentals of Entrepreneurship, Himalaya, New Delhi.
4. Khanka, S. S: Text book on Entrepreneurship , S. Chand Publications. New Delhi.
5. M.B. Shukla: Entrepreneurship and Small Business Management, Kitab Mahal.

6. Vasant Desai: Dynamics of Entrepreneurial Development and Management; Himalaya, New Delhi.

Eco/4/CC/04

MACROECONOMICS - II

Credit 5

Objectives : To explain the role of money and banking in the economy

Outcomes : At the end of the course, the learner will be able to understand fluctuations in the economy and models of economic growth

Module -1 : **Money**

Meaning and functions of money; High-powered money; Gresham's law; Monetary standards, metallic and paper systems; Quantity Theory of Money, Classical and Cambridge versions, Keynesian approach.

Module - 2 : **Banking**

Meaning, types and functions of Commercial Banks; Process of credit creation by banks; Instruments of credit control by Central Bank.

Module - 3 : **Trade Cycles**

Meaning, nature and characteristics of trade cycle; Hawtrey's monetary theory; Hayek's over-investment theory; Keynes's view on trade cycle- concept of accelerator; Control of trade cycles.

Module - 4 : **Inflation**

Meaning of Inflation, Deflation, Reflation and Stagflation; Demand-pull inflation and Cost-push inflation; Causes and effects of inflation; Measures to control inflation; Philip's curve.

Module - 5 : **Economic Growth**

Meaning of economic growth and economic development; Growth Models - Harrod-Domer; Instability of equilibrium; Neo-classical growth models - Solow's; Economic growth and technical progress.

BASIC READING

1. Ackley, G (1976), Macroeconomics, Theory and Policy, Mc Millan Publishing Company NY.
2. Day A.C.L (1960) Outline of Monetary Economics; Oxford University Press, Oxford
3. Gupta, S.B (1994) Monetary Economics, S.Chand and Co. Delhi
4. Heijdra, B.J and F.V Ploeg (2001), Foundation of Modern Macroeconomics, Oxford University Press, Oxford
5. Lucas R. (1981) Studies in Business Cycle Theory, MIT Press, Cambridge
6. Shapiro E. (1996) Macro Economic Analysis, Galgotia Publications, New Delhi
7. Dwivedi DN (Latest edition) Macroeconomics, Tata McGraw Hill Publications.
8. Mithani DM (2014) Money, Banking, International Trade and Public Finance, Himalaya Publishing House.

Objectives : To introduce the basic features of Indian economy
Outcomes : At the end of the course, the learner will understand the performance of Indian economy

Module - 1 : Structure of the Indian Economy

Basic features; Characteristics of under-development; Role of the state; Issues of sustainable development; Natural resources - 1, and, water and forest resources.

Module - 2 : Population and Development

Broad Demographic features - Population size and growth rates, sex composition; rural - urban migration, occupational distribution; Problem of over-population; Population policy; Infrastructure development; Growth and composition of national income.

Module - 3 : Planning in India

Objectives; strategies; Broad achievements and failures; Current Five Year Plan - Objectives and targets; Composition and role of National Institution for Transforming India (NITI) Aayog; New Economic Reforms-Liberalization, Privatization and Globalization; Rationale behind economic reforms; Concept of Disinvestment.

Module - 4 : Agriculture

Nature and importance; Trends in agricultural production and productivity; Factors determining productivity; Land reforms; New agricultural strategy and Green Revolution; Rural credit; Agricultural marketing.

Module - 5 : Regional Economy

Basic features of Mizoram Economy - Agriculture, industry and service sectors; Finances - Source of revenue, growth trend of public expenditure and debt; Rural development; Land Use Policy; Forest Policy; current status of shifting cultivation.

BASIC READING

1. Datt R and K.P.M Sundharm (Latest edition), Indian Economy, S.Chand and Company Ltd. New Delhi
2. Dinghra I.C (2001) The Indian Economy; Environment and Policy; Sultan Chand & Sons New Delhi
3. Dutt R.C (1950) The economic History of India under early British Rule, Low Price Publication Delhi
4. Misra, S.K and V.K Puri (2001) Indian Economy - Its Development Experience, Himalaya Publishing House, Mumbai
5. Ahuwalia, I.J and IMD Little (Eds) India's Economic Reforms and Development, Oxford University Press, New Delhi

Objectives : To introduce the role of fiscal policy in economic stabilisation, distribution and development

Outcome : The learner, at the end of the course, will be able to follow the role and significance of public expenditure, taxation and public debt in the economy

Module - I : Nature and Scope of Public Finance

Meaning and scope of public finance; Distinction between private and public finance; Public goods vs. private goods; The principle of maximum social advantage; Market failure and Role of the government.

Module - 2 : Public Expenditure

Meaning, classification and principle of public expenditure; Canons and effects of public expenditure; Trends in public expenditure and causes of growth of public expenditure in recent year

Module - 3 : Taxation

Sources of public revenue; Taxation - Meaning, Canons and classification of taxes; Division of tax burden - The benefit and ability-to-pay approaches; Impact and incidence of taxes; Taxable capacity; Effects of taxation; characteristics of a good tax system; Major trends in tax revenue of the central and state governments in India

Module - 4 : Public Debt

Sources of public borrowing; effects of public debt; methods of debt redemption; Growth of India's Public debt; Intergenerational transfer of public debt.

Module - 5 : Public Budget and Financial Administration

The public budget - Kinds of budget, Zero-based Budgeting; Economic and functional classification of the budget; Preparation and passing of budget in India; Lack of flexibility in Central and State budgets; Role of Finance Commission in India.

BASIC READING

1. Bhargava, R.N (1971) The theory and working of Union Finance in India, Chaitanya Publishing House, Allahabad
2. Browning E.K; J.M Bowning (2004) : Public Finance and the Price System : Pearson Publication (Singapore) Pvt. Ltd; Indian Branch, Potperganj Delhi
3. Houghton, E.W (Ed) (1988), Public finance, Penguin, Baltimore
4. Jha. R. (1998), Modern Public Economics, Routledge, London.
5. Mithari D.M (1998) Modern Public Finance Himalaya Publishing House, Mumbai
6. Musgrave, R.A and P.B Musgrave (1976), Public finance in Theory and Practice, Mc Graw Hill, Kogakusha, Tokyo.
7. Musgrave R.A (1959) The Theory of Public Finance, Mc Graw Hill, Kogakusha, Tokyo
8. Prakash OM (2008) Public Economics (Theory and Practice), Vishal Publishing Co. Jalendhar

9. RBI, Report on Currency and Finance (Annual) Mumbai

Eco/5/CC/07 **QUANTITATIVE TECHNIQUES-I** **Credits**
Objectives : **To provide basic mathematical tools for economic analysis**
Outcomes : **Interpret and analyse economic data using mathematical tools.**

Module -1 : **Basic Concepts**

Variables; Sets and basic set operations; Different types of functions, different types of equations (linear and non-linear equations) and their application in economics.

Module - 2 : **Differential Calculus**

Concept of differentiability of a function; Rules of differentiation; Higher order derivatives; Maxima and Minima; Partial derivatives; Economic applications of simple differentiation- Profit maximization, Cost minimisation, Elasticities, Inter-relationships among total, marginal and average costs and revenues.

Module - 3 : **Integral Calculus**

Simple rules of integration; Definite integral and areas under curves; Application of integration - Consumer's and producer's surplus, total revenue and cost.

Module - 4 : **Matrices and its Operations**

Types of matrices; Algebra of matrices; Determinants and its properties; Rank of a matrix; Solution of system of linear equations by matrix inversion method and Cramer's rule.

Module- 5 : **Linear Programming**

Concept and formulations of linear programming problems; Solution of Linear programming problem by graphical method, Concept of Dual.

BASIC READINGS:

1. Allen, R.G.D (1974): Mathematical Analysis for Economists, Mc Millan Press, London.
2. Chiang, A.C (1986): Fundamental Methods of Economics, Mc Graw Hill, New Delhi.
3. Hands, D.W. (1991): Introductory Mathematical Economics, D.C. Health.
4. Mehta, B.C. & Madnani, G.M. (Latest edition): Mathematics for economists, Sultan Chand & Sons, New Delhi.
5. Renshaw, Geoff: Maths for economics (2nd Edition), Oxford University Press.

Eco/5/CC/08A **AGRICULTURE ECONOMICS** **Credits**

Objectives : **To explain the role and performance of agriculture in the development process**
Outcomes : **Be able to understand the role of agrarian relation, land reforms and technological change in agriculture development**

Module -1 : **Rural Economy of India**

Composition of the Indian rural economy-farm sector and non-farm sector, Agriculture and allied activities (fisheries, horticulture, floriculture); Forestry in India, its growth and problems; Cattle wealth in India and dairying; Rural Industrialisation-Food processing industries and agro-based industries, development of rural infrastructure.

Module-2 : Development of Agriculture

Role and importance of agriculture in Economic Development Linkage between the agricultural sector and the non-agricultural sector, changing nature of linkages; Agricultural resources in India: Land utilization and cropping pattern; irrigation; Trends in agricultural growth and agricultural productivity; Pattern of agricultural development: regional variation.

Module - 3 : Agrarian Relations and Land Reforms in India

Agrarian relations: Historical evaluation and land reforms programme during 1950's and 1960's; Land reforms: Programme and performance during 1970's and after

Module - 4 : Technological Change in Agriculture

Technology in agriculture; traditional techniques and practices, HYV seeds - fertilizers, water technology (green revolution); Sustainable agriculture; Emerging trends in agricultural technology; Dry land farming, use of bio technology techniques

Module - 5 : Indian Agriculture in post- WTO

An overview of agricultural development; underemployment and unemployment in the rural economy; Globalization of Indian economy and its effects on Indian agriculture.

BASIC READINGS:

1. Bilgrami. S A R (2000) An Introduction to Agricultural Economics, (2nd Edition) Himalaya Publishing House, Mumbai.
2. Sadhu, A.N and J. Singh (2000) Agricultural Problems in India (3rd edition) Himalaya Publishing House, Mumbai
3. Sundaram I.S (1999) Rural Development (3rd edition) Himalaya Publishing House, Mumbai
4. Sani R.N (2000) Leading Issues in Agricultural Economics, Arihant Press, Jalandar

Eco/5/CC/08B

INDUSTRIAL ECONOMICS

Credit

5

Objectives : To explain basic concepts and issues in industrial economics

Outcome : The learners will be able to understand the role in industrial sectors in the economy

Module -1 : Introduction

Industry and economic development; Industry and sectoral linkages; Industrial classification and data information.

Module - 2 : Industrial Organization and Ownership Structure

Public, private, joint and cooperative sectors; Private corporate sector; MNC and their role; Industrial concentration and monopoly;

Module - 3 : Location and Dispersion

Locations of industries - Theories of location; Diversification; Integration and merger of industrial units; Dispersion and problem of regional imbalance.

Module-4 : Financing of Industry

Mode of financing - equity and debt; Institutional Finance; Bank finance

Module - 5 : Industrial Productivity

Concept and measurement of productivity - productivity in Indian industries; industrial sickness; Under utilization of capacity - factors accounting for it and consequences

BASIC READINGS:

1. Aluwalia, I.J (1995) Industrial Growth in India, Oxford University Press, New Delhi
2. Clarkson K.W. and R. Miller (1985) Industrial organization : Theory, Evidence and Public Policy, Mc Graw Hill, Kogakusha, Tokyo
3. Devme, P.J et al (1978) An introduction to Industrial Economics, (3rd edition) George Allen and Unwin London.
4. Government of India, Economic Survey (Annual) New Delhi
5. Mamona and Mamoria (2000), Dynamics of Industrial Relation in India (13th edition) Himalaya Publishing House, Mumbai
6. Naidu K M (1994). Industrialization and Regional Development in India, Reliance Publishing House, New Delhi
7. Reserve Bank of India, Report on Currency and Finance (Annual) Mumbai

Eco/5/CC/08C

ECONOMIC DEVELOPMENT & PLANNING

Credit 5

Objectives : To explain theories and approaches of economic development and role of planning;

Outcome : The learners will be able to understand the dynamic interplay of various forces in understanding the development process

Unit - I : Basic Concepts of Economic Development

Economic growth and economic development; Indicators of economic growth and development - GNP per capita, PQLI and HDI; Features of Underdevelopment; Factors affecting economic growth (Capital, Labour and Technology); Measurements of Development Gap, Sustainable economic development. Kuznets's inverted U hypothesis

Unit - 2 : Theories of Economic Development

Adam Smith; Karl Marx; Schumpeter; Rostow's stages of growth

Unit - 3 : Approaches to Economic Development

Poverty - concepts of poverty line, absolute and relative poverty; Vicious Circle of Poverty, Lewis dual sector model, Lebenstein Critical Minimum Effort theory, Big Push theory; Dualism - Social, Technological and Financial; Balanced vs Unbalanced growth theories.

Unit - 4 : Development Models and Policies

Endogenous versus exogenous growth models; The Harrod-Domar model; The Solow model; The Kaldor Model; Joan Robinson Model; Features of India's development policies - The Nehruvian model (Controlled economy) and New Economic Policy 1991 (Liberalised economic policy).

Unit - 5 : Development Planning

Concept of Economic planning; Rationale for planning; Types of Planning - Centralised and Decentralised planning, Financial and Physical planning, Perspective and Annual planning; Cost-Benefit Analysis; Shadow Prices and its uses

BASIC READINGS:

1. Thirlwall, A. P.(2003), Growth and Development, Seventh edition, Palgrave Macmillan, New York.
2. Meier, Gerald M. and James E. Rauch (2000), Leading Issues in Economic Development, Oxford University Press, New York
3. Jhingan, ML - The Economics of Development and Planning, Vrinda Publication
4. Goel, R.L. Economics of Development and Planning
5. Todaro, Michael P. and Stephen C Smith (2004) Economic Development, Pearson Education,
6. Subrata (2003) Indian Reprint 2007: Introduction to Development Economics, Routledge, London & New York
7. Ghosh, Arun (1996) Paradigms of Economic Development, IAS, Shimla.

Eco/5/CC/08D **MATHEMATICAL ECONOMICS-I** **Credit** **5**

Objectives : To provide basic mathematical tools for economic analysis
Outcomes : Interpret and analyse economic data using mathematical tools.

Module 1: Basic Quantitative Methods

Concept of variable, constants and parameters. Functional relationship and graph. Elementary ideas of differential and integral calculus.

Module 2: Matrices

Matrix and determinants, matrix inversion by co-factor and Gauss elimination methods. Solution of a system of simultaneous equations by matrix inversion and Cramer's rule. Solution of quadratic equations.

Module 3: Consumer Theory

Utility function, budget line, constrained optimization, consumer's equilibrium, income effect, substitution effects, Slutsky equation, derivation of demand curve, elasticity of demand, consumer's surplus.

Module 4: Market Structure/Pricing

Concept of equilibrium, equilibrium of firms under perfect competition and monopoly. Price discrimination. Determination of equilibrium output and prices under Cournot and Stakelberg Model. The basic Cobweb model.

Module 5: Theory of Production

Properties of production function- homogeneous and non-homogeneous; Cobb-Douglas, CES, Returns to scale, Euler's theorem, choice of optimal combination of factors of production.

Objective : The course aims to provide fundamental concepts in environmental economics

Outcome : At the end of the course, the learners will be able to understand economy-environmental linkages

Unit-I: Introduction to Environmental Economics

Economy and environment inter-linkages; Economic Efficiency and Market Failures: Market solutions and efficiency; Problem of externalities; Public Goods -Environment as a public good; Public goods and public bads; Tragedy of Commons; Common property resources.

Unit - II: Development and Environment

Environment and Development; Environmental Kuznets's Curve; Theory of Demographic Transition; Population, Poverty and Environment; Degradation of Environment

Unit - III: Sustainable Development and Valuation of Environment.

Meaning, Objectives and Indicators of Sustainable Development; Economics of Sustainable development; Environmental Impact Assessment; Valuation of Environmental damages and benefits - direct and indirect methods; UN Millennium Development Goals

Unit - IV: Pollution Control

Types of pollution: Air, water and noise; Optimal level of pollution; Prevention and Control of Pollution in India; Soil degradation - causes, effects and controlling measures; Main features of Water (Prevention and Control of Pollution) Act 1974 and Forest Conservation Act, 1980; Central Pollution Control Board and State Pollution Control Board.

Unit - V: Global Environmental Issues

Climate Change - Implications and Mitigation; International attempts to protect the environment - Movements, Laws, Agreements; Rio Declaration and Kyoto Protocol; World Bank and the environment - Polluter pays principle; Energy Security-concept.

BASIC READINGS:

1. Environmental Education in India (2002), Association of Indian Universities, New Delhi.
2. Jhingani, M. L. & Sharma, C. K. (2009): Environmental Economics: Theory, Management and Policy
3. Singh, Katar and Shishodia, Anil (2007): Environmental Economics -Theory and Practice, Sage Publications, New Delhi.
4. Bhattacharya, R.N. (Ed) (2001), Environmental Economics: An Indian Perspective, Oxford University Press, New Delhi.

5. Hartley, Shogren & White (2004), Environmental Economics in Theory and Practice, Macmillan India limited, Delhi.

Eco/6/CC/10 QUANTITATIVE TECHNIQUES - II Credit 5

Objective : Introduce qualitative methods in economics analysis
Outcome : Define and understand applications of quantitative methods

Module - 1 : Introduction

Meaning, uses and importance of statistics; Concept of descriptive and inferential statistics; Methods of data collection- Sampling vrs Census; Data classification-primary data and secondary data; Data presentation-Diagrammatic and graphical presentations.

Module - 2 : Central Tendency and Dispersion

Measures of central tendency: mean, median, mode, geometric mean and harmonic mean.

Measures of dispersion: range, mean deviation, standard deviation, coefficient of variation, quartile deviation, skewness and kurtosis.

Module - 3 : Probability and distribution

Concept of probability- Classical, Empirical and Modern; Basic theorems of probability-addition and multiplication. Theoretical distribution - binomial, poisson and normal distribution.

Module - 4 : Correlation and Regression

Correlations: Karl Pearson and Rank Correlation. Concept of partial and multiple correlation.

Regression analysis: estimation of simple regression line by OLS, interpretation of regression coefficients, concept of coefficient of determination.

Module - 5 : Time series and Index Number

Time series analysis-Concept and components, determination of trend, seasonal and cyclical indices;

Index numbers - Concept, price-relative, quantitative relative, Laspeyres', Paasche's and Fisher Indices. Problems in the construction and limitations of index numbers. Tests for ideal index number.

BASIC READING

1. Gupta SC & Kapoor VK (Latest edition): Fundamentals of mathematical statistics, S Chand & Sons, New Delhi.
2. Gupta, SP (Latest edition): Statistical Methods, S Chand & Sons, New Delhi.
3. Goon, Gupta, Dasgupta (Latest edition): Fundamentals of Statistics-I, The World Press Private Ltd, Kolkata.
4. Hands, D.W. (1991) Introductory Mathematical Economics, D.C. Health.
5. Renshaw, Geoff: Maths for economics (2nd Edition), Oxford University Press.

Objectives : To introduce basic concepts in financial institutions and markets.

Outcome : Be able to understand working and performance of various segments of financial sectors

Module - 1 : Central Bank - RBI

Functions and objectives of RBI; Instruments of Credit control - quantitative and qualitative methods - Bank rate policy, open market operations, VRR and selective methods; Development and regulatory role of RBI; Objectives and limitations of monetary policy; Measures used by the RBI to control inflation.

Module - 2 : Money and Commercial Banking

Functions and kinds of money; components of money supply; Functions, types and objectives of commercial banks; Liabilities and assets of banks; Process of credit creation by commercial banks, purpose and limitation.

Module - 3 : Non-banking Financial Institutions

Structure of cooperative institutions and development banks in India - Their objectives, role and limitations; Definition and types of NBFI's namely LIC, Investment Companies, Mutual funds, Venture Capital and its growth and importance; Recent measures taken by the RBI to regulate their working.

Module - 4 : Financial Markets

Meaning and structure of Financial Markets - money market and capital market; Concept and functions of stock market and market for gilt-edged securities; Types of regulated and unregulated credit markets; Recent Financial Sector Reforms in India; SEBI - functions and its impact on the working of Capital Markets in India.

Module - 5 : Foreign Exchange Markets

Foreign exchange; Foreign exchange market; Foreign exchange rate-concept of spot exchange rates and forward exchange rates; Determination of exchange rates under fixed and flexible exchange rate regimes; Concept of hedging in the determination of exchange rates; Eurodollar market - its role and significance.

BASIC READINGS:

1. Bhole, LM & Mahakud, J. (Latest Edition) Financial Institutions and Market. Tata Mc Graw Hill
2. Gupta, S.B (1995) Monetary Economics, Institutions, Theory and Policy. S.Chand & Co. New Delhi
3. Grabble J.O (1992). International Financial Markets - Elsevire, New York
4. Mithani, DM (Latest Edition) - Money, Banking, International Trade and Public Finance. Himalaya Publishing House.
5. Pathak, Bharati V. (Latest Edition). The Indian Financial System: Markets, Institutions and Services. Pearson Education.
6. Rangarajan, C (1999) Indian Economics; Essays on Money and Finance; UBS Publishers, New Delhi
7. RBI (2000), Report of the Committee on Financial Companies.

Objective : Provide the learners an overview of the history of economic thought
Outcome : The learner will appreciate the historical background of various economic thoughts

Module - 1 : Early Period

Economic thought of Plato and Aristotle - Doctrines of just cost and just price - Mercantilism: main characteristics; Thomas Mun - Physiocracy: natural order, primacy of agriculture, social classes, Tableau Economique, taxation, Turgot - Economic ideas of Petty, Locke and Hume

Module - 2 : Classical Period

Adam Smith - Division of labour, theory of value, capital accumulation, distribution, views on trade, economic progress; David Ricardo - value, theory of rent, distribution, ideas on economic development and international trade; Thomas R. Malthus - theory of population, theory of gluts.

Module - 3 : Marginalists

The precursors of marginalism - Cournot, Thunen, Gossen - The marginalist revolution; Jevons, Walras and Menger - Bohm-Bawerk, Wicksell and Fisher: the rate of interest - Wicksteed and Weiser; Distribution - Marshall as a great synthesizer; role of time in price determination, economic methods, ideas on consumer's surplus, elasticities, prime and supplementary costs, representative firm, external and internal economies, quasi-rent, organization as factor of production, nature of profits.

Module - 4 : Keynesian Ideas

The aggregate economy, Liquidity Preference Theory and Liquidity trap, Marginal Efficiency of Capital and Marginal Efficiency of Investment, wage rigidities, underemployment equilibrium, role of fiscal policy: deficit spending and public works, multiplier principle, cyclical behavior of the economy, uncertainty and role of expectations, impetus to economic modeling

Module - 5 : Indian Economic Thought

Early economic ideas: Kautilya, Valluvar; Modern economic ideas: Naoroji, Ranade, R.C Dutt and M.N. Roy; Economic ideas of Gandhi: Village, Swadeshi, place of machine and labour, cottage industries, trusteeship; Early approaches to planning (The national planning committee); Gandhian co-operation as a way of life and strategy of development; J.K Mehta: Wantlessness.

BASIC READING

1. Blackhouse, R. (1955): A History of Modern Economic analysis, Basil Blackwell, Oxford.
2. Blang M. (1997): Economic Theory in Retrospect (5th Edition) Cambridge University Press, Cambridge.
3. Ganguly B.N (1997) : Indian Economic Thought: A 19th Century Perspective, Tata Mc GrAw Hill, New Delhi.
4. Guide, C and G. Rist (1965): A History of Economic Doctrines (2nd Edition) George Harrop & Co., London.
5. Gray A and AE Thomson (1980): The Development of Economic Doctrine

- (2nd Edition) Longman Group, London.
6. Roll, E (1973): A History of Economic Thought, Faber, London.
 7. Schumpeter, J. A. (1954) History of Economic Analysis, Oxford Press, New York.

Eco/6/CC/12B

INTERNATIONAL TRADE

Credit 5

- Objectives** : To explain theories of trade and gains from trade and role of protection and the pattern of India's trade
- Outcome** : Be able to understand impacts of protection in trade and liberalization of trade measures

Module - 1 : Importance of Trade and trade Theories

Importance of the study of international trade; Inter-regional and international trade; Theories of absolute advantage, comparative advantage and opportunity cost; Heckscher-Ohlin theory of trade - its main features, assumptions and limitations

Module - 2 : Gains from Trade

Gains from Trade and their measurement; Various concept of terms of trade; Doctrine of reciprocal demand - its limitations.

Module - 3 : Tariffs and Quotas

Meaning and types of tariffs and quotas: Their impact in partial equilibrium analysis; Concept of optimum tariff; Free trade versus trade protection.

Module - 4 : Balance of Trade and Balance of Payments

Concepts and components of balance of trade and balance of payments; Equilibrium and disequilibrium in balance of payments; Consequences of disequilibrium in balance of payments; Various measures to correct deficit in the balance of payment; Relative merits and demerits of devahtiation.

Module - 5 : Foreign Trade in India

Recent changes in the composition and direction of foreign trade; Causes and effects of persistent deficit in the balance of payments; Measures adopted by the government to correct the deficit before and after 1991; Meaning of partial and full convertibility of rupee.

BASIC READINGS:

1. Kennan, P.B (1994) , The International Economy, Cambridge University Press London.
2. Kindleburger, C.P. (1973) International Economics, R.D. Irwin, Home Wood.
3. Krugman, P.R. and M. Obstgeld (1994): International Economics -Theory and policy, Glenview, Foresman.
4. Patel S.J. (1995): Indian Economy Towards the 21st Century, University Press Ltd, India.
5. Salvatore, D.L. (1997): International Economics, Prentice- Hall, Upper Saddle River, N. J.
6. Sodarsten, Bo (1991) International Economics, Mc Millan Press Ltd. London.

Eco/6/CC/12C

ECONOMETRICS

Credit 5

- Objective** : To give a broad overview of basic concepts in econometrics analysis
Outcome : Demonstrate an understanding of key econometric concepts and theories

Module - 1 : Introduction to Econometrics

Definition and scope of econometrics. The methodology of econometric research: specification and estimation of an econometric model. Basic concept of estimation: desirable properties of estimators- unbiasedness, efficiency, consistency, sufficiency.

Module - 2 : Theoretical Distribution and Testing of Hypothesis

Theoretical frequency distribution and application of binomial, poisson and normal distribution. Testing of hypothesis: Type-I and Type-II errors, Standard Errors, Level of Significance. Hypothesis testing based on Z, t and Chi-square statistics.

Module -- 3 : Simple Regression Analysis

Classical assumptions of regression analysis. Estimation of simple regression coefficients by OLS, properties of OLS estimators. Coefficient of Determination, Adjusted R^2 , decomposition of sum of squares in regression and ANOVA in simple regression equation. Statistical Inference in regression: testing of the significance of regression coefficients.

Module - 4 : Estimation

Concept of estimate and estimator, desirable properties of estimators- unbiasedness, efficiency, consistency and sufficiency, BLUE, MLE.

Module - 5 : Problems in OLS estimation

Problems of multicollineary and auto-correlation- their consequences, tests and remedies.

BASIC READINGS:

1. Greene, W. (1997), *Econometric Analysis.*, Prentice Hall, New York
2. Gujrati, D. (1995), *Basic Econometrics*, Mc Grow Hill, New Delhi
3. Johnston J. and J.D Nardo (1997) *Econometric Methods*, Mc Grow Hill New York
4. Kmenta, J (1977), *Theory of Econometrics* Michigan Press, New York
5. Koutsoyanis, A (1977), *Theory of Econometrics*, (2^{ud} edition), The Mc Millan Press Ltd.
6. Madalla, G.S (1993) *Econometrics - An Introduction*, Mc Grow Hill, New York

Eco/6/CC/12D

MATHEMATICAL ECONOMICS-II

Credit 5

- Objectives** : To provide basic mathematical tools for economic analysis
Outcomes : Interpret and analyse economic data using mathematical tools

Module 1: Cost and Revenue Analysis

Derivation cost curves; relations between total, average, elasticity of demand and revenue; producer's surplus, production possibility curve, Adding up theorem.

Module 2: Input-Output Analysis

Input-output analysis: assumptions, technological coefficient matrix, closed and open model. Hawkins-Simon conditions. Determination of equilibrium output and prices. Dynamic Input-Output model.

Module 3: Linear Programming

Concept and formulation of Linear Programming Problems, graphical and simplex methods of solving LP problems. Theorem of duality- concept of primal and dual, transformation of primal into dual.

Module 4: Introductory Game Theory

Introduction and concepts: two-person-zero-sum game, pure and mixed strategies, saddle point solution, dominance.

Module 5: Dynamic Economic models

Difference and differential equations- concepts, solution of first order equations. Growth models- Solow and Harrod. Derivation of time path under Cobweb model.

BASIC READINGS:

1. Allen, R.G.D (1974) Mathematical Analysis for Economists, Mc Millan Press, London.
2. Barthwal, R.R (1992): Microeconomics Analysis, New Age International (P) Ltd, Publishers, New Delhi.
3. Chiang, A.C (1986), Fundamental Methods of Economics, Mc Graw Hill, New Delhi.
4. Coell, A. Mas et, al. (1991), Microeconomics Theory, Harvard University Press, Cambridge, Mass.
5. Hands, D.W. (1991) Introductory Mathematical Economics, D.C. Health.
6. Henderson, J. and R.E. Quandt (1980), Microeconomic Theory: A Mathematical Approach. Mc Graw Hill, New Delhi.
7. Handy, S.T. (1997), Operations Research Practice Hall of India, New Delhi.
8. Mehta, B.C. & Madnani, G.M. (Latest edition): Mathematics for economists, Sultan Chand & Sons, New Delhi.
9. Renshaw, Geoff: Maths for economics (2nd Edition), Oxford University Press.
10. Yamane, Taro (1999): Mathematics for Economists-An elementary Survey, Prentice Hall of India, New Delhi.

Eco/6/CC/12E

DEMOGRAPHY

Credit 5

Objectives : Introduce key concepts/theories and provide basic techniques of analysis in demography

Outcome : Understand vital demographic statistics

Module -1 : Introduction

Population study and demography: Its relation with other disciplines; Theories of Population Malthus, Optimum theory of population, and theory of demographic transition.

Module - 2 : Sources of Demographic Data in India

Sources of Demographic data in India: Census-Civil registration system and demographic surveys; National Family Health Survey 1 and 2 - their relative merits and demerits.

Module - 3 : Techniques of Analysis

Crude birth and death rates, age specific birth and death rates, standardized birth and death rates - Study of Fertility: Total fertility rate, gross reproduction rate, and net reproduction rate.

Module - 4 : Population Projection

Techniques of population projection - concept of stationary, stable and quasi-stationary population - aging of population in India - Changes in family structure and old age security.

Module - 5 : Population Policy

Salient features of Population Censuses of 1971, 1981, 1991 and 2001: Evolution of population policy in India, Shift in policy focus from population control to family welfare and to women empowerment

BASIC READINGS:

1. Agarwala S.N (1985), India's Population Problem, Tata McGraw Hill, Bombay.
2. Agarwal U.D (1999) Population Projection and Their Accuracy, B.R. Publishing Corporation N.D.
3. Blende, A.A ;and T.R. Kanitkar (1982) Principles of Population Studies, Himalaya Publishing House, Mumbai.
4. Bogul, D.J. (1971) Principles of Demography; John Wiley, New York.
5. Bose, A. (1996) India's Basic Demographic Statistics, B.R. Publishing Corporation, New Delhi.
6. Choubey, R.K. (2000) Population Policy in India, Kanishka Publications, New Delhi.
7. Srinivasan, K. (1998), Basic Demographic Techniques and Applications, Sage Publications , New Delhi.

Eco/6/CC/12F

COMPUTER AND SOFTWARE APPLICATIONS IN ECONOMICS

Credit 5

Objectives : To give a broad overview of basic concepts in mathematical economics

Outcome : Familiarize with key mathematical economics concepts

Module-1 : Basic of Computers

Computer fundamentals; Organization and components of a computer; computer hardware CPU; Memory; Disk drives; Input and output devices; Keyboard; Mouse and VDU, Computer peripherals like printer, scanner, digitizer, etc. Computer software - Operating system, application software and packages.

Module - 2 : Use of Computer for Office Automation

Text editors and word processor software packages; Operative familiarization with any one package like MS-Word; Concept and use of spread sheet; Operation and use of MS-Excel; Basics of Database; Table; records and fields; Data entry and query processing; Operative principles of MS-Access; Document formation and presentation through MS-Power point.

Module - 3 : Data Analysis and Trend Forecasting

Basics of statistical functions and analysis - Mean, median, mode, standard deviation; Distribution function and density function; Statistical package

handling and command description for SPSS: Regression and auto-regression; Correlation and auto-correlation; Covariance and Auto covariance

Module - 4 : Applications

Text and mail communication using computers; E-mail; Chat; Coice mail; Document transfer and delivery; Internet; World Wide Web (WWW) and use for business and commercial activities like e-business and e-commerce; Electronic stock market and exchanges; B2B and B2C Concepts.

Module - 5 : IT Application to finance

On line banking; ATM's Electronic Stock Exchange; Electronic trading; Data shearing and decimation; Electronic transaction; Document delivery; Authentication and validation transaction processing.

BASIC READINGS:

1. Kerns (1993), Essentials of Microsoft Windows Word and Excell; Prentice Hall of India, New Delhi.
2. Rajaraman, V (1996) Fundamentals of Computers, Prentice Hall (India) New Delhi.
3. Schied, F. (1983), Theory and Problems of Computers and Programming, Schaum's Outline Series, McGraw- Hill, New Delhi.
4. Intrilligator, M.D. (1978), Econometric Models Techniques and Application, Prentice Hall, Englewood cliffs, N.J.

