

## STRUCTURE FOR ECONOMICS MAJOR

### SEMESTER I

PAPER 1: MICROECONOMICS I

PAPER 2: DEVELOPMENT ECONOMICS - I

### SEMESTER II

PAPER 3: MACROECONOMICS I

PAPER 4: MICROECONOMICS - II

### SEMESTER III

PAPER 5: MACROECONOMICS II

PAPER 6: ECONOMIC STATISTICS

### SEMESTER IV

PAPER 7: MATHEMATICAL ECONOMICS I

PAPER 8: ECONOMETRICS - I

PAPER 9: DEVELOPMENT ECONOMICS II

PAPER 10: INTERNATIONAL ECONOMICS

### SEMESTER V

PAPER 11: MATHEMATICAL ECONOMICS II

PAPER 12: ECONOMETRICS - II

PAPER 13: DEVELOPMENT ECONOMICS III

PAPER 14: PUBLIC ECONOMICS

### SEMESTER VI

PAPER 15: OPEN ECONOMY MACROECONOMICS

PAPER 16: INDIAN ECONOMIC ISSUES

PAPER 17: OPTIONAL PAPERS: FINANCE / HEALTH

PAPER 18: PROJECT / TERM PAPER

**SYLLABUS**  
**BSc Economics Major**  
**FIRST YEAR, FIRST SEMESTER**

[NOTE: Figures in brackets indicate the no. of lectures]

**Paper-1** **MICRO ECONOMICS– I** **(Full Marks 80)**

<b>Module – 1 <u>Introduction to Price Theory</u></b>		
<b>Unit – 1</b>	Scarcity and choice; choice by command and choice by market; the role of prices in a market economy.	(02)
<b>Unit – 2</b>	Elementary concepts of demand, supply and price determination; stability of equilibrium (the Walrasian approach); elasticities of demand and supply.	(05)
<b>Unit – 3</b>	Comparative static.	(01)
<b>TOTAL LECTURES</b>		<b>(8)</b>
<b>References:</b>		
1. Pindyck ,Rubinfeld and Mehta : Microeconomics Pearson Education Asia, 6th Edition, Chapter 2		
2. Maddala and Miller: Microeconomics- Theory and Applications, McGraw – Hill, Chapters 1,2,3		
3. Varian H.R: Intermediate Microeconomics, East– West Press,7th Edition, Chapters 2, 5		

<b>Module – 2 <u>Theory of Consumer Behaviour – Alternative Approaches</u></b>		
<b>Unit – 1</b>	Cardinal utility; law of diminishing marginal utility; derivation of the Marshallian demand curve and its elasticity implications.	(02)
<b>Unit – 2</b>	Ordinal utility – axioms; indifference curves, budget constraint and consumer’s equilibrium; comparative static: price – consumption, income-consumption and Engel’s curves and demand elasticities; price-effect: substitution and income-effects; classification of commodities: normal, inferior and Giffen goods. Some applications: Buying and selling, intertemporal choice.	(20)
<b>Unit – 3</b>	Revealed Preference approach: Strong and weak axioms of revealed preference – properties of demand function – Index numbers.	(04)
<b>TOTAL LECTURES</b>		<b>(26)</b>
<b>References:</b>		
1. Varian H.R: Intermediate Microeconomics,7th Edition, Chapters 3, 4, 5, 6, 7, 8, 9, 10		
2. Pindyck ,Rubinfeld and Mehta : Microeconomics, 6th Edition, Chapters 3,4		
3. Gravelle and Rees : Microeconomics Pearson Education Asia , 2 <sup>nd</sup> Edition Chapter 3		

<b>Module – 3 <u>Introduction to the theory of firms – Production and Cost analysis</u></b>		
<b>Unit – 1</b>	Technology and technological efficiency – General concept of Production function – Concepts of total product, average product and marginal product –Return to factor and returns to scale - Isoquants and diminishing rate of factor substitution – Elasticity of Substitution –Some examples of technology (fixed proportion, perfect substitute, Cobb – Douglas Production Function, CES Production Function), General concept of homogenous production function and its properties.	(8)
<b>Unit – 2</b>	Optimizing behaviour of firm: constrained output maximization, Constrained Cost minimization. Expansion path. Input demand and input demand function.	(06)
<b>Unit – 3</b>	Costs – Economic / Opportunity Cost and accounting cost, Concept of sunk cost — Time dimension of cost – Long run cost function-Relation between expansion path and long run total cost curve - Functional coefficient and shape of long run average cost. Cost in the short run – total cost – Fixed and variable cost – Marginal cost – Average cost – Derivation of short run cost— Relation between short run and long run cost. Multi-product firm and economies of scope.	(12)
<b>TOTAL LECTURES</b>		<b>(26)</b>
<b>References:</b>		
1. Maddala and Miller: Microeconomics- Theory and Applications, Chapters 6, 7		
2. Ferguson and Gould: Microeconomics , 6th Edition, Chapters 6, 7, 8		
3. Varian H.R: Intermediate Microeconomics, East– West Press ,7th Edition, Chapters 18		
4. Pindyck, Rubinfeld and Mehta : Microeconomics, 6th Edition, Chapters 5, 6		

**Module – 4 Market Morphology(I)**

**Unit – 1** Perfectly Competitive Market: Assumptions – Market Demand – Demand curve for an individual firm Supply function: Time dimension of supply function – very short Period, short period and long period – concept of external economies and diseconomies – Commodity Market Equilibrium – Short period (run) equilibrium of firm and industry – Long run supply curve – Constant, increasing and decreasing cost industry – consumer's and producer's surplus – Efficiency of Competitive market – Effects of tax – subsidy and price control. (11)

(11)

**References:**

1. Pindyck, Rubinfeld and Mehta: **Microeconomics (Pearson Education Asia), 6th Edition, Chapters 7,8,9,10,11,12**
2. Ferguson and Gould: **Microeconomics, 6th Edition, Chapters 9,10,11,12**
3. Sen, Anindya: **Microeconomics- Theory and Applications (Oxford University Press) 2nd Edition, Chapters 8,9,10,11,12**

Additional reading: 1.Gravelle and Rees- Microeconomics; Pearson Education, 2<sup>nd</sup> Edition Chapter 12, Sections A and B

**Module – 1 Preliminaries and Basic Concepts**

**Unit – 1** Nature of Development economics: economy, society and values; broad features of underdevelopment; distinction between growth and development, brief outline of entitlement approach and human development paradigm. Alternative concepts of economic development: income-based approach and capability-based approach; index construction and indices of development including human development index; development experience of less developed countries in the recent past. (13)

**Unit – 2** Development and economic reform: some basic issues. (03)

**TOTAL LECTURES (16)**

**References:**

1. **Todaro and Smith : Economic Development (Pearson Education): Chapters 1 and 2**
2. **Thirwall A.P : Growth and Development (Palgrave MacMillan): Chapter 2**
3. **Fukuda-Parr and Shiva Kumar: Readings in Human Development (Oxford University Press) 2nd Edition: Chapters 1.1,1.2,2.9**
4. **Amit Bhaduri and Depak Nayar: The Intelligent Person's Guide to Liberalization, Penguin Books, Chapters 1, 6**
5. **Debraj Ray: Development Economics ( Oxford University Press): Chapters 2.2,2.3**
6. **Amartya Sen: Development as Freedom: Chapter 2**

**Module – 2 Population Growth and Economic Development**

**Unit – 1** Population growth and the quality of life - Facts about World population - Effects of population growth on the process of development. (06)

**Unit – 2** Demographic transition theories - the causes of high fertility in developing countries: the Malthusian and household models - the concept of 'optimum' population. (06)

**TOTAL LECTURES (12)**

**References: 1. Todaro and Smith : Economic Development (Pearson Education): Chapter 7**

2. **Ray Debraj : Development Economics (Oxford University Press) Chapter 9**
3. **Berg: Economic Growth and Development: McGraw Hill, International Edition: Chapters 7.3.3 , 7.3.4**

**Module – 3 Inequality and Poverty**

**Unit – 1** Definition of economic inequality – measures of inequality; Inequality, income and growth: the inverted- U hypothesis and its empiricism. (07)

**Unit – 2** Poverty – the conceptual issues: overall expenditure or item-by-item consumption, absolute or relative, temporary or chronic, households or individuals; (10)

**TOTAL LECTURES (17)**

**References: 1. Todaro and Smith : Economic Development (Pearson Education): Chapter 6**

2. **Sen Amartya : Inequality Reexamined (Oxford University Press)**
3. **Ray Debraj : Development Economics (Oxford University Press): Chapters 6,7 and 8.2**

**Module – 4 Analytical Core, Development Index And Basic Strategies of Economic Development**

**Unit – 1** Rostow's stages of growth; Structuralist approach: the Lewis model and the Harris-Todaro model (10)

**Unit – 2** Underdevelopment as a coordination failure: multiple equilibria and low-income equilibrium trap- the theory of 'big-push'. (07)

**Unit – 3** Strategies of economic development: balanced versus unbalanced growth- choice of technique. (09)

**TOTAL LECTURES (26)**

**References: 1. Todaro and Smith: Economic Development (Pearson Education) Chapter 2**

2. **Ray Debraj: Development Economics (Oxford University Press) Chapters 2.2, 2.3, 10.3**
3. **Thirwall A.P: Growth and Development (Palgrave MacMillan) Chapter 2 , 3 (Pg 115-120), 9, 12**
4. **Kaushik Basu: Analytical Development Economics (Oxford University Press):2nd Edition, Chapters 4,7,8**
5. **Human Development Report, 1995,1999**

## FIRST YEAR, SECOND SEMESTER

**Paper-3**

**MACRO ECONOMICS– I**

**(Full Marks 80)**

**Module – 1 National Income Analysis**

<b>Unit – 1</b>	Nature and scope of macroeconomics with emphasis on macroeconomic problems and policies - introduction to macro-economic data –circular flow of income- definitions of gross domestic product, gross and net national product, national and personal income, methods of national income accounting, saving-investment identity and role of unintended change in inventories	(06)
<b>Unit – 2</b>	GNP deflator and its uses, cost of living and consumer price index, unemployment and GNP, measuring joblessness, Okun’s Law, national income and economic welfare.	(04)
<b>TOTAL LECTURES</b>		<b>(10)</b>

**References:**

1. Dornbusch, Fisher and Startz: **Macroeconomics (Tata McGraw-Hill), 9th Edition, Chapters 1, 2**
2. Blanchard: **Macroeconomics (Pearson Education), 4th Edition, Chapters 2, 3**
3. Soumyen Sikdar: **Principles of Macroeconomics (Oxford university Press), 2<sup>nd</sup> Edition, Chapter 2**

**Module – 2 Basic Model Of Effective Demand And Income Determination**

<b>Unit – 1</b>	Simple Keynesian Model – equilibrium, adjustment process and stability (with economic interpretation of the stability condition) – comparative static: expenditure multipliers without and with the government sector, paradox of thrift, SKM multiplier in an open economy.	(10)
<b>Unit – 2</b>	IS – LM Model – commodity market equilibrium and the IS curve, money market equilibrium and the LM curve–macroeconomic equilibrium and the adjustment process, stability of equilibrium with explicit derivation of the stability condition-comparative static: fiscal policy, monetary policy (with special reference to interest rate overshooting) and policy mix, model under real balance effect - long run version of the model under price adjustment. Demand Side of the economy: Construction of the AD curve from the IS-LM Model– economic analysis of its slope and shifts	(20)
<b>TOTAL LECTURES</b>		<b>(30)</b>

**References:**

1. Mankiw N.G: **Macroeconomics (Worth Publishers), 5th Edition, Chapters 10, 11**
2. Dornbusch, Fisher and Startz: **Macroeconomics (Tata McGraw-Hill), 9th Edition, Chapters 5, 9, 10, 11**
3. Bernanke and Abel: **Macroeconomics, 4th Edition Chapters 9**
4. Blanchard: **Macroeconomics (Pearson Education), 4th Edition, Chapters 3,4,5**

**Module – 3 Theories of Consumption, Investment Function, and Money**

<b>Unit – 1</b>	Keynesian absolute income hypothesis, Kuznets’ empirical findings and consumption puzzle, Intertemporal optimization as basis for consumption function, Life cycle hypothesis, permanent income hypothesis, random walk hypothesis and their policy implications.	(12)
<b>Unit – 2</b>	Neoclassical theory of business fixed investment, Stock market and Tobin’s q, Accelerator model of inventories.	(08)
<b>Unit –3</b>	Theories of money demand: Baumol – Tobin model of demand for money, Tobin’s model of speculative demand for money.	(05)
<b>Unit – 4</b>	Money supply Asset Liability accounting of central bank and commercial bank, money multiplier theory and determination of money supply, selective instruments of monetary control, interest rate targeting or money supply targeting, growth rate of money supply and rate of inflation, nominal rate and real rate of interest, hyperinflation, costs of inflation.	(05)
<b>TOTAL LECTURES</b>		<b>(30)</b>

**References:**

1. Bernake and Abel: **Macroeconomics (Pearson Education), 4<sup>th</sup> Edition, Chapters 4, 7, 15, section 15.1, 15.3, 15.4**
2. N.Gregory Mankiw: **Macroeconomics (Worth Publishers), 5<sup>th</sup> Edition Chapter 4, Chapter 15, Sections 15.3-15.5, Ch. 16,17, 18**
3. Dornbusch, Fisher and Startz: **Macroeconomics (Tata McGraw-Hill), 8<sup>th</sup> Edition, Chapters 13,14, 15, 16, 18:sections 18.4,18.5**

**Module – 1 Market Morphology**

**Unit – 1** Monopoly -- Sources of Monopoly power- Average Revenue and Marginal Revenue – Profit maximization – Effects of Tax – Price discrimination: First, Second and Third Degree – Two part tariff – Multiple plant monopolist – Concept of monopoly power – Mark up pricing — Social Costs of monopoly power and dead-weight loss – Natural monopoly and its regulation - Monopoly equilibrium under sales maximization; comparison between profit maximization and sales maximization (10)

**Unit – 2** Monopolistic Competition: Assumptions – Product differentiation and Demand curve – Concept of Industry group – Equilibrium of the firm – Excess capacity and its interpretation — A simple location model of product differentiation (Hotelling's model). (05)

**Unit- 3** Oligopoly: Simultaneous Quantity Setting: Cournot Equilibrium; Simultaneous Price Setting: Bertrand Equilibrium and Bertrand Paradox, Product differentiation in Bertrand model; Quantity Leadership: Stackelberg Equilibrium; Price Leadership; Collusion and Formation of Cartel; Cartel Instability, Punishment strategies and Cartel Stability ;Price Rigidity: Kinked Demand Curve Model (15)

**TOTAL LECTURES (30)**

**References:**

1. Pindyck, Rubinfeld and Mehta: *Microeconomics (Pearson Education Asia)*, 6th Edition, Chapters 7,8,9,10,11,12
2. Ferguson and Gould: *Microeconomics*, 6th Edition, Chapters 9,10,11,12
3. Varian H.R: *Intermediate Microeconomics*, East– West Press,7th Edition, Chapters 22, 24, 25,27
4. Sen, Anindya: *Microeconomics- Theory and Applications (Oxford University Press)* 2nd Edition, Chapters 8,9,10,11,12

Additional reading: 1.Gravelle and Rees- *Microeconomics*; Pearson Education, 2<sup>nd</sup> Edition Chapter 12, Sections A and B

**Module – 2 Market for Inputs**

**Unit – 1** Competitive Factor Markets – Demand for factor – One input case – Several Inputs – Market demand curves – Derivation of labour supply curve - Equilibrium in a Competitive factor market – Adding–up problem. (08)

**Unit – 2** Factor demand in imperfect competition – Single input case – several inputs – exploitation and role of trade union – Rent and Quasi-rent. (07)

**TOTAL LECTURES (15)**

**References:**

1. Pindyck, Rubinfeld and Mehta: *Microeconomics (Pearson Education Asia)*, 6th Edition, Chapter 13
2. Ferguson and Gould: *Microeconomics*, 6th Edition, Chapters 14, 15
3. Maddala and Miller: *Microeconomics*, Edition2006, Chapters 15, 16, 17
4. Varian H.R: *Intermediate Microeconomics*, East– West Press,7th Edition, Chapters 9.8

**Module – 3 Choice under Uncertainty**

**Unit – 1** Expected utility theorem and attitude towards risk Utility function and expected utility; Risk preference and risk aversion; Concept of risk premium and certainty equivalence.

**Unit – 2** Applications , Demand for risky assets: trade-off between risk and return; Reducing risk: Fair insurance; Insurance with asymmetric information: moral hazard, adverse selection (concepts only)

**TOTAL LECTURES (08)**

**References:**

1. Pindyck Rubinfeld and Mehta :*Microeconomics*; Pearson Education, 5<sup>th</sup> Edition Chapter 5
2. Anindya Sen: *Microeconomics (OUP)*,2<sup>nd</sup> Edition Chapter 15, Section 15.1-15.4
3. Varian: *Intermediate Microeconomics East-West Press*, 6<sup>th</sup> Edition, Chapter 12, chapter 13, section 13.1

**Module – 4 General Equilibrium, Welfare Economics and Market Failure**

**Unit – 1** Pareto optimality and welfare ,2X2 Exchange: Pareto efficiency, Utility Possibility Frontier; 2X2 Production: Pareto efficiency, Production Possibility Frontier; Grand Utility Possibility Frontier; Competitive Equilibrium and Pareto efficiency.

**Unit – 2** Market failure and policies, Market Failure under externality: Coase Theorem, scope for government. Intervention: taxes and subsidies as instruments. Pareto optimality with public goods and market failure.

**TOTAL LECTURES (18)**

**References:**

1. **Varian: Intermediate Microeconomics; East-West Press, 6<sup>th</sup> Edition Chapters 30, 31, 33**
2. **Anindya Sen: Microeconomics; OUP, 2<sup>nd</sup> Edition Chapter 14, Section 14.4-14.6**
3. **Pindyck Rubinfeld and Mehta: Microeconomics; Pearson Education, 5<sup>th</sup> Edition Chapters 16 and 18.**

# **SYLLABUS B.Sc. Economics Major**

## **SECOND YEAR, THIRD SEMESTER**

*[NOTE: Figures in brackets indicate the no. of lectures]*

**Paper-5**

**MACRO ECONOMICS –II**

**(Full Marks 80)**

<b>Module – 1 <u>Supply Side of the Economy, Aggregate Supply Curve and Phillips Curve</u></b>	
<b>Unit – 1</b>	Unemployment: Job loss, job finding and natural rate of unemployment; Job search and frictional unemployment. Wage rigidity and structural unemployment: minimum wage, union and collective bargaining, efficiency wage. (09)
<b>Unit – 2</b>	Basic concept of aggregate supply curve...the long run as vertical aggregate supply curve and the short run as horizontal aggregate supply curve; full employment equilibrium and unemployment equilibrium in terms of the AD-AS model and adjustment process. (10)
<b>Unit – 3</b>	Alternative models of derivation of the aggregate supply curve; analysis of short run and long run effects of shocks under adaptive expectation. (10)
<b>Unit – 4</b>	Phillips curve as supply side relation, short run and long run tradeoff between inflation and unemployment and traditional concept of sacrifice ratio, types of inflation. Basic concept of rational expectation and irrelevance of the traditional concept of sacrifice ratio. (12)
<b>TOTAL PERIODS (41)</b>	
<b>References:</b>	
1. Mankiw N.G: <b>Macroeconomics (Worth Publishers), 5th Edition, ChapterS 6,9, 13</b>	
2. Dornbusch, Fisher and Startz: <b>Macroeconomics (Tata McGraw-Hill),9th Edition, Chapters 5, 6,7</b>	
3. Blanchard <b>Macroeconomics (Pearson Education), 4th Edition, Chapters 6,7,8</b>	
4. Bernanke and Abel: <b>Macroeconomics, 4th Edition ChapterS 8,9</b>	

<b>Module – 2 <u>Theories of Business Cycles</u></b>	
<b>Unit – 1</b>	Real Business Cycle: Technology shock, fiscal shock and propagation mechanism. Public debt and deficit: Traditional View of Government Debt, Barro-Ricardo equivalence theorem, Different perspectives on debt: stabilization, tax smoothing, intergenerational redistribution.
<b>Unit – 2</b>	New Keynesian macroeconomics: menu cost, staggering of wage and price, Overlapping wage contract and co- ordination failure.
<b>TOTAL LECTURES (15)</b>	
<b>References:</b>	
1. N.Gregory Mankiw: <b>Macroeconomics (Worth publisher), 5<sup>th</sup> Edition Chapter 19 Sections 19.1, 19.2</b>	
2. Bernanke and Abel: <b>Macroeconomics (Pearson Education), 4<sup>th</sup> Edition, Chapter 10 Chapter 11, section 11.2.</b>	
3. Dornbusch, Fisher and Startz: <b>Macroeconomics (Tata McGraw-Hill), 8<sup>th</sup> Edition, Chapter 20, Sections 20.5, 20.6</b>	

<b>Module – 3 <u>Growth Economics</u></b>	
<b>Unit – 1</b>	Classical full employment model: Analysis of real sectors-factor market and loan market.
<b>Unit – 2</b>	Solow (Neo- Classical) model of growth: model with population growth, steady state condition, golden rule of capital accumulation and dynamic inefficiency.
<b>Unit – 3</b>	Solow model with technological progress; growth accounting and Solow residual; issue of absolute and relative convergence.
<b>Unit – 4</b>	Brief outline of endogenous growth – The A.K model
<b>TOTAL LECTURES (15)</b>	
<b>References:</b>	
1. N. Gregory Mankiw: <b>Macroeconomics (Worth Publishers),5<sup>th</sup> Edition Chapters 3,7, 8</b>	
2. Bernanke and Abel: <b>Macroeconomics (Pearson Education), 4<sup>th</sup> Edition, Chapter 6</b>	



## Paper 6: Economic Statistics

Full Marks 80 (Theory 40 + Practical 40)

Total number of Classes: 65 [40 (Lecture) + 25 (Lab + Tutorial)]

Required Software: EXCEL

### Module I: A First Look at Data

**Unit 1:** Types of Variables- Frequency Distribution- Statistical Summaries - concept of Measurement Errors and Missing Variables in the context of Univariate, Bivariate and Multivariate Data Analysis

**Unit 2:** Histograms- Frequency Polygons- Stem & Leaf Displays- Graphing Negative Numbers- Time Plots- Time Series Smoothing

**Unit 3:** Economic Applications: Macroeconomic Indicators- Economic Statistics- Exploratory Analysis and use of graphs (income, employment, consumption, investment, money demand, money supply, fiscal health of the economy, etc.)

#### References:

Hamilton Lawrence W. (1990): Modern Data Analysis: A First Course in Applied Statistics, Brooks/ Cole Publishing Company, Pacific Grove, California, USA, Chapters 1, 2.

Bowen & Starr: Basic Statistics for Business and Economics, Chapter 2

Database of Indian Economy, RBI website on database of Indian Economy ([www.dbie.rbi.org.in](http://www.dbie.rbi.org.in)), Ministry of Statistics and Program Implementation ([www.mospi.nic.in](http://www.mospi.nic.in)) on CSO & NSSO data;

[http://economicsnetwork.ac.uk/archive/data\\_worksheets](http://economicsnetwork.ac.uk/archive/data_worksheets)

Woolridge: Econometrics (Introduction)

### Module II: Summarizing Distributions

**Unit 1:** Measures of Centers- The Mean, Median and Mode- Comparison of Mean, Median and Mode- Mean, Median and distributional shape- Types of Mean (Arithmetic Mean, Geometric Mean, Harmonic Mean)- choosing a measure of centre- Means and Medians from Grouped Data- Weighted Means;

**Unit 2:** Economic Application- Index Numbers- Laspeyres, Paschee and the Fisher's Ideal Index (time-reversal test and factor-reversal test)- Cost of Living Index- Estimation of Inflation adjusted income and the problem of bias management- Chain Index and the shift of base- Finding GDP deflator for a long time series;

**Unit 3:** Deviations from Mean- Variance and Standard Deviation- Measure of Spread Based on Ordered Statistics- The Pseudo Standard Deviation- Comparison of Distributions in terms of Box-plots- Coping with Outliers and Skewness- Logarithms- Ladder transformation

**Unit 4:** Measures of Relative Dispersion- Measurement of Poverty (Head-Count-Ratio, Normalized Poverty Gap,  $P(\alpha)$ -measure, FGT measure)- Measurement of Economic Inequality (Lorenz Curve, Gini Coefficient)

**Unit 5:** Multi-dimensional Indices- Human Development Index (HDI), Gender Sensitive Development Index and the concept of *equally distributed equivalence* (GDI, GEM, GII)- Human Poverty Index (HPI)

#### References

Hamilton Lawrence W. (1990): Modern Data Analysis: A First Course in Applied Statistics, Brooks/ Cole Publishing Company, Pacific Grove, California, USA, Chapters 3, 4, 5, 6;

Goon, A.M., Gupta, M.K. and B. Dasgupta (1983): Fundamentals of Statistics, Volume I, Chapters 7, 8, 9;

Bowen & Starr: Basic Statistics for Business and Economics, Chapter 17 (Cost of Living Index);

Varian, H.: Intermediate Microeconomics (6<sup>th</sup> Edition), Chapter 7 (Index Number)

Todaro, M. P. and Smith, S. C. (2003): Economic Development, Eighth Edition, Chapter 6; (Poverty-Inequality)

UNDP (2008): Human Development Report 2007-08- Technical Note (Multi-dimensional Index)

EXCEL handbook on Statistical and Econometrical Applications

## SECOND YEAR, FOURTH SEMESTER

**Paper-7**

**MATHEMATICAL ECONOMICS - I**

**(Full Marks 80)**

<b>Module – 1</b> <u><b>Optimization Technique</b></u>	
<b>Unit – 1</b>	<b>Unconstrained Optimization:</b> General Structure, derivation of first order and second order conditions, envelope theorem. Applications: Profit maximization in different markets.
<b>Unit – 2</b>	<b>Constrained Optimization:</b> General Structure with two independent variables, derivation of first order and second order conditions, envelope theorem. <b>Applications:</b> Utility maximization and derivation of demand function and some extensions of consumer behaviour including consumption-labour choice and intertemporal choice; cost minimization and derivation of factor demand function; Pareto optimality conditions without and with public goods.
<b>Unit – 3</b>	<b>Duality Approach:</b> A. Duality in the theory of consumer behaviour: Indirect Utility Function and Roy’s identity, expenditure function and its properties, derivation of Slutsky equation. B. Properties of cost function and Shepard’s Lemma, duality between production and cost. C. Properties of profit function and Hotelling’s Lemma, Properties of factor demand function under profit maximization, Slutsky equation for factor demands.
<b>TOTAL LECTURES                    (40)</b>	
<b>References:</b>	
1. Eugene Silberberg and Wing Suen: <b>The Structure of Economics: A Mathematical Analysis (Irwin McGraw Hill), 3<sup>rd</sup> Edition chapters 6, 7, 8,9,10.</b>	
2. Knut Sydsaeter and Peter J. Hammod: <b>Mathematics for Economic Analysis (Pearson Education), Chapter 17, Chapter 18, sections 18.1-18.5.</b>	
3. Alpha C. Chiang and Kevin Wainwright: <b>Fundamental Methods of Mathematical Economics (McGraw Hill International Edition), 4<sup>th</sup> Edition, Chapters 11, 12.</b>	
4. Gravelle and Rees: <b>Microeconomics ((Pearson Education), 2<sup>nd</sup> Edition Chapter 14, section A</b>	

<b>Module – 2</b> <u><b>Game Theory and its Applications</b></u>	
<b>Unit – 1</b>	Two person zero sum game, concept of pure strategy and mixed strategy.
<b>Unit – 2</b>	One shot game, concept of Nash equilibrium and method of dominance. Applications: Cournot model, problem of prisoner’s dilemma and cartel instability, The Commons problem, strategic trade.
<b>Unit – 3</b>	Sequential game and backward induction. Application: Stackelberg equilibrium, time consistent macroeconomic policy.
<b>TOTAL LECTURES                    (20)</b>	
<b>References:</b>	
1. Prajit K. Dutta: <b>Strategies and Games, The MIT Press, Chapters 2, 3, 4, 5, 10.</b>	
2. Bierman and Fernandez: <b>Game Theory with Economic Applications, Pearson Education, Chapters 1, 6 and 8</b>	
3. Taha: <b>Operation research, Pearson Education, Chapter 14, section 14.5</b>	

<b>Module – 3</b> <u><b>Behaviour under Uncertainty</b></u>	
<b>Unit – 1</b>	Specification of preferences, expected utility hypothesis, state preference approach, risk aversion and risk preference, measurement of risk aversion.
<b>Unit – 2</b>	Applications: 1) Demand for insurance: Fair insurance and insurance under asymmetric information; 2) Allocation of wealth to risky asset: portfolio choice and mean variance analysis, taxation of risky income; 3) Managerial incentives, 4) Output decision under price uncertainty.
<b>TOTAL LECTURES                    (12)</b>	
<b>References:</b>	
1. A. K. Dixit: <b>Optimization in Economic Theory 2<sup>nd</sup> Edition, (Oxford University Press) Chapter 9</b>	
2. Silberberg: <b>The Structure of Economics, 2nd Edition McGraw Hill International Edition, Chapter 13</b>	

## Paper 8: Econometrics I

Full Marks 80 (Theory 40 + Practical 40)

Total number of Classes: 65 [40 (Lecture) + 25 (Lab + Tutorial)]

Required Software: EXCEL

### Module I: Preliminaries

**Unit 1:** What is Econometrics?- Economic & Econometric Models- the Aims & Methodology of Econometrics- What Constitutes a test of an Economic Theory?

**Unit 2:** Basic Results in Probability (examples of random phenomena, probability space, properties of probabilities, conditional probability, independence)- Discrete random variables and probability distributions- Binomial, Poisson, (statement of functional forms and discussion of genesis only to understand the parameters intuitively, however, no formal derivation of moments is required) – Continuous Random Variable, Normal Probability Distribution and related distributions ( $\chi^2$ ,  $t$ ,  $F$ )- Mathematical Expectation, Mean and Variance- Joint Probabilities, Covariance and Correlation;

**Unit 3:** Classical Statistical Inference- Random Sampling and Sampling Distributions- Procedures for Estimation of Parameters (Method of Moments, Least Squares Estimation and Maximum Likelihood Estimation)- Properties of Estimators- Interval Estimation- Hypothesis Testing (Type I & Type II Errors)- Relationship Between Confidence Interval Procedures and Tests of Hypotheses (concepts only);

#### References:

Hoel, Port & Stone (1971): Introduction to Probability Theory, Chapter 1 & 3 (for Unit 2)

Ramanathan, Ramu (2002): Introductory Econometrics with Applications (Fifth Edition), Chapter 2

Maddala, G.S. & Lahiri, K (2009): Introduction to Econometrics, Chapter 1, 2

Goon, A.M., Gupta, M.K. and B. Dasgupta (1983): Fundamentals of Statistics, Volume I, Chapters 7, 8, 9

Mood, Graybill & Boes (1974): Introduction to the Theory of Statistics (3<sup>rd</sup> Edition), McGraw-Hill, (for illustrating the concept of maximum likelihood estimation with the example of a binomial distribution)

### Module II: Simple Linear Regression Model

**Unit 1:** Specification of the Relationships- the Method of Moments- Method of Least Squares- Statistical Inference in the Classical Linear Regression Model (CLRM)- Analysis of Variance- Goodness of fit- Prediction- Outliers- Alternative Functional Forms for Regression Equations and Ladder Transformations;

**Unit 2:** Qualitative Causal Influences- Categorical Independent Variables- Construction of Dummy Variables for the Change in Intercept term- Dummy Variable for the Change in Slope coefficients- Dummy Variable for testing Stability of Regression Coefficients;

#### References:

Chatterjee, Samprit & A.S. Hadi (2012): Regression Analysis by Examples (5<sup>th</sup> Edition), Chapter 1, John Wiley; (For introduction of regression technique to students)

Ramanathan, Ramu (2002): Introductory Econometrics with Applications (Fifth Edition), Chapter 3, 7;

Maddala, G.S. & Lahiri, K (2009)/ Maddala (3<sup>rd</sup> edition): Introduction to Econometrics, Chapter 3, 8;

Hamilton (1991): Regression with Graphics: A Second Course in Applied Statistics, introductory chapters;

Mukherjee, C., White, H. & Wyuts, M. (1998): Econometrics and Data Analysis for Developing Countries, Chapter 3, Routledge, NY; (for Ladder Transformation)

Gujrati, D. (2009): Basic Econometrics (for problems);

**Module – 1 Development Policy Making and the Role of the State**

<b>Unit – 1</b>	The nature of and rationale for development planning - the crisis in planning: the problems of implementation and plan failure - decentralization and role of the state.	(02)
<b>Unit – 2</b>	Government failures and the resurgent preference for market over planning- role and limitations of the market in LDCs, Market Failure.	(06)
<b>TOTAL LECTURES</b>		<b>(08)</b>

**References:**

1. Todaro and Smith: Economic Development (Pearson Education): Chapter 16
2. Meier and Rauch: Leading issues in Economic Development (Oxford University Press) Chapter IX.A.
3. Amit Bhaduri and Deepak Nayar: The Intelligent Person's Guide to Liberalization, Penguin Books, Chapter 5.
4. Hyami: Development Economics (Oxford University Press):Chapter 8

**Module – 2 Input-Output Model Analysis and Project Appraisal**

<b>Unit – 1</b>	Input-output analysis: Its uses and general solution to input-output model; forecasting labour requirement, investment requirement and import requirement; backward and forward linkages; the Hirschman compliance.	
<b>Unit – 2</b>	Financial appraisal, economic appraisal and social appraisal; Shadow prices for factors of production; distributional considerations in project appraisal;	
<b>TOTAL LECTURES</b>		<b>(18)</b>

**References:**

1. Thirlwall A.P: Growth and Development (Palgrave McMillan), 7<sup>th</sup> Edition, Chapters 13, 10

**Module – 3 Agricultural Economics: Land and Credit**

<b>Unit – 1</b>	Forms of land tenure, Efficiency of share tenancy: Marshall and Cheung's analysis.	
<b>Unit – 2</b>	Rural credit market: Lender's risk hypothesis, Personalized transaction and Monopolistic market, basic concept of inter-linkage in rural markets.	
<b>TOTAL LECTURES</b>		<b>(15)</b>

**References:**

1. Kaushik Basu: Analytical Development Economics (Oxford University Press), Chapter 12, Section 12. 1, 12.2; Chapter 13, Section 13.1, 13.2, Chapter 14, Sections 14.1, 14.2
2. Debraj Ray: Development Economics, Chapters 11, 12

**Module – 4 Labour and Unemployment**

<b>Unit – 1</b>	Disguised unemployment: Characterization and policy implications (Sen's Model)	
<b>Unit – 2</b>	Economics of child labour: Empirical context, Basu-Van model of multiple equilibria with altruism, policy issues	
<b>Unit – 3</b>	Efficiency wage theory as explanation for wage rigidity and involuntary unemployment: A basic model	
<b>TOTAL LECTURES</b>		<b>(15)</b>

**References:**

1. Amartya Sen: Resources, Value and Development (Oxford University Press)
2. Kaushik Basu: Analytical Development Economics (Oxford University Press), Chapter 10, Section 10.1, 10.2, 10.3
3. Todaro and Smith: Economic Development (Pearson Education), 8<sup>th</sup> Edition, Chapter 9, section on Child Labour.

**Module – 5 Environmental Economics**

**Unit – 1** Environmental accounting.

**Unit – 2** Tragedy of commons and market interventions, Sustainable development, Environmental Kuznet's curve.

**TOTAL LECTURES (10)**

**References:**

1. **Todaro and Smith: Economic Development (Pearson Education), 8<sup>th</sup> Edition, Chapter 11**
2. **Stiglitz and Walsh: Principles, W.W. Norton and Company, 4<sup>th</sup> Edition, Chapter 21**

**Module – 6 Gender and Development**

**Unit – 1** Aspects of gender inequality, concept of missing women and poverty of female-headed household.

**Unit – 2** Gender related development indices.

**TOTAL LECTURES (6)**

**References**

1. **Fukuda-Parr and Shiva Kumar: Readings in Human development (Oxford University Press)**
2. **Human Development Reports, 1995,1999, technical note**  
**Additional reading: Amartya Sen: Many Faces of Gender Inequality, in Frontline Volume 18, issue 22, 2001**

<b>Module – 1 <u>Comparative Advantage and International Equilibrium.</u></b>	
<b>Unit – 1</b>	Comparative advantage: Sources of comparative advantage (production and demand bias); gains from trade and decomposition.
<b>Unit – 2</b>	Offer curve analysis: Construction of Offer curves, international equilibrium and determination of terms of trade, stability of equilibrium: Marshall – Lerner condition.
<b>TOTAL LECTURES (10)</b>	

<b>Module – 2 <u>Ricardian Model and Specific Factor Model of Trade.</u></b>	
<b>Unit – 1</b>	One factor economy: production possibility frontier, relative demand and relative supply and autarkic terms of trade.
<b>Unit – 2</b>	Trade in Ricardian world: determination of international terms of trade, complete specialization and gains from trade. Extensions of Ricardian model.
<b>Unit – 3</b>	Specific Factor Model__Basic model: prices, wages and labour allocation, relative prices and distribution of income. International trade in the specific factor model: resources and relative supply, trade and relative prices, the pattern of trade, income distribution and gains from trade.
<b>TOTAL LECTURES (15)</b>	

<b>Module – 3 <u>Factor Endowment and trade: HO Model</u></b>	
<b>Unit – 1</b>	Definition of factor abundance, factor intensity ranking, one to one correspondence between commodity price ratio and factor price ratio (Stolper- Samuelson theorem), one to one correspondence between endowment ratio and production proportion (Rybscznski theorem).
<b>Unit – 2</b>	Difference in endowment ratio as source of comparative advantage, effects of trade on factor price and income distribution – factor price equalization; factor intensity reversal and factor price equalization.
<b>Unit – 3</b>	Empirical studies– Leontief Paradox.
<b>TOTAL LECTURES (20)</b>	
<b>References:</b>	
1. Paul R. Krugman and Maurice Obstfeld: <b>International Economics (including appendix), Pearson Education, 6<sup>th</sup> Edition Chapters 2-5.</b>	
2. Caves, Frankel and Jones: <b>World Trade and Payments: An Introduction (including appendix), Pearson Education, 9<sup>th</sup> Edition Chapters 2, 3, 5, 6, 7</b>	
3. Peter B Kenen: <b>The International Economy, Prentice Hall, Chapters 2, 3, 4 ,6</b>	
4. Giancarlo Gandolfo: <b>International Trade Theory and Policy (Springer), Chapters 2, 3, 4, 5 and 6: sections: 6.1, 6.2.</b>	

<b>Module – 4 <u>Trade Policy:Partial and General Equilibrium</u></b>	
<b>Unit – 1</b>	Partial equilibrium analysis: Tariff – cost and benefit, effective rate of protection and intermediate goods, quota, tariff – quota equivalence and non-equivalence, export subsidy, voluntary export restraint.
<b>Unit – 2</b>	General Equilibrium Analysis: Distinction between small and large open economy, welfare effects of tariff in a small country, optimum tariff for large open economy, Metzler’s paradox.
<b>TOTAL LECTURES (20)</b>	
<b>References:</b>	
1. Paul R. Krugman and Maurice Obstfeld: <b>International Economics (including appendix), Pearson Education, 6<sup>th</sup> Edition Chapters 8,9 (including relevent appendix).</b>	
2. Caves, Frankel and Jones: <b>World Trade and Payments: An Introduction (including appendix), Pearson Education, 9<sup>th</sup> Edition Chapters 10 (including appendix)</b>	

## THIRD YEAR, FIFTH SEMESTER

**Paper-11**

**MATHEMATICAL ECONOMICS - II**

**(Full Marks 80)**

**Module – 1 Economic Dynamics**

**Unit – 1**     **Techniques of integration:** Definite and indefinite integral.  
Applications: Consumer surplus, Producer surplus, presents value, investment and capital stock, marginal cost and total cost. .

**Unit – 2**     **Difference equations and its applications**

- A. First order non-homogenous linear difference equation: Cobweb Model, market model with inventory, stability in S.K.M and ISLM, partial adjustment model of energy demand.  
B. Second Order non-homogenous linear difference Equation: Samuelson's model of Multiplier-Accelerator interaction, A Cournot model of duopoly.

**Unit – 3**     **Differential Equations and its applications**

- A. First order non-homogenous linear differential equation: Excess demand functions and price adjustment, output adjustment and stability in S.K.M, Solow growth model, Dynamics of national debt, Dynamics of the IS-LM model (Taylor's series approximation to be used to derive time path of relevant endogenous variable, wherever required).  
B. Second order non-homogenous linear differential equation: Price adjustment and time path of price (basic demand-supply framework with (a) inventories and (b) entry and exit); Inflation unemployment trade off.

**TOTAL LECTURES (35)**

**References:**

1. Alpha C. Chiang & Kevin Wainwright: **Fundamental Methods of Mathematical Economics** (McGraw Hill International Edition)
2. Hoy, Livernois, McKenna, Rees and Stengos: **Mathematics for Economics, 2<sup>nd</sup> Edition** Prentice Hall of India, Chapters 18, 20, 21 and 22

**Module –2 Linear Programming**

**Unit – 1**     Linear Programming problem-Formulation and Simplex Method of solution, Duality, Complementary slackness theorem.

**Unit – 2**     Applications: Diet problem, Two person zero sum game as linear programming problem and solution procedure using graphical method and simplex method, Duality interpretation of input-output model.

**TOTAL LECTURES (15)**

**References:**

1. H A Taha: **Operations Research, 8<sup>th</sup> Edition**, Pearson Education, Chapters 2, 3, 4, 13.4
2. Silberberg: **The Structure of Economics, 2nd Edition** McGraw Hill International Edition, Chapter 15
3. Dorfman, Samuelson and Solow: **Linear Programming and Economic Analysis**, Chapter 9

**Module – 3 Static Equilibrium Analysis and Comparative Statics**

**Unit – 1**     Simultaneous equation system and solution procedure using Cramer's Rule.

**Unit – 2**     Applications: 1) Comparative statics in ISLM model (fiscal policy and monetary policy); 2) Comparative statics in AD-AS model under rigid wage (fiscal policy, monetary policy and wage cut) and comparison between IS-LM model and AD-AS model; 3) Rybczynski Theorem and Stolper- Samuelson Theorem, 4) Equilibrium in two markets and price-quantity determination.

**TOTAL LECTURES (20)**

**References:**

1. Hoy, Livernois, McKenna, Rees and Stengos: **Mathematics for Economics, 2<sup>nd</sup> Edition** Prentice Hall of India, Chapter 7
2. Silberberg: **The Structure of Economics, 2nd Edition** McGraw Hill International Edition, Chapter 15

**Total number of Classes: 65 [40 (Lecture) + 25 (Lab + Tutorial)]**  
**Required Software: EXCEL**

**Module I: Multivariate CLRM**

**Unit 1:** A Few Useful Operations in Matrix Algebra (Transpose, Inverse, Rank, Differentiation of Linear and Quadratic Form);

**Unit 2:** k-variable CLRM- model specification- properties of Ordinary Least Squares (OLS) estimators- Simple, Partial and Multiple Correlations- Degrees of Freedom and Adjusted  $R^2$ - Prediction- Analysis of Variance and Tests of Hypotheses- Omission of Relevant Variables and Inclusion of Irrelevant Variables- Tests for Stability;

**References:**

Johnston (1984): Econometric Methods (3<sup>rd</sup> Edition), Chapter on K-variable CLRM and the Appendix on Matrix Algebra;

Maddala/ Maddala-Lahiri: Introduction....., Chapters 4;

Ramanathan (2002): Introductory....., Chapter 4;

**Module II: Relaxing the Assumptions of CLRM**

**Unit 1:** Heteroskedasticity- Detection (Goldfeld-Quandt test, Ramsey test, Glejser test and White test)- Consequences- Possible Ways Out (Weighted Least Squares, log-transformation);

**Unit 2:** Autocorrelation- Autoregressive (AR) and Moving Average (MA) Processes- Detection (Durbin-Watson test)- Estimation in Levels Versus First differences- Estimation Procedure for AR(1) error ( $\rho$ -differencing)- estimation of  $\rho$  (Grid-Search procedure)- Durbin's h-test for models with lagged dependent variables;

**Unit 3:** Multicollinearity- Exact and Near-exact Multicollinearity- Consequences- Detection (Klien's Rule of Thumb)- Coping with Multicollinearity (dropping variable, adding more observations);

**References:**

Maddala/ Maddala-Lahiri: Introduction....., Chapters 5, 6, 7;

Ramanathan (2002): Introductory....., Chapters 5, 8, 9;

Chatterjee, Samprit & A.S. Hadi (2012): Regression Analysis by Examples (5<sup>th</sup> Edition), Chapter 9 & 10 [selected parts] for the handling of Multicollinearity problem;

Gujrati, D. (2009): Basic Econometrics (for problems);



**Module – 1 Trade Aid and Growth**

**Unit – 1** Gains from trade in Solow model, East Asian growth miracle; Learning by trading and endogenous growth; trade and technological progress.

**Unit – 2** Saving constraint, foreign exchange constraint and aid: Dual gap model of aid.

**TOTAL LECTURES (10)**

**References:**

- Hendrik Van Den Berg and Joshua J Lewer: International Trade and Economic Growth (Prentice Hall of India), Chapter 3: Sections 3.5, 3.6; Chapter 4, Section 4.5; Chapter 6.**
- Kaushik Basu: Analytical Development Economics (Oxford University Press), Chapter 5: Section 5.2**

**Module –2 Trade Policy Debate and Economic Integration**

**Unit – 1** Import substitution: Infant industry argument and Prebisch- Singer hypothesis as justification; methods of import substitution and critical appraisal with special reference to rent seeking; case studies.

**Unit – 2** Export oriented industrialization: Basic logic, methods of export promotion, case studies.

**Unit – 3** Multinationals in developing countries, technology transfer and government policies

**TOTAL LECTURES (16)**

**References**

- Todaro and Smith: Economic Development (Pearson Education), Chapter 13.**
- Ray Debraj: Development Economics (Oxford University Press), Chapters 17 and 18.**
- Thirwall A.P: Growth and Development (Palgrave MacMillan), Chapter 16.**
- Soumyen Sikdar: Contemporary Issues in Globalization, OUP, Chapter 4.**

**Module –3 Employment, Wage Inequality and Globalization**

**Unit – 1** Basic facts; inflow of foreign capital and immiserization, distinction between skilled and unskilled labour and wage inequality.

**Unit – 2** General equilibrium structure as an explanatory framework.

**TOTAL LECTURES (15)**

**References**

- Sugata Marjit and Rajat Acharyya: International Trade, Wage Inequality and the Developing Economy, Physica-Verlag, Chapters 2, 4 and 6.**
- Soumyen Sikdar: Contemporary Issues in Globalization, OUP, Chapter 4.**

**Module – 4 International Institutions**

**Unit – 1** IMF and World Bank: structural adjustment and stabilization programme: rationale, country experience with special reference to debt crisis and debt management.

**Unit – 2** WTO and developing countries in the new global economic order.

**Unit – 3** Justification for government policy: Externality, monopoly, and intertemporal resource allocation.

**Unit – 4** Government failures, rent seeking activity, issue of corruption: incentives and policies; informal activity as re- evading behaviour and cost of informality.

**Unit – 5** Decentralization, Participatory Development and role of NGOs, Self Help groups, women agencies and institutions of micro credit. **(28)**

**References**

- Ray Debraj: Development Economics (Oxford University Press), Appendix of Chapter 17.**
  - Soumyen Sikdar: Contemporary Issues in Globalization, OUP, Chapter 7**
  - Todaro and Smith: Economic Development (Pearson Education), Chapter 14**
  - Hendrik Van Den Berg: Economic Growth and Development (McGraw Hill International Edition), Chapter 12**
  - Vandanna Desai and Robert Potter: The Companion to Development Studies, Arnold Publication Chapter 10, sections 10.6, 10.8, 10.11**
  - Amartya Sen: Development as Freedom, OUP, Chapter 8**
  - A V Banerjee et al (ed): Understanding Poverty (OUP), Chapter 26**
- Internet sources:** <http://www.imf.org>, <http://www.worldbank.org>

**Module 1: Public Goods, Mixed Goods, Club Goods and Voting**

**Unit 1:** Equilibrium and Efficiency with Private Goods.

**Unit 2:** Characteristics of public goods, mixed goods and merit goods

**Unit 3:** Optimal provision of public goods: Partial equilibrium and general equilibrium analysis

**Unit 4:** Voting: Median Voter Theorem

**Ref:** 1. Chandana Ghosh and Ambar Nath Ghosh : Economics of the Public Sector, PHI, Chapter 2  
2. J. Hindricks and G.D. Myles, Chapter 5, Section 5.5

Total Lectures: 18

**Module 2: Principles of tax equity and efficiency of taxation**

**Unit 1:** Benefit Principle and Ability to pay principle

**Unit 2:** Excess burden: Partial and general equilibrium analysis

**Ref:** Chandana Ghosh and Ambar Nath Ghosh Economics of the Public Sector, PHI: Chapters 3 & 4

Total Lectures: 10

**Module 3: Tax Incidence and personal income taxation**

**Unit 1:** Tax incidence in competitive market and Monopoly: Partial equilibrium analysis

**Unit 2:** Definition of personal income; effects of income tax on labour supply, saving, risk taking

Total Lectures: 18

**Module 4: Govt. Budget and Public Debt**

**Unit 1:** Taxation and borrowing: Barro-Ricardo equivalence theorem

**Unit 2:** Debt sustainability and Domar thesis on public debt

**Unit 3:** Stabilization and Fiscal Policy

**Ref 1:** Chandana Ghosh and Ambar Nath Ghosh Economics of the Public Sector, PHI, Chapter 9  
**2:** Mankiw: Macroeconomics (Specific chapter to be decided on the basis of current edition)  
**3.** Musgrave and Musgrave

Total Lectures: 16

**Module 5: The Public Sector in India**

**Unit 1:** The constituents of public sector

**Unit 2:** Government Budget: revenue account, capital account, different concepts of deficit, concept of fiscal federalism

**Ref:** 1. Chandana Ghosh and Ambar Nath Ghosh Economics of the Public Sector, PHI, Chapter 1  
2. Hyman, Public Finance, The Dryden Press, Chapter 3

Total Lectures: 10



<b>Module – 1 <u>Development Planning: Major Milestones.</u></b>	
<b>Unit – 1</b>	<b>Industrialization:</b> 2 <sup>nd</sup> five-year plan and industrialization: Nehru-Mahalanobis strategy of planned economic development and regulatory framework of a mixed economy.
<b>Unit – 2</b>	<b>Food Crisis:</b> Food crisis during sixties, green revolution and government intervention in food grain market with special reference to agricultural price, PDS and priority sector lending.
<b>Unit – 3</b>	<b>Poverty alleviation:</b> Public intervention for poverty alleviation: an overall assessment with emphasis on poverty eradication and employment generation during 5 <sup>th</sup> five year plan and introduction of IRDP during 6 <sup>th</sup> five year plan.
<b>Unit – 4</b>	<b>Economic crisis:</b> Industrialization strategy and selective import liberalization under 7 <sup>th</sup> five year plan: external debt crisis, fiscal imbalance, balances of payment problems and inflation.
<b>TOTAL LECTURES (25)</b>	

<b>Module – 2 <u>New Economic Policy , 1991</u></b>	
<b>Unit – 1</b>	Stabilization and structural adjustment programme—rationale and different aspects.
<b>TOTAL LECTURES (8)</b>	

<b>Module – 3 <u>Development Experience under Reforms</u></b>	
<b>Unit – 1</b>	<b>External sector:</b> Balance of payments—trend and composition; currency convertibility and exchange rate movements; exim policy and WTO related issues; portfolio investment and foreign direct investment.
<b>Unit – 2</b>	<b>Financial sector:</b> Monetary trends and developments; Non-performing assets and banking sector reforms with special reference to prudential supervision; non-bank financial intermediaries and developments in security markets.
<b>Unit – 3</b>	<b>Fiscal reforms:</b> Budgetary developments; tax reforms and measures; pension reforms.
<b>Unit – 4</b>	<b>Agriculture and Industry: (A)</b> Agricultural growth; agricultural credit, insurance and marketing; capital formation; agricultural trade liberalization. <b>(B)</b> Industrial growth and fluctuation; public sector enterprises with special emphasis on disinvestments; 11 <sup>th</sup> five year plan, SEZ and environmental issues.
<b>Unit 5</b>	<b>Social sectors and infrastructure: (A)</b> Poverty alleviation and employment generation programmes; women and child development; health and education; labour laws and labour markets. <b>(B)</b> Power; telecommunication; transport.
<b>TOTAL LECTURES (40)</b>	

**References:**

1. Prमित Chaudhuri: **The Indian Economy, Poverty and Development**, Vikas Publishing House.
2. Prमित Chaudhuri: **Readings in Indian Agricultural Development**, George Allen and Unwin Ltd.
3. Bhagwati and Desai: **India Planning for Industrialization**, OUP.
4. Bhagwati and Chakraborty: **Contribution to India Economic Analysis**.
5. Bimal Jalan (Ed): **The Indian Economy**, OUP
6. Bimal Jalan: **India's Economic Crisis – The Way Ahead**, OUP
7. Robert E.B. Lucas and Gustav F. Papanek: **The Indian Economy: Recent Development and Future Prospects**, OUP.
8. Sukhomoy Chakraborty: **Development Planning – The Indian Experience**, OUP
9. M.S.Ahluwalia and I.M.D Little (Ed): **India's Economic Reforms and Development - Essays in Honour of Man Mohan Singh**, OUP
10. Jagdish Bhagwati: **India in Transition – Freeing the Economy**, OUP
11. V.Joshi and I.M.D Little: **India Macroeconomics and Political Economy, 1964-1991**, OUP.
12. V.Joshi and I.M.D Little: **India's Economic Reforms 1991-2001**, OUP
13. I.J.Ahluwalia: **Industrial Growth In India – Stagnation since the Mid-Sixties**, OUP
14. Raja J. Chelliah: **Towards Sustainable Development – Essays in Fiscal and Financial Sector Reforms in India**, OUP
15. C. Rangarajan: **Indian economy – Essays on Money and Finance**, UBS Publishers' Distributors Ltd
16. T.N. Srinivasan: **Eight Lectures on India's Economic Reforms**, OUP
17. Uma Kapila Ed: **Indian Economy since Independence, different volumes**, Academic Foundation.
18. **Economic Survey**, different volumes.
19. **Economic and Political Weekly**, relevant articles.
20. **India Infrastructure Report**, Different Volumes

**Module – 1 Corporate Finance**

**Unit – 1** Structure of corporate governance, financial instruments and financial structure; Financial statement and ratio analysis; time value of money; investment decisions and net present value; capital budgeting-weighted average cost of capital and different methods; corporate restructuring: mergers, acquisitions, amalgamations, divestments-meaning, motives and strategies.

**Unit – 2** Concept of risk and return; portfolio theory, capital asset pricing model, arbitrage pricing theory; efficient market hypothesis-basic concept.

**Unit - 3** Capital market in India: brief history, major reforms in primary and secondary capital market.

**References:**

1. Brealey, Myers, Allen and Mohanty, **Principles of Corporate Finance, 8<sup>th</sup> Edition, Tata Mcgraw-Hill Company Limited, Chapters 2-9, 13,32**
2. Arnold and Kumar: **Corporate Financial Management, 3<sup>rd</sup> Edition, (Pearson Education), Chapters 2,6-8,14,20**
3. Eiteman, Stonehill, Moffett and Pandey: **Multinational Business Finance, 10th Edition (Pearson Education), chapters 18,19.**
4. Tirole, **Theory of Corporate Finance, MIT Press, Chapters 1,2, 3.1, 3.2**
5. Pathak: **Indian Financial System, (Pearson Education), relevant chapters**

**TOTAL PERIODS (40)**

**Module – 2 Derivatives and Markets**

**Unit – 1** Markets: Forward, future, options: types of option-put option and call option and valuation

**Unit – 2** Derivative markets in India: derivative trading and regulatory framework.

**References:**

1. Eiteman, Stonehill, Moffett and Pandey: **Multinational Business Finance, 10th Edition (Pearson Education), Chapter 5.**
2. Brealey, Myers, Allen and Mohanty, **Principles of Corporate Finance, 8<sup>th</sup> edition, Tata Mcgraw-Hill Company Limited, Chapters 20, 21**
3. Arnold and Kumar: **Corporate Financial Management, 3<sup>rd</sup> edition, (Pearson Education), chapters 21**
4. Pathak: **Indian Financial System, (Pearson Education), relevant chapters.**

**TOTAL PERIODS (30)**

**Module – 1 Health Economics: Concepts and Measures**

**Unit – 1** Concept of Health- Public Health and Medical Care-Preventive and Externalities- Curative Health- Health as a Commodity.

**Unit – 2** Measures of Health-Anthropometric Measures and Body-Mass-Index (BMI) - epidemiologic transition theory and Global Burden of Disease (GBD)-different mortality rates (IMR, CMR, MMR etc) - Quality Adjusted Life Years (QALY) and Disability Adjusted Life Years (DALY).

**References:**

1. Palgrave Dictionary of Economics, Macmillan: Health Economics & Medical Care; Public Health
2. World Development Report (1993): Investing in Health, Chapter 1.
3. Meier & Rauch (7th edition): Leading Issues in Economic Development, Chapter V, Sections V.C.1, V.C.2
4. Murray (1996): Epidemiologic and Morbidity Transition in India in Dasgupta, Chen & Krishnan(ed) Health, Poverty and Development in India, OUP.
5. Partha Dasgupta (1995): An Inquiry into Well-Being and Destitution, Chapter 4, Sections 4.3, 4.4, and 4.5.
6. William Jack (1999): Principles of Health Economics for Developing Countries, WBI Development Studies, Chapters 2 ,3.

TOTAL PERIODS (25)

**Module – 2 Health and Medical Care: An Economic Perspective**

**Unit – 1** Demand for medical care- elasticities –empirical estimation – case studies.

**Unit – 2** Medical Care and Production Costs.

**Unit – 3** Cost- Benefit vis-à-vis Cost Effectiveness Analysis.

**Unit – 4** Financing Medical Care-third party payment-the role of government-scope of medical insurance.

**References:**

1. Neun & Santerre (4th edition): Health Economics, Chapters 2, 3, 4,5,6,7

TOTAL PERIODS (25)

**Module – 3 Medical Care in India****References:**

1. Ajay Mahal: The Distribution of Public Health Subsidies in India in Yazbeck & Peters(ed) Health Policy Research in South Asia, World Bank(2003)
2. Ramesh Bhatt (1993): The Private Health Care Sector in India in Berman & Kahn(ed) Paying for India's Health Care, Sage Publications.
3. Rama V. Baru: Private Health Care in India- Social Characteristics and Trends, Sage Publications (selected chapters)
4. Health Insurance in India: Current Scenario- Annex 2 in Social Health Insurance: Regional Overview in South-East Asia.
5. Selected Case studies from relevant websites.

TOTAL PERIODS (20)

Computer Laboratory classes and Tutorials.

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