*Syllabus for*

# 3-Year BSc (Honours & Generic) in Economics

*Under Choice Based Credit System (CBCS)*

Prepared in 2018: Effective from the Academic Session 2018-19


**Department of Economics**

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# Structure of the Syllabus

## B Sc (Honours) in Economics

## [Choice Based Credit System]

# Semester – I

| Course Type | Course Code | Course Title | Credit | Total Class Hours | Marks | | |
|---|---|---|---|---|---|---|---|
| | | | | | Continuous Assessment (CA) | End Semester Examination (ESE) | Course Total |
| **Core-1** | CT1 | Introductory Microeconomics | 6 | 75 | 15 | 60 | 75 |
| **Core-2** | CT2 | Mathematical Methods in Economics-II | 6 | 75 | 15 | 60 | 75 |
| **Generic Elective (Interdisciplinary for other department)** | GE1T | Introductory Microeconomics | 6 | 75 | 15 | 60 | 75 |
| **Ability Enhancement Compulsory Course (AECC)** | AECC-1 | English/Modern Indian Language | 2 | 50 | 10 | 40 | 50 |
| **Semester -I : Total** | | | **20** | | | | **275** |

## Semester – II

| Course Type | Course Code | Course Title | Credit | Total Class Hours | Marks | | |
|---|---|---|---|---|---|---|---|
| | | | | | Continuous Assessment (CA) | End Semester Examination (ESE) | Course Total |
| **Core-3** | CT3 | Introductory Macroeconomics | 6 | **75** | 15 | 60 | 75 |
| **Core-4** | CT4 | Mathematical Methods in Economics - II | 6 | **75** | 15 | 60 | 75 |
| **Generic Elective (Interdisciplinary for other department)** | GE-2 | Introductory Macroeconomics | 6 | **75** | 15 | 60 | 75 |
| **Ability Enhancement Compulsory Course (AECC)** | AECC-2 | ENVS | 4 | | | 80 | 100 |
| **Semester -II: Total** | | | **22** | | | | **325** |

## Semester – III

| Course Type | Course Code | Course Title | Credit | Total Class Hours | Marks | | |
|---|---|---|---|---|---|---|---|
| | | | | | Continuous Assessment (CA) | End Semester Examination (ESE) | Course Total |
| Core-5 | C5T | Intermediate Microeconomics – I | 6 | 75 | 15 | 60 | 75 |
| Core-6 | C6T | Intermediate Macroeconomics – I | 6 | 75 | 15 | 60 | 75 |
| Core-7 | CC-7 | Statistical Methods for Economics | 6 | 75 | 15 | 60 | 75 |
| Skill Enhancement Course (SEC) | SEC-1 | SEC-1: Data Analysis Or SEC-1: Contemporary Economic Issues | 2 | 40 | 10 | 40 | 50 |
| Generic Elective (Interdisciplinary for other department) | GE-2 | Indian Economy-I or Environmental Economics or Money and Banking | 6 | 75 | 15 | 60 | 75 |
| **Semester -II: Total** | | | **26** | | | | **350** |

## Semester – IV

| Course Type | Course Code | Course Title | Credit | Total Class Hours | Marks | | |
|---|---|---|---|---|---|---|---|
| | | | | | Continuous Assessment (CA) | End Semester Examination (ESE) | Course Total |
| **Core-8** | CC-8T | Intermediate Microeconomics – II | 6 | 75 | 15 | 60 | 75 |
| **Core-9** | CC-9T | Intermediate Macroeconomics – II | 6 | 75 | 15 | 60 | 75 |
| **Core-10** | CC-10T | Introductory Econometrics | 6 | 75 | 15 | 60 | 75 |
| **Skill Enhancement Course (SEC)** | SEC-2 | Managerial Economics or Research Methodology | 2 | 30 | 10 | 40 | 50 |
| **Generic Elective (Interdisciplinary for other department)** | GE-2 | Economic History of India or Public Finance | 6 | 75 | 15 | 60 | 75 |
| **Semester -IV: Total** | | | **26** | | | | **350** |

## Semester – V

| Course Type | Course Code | Course Title | Credit | Total Class Hours | Marks | | |
|---|---|---|---|---|---|---|---|
| | | | | | Continuous Assessment (CA) | End Semester Examination (ESE) | Course Total |
| Core-11 | CC-11T | International Economics | 6 | 75 | 15 | 60 | 75 |
| Core-12 | CC-12T | Public Economics | 6 | 75 | 15 | 60 | 75 |
| Department Specific Electives (DSE) | DSE-1 | Economics of Health and Education or Applied Econometrics or Economic History of India (1857-1947) | 6 | 75 | 15 | 60 | 75 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Department Specific Electives (DSE) | DSE-2 | Political Economy – I or Money and Financial Markets or Financial Economics | 6 | 75 | 15 | 60 | 75 |
| **Semester -V: Total** | | | **24** | | | | **300** |

# Semester – VI

| **Course Type** | **Course Code** | **Course Title** | **Credit** | **Total Class Hours** | **Marks** | | |
|---|---|---|---|---|---|---|---|
| | | | | | **Continuous Assessment (CA)** | **End Semester Examination (ESE)** | **Course Total** |
| **Core-11** | CT13 | Indian Economy | 6 | 75 | 15 | 60 | 75 |
| **Core-12** | CT14 | Development Economics | 6 | 75 | 15 | 60 | 75 |
| **Department Specific Electives (DSE)-3** | DSE-3 | Political Economy – II or Environmental Economics or Topics in Microeconomics – I | 6 | 75 | 15 | 60 | 75 |
| **Department Specific Electives (DSE)-4** | DSE-4 | Comparative Economic Development (1850-1950) or Topics in Microeconomics – II or Project Work | 6 | 75 | 15 | 60 | 75 |
| **Semester -V: Total** | | | **24** | | | | **300** |

# Outcome of the Academic Programme on

# 3-Year B.Sc. in Economics

## Program Objective

The purpose of the Economics Honours Program is to provide the students a firm foundation in the discipline of Economics. This program has a structured curricula which consists of core courses that encompass concepts, fundamental theories and general principles and provide a well-resourced learning environment for this dynamic subject. This program aims at enhancing students' ability to ask pertinent questions and to obtain solutions to these by using quantitative and qualitative reasoning, relate social reality with economics and use this knowledge for the material, social and cultural benefit of the individual self as well of the society.

## Program Outcomes

On completion of the 3-year B.Sc. in Economics programme, students will have acquired much knowledge and many skills.

I. To expose the students to the basic concepts of micro economics and macroeconomic theory

II. To equip the students with mathematical, statistical and econometric tools to analyze economic problems

III. To formally analyze the theory of consumer behaviour , producer behaviour, markets, factor pricing , cost structure and revenue through advanced micro economic theory

IV. To make students understand the long run dynamic issues like growth and technical progress

V. To familiarize students to the basic concepts and theories of international trade, determinants, and dynamic effects of trade policies

VI. To make the students understand the functioning of banks , monetary and financial sectors of the economy, role of financial markets and Institutions , budget and balance of payments

VII. To expose the students to various economic problems and issues related to growth, development, sustainable development, environment with special reference to India

## Programme Specific Outcomes of the Academic Programme on 3-Year B.Sc. in Economics

Students shall acquire a basic, comprehensive and in-depth understanding of all branches of the discipline of Economics. The course work will help them in acquiring desirable outcomes in graduate examinations, pursue higher academic degrees, enhance their preparedness for appearing in competitive examinations, get them ready as future teachers and equip them as professionals in accounting, insurance, finance, marketing and management and such others, both in the national as well as in the international arena. Students shall acquire skills needed to conduct research studies relevant and beneficial in the contemporary world. In fact, the way the course work is structured, will certainly go a long way to impart sufficient skills and information which will enhance students' Employ ability, make them environmentally conscious and responsible citizens and help them to become important ccontributors to national wealth and prestige.

### Prospects and Career Options

The academic programme on 3-year B.Sc. in Economics under CBCS is the right option for students who are interested in understanding economics, the motive and understanding behind each economic policy, the functioning of different economic strategies, and various economic principles and allied fields of economics. There are various academic and career options.

1. Pursuing higher studies (post-graduate) in Economics, Applied Economics, and allied subjects (like Foreign Trade, Quantitative Economics, Labour Economics and other fields of Social Science) in different reputed universities all over India and abroad.
2. Pursuing higher studies in Management and Actuarial Science Jobs in schools, colleges and Universities after acquiring additional higher degree qualifications.
3. Job prospects as economist, consultant, analyst in the growing Banking and Insurance Sector.
4. Prospect of being absorbed in Actuarial business is particularly bright for students in the discipline of Economics with Mathematics.

5. Jobs in Indian Economic Services and State Government Services through success in competitive examinations.
6. Jobs and engagement in Rural Development and Public Policy.
7. Students with a flair for writing in English/Bengali may choose careers in Journalism particularly in the field of socio-political issues in print and electronic media.

# Semester –I

## Paper CC-1: Introductory Microeconomics

### Unit 1: Exploring the subject matter of Economics 15 lecture hours

Scope and Method of Economics: Wants, Scarcity, Competing Ends and Choice – Defining Economics, Thinking like an economist: Basic Economics Questions, Microeconomics and Macroeconomics, Normative Economics and Positive Economics

Principles of Microeconomics – principles of individual decision making and principles of economic interactions – Introduce Production possibilities frontier, opportunity cost, efficiency, marginal changes and cost-benefit, trade, market economy, property rights, profits, incentives, information, market failure, externality and market power.

### Unit 2: Demand and Supply: How Markets Work 10 lecture hours

Elementary theory of Demand: Determinants of household demand and market demand, movement along and shift of the demand curve

Elementary theory of Supply: Factors influencing supply, the supply curve, movement along and shift of the supply curve

The Elementary theory of market price: Determination of equilibrium price in a competitive market.

Market Adjustment without Government (with illustrations): The effect of shifts in demand and supply, the excess demand function, existence, uniqueness and stability of equilibrium, Walrasian approach and Marshallian approach.

### Unit 3: Market Sensitivity and Elasticity 12 lecture hours

Importance of Elasticity in Choice-Decisions

Method of Calculation- Arc Elasticity, Point Elasticity-definition

Demand and supply Elasticities-Types of elasticity and factors affecting elasticity, Demand Elasticity and Revenue, Long run and Short run elasticity of Demand and Supply. Income and Cross Price Elasticity

Applications: Case studies – OPEC and Oil Price, Illegal Drugs

**Unit 4: Utilitarian Approach** **28 lecture hours**

**(Focus on intuitive explanation and diagrams. Learning to analyze with outusing calculus must)**

The History of Utility Theory – From Cardinal to Ordinal Approach.

Utility in Cardinal Approach- Utility and choice, Total Utility and Marginal Utility, Utility and choice-maximization, marginal utility, theory of demand.

Ordinal utility- Assumptions on preference ordering, indifference curve, marginal rate of substitution and convexity of IC, budget constraint, consumers' equilibrium-interior and corner, Derivation of Demand Curves from ICs, composite good convention. Application: Cash subsidy versus subsidy in kind.

Price consumption curve, Income consumption curve and Engel curve. Price effect - Income and Substitution effect (Hicks and Slutsky), inferior goods and Giffen goods, Marshallian and compensated demand curves.

**Unit 5: Production and Costs** **10 lecture hours**

General concept of production function; different stages of production functions, the short - run versus long run, Average and Marginal Products, the slope of the product curve, the average product of labour curve, the marginal product of labour curve, the law of diminishing marginal returns, Labour productivity; Production with two variable inputs – diminishing marginal returns, substitution among inputs, Iso- quant; Return to scale: – constant return to scale, increasing return to scale, decreasing return to scale, and describing return to scale.
Different types of production functions- (Cobb–Douglas Production Function, CES Production Function); Homogeneous production function & homothetic production.
Measuring Cost: which costs matter?
Elementary concept of cost function, total cost, average cost, marginal cost, , fixed cost, variable cost, Cost in the short run – the determinants of short run cost function, the shapes of the cost curves, Costfunction in the long run, Optimization problem (Output maximization & cost minimization)

- **Course Outcome:**

The course exposes the students to the basic principles of micro economic theory and illustrates how micro economic concepts can be applied to analyze real life situations.

**ECO-A-CC-1-1-TU**

**Texts**

1. G.Mankiw.2007,Economics:Principles and Applications, India edition by

South Western, Cengage Learning
2. R.G. Lipsey. An Introduction to Positive Economics, ELBS (6thedition)
3. Lipsey, R. and Chrystal, A. 2007 Economics, OUP
4. Pindyck, Rubinfeld and Mehta, Microeconomics, Pearson
5. G.S.Maddala and E. Miller, 1989, Microeconomics, Prentice Hall, McGraw Hill International Editions

**References**

1. Karl e Case and Ray C Fair, Principles of Economics, Pearson Education, 8thEdition, 2007
2. P Samuelson and W. Nordhaus, Economics, McGraw hill International Edition (14th edition or later edition)
3. J.E.Stiglitz and C.E. Walsh, Principles of Economics, WW Norton and Company, NY, (3rd edition or later edition)
4. Hal. R Varian , Intermediate Microeconomics, A modern Approach, WW Norton and Company, 8th edition, 2010(T)
5. Gravelle, H. and Rees, R. , Microeconomics, Prentice Hall
6. Ryan, W.J.L. and Pearce : Price Theory and Applications , Macmillan Education, UK
7. Ferguson, C.E. and Gould, J.P.: Microeconomic Theory, Aitbs Publishers and Distributors, New Delhi.
8. Satya Chakrabarty, Microeconomics, Allied Publishers

**Paper : C2T: Mathematical Methods in Economics-I**

**Unit 1: Preliminaries** **9 lecture hours**

Logic and proof techniques; sets and set operations; relations; functions and their properties; number systems. Convex sets; geometric properties of functions: convex functions, their characterizations, properties and applications; further geometric properties of functions: quasi-convex functions, their characterizations, properties and applications; limit and continuity.

**Unit 2: Functions of one real variable** **18 lecture hours**

Continuous functions of different types and their graphs- quadratic, polynomial, power, exponential, and logarithmic; Derivatives of first and second order and their properties; convex, concave and linear function. Application in economics- concept of marginal.

**Unit 3: Single variable optimization** **18 lecture hours**

Local and global optima; Geometric characterizations; characterizations using calculus; Applications in Economics- profit maximization and cost minimization.

**Unit 4: Integration of functions** **10 lecture hours**

Integration of different types of functions; Methods of Substitution and by parts; Applications in economics- obtaining total from the marginal.

**Unit 5: Difference Equations** **10 lecture hours**

Finite difference; Equations of first and $2^{nd}$ orders and their solutions; Application in Economics- Cobweb model.

- **Course Outcome:**

The main outcome to explain how mathematical techniques can be applied to economic theory

**Reference Books**


1. K. Sydsaeter and P. Hammond, Mathematics for Economic Analysis, Pearson Educational Asia: Delhi, 2002.
2. A. Mukherji and S. Guha: Mathematical Methods and Economic Theory, Oxford University Press, 2011
3. Apostol T.M. Calculus, Volume 1, One-variable calculus, with an introduction to linear algebra, (1967) Wiley, ISBN 0-536-00005-0, ISBN 978-0-471-00005-1
4. K. G. Binmore, Mathematical analysis, Cambridge University Press, 1991.
5. R.V. Hogg and A.T. Craig , An Introduction to Mathematical Statistics, Third Edition, Amerind, New York, London
6. Kenny and Keeping, Mathematics of Statistics, Van Nostrand.
7. Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, McGraw Hill Education, Fourth Edition, 2013
8. Gun, A.M., Gupta, M. K., & Dasgupta, B. *Fundamental of Statistics*, Vol.1. World Press Private.

# Generic Elective (GE)

## [Interdisciplinary for other department]

## Paper: GE1T: Introductory Microeconomics

**Unit 1: Exploring the subject matter of Economics 9 lecture hours**

Why study economics? Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output; science of economics; the basic competitive model; prices, property rights and profits; incentives and information; rationing; opportunity sets; economic systems; reading and working with graphs.

**Unit 2: Demand and Supply: How Markets Work 18 lecture hours**

Elementary theory of Demand: Determinants of household demand and market demand, movement along and shift of the demand curve

Elementary theory of Supply: Factors influencing supply, the supply curve, movement along and shift of the supply curve

The Elementary theory of market price: Determination of equilibrium price in a competitive market.

**Unit 3: Market Sensitivity and Elasticity 10 lecture hours**

Importance of Elasticity in Choice-Decisions

Method of Calculation- Arc Elasticity, Point Elasticity-definition

Demand and supply Elasticities-Types of elasticity and factors affecting elasticity, Demand Elasticity and Revenue, Long run and Short run elasticity of Demand and Supply.

Income and Cross Price Elasticity

**Unit 4: The Households 18 lecture hours**

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer‘s optimum choice; income and substitution effects.

**Unit 5: The Firm and Perfect Market Structure 10 lecture hours**

Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output in the long run.

**Unit 6: Imperfect Market Structure 10 lecture hours**

Monopoly Market Structure- short run costs and output decisions; costs and output in the long run.

- **Course Outcome:**

Course exposes the students to the basic principles of micro economic theory illustrates how micro economic concepts can be applied to analyze real life situation.

**Reference Books**


1. Karl E. Case and Ray C. Fair, Principles of Economics, Pearson Education Inc., 8th Edition, 2007.
2. N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
3. Joseph E. Stiglitz and Carl E. Walsh, Economics, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007.

# Semester -II

## Paper CC-3: Introductory Macroeconomics

**Unit 1: National Income Accounting 20 lecture hours**

Macroeconomic data- Basic concepts of National Income Accounting, The circular flow, Concepts of GNP, GDP, NNP, and NDP at market price and at factor cost. The measurement of National Income-Value Added Method and Expenditure Method. The problem of double counting. The role of Government, Concepts of Corporate Income, Corporate Savings, Personal Income, Personal Disposable Income and Personal Savings. Saving-Investment gap and its relation with budget deficit and trade surplus. National Income accounting and cost of living. Basic idea of India‘s national income.

**Unit 2: Income Determination in the Short Run (Part-I): The Simple Keynesian Model in a Closed Economy 18 lecture hours**

The Simple Keynesian Model (SKM) in a Closed Economy without Government- the Keynesian Consumption Function; the Keynesian Saving Function; income determination in SKM; stability of equilibrium; the concept of effective demand- the concept of demand-determined output ; the Simple Keynesian Multiplier; the paradox of thrift; the SKM in a Closed Economy with Government; government expenditure and tax; the government expenditure multiplier and the tax rate multiplier; the balanced budget multiplier; the budget surplus; effects of tax changes and government purchases on budget surplus; the full employment budget surplus.

**Unit 3**: **The Classical system 18 lecture hours**

Basic ideas of Classical Macroeconomics; Say‘s Law and Quantity Theory of Money, Loanable fund theory; the Classical Theory of Income and Employment determination; full Employment and wage-price flexibility; Classical Dichotomy and Neutrality of Money.

**Unit 4: Macroeconomic Foundations-I 19 lecture hours**

Investment function: Concepts of Marginal productivity of capital, marginal efficiency of capital (MEC) and marginal efficiency of investment (MEI), Acceleration principle. Multiplier –accelerator interaction.

- **Course Outcome:**

The course introduces the students to the basic concepts of macroeconomics.

**Tutorial Contact**

**Textbooks:**


1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition,2010.
2. N. Gregory Mankiw. Principles of Macroeconomics, Indian Imprint of South Western by Cengage India, 6th edition,2015.
3. N. Gregory Mankiw. Macroeconomics, Worth Publishers,2010.
4. GhoshChandana and GhoshAmbar, Macroeconomics, PHI Learning Pvt Ltd,2014.

**References**

1. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
2. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc.,7th edition, 2011.

3. Venieris, Y.P. and Sebold F.D., Macroeconomics: Models and Policy, John Wiley and Sons, 1977.

4. Ackley Gardner (old), Macroeconomic Theory, Macmillan,1961

5. Ackley Gardner(new), Macroeconomics : Theory and Policy :Macmillan,1978

6. Ghosh Chandana and Ghosh Ambar, Indian Economy: A Macro-theoretic Analysis, PHI Learning Pvt Ltd, 2016.

7. J.R.Hicks. The Social Framework: An Introduction to Economics, Clarendon Press, 3rd edition, 1960.

8. Sikdar Soumyen, Principles of Macroeconomics, Oxford University Press.

Economic Survey, Government of India, various issues.

## Paper C4 T: Mathematical Methods in Economics-II

**Unit 1: Matrix Algebra** **19 lecture hours**

Matrix: its elementary operations; different types of matrix; Rank of a matrix; Determinants and inverse of a square matrix; solution of system of linear equations; Eigen values and Eigen vectors. System of nonlinear equations- Jacobian determinant and existence of solution. Applications of Matrix Algebra in input-output analysis-the Leontief Static Open Model(LSOM) - the Hawkins-Simon conditions.

**Unit 2: Function of several variables** **18 lecture hours**

Continuous and differentiable functions: partial derivatives and Hessian matrix. Homogeneous and homothetic functions. Euler's theorem, implicit function theorem and its application to comparative statics problems. Economic applications- theories of consumer behaviour and theory of production.

**Unit 3: Multi-variable optimization** **20 lecture hours**

Optimization of nonlinear functions: Convex, concave, and quasi-concave functions; Unconstrained optimization; Constrained optimization with equality constraints-Lagrangian multiplier method; role of Hessian determinant; Inequality constraints and Kuhn-Tucker Conditions; Value function and Envelope theorem; Economic applications – consumer behaviour and theory of production.

Optimization of linear function: Linear programming; concept of slack and surplus variables (graphical solution only) concept of convex set, The Duality Theorem Economic Applications of Linear Programming, Simplex method.

**Unit 4: Differential Equations** **18 lecture hours**

Solution of Differential equations of first order and second order; Economic application- price dynamics in a single market, multimarket supply demand model with two independent markets. Qualitative graphic solution to 2x2 linear simultaneous differential equation system- phase diagram, fixed point and stability.

- **Course Outcome:**

The course transmits the body of basic mathematic that enables the study of economic theory specifically, micro economic theory, macro-economic theory , statistics and econometrics.

**Reference Books**


1. K. Sydsaeter and P. Hammond, Mathematics for Economic Analysis, Pearson Educational Asia: Delhi, 2002.
2. Lawrence Blume and Carl Simon. Mathematics for Economists, W. W. Norton andCompany, 1994.
3. Alpha Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, Fourth Edition, McGraw-Hill, 2005.

## Generic Elective (GE)

## [Interdisciplinary for other department]

## Paper: GE2T: Introductory Macroeconomics

**Unit 1: Introduction to Macroeconomics and National Income Accounting: 13 lecture hours**
Basic issues studied in macroeconomics, concepts of National Income Accounting, The circular flow, Concepts of GNP, GDP, NNP, and NDP at market price and at factor cost. The measurement of National Income-Value Added Method and Expenditure Method.The problem of double counting. Concepts of Corporate Income, Corporate Savings, Personal Income, Personal Disposable Income and Personal Savings. Basic idea of India‘s national income

**Unit 2: Money 14 lecture hours**
Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy.

**Unit 3: Inflation 10 lecture hours**
Inflation and its social costs; hyperinflation.

**Unit 4: The Closed Economy in the Short Run 28 lecture hours**
Classical and Keynesian systems; simple Keynesian model of income determination; IS-LM model; fiscal and monetary multipliers.

- **Course Outcome:**

The course introduces the students to the basic concepts of macro economics

**Reference Books**


1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
4. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
6. Errol D‘Souza, Macroeconomics, Pearson Education, 2009.
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, International Economics, Pearson Education Asia, 9th edition, 2012.

# Semester – III

## Paper C5T: Intermediate Microeconomics – I

**Unit 1: Consumer Theory** **20 lecture hours**

Cardinal utility; Preference: ordering and properties of ordinal utility; existence of utility functions, different utility functions and their properties, compensating and equivalent variation, Slutsky equation; consumption-leisure choice and labour supply; choice under uncertainty (expected utility and risk aversion), inter- temporal choice and savings decision; revealed preference approach.

**Unit 2: Production and Costs** **20 lecture hours**

Production with two outputs- economies of scope: product transformation curves, economics and diseconomies of scope, the degree of economics of scope, iso-cost line, ridge line, expansion path, Different concept of cost- Economic cost versus accounting cost, opportunity cost, sunk cost, fixed cost and variable costs, fixed versus sunk cost. Long- run versus short run cost curve- the inflexibility of short-run production, long- run average cost, economics and dis-economics of scale, the relationship between short run and long run cost.

**Unit 3: Competitive Equilibrium** **20 lecture hours**

Perfectly competitive markets, profit maximization, marginal revenue, marginal cost and profit maximization, choosing output in the short run, the competitive firm's short run supply curve, the short run market supply curve, choosing output in the long run, the industry's long run supply curve, Price adjustment theory- cob-web model and spiral model.

**Unit 4: Input market in perfect competition** **15 lecture hours**

Derived demand for input, marginal product and marginal revenue product, input demand for competitive firm and competitive industry, returns to scale and product exhaustion.

- **Course Outcome:**

The course provides sound training in micro economic theory to formally analyze the behavior of individual agent

**Suggested Readings:**


**1.** Hal R. Varian, Intermediate Microeconomics, a Modern Approach, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used for problems.

**2.** C. Snyder and W. Nicholson, Fundamentals of Microeconomics, Cengage Learning (India), 2010.

**3.** B. Douglas Bernheim and Michael D. Whinston, Microeconomics, Tata McGraw-Hill (India), 2009.

**4.** Hugh Gravelle and Ray Rees. Microeconomics, Prentice Hall (UK); 3rd edition, 2004.

**5.** Anindya Sen , Microeconomics: Theory and Applications, Oxford University Press

Pindyck, Rubinfeld and Mehta, Microeconomics, Pearson


## Paper C6T: Intermediate Macroeconomics – I

**Unit 1: Income Determination in the short-run** **20 lecture hours**

Simple Keynesian System: Multipliers; equilibrium in both closed and open economy and stability; autonomous expenditure, balanced budget, and net exports; paradox of thrift.

IS-LM Model - equilibrium, stability and comparative statics; effects of fiscal and monetary policies, real balance effects; IS-LM in the open economy under fixed and flexible exchange rate with perfect and imperfect capital mobility (Mundell-Fleming model).

**Unit 2: Aggregate Demand and Aggregate Supply** **17 lecture hours**

Derivation of aggregate demand assuming price flexibility; Derivation of aggregate supply curves both in the presence and absence of wage rigidity; equilibrium, stability, and comparative statics-effects of monetary and fiscal policies; Unemployment and its causes-possible solutions, including real balance effect and wage cut policy.

**Unit 3: Money Supply, Monetary Policy and Government Budgetary Operations** **17 lecture hours**

Measures of money supply with special reference to India ($M_1$, $M_2$, $M_3$ and$M_4$), Balance sheet view of money supplied by the banking sector as a whole High powered money–definition, Balance sheet of Reserve Bank of India and High powered money, Balance sheet of Commercial banks and basic ideas of money multiplier theory. Deposit multiplier, currency multiplier, reserve multiplier, credit multiplier and money multiplier in the context of the theory of money supply Interest sensitivity of money supply and the slope of the LM curve. Monetary policy – Open Market Operations, Statutory Liquidity Ratio, Bank rate, variable reserve ratio, repo rate. Government Budget Deficit and Deficit Financing-Indian illustration. Deficit financing and monetary policy.

**Unit 4: Inflation, Unemployment and Expectations 11 lecture hours**

The concept of Inflationary Gap. Demand pull vs. Cost push inflation, Mark-up inflation, The concept of stagflation, Central Bank's role in controlling inflation: Monetary policy.Inflation and unemployment trade-off.Deriving the Phillips Curve from Aggregate Supply Curve.Short run and long- run Phillips curve – role of adaptive expectations and rational expectations.

- **Course Outcome:**

To introduce the students the formal modeling of macroeconomics in terms of analytical tools

**Textbooks:**


Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition,2010.

N. Gregory Mankiw. Macroeconomics, Worth Publishers, 2010


**References**


1. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition,2005.
2. Ackley Gardner (old), Macroeconomic Theory, Macmillan,1961
3. Ackley Gardner(new), Macroeconomics : Theory and Policy :Macmillan,1978
4. GhoshChandana and GhoshAmbar, Macroeconomics, PHI Learning Pvt. Ltd,2014
5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
6. Venieris, Y.P. and Sebold F.D. , Macroeconomics: Models and Policy, John Wiley and Sons,1977
7. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 10th edition,2016.
8. William Branson. Macroeconomic Theory and Policy, Indian reprint, East West Press, 3rd edition, 2014.
9. Levacic Rosalind and Rebmann Alexander, Macroeconomics: An Introduction to Keynesian and Neo-Keynesian Controversies, Palgrave Macmillan,1982.
10. SikdarSoumyen, Principles of Macroeconomics, Oxford UniversityPress
11. Blaug Mark , Economic Theory in Retrospect, 5th Edition, Cambridge UniversityPress, 1997
12. Mueller, M. (edited), Readings in Macroeconomics, London: Holt, Rinehart and Winston, 1973.

## Paper: CC-7: Statistical Methods for Economics

**Unit 1: Introduction and Overview** **6 lecture hours**

Subject-matter - the distinction between population and sample Representation of data-graphical (line diagram, bar diagram, pie chart) and tabular method Frequency Distribution

**Unit 2: Descriptive Statistics** **13 lecture hours**

Measures of central tendency (arithmetic mean, geometric mean, harmonic mean, median and mode, and their properties, Quartiles, Deciles and Percentiles), Dispersion(range, quartile deviation, mean deviation, standard deviation, coefficient of variation, coefficient of mean deviation, coefficient of quartile deviation, Lorenz curve and Gini coefficient), Moments, Skewness and Kurtosis (definition, computation), Correlation and Regression (definition, computation, properties)

**Unit 3: Elementary Probability Theory** **10 lecture hours**

Sample spaces and events (concepts and definitions using set theory), Axiomatic definition of probability and properties, theorem of total probability, Conditional probability, theorem of compound probability, Bayes' theorem and its applications.

**Unit 4: Probability Distributions** **18 lecture hours**

Random variable (discrete and continuous), Probability distributions (pmf, pdf Distribution functions), Expected values of random variables (mean, variance, raw moment, central moment, moment generating functions), Properties of commonly used discrete and continuous distributions: Binomial - (derivation of pmf, mean, variance, moments, moment generating functions, problems)

Poisson - (derivation of pmf, mean, variance, moments, moment generating functions, problems)

Normal - (derivation of pdf, mean, variance, moments, moment generating functions, problems)

Joint distribution functions of random variables (discrete and continuous) -joint pdf (pmf), marginal pdf (pmf)., conditional pdf (pmf)

**Unit 5: Sampling Theory** **14 lecture hours**

Principal steps in a sample survey (concepts of population, sample, parameter, and statistics)

Methods of sampling- SRSWR, SRSWOR (use of random sampling numbers), Stratified sampling (basic concepts only), Multi-staged sampling (basic concepts only), Sampling distribution of sample mean and sample proportion, Mean and standard error both in SRSWR

and SRSWOR, Standard normal, chi-square, Student's t and F distributions – definitions, important Properties(mean and variance)

**Unit 6: Statistical Inference** **14 lecture hours**

Point estimation-Properties of a good estimator; Basic principles of Ordinary Least square, Maximum Likelihood Method of Moments; *Interval* estimation. Testing of hypothesis (basic concepts of null hypothesis, alternative hypothesis, type I and Type II errors, power of a test, p-value).

- **Course Outcome:**

Introduce the students to the notion of sampling techniques, probability, probability distribution and statistical inference.

**ECO-A-CC-3-7-TU**

**Tutorial contact hours: 10 [for revision, doubt clearing, solving problems]**

**Text books**

Goon, A. M, Gupta, M. K, and Dasgupta, B. Fundamentals of Statistics (Volume One, Volume two), The World Press Private Ltd

William G. Cochran, Sampling Techniques, John Wiley, 2007

**Reference books**

John E. Freund, Mathematical Statistics, Prentice Hall, 1992.

Mood, A.M., F. A. Graybill and D.C. Boes, Introduction to the theory of statistics, McGraw Hill, 1974.

## Paper: Skill Enhancement Course I: Data Analysis [DA]

**Unit 1: Collection and representation of data** **20 lecture hours**

Collection of data from households (some methodological issues), Census, Sample survey, Representation of data, the basics of data management in any two statistical software: Stata / Eviews / SPSS / MS Excel

**Unit 2: Analysis of Indian data18 lecture hours** **20 lecture hours**

Economic Survey, National Sample Survey Office (NSSO) – Household Consumer Expenditure Survey rounds, Census of India – Population Census 2011, Reserve Bank of India (RBI) – Handbook of Statistics on Indian Economy (Selected parts)

- **Course Outcome:**

On successful completion of this course, students will be able to apply correctly a variety of statistical techniques, both descriptive and inferential, Interpret, in plain language, the application and outcomes of statistical techniques, Interpret computer output and use it to solve problems.

**Suggested Readings:**

1. Goon, A. M, Gupta, M. K, and Dasgupta, B. Fundamentals of Statistics (Volume One), The World Press Private Ltd
2. GOI, Note on Sample Design and Estimation Procedure of NSS 68th Round, National Sample Survey Office, Ministry of Statistics and Programme Implementation.
3. GOI, SRS Statistical Report 2016, Office of the Registrar General & Census Commissioner, India

**Suggested Websites**

www.mospi.nic.inwww

.censusindia.gov.inww

w.rbi.org.in

## Paper: Skill Enhancement Course I: Rural Development [RD]

**Unit 1: Aspects of Rural Development** **6 lecture hours**

Concept of Rural Development, Rural Development vs. Agricultural Development, Role of NGOs in Rural Development, Rural Non-Farm Sector and Rural Development

**Unit 2: Panchayats and Rural Development** **5 lecture hours**

Decentralized Planning and Participatory Development, Role of Panchayats in Decentralized Rural Development, Participatory Rural Appraisal, Panchayats and Rural Development in West Bengal

**Unit 3: Rural Credit and Self Help Groups (SHGs)** **11 lecture hours**

Role National Bank for Agriculture and Rural Development (NABARD) for promoting Rural Development, Constraints of micro-enterprises in rural areas, Credit needs for rural non-farm sector. The concept of Microcredit, Micro credit and the role of Grameen Bank, Need for SHG for formation and features of SHG, SHGs in India

**Unit 4: Critical Evaluation of Selected Government Programmes and Rural Development** **8 lecture hours**

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Rural Development, Child labour and school drop-out in rural areas. Mid-day Meal and Rural Development,National Rural Health Mission (NRHM) and Rural Development, Pradhan Mantri Gram Sadak Yojana (PMGSY) and Rural Development.

- **Course Outcome:**

To provide a deeper understanding of rural development and issues therein.

**References**


I. Katar Singh , Rural Development : Principles, Policies and Management, Sage Publications, NewDelhi
II. K.G. Karmakar, Rural Credit and Self-Help Groups, Sage Publications, New Delhi
III. S. Sau, Rural Industrialization –Development Trajectory in India, Farma K.L.M., Kolkata

IV. Misra D. and Puri K. Indian Economy, Himalaya Publishing House

V. Datt and Sundharam (Revised by G. Datt and A. Mahajan) , Indian Economy, 70th edition.

## Generic Elective (GE)

## [Interdisciplinary for other department]

## Paper: GE3: Indian Economy-I

**Unit 1: Economic Development since Independence** 20 **lecture hours**
Major features of the economy at independence; growth and development under different policy regimes-goals, constraints, institutions and policy framework; an assessment of performance-sustainability and regional contrasts; structural change, savings and investment.

**Unit 2: Population and Human Development** 15 **lecture hours**
Demographic trends and issues; education; health and malnutrition.

**Unit 3: Growth and Distribution** 15 **lecture hours**
Trends and policies in poverty; inequality and unemployment.

**Unit 4: International Comparisons** 15 **lecture hours**

- **Course Outcome:**

The course highlights the achievements and issues of the economy

**Readings:**

1. Jean Dreze and Amartya Sen, 2013.*An Uncertain Glory: India and its Contradictions*, Princeton University Press.
2. PulapreBalakrishnan, 2007, The Recovery of India: Economic Growth in the Nehru Era, *Economic and Political Weekly*, November.
3. Rakesh Mohan, 2008, ―Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, *Economic and Political Weekly*, May.
4. S.L. Shetty, 2007, ―India‘s Savings Performance since the Advent of Planning, in K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India's Development.*
5. Himanshu, 2010, ―Towards New Poverty Lines for India, *Economic and Political Weekly*, January.
6. Jean Dreze and Angus Deaton, 2009, ―Food and Nutrition in India: Facts and Intepretations, *Economic and Political Weekly*, February.

7. Himanshu. 2011, ―Employment Trends in India: A Re-examination, *Economic and Political Weekly*, September.
8. Rama Baru et al, 2010, ―Inequities in Access to Health Services in India: Caste, Class and Region, *Economic and Political Weekly*, September.
9. Geeta G. Kingdon, 2007, ―The Progress of School Education in India, *Oxford Review of Economic Policy*.
J.B.G. Tilak, 2007, ―Post Elementary Education, Poverty and Development in India, *International Journal of Educational Development.*
11. T. Dyson, 2008, ―India‘s Demographic Transition and its Consequences for Development in Uma Kapila, editor, *Indian Economy Since Independence*, 19th edition, Academic Foundation.
12. KaushikBasu, 2009, ―China and India: Idiosyncratic Paths to High Growth, *Economic and Political Weekly*, September.

13. K. James, 2008, ―Glorifying Malthus: Current Debate on Demographic Dividend in India, *Economic and Political Weekly*, June.
14. ReetikaKhera, 2011, ―India‘s Public Distribution System: Utilisation and Impact *Journal of Development Studies*.
15. Aniruddha Krishna and DevendraBajpai, 2011, ―Lineal Spread and Radial Dissipation: Experiencing Growth in Rural India, 1992-2005, *Economic and Political Weekly*, September.
16. KaushikBasu and A. Maertens, eds, 2013, *Oxford Companion to Economics*, Oxford University Press.

**Or**

## Paper: Generic Elective in Economics III(c): Environmental Economics

**Unit 1: Introduction** 17 **lecture hours**
Key environmental issues and problems, economic way of thinking about these problems, Basic concepts from economics; Pareto optimality and market failure in the presence of Externalities; property rights and other approaches.

**Unit 2: The Design and Implementation of Environmental Policy** 18 **lecture hours**
Overview, Pigouvian taxes and effluent fees, tradable permits, implementation of environmental policies in India and international experience; trans boundary environmental problems; economics of climate change.

**Unit 3: Environmental Valuation Methods and Applications** 18 **lecture hours**
Valuation of non-market goods and services--theory and practice; measurement methods; cost-benefit analysis of environmental policies and regulations.

**Unit 4: Sustainable Development** 12 **lecture hours**
Concepts; measurement; perspectives from Indian experience

- **Course Outcome:**

On the successful completion of this course, the students will be able to

I. Discuss the environmental issues in relation to the theory of externalities, public goods, and welfare.

II. Illustrate and examine economic principles concerning the choice of instruments for controlling pollution and the relative strength and weaknesses of environmental policies based on command-and-control vis-à-vis market-based instruments.

III. Discuss various approaches and methods developed for valuing environmental goods and services.

IV. Examine issues in the contemporary environmental discourse from an economists' point of view.

**Suggested Readings:**

**1.** Roger Perman, Yue Ma, Michael Common, David Maddison and James McGilvray, "Natural Resource and Environmental Economics", Pearson Education/Addison Wesley, 4th edition, 2011.

**2.** Charles Kolstad, "Intermediate Environmental Economics", Oxford University Press, 2nd edition, 2010.

**3.** Robert N. Stavins (ed.), "Economics of the Environment: Selected Readings", W.W. Norton, 6th edition, 2012.

**4.** Robert Solow, "An Almost Practical Step toward Sustainability," Resources for the Future 40th anniversary lecture, 1992.

**5.** Kenneth Arrow et al., "Are We Consuming Too Much?" Journal of Economic Perspectives, 18(3): 147-172, 2004.

**6.** IPCC (Intergovernmental Panel on Climate Change), Fifth Assessment Report (forthcoming 2014).

## Or

## Paper: GE3T: Money and Banking

**Unit 1: Money and Banking** **20 lecture hours**

Concept, functions, measurement; quantity theory of money supply and high power money, four concepts of money supply, theory of money supply, derivation of money multiplier, and theories of money supply determination.

**Unit 2: Financial Institutions, Markets, Instruments and Financial Innovations**

**15 lecture hours**

1. Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises.
2. Money and capital markets: organization, structure and reforms in India; role of financial derivatives and other innovations.

**Unit 3: Interest Rates** **15 lecture hours**

Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.

**Unit 4: Banking System** **15 lecture hours**

Meaning and function of commercial bank, purposes or uses of credit, origin and evaluation of commercial banking, role of commercial bank in economic development, credit creation ,limitation of credit.

**Unit 5: Central Banking and Monetary Policy** **10 lecture hours**

function of central bank, methods of credit control, bank rate policy, open market policy,selective credit control, moral suasion, objectives of monetary policy, monetary management in an open economy; current monetary policy of India.

- **Course Outcome:**

To expose students to the theory and functioning of the monetary and financial sectors of the economy

**Suggested Readings:**


**1.** F. S. Mishkin and S. G. Eakins, Financial Markets and Institutions, Pearson Education, 6th edition, 2009.
**2.** F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, Foundations of Financial Markets and Institutions, Pearson Education, 3rd edition, 2009.
**3.** M. R. Baye and D. W. Jansen, Money, Banking and Financial Markets, AITBS, 1996.
**4.** Rakesh Mohan, Growth with Financial Stability- Central Banking in an Emerging Market, Oxford University Press, 2011.
**5.** L. M. Bhole and J. Mahukud, Financial Institutions and Markets, Tata McGraw Hill, 5th edition, 2011.
**6.** M. Y. Khan, Indian Financial System, Tata McGraw Hill, 7th edition, 2011.
**7.** N. Jadhav, Monetary Policy, Financial Stability and Central Banking in India,
**8.** Macmillan, 2006.
**9.** R.B.I. – Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998.
**10.** R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest).

# Semester –IV

## Paper CC-8: Intermediate Microeconomics – II

**Unit 1: Imperfect Market Structure** **40 lecture hours**

Monopoly and barriers to entry- output determination and price rule, measure and sources of monopoly power, social costs of monopoly power-deadweight lossPricing with market power-first, second and third degree price discrimination, multi-plant monopoly.

Monopolistic competition- short run and long run equilibrium, excess capacity

Oligopoly- Oligopoly and Game theorey, Cournot, Bertrand and Stackelberg Model- use of iso-profit curves and simple game theoretic interpretation. Sweezy's kinked demand curve model and non-collusive equilibrium. Competition versus collusion- the Prisoners' Dilemma. Collusive Oligopoly –Cartels and Price Leadership.

**Unit 2: Input market under Imperfect Competition** **5 lecture hours**

Monopsony, bilateral monopoly in labour market

**Unit 3: General Equilibrium, Efficiency and Welfare** **30 lecture hours**

General Equilibrium and Economic Efficiency- Exchange, production and welfare, Pareto Optimality,

Edge- worth box and contract curve, Pareto efficiency and perfect competition Reasons for Market failure, Pareto efficiency and market failure (externalities and public goods), property right and Coase Theorem Markets with asymmetric information-adverse selection, moral hazards, agency problems (concepts only).

- **Course Outcome:**

The course gives emphasis to conceptual clarity coupled with the use of mathematical tools and reasoning

**Text**

Pindyck, Rubinfeld and Mehta, Microeconomics, Pearson

**References**


1. Hal. R Varian , Microeconomic Analysis, WW Norton and Company, 3rd edition,2013
2. J Tirole, Theory of Industrial Organisation, MIT Press,1988
3. K Binmore, Fun and Games: A text on Game Theory,OUP,1991
4. AnindyaSen, Microeconomics, OUP
5. C. Snyder and W. Nicholson, Fundamentals of Microeconomics, Cengage Learning,2010
6. Satya Chakrabarty, Microeconomics, Allied Publishers
7. Ferguson, C. E. and Gould, J.P., Microeconomic Theory, Aitbs Publishers and Distributors, New Delhi.
8. Cohen,K.J.andCyert,R.M.,—TheoryoftheFirms:ResourceAllocationinaMarketE

conomy‖, Prentice HallIndia,1981
9. Chauhan,S.P.S.,―Microeconomics-AnAdvancedTreatise‖,PrenticeHallIndia,2009

## Paper C9T: Intermediate Macroeconomics – II

**Unit 1: Schools of Macroeconomic Thoughts** **20 lecture-hours**

Classical System: Say's law and quantity theory; Friedman's restatement; classical dichotomy and neutrality of money; Keynesian vs classical system; basic tenets of New Classical and New Keynesian System.

**Unit 2: Macro-economic-Foundations-II** **20 lecture-hours**

Consumption: Keynesian consumption function; Fisher's theory of optimal inter-temporal choice; life-cycle and permanent income hypotheses; Dusenberrys' relative income hypothesis; rational expectations and random-walk of consumption-expenditure.
Demand for money: Regressive Expectations and Tobin's portfolio choice models; Baumols' inventory theoretic money demand.

**Unit 3: Monetary Policy** **15 lecture-hours**

Money and prices- The quantity theory of money, Kynens's Monetary theory, Friedman's Restatement of the QTM, high-powered money; money multiplier analysis; monetary policy – OMO, Bank rate, variable reserve ratio, repo and reverse repo.

**Unit 4: Economic Growth** **10 lecture-hours**

Harrod- Domar model and Solow one sector growth models; golden rule; dynamic efficiency, technological progress and elements of endogenous growth theory.

- **Course Outcome:**

The students are introduced to the long run dynamic issues like Growth and technical progress.

**Reference Books:**

**1.** Snowdon and Vane (ed), A Macroeconomics Reader, Routledge, Taylor and Francis Group.
**2.** R. Barro. Macroeconomics, 5th edition, The MIT Press, 1989
**3.** W.H.Branson. Macroeconomics, Haper and Row, 3rd edition, 1989
**4.** A.K.Sen (ed). Growth Economics, Penguin, 1970
**5.** Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011
**6.** J.B Hall and R.E.Taylor. Macroeconomics, W.W.Nortan and Company, 5th revised edition, 1997

7. Errol D'Souza. Macroeconomics, Pearson Education (New Delhi), 2009
8. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 201

## Paper C10T: Introductory Econometrics

**Unit 1: Nature and Scope of Econometrics** **2 lecture-hours**

Definition and Scope of Econometrics; Importance of Error Term.

**Unit 2: Statistical Concepts** **9 lecture-hours**

Sampling Distributions- $\chi^2$, t- and F-distributions and their application in testing of hypothesis; Defining hypothesis; Distribution of test-statistics; testing hypotheses related to population parameters; Type I and Type II errors; power of a test.

**Unit 3: Classical Linear Regression Model: Two Variable Case** **20 lecture-hours**

The model and the role of disturbance term ; Estimation of model by method of ordinary least squares (OLS);Gauss-Markov theorem, Reverse Regression, properties of estimators; goodness of fit; testing of hypotheses and confidence intervals; scaling and units of measurement; prediction and forecasting, Problems in OLS Method

**Unit 4: Multiple Classical Linear Regression Model** **20 lecture-hours**

Motivation for multiple regression, Estimation by OLS method; properties of OLS estimators; testing hypotheses – individual and joint; partial correlation and regression coefficients; goodness of fit –role of $R^2$ and adjusted $R^2$ ; Use of qualitative (dummy) independent variables**.**

**Unit 5: Violations of Classical Assumptions: Consequences, Detection and Remedies** **14 lecture-hours**

Problems of Multi-collinearity, Hetero scedasticity**,** and Auto correlation; Consequences of applying OLS under Hetero scedasticity and Autocorrelation and **their** detection– Durbin-Watson Test, Glesjer Test, Goldfeld- Quandt Test.

**Unit 6: Specification Problem** **10 lecture-hours**

Omission of a relevant variable; inclusion of an irrelevant variable; tests of specification errors.

- **Course Outcome:**

The course provides a comprehensive introduction to basic econometric concepts and techniques

**Reference Books**

**1.** Jay L. Devore, Probability and Statistics for Engineers, Cengage Learning, 2010.
**2.** John E. Freund, Mathematical Statistics, Prentice Hall, 1992.
**3.** Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Applications, Prentice Hall, 2011.
**4.** D. N. Gujarati and D.C. Porter, Essentials of Econometrics, McGraw Hill, 4th edition, International Edition, 2009.
**5.** Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 3rd edition, Indian edition, 2007
**6.** Jan Kmenta, Elements of Econometrics, Indian Reprint, Khosla Publishing House, 2nd edition, 2008
**7.** Stock and Watson
**8.** Maddala- Introduction to Econometrics, Wiley

## Paper: Skill Enhancement Course II: Research Methodology

**Unit 1** **10 lecture hours**

Understanding the nature of research, formulating the research topic, Review of Literature

**Unit 2** **10 lecture hours**

Approaches to research and research strategy, Research Ethics Using Secondary data Using Primary data- collecting data through observations/ interviews/ questionnaire from society through scientific methods

**Unit 3** **10 lecture hours**

Sample Selection Methods, Analyzing Data, Writing Project Report – Referencing Styles

- **Course Outcome:**

Learning outcomes of this course are crucial for students aspiring to become future researchers. This course equips students in the rudiments of a good research work and research paper. It makes students aware of the basic methodological issues such as

I. identifying a concrete research problem, writing a theme-based literature survey, developing writing skills, designing a field survey- the sampling frame, using random numbers for samples, drawing up the questionnaire, data entry after field survey, tabulating the data and interpreting it with graphs and figures

II. motivation, objectives, theme-based literature survey, developing writing skills, conducting field surveys, sampling frame, sample and use of random numbers, preparing questionnaire, pilot survey, data entry, tabular representation and graphical interpretation

III. Theoretical and Empirical Research - structure of an ideal research paper in Economics, illustrations, reporting and interpretation of regression results, testable hypothesis and statistical inference in empirical research, model building and closing the model, stability analysis in theoretical models using linearization of non-linear differential equations, Jacobian matrix and phase diagram analysis with illustration from IS-LM model

IV. Role of footnotes or end notes in a research paper

V. Bibliography, reference and citation, Abstract writing

VI. Power Point Presentation of papers with graphs and charts.

**Reference Books**


1. C.R. Kothari: Research Methodology: Methods and Techniques (second revised edition), New Age India (P) Ltd Publishers.
2. Ranjit Kumar (2014), Research Methodology: A Step by Step Guide for beginners, 4th Edition, Sage Publications.
3. Uwe Flick (2012), Introducing Research Methodology: A Beginner's Guide to Doing a Research Project, Sage Publications.
4. Bethlehem, J.(2009), Applied Survey Methods: A Statistical Perspective, Wiley.
5. Cochran, William G. (2008), Sampling Techniques, Third Edition, Wiley India, ISBN 978-81-265-1524-0. Reprint: 2008.
6. Groves, R. M., Fowler, F.J., Couper, M.P., Lepkowski, J.M., Singer, E. and Tourangeau, R. (2009). Survey Methodology, Wiley.


**Or**

## Paper: Skill Enhancement Course II: Managerial Economics

**Unit 1: Demand, Cost and Profit Analysis** **6 lecture hours**

Demand for durable and non-durable products, demand forecasting techniques Cost estimation

Cost-volume-profit analysis (break even analysis)-objectives and assumptions; determination of breakeven point, limitations of c-v-p analysis

**Unit 2: Pricing Policies and practices** **3 lecture hours**

Factors governing prices, price discounts and differentials, price forecasting

**Unit 3: Capital Budgeting** **8 lecture hours**

What is capital budgeting, need for capital budgeting, different steps in capital budgeting, Capital budgeting appraisal methods – payback method, accounting rate of return method, net present value method, interest rate of return method, benefit cost ratio method. Capital rationing, alternative methods of financing investments

**Unit 4: Cost of capital** **5 lecture hours**

Cost of debt capital, cost of share capital, cost of equity capital, cost of retained earnings

**Unit 5: Inventory Management** **8 lecture hours**

Inventory costs, concepts of average inventory, various inventory models-economic order quantity, optimum number of orders per year, optimum number of days supply per order.

- **Course Outcome:**

In this course, the students learn the concepts and techniques of production management. They will learn the various theoretical concepts of Economic Analysis so that they can use this as inputs in managerial decision-making process when they are in engaged in corporate employment. The broad topics include demand, cost and profit analysis, pricing policies and practices, capital budgeting and appraisal methods. cost of capital- notions of debt, share and equity capital, inventory management costs, concepts of average inventory and various inventory models. Skill outcomes will be reflected in the ability of students to demonstrate the use of economic concepts and policies to improve skills in business decision-making.

**References**


1. Varshney R.L., and Maheshwari K.L. – Managerial Economics, Sulatn Chand, N Delhi
2. Keat P. G. and Young P.K.Y – Managerial Economics, Pearson Education, N Delhi]
3. Mehta P.L - – Managerial Economics, Sulatn Chand, N Delhi
4. Samuelson W.F and Marks S,G - – Managerial Economics, Wiley Student Education
5. Clarke T. International Corporate Governance, Rout ledge.


## Generic Elective (GE)
## [Interdisciplinary for other department]

## Paper: GE-4: Economic History of India (1857-1947)

**Unit 1: Introduction: Colonial India: Background and Introduction** **8 lecture hours**

Overview of the colonial economy

**Unit 2: Macro Trends** **12 lecture hours**

National Income; population; occupational structure.

**Unit 3: Agriculture** **15 lecture hours**

Agrarian structure and land relations; agricultural markets and institutions – credit, commerce and technology; trends in performance and productivity; famines.

**Unit 4: Railways and Industry** **15 lecture hours**

Railways; the de-industrialisation debate; evolution of entrepreneurial and industrial structure; nature of industrialisation in the interwar period; constraints to industrial breakthrough; labor relations.

**Unit 5: Economy and State in the Imperial Context** **15 lecture hours**

The imperial priorities and the Indian economy; drain of wealth; international trade, capital flows and the colonial economy – changes and continuities; government and fiscal policy.

- **Course Outcome:**

The course analyses the key aspects of Indian economic development during the second half of British colonial rule

**Reference Books**


1. Lakshmi Subramanian, "History of India 1707-1857", Orient Blackswan, 2010, Chapter 4.
2. SumitGuha, 1991, _Mortality decline in early 20th century India', Indian
3. Economic and Social History Review (IESHR), pp 371-74 and 385- 87.
4. Tirthankar Roy, The Economic History of India 1857-1947, Oxford University Press, 3rd edition, 2011.
5. J. Krishnamurty, Occupational Structure, Dharma Kumar (editor), The Cambridge Economic History of India, Vol. II, (henceforth referred to as CEHI), 2005, Chapter 6.
6. IrfanHabib, Indian Economy 1858-1914, A People's History of India, Vol.28, Tulika, 2006.
7. Ira Klein, 1984, ―When Rains Fail: Famine relief and mortality in British India‖,IESHR 21.
8. Jean Dreze, Famine Prevention in India in Dreze and Sen (eds.) Political Economy of Hunger, WIDER Studies in Development Economics, 1990, pp.13- 35.
9. John Hurd, Railways, CEHI, Chapter 8, pp.737-761.
10. Rajat Ray (ed.), Entrepreneurship and Industry in India, 1994.
11. AK Bagchi, ―Deindustrialization in India in the nineteenth century: Some theoretical implications, Journal of Development Studies, 1976.
12. MD Morris, Emergence of an Industrial Labour Force in India, OUP 1965, Chapter 11, Summary and Conclusions.
13. K.N. Chaudhuri, Foreign Trade and Balance of Payments, CEHI, Chapter 10.
14. B.R. Tomlison, 1975, India and the British Empire 1880-1935, IESHR, Vol.XII.
15. Dharma Kumar, the Fiscal System, CEHI, Chapter 12.
16. BasudevChatterjee, Trade, Tariffs and Empire, OUP 1992, Epilogue.
17. IrfanHabib, Indian Economy 1858-1914 (A People's History of India), Vol.28, Tulika 2006.
18. Daniel Thorner, Agrarian Prospect in India, 1977
19.


**Or**

## Paper: GE-4: Public Finance

**Unit 1: Combinatorial Mathematics** **35 lecture hours**

**Theory**

1. Overview of Fiscal Functions, Tools of Normative Analysis, Pareto Efficiency, Equity and the Social Welfare.
2. Market Failure, Public Good and Externalities.
3. Elementary Theories of Product and Factor Taxation (Excess Burden and Incidence).

**Unit 2: Issues from Indian Public Finance** **30 lecture hours**

1. Current Issues of India's Tax System.
2. Working of Monetary and Fiscal Policies.
3. Analysis of Budget and Deficits
4. Fiscal Federalism in India
5. State and Local Finances

- **Course Outcome:**

To provide an overview of government finances with special reference to India.

**Reference Books**


1. Musgrave, R.A. and P.B. Musgrave, Public Finance in Theory and Practice, Mc-Graw
2. Hill, 1989.
3. Mahesh Purohit , "Value Added Tax: Experience of India and Other Countries", Gayatri
4. Publications, 2007.
5. KaushikBasu, and A. Maertens (ed.), The Oxford Companion to Economics in India,
6. Oxford University Press, 2007.
7. M.M Sury, Government Budgeting in India, Commonwealth Publishers, 1990.
8. Shankar Acharya, "Thirty years of tax reform" in India, Economic and Political Weekly,
9. May 2005.
10. Government of India, Report of the 13th Finance Commission.
11. Economic Survey, Government of India (latest).
12. State Finances: A Study of Budgets, Reserve Bank of India (latest)

# Semester –V

## Paper: CC-11: International Economics

**Unit 1: Basics of trade theory** **14 lecture hours**

Arbitrage as basis and direction of trade; fundamental sources of cross-country price differences and arbitrage; concept of comparative advantage; externalities, regulation and perverse comparative advantage; International equilibrium; offer curves, ToT and stability; Gains from Trade (GFT) Theorem; Concepts of Production possibility Frontier and Community Indifference curves; Illustration of GFT; Decomposition of GFT; Substitution possibilities and magnitude of GFT.

**Unit 2: Technology and Trade (Ricardian Model)** **11 lecture hours**

Comparative versus Absolute Advantage, One-factor economy, production possibility frontier, relative demand and relative supply, terms of trade; Trade in Ricardian world, Determination of intermediate ToT, Complete specialization & GFT

**Unit 3: Factor Endowment & Trade (Heckscher-Ohlin-Samuelson Model)**
**18 lecture hours**

H-O theorem and physical vs. price definitions of factor abundance; Properties of the HO model: Factor intensity ranking, one-to-one correspondence between commodity price ratio & factor price ratio (Stolper-Samuelson theorem), One to one correspondence between endowment ratio and production proportion ( Rybczysky's theorem); Proof of HO theorem; Taste bias and invalidation of HO theorem; Empirical studies- Leontief Paradox; Effects of trade on factor price and income distribution, factor price equalization, factor intensity reversal & factor price equalization.

**Unit 4: Trade Policy** **16 lecture hours**

Partial Equilibrium Analysis: Tariff - cost–benefit, Quota, Quota- Tariff equivalence & non-equivalence, effects of tariff, quota, subsidy and voluntary export restraint; General Equilibrium Analysis- distinction between large and small economy, welfare effects of a tariff on small country and large country, Offer curve and ToT, Tariff ridden offer curve, Tariff war, Optimum tariff for large economy, Metzler's Paradox.

**Unit 5: Balance of Payments & Exchange Rate:** **16 lecture hours**

Balance of Payment accounts in an open economy; Determination of National Income, Transfer problem, Introduction of foreign Country & repercussion effect - open economy multiplier with & without repercussion effect; Fixed & Flexible Exchange Rate: adjustment of demand and supply of Foreign Exchange, Effect of devaluation, Effects of exchange rate on domestic prices and ToT, Marshall-Lerner Condition, J-Curve effect.

- **Course Outcomes:**

A systematic exposition of models explaining the composition, direction and consequences of international trade and determinant and effects of trade policy.

**Reference Books:**

**1.**P. Krugman and M. Obstfeld- International Economics (8th Edition) ; Pearson Education

**2.**R. Caves, J. Frankel and R.W. Jones – World Trades & Payments (9th Ed); Pearson Education.
**3.**Rajat Acharyya- International Economics; Oxford University Press
**4.** Giancarlo Gandolfo, International Trade Theory and Policy, Springer, 2014

## Paper: C12T: Public Economics

**Unit 1: Nature and Scope of Public Economics** **10 lecture hours**
Definition and Scope of Public Economics; Externalities, Market Failure and Government Intervention; Coase Theorem; Public Expenditure to finance Development.

**Unit 2: Theory of Public Good** **22 lecture hours**
Overview of Public Good; Characteristics of Pure Public Good; Distinction between Pure Public Good and Private Good; Market Failure in case of Pure Public Good; Optimal provision of Public Goods; Private Provision and Public Provision of Public Goods; Lindahl Equilibrium, Voting Equilibrium.

**Unit 3: Taxation:** **22 lecture hours**
Classification of Taxes; Canons of Taxation; Benefit Principle; Equal Sacrifice Principle; Ability to Pay Principle; Incidence and Burden of Taxes; Effects of taxation on income distribution, work efforts, and on savings; the Laffer curve; Optimal Taxation

**Unit 4: Public Expenditure and Public Debt:** **21 lecture hours**
Meaning and Classification of Public Expenditure; government budget and its types; government expenditure and tax multiplier**s**, balanced budget multiplier; Fiscal Federalism in India; Meaning of Public Debt; Sources of Public Borrowings: internal and external borrowing; Effects of Public Debt.

- **Course Outcomes:**

In this course, students will acquire an understanding about

I. Role of government in a market economy, public goods, market failure, government intervention and public expenditure for financing development
II. Choice and Public Economics – pure public good, private good, market failure, optimal provision of public good, private provision and public provision of public goods, Lindahl and Voting equilibrium
III. Government revenue and government expenditure: Taxes-classification, canons, principles, incidence and burden of taxation, income distribution and taxes, the Laffer curve, direct and indirect taxes and income distribution, optimal taxation
IV. Public Finance - Meaning and Classification of Public Expenditure, the fiscal multipliers, definition, sources and effects of public debt, Fiscal Federalism in India and why there should be multiple levels of government.

**Reference Books**


1. A. B. Atkinson and J. E. Stiglitz, Lectures on Public Economics, McGraw-Hill Inc.,US, 1980.
2. C. V. Brown and P. M. Jackson. Public Sector Economics, Wiley-Blackwell; 4th Edition, 1991.
3. J. F. Due and A. F. Friedlander. Government Finance-Economics of Public Sector, AITBS Publishers and Distributors, 1994
4. J. Hindriks and G. D. Myles. Intermediate Public Economics, The MIT Press; Annotated Edition, 2006.
5. R.A. Musgrave and P.B. Musgrave, Public Finance in Theory & Practice,
6. McGraw Hill Publications, 5th edition, 1989.
7. AmareshBagchi (ed), Readings in Public Finance, OUP
8. 5. J. E. Stiglitz. Economics of Public Sector,W. W Norton and Company, 3rd Edition, 2000.
9. R.J.Chelliah (ed), Towards Sustainable Growth, OUP, 2009
10. A Ghosh and C. Ghosh, Public Finance,Prentice Hall India Learning Private Limited; 2nd Revised edition (2014)


## Paper: Department Specific Electives (DSE-1): Economics of Health and Education

**Unit 1: Role of Health and Education in Human Development 12 lecture hours**

Importance in poverty alleviation; health and education outcomes and their relationship with macroeconomic performance.

**Unit 2: Microeconomic Foundations of Health Economics 12 lecture hours**

Demand for health; uncertainty and health insurance market; alternative insurance mechanisms; market failure and rationale for public intervention; equity and inequality.

**Unit 3: Evaluation of Health Programs 2 12 lecture hours**

Costing, cost effectiveness and cost-benefit analysis; burden of disease.

**Unit 4: Health Sector in India: An Overview 12 lecture hours**

Health outcomes; health systems; health financing.

**Unit 5: Education: Investment in Human Capital 12 lecture hours**

Rate of return to education: private and social; quality of education; signaling or human capital; theories of discrimination; gender and caste discrimination in India.

**Unit 6: Education Sector in India: An Overview 9 lecture hours**

Literacy rates, school participation, school quality measures.

- **Course Outcomes:**

In this course, students will acquire an understanding about Knowledge health care system, health care cost, cost-benefit analysis of health care system, to develop the knowledge about human capital, cost-benefit analysis of education system, to gathered the knowledge about the education as a growth engine in any economy, education and health scenario of our country.

**Reference Books**


1. William, Jack, Principles of Health Economics for Developing Countries, World Bank Institute Development Studies, 1999.
2. World Development Report, Investing in Health, The World Bank, 1993.
3. Ronald G., Ehrenberg and Robert S., Smith, Modern Labor Economics: Theory and Public Policy, Addison Wesley, 2005.


## Or

## Paper: DSE1T: Applied Econometrics

**Unit 1: Stages in Empirical Econometric Research** **12 lecture hours**

Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruences, complete set of residues, Chinese Remainder theorem, Fermat's Little theorem, Wilson's theorem.

**Unit 2: Regression Diagnostics and Specification** **10 lecture hours**

Misspecification; functional forms; model selection.

**Unit 3: Advanced Topics in Regression Analysis** **14 lecture hours**

Selected Topics: Dynamic Econometric Models: distributed lag models; autoregressive models; instrumental variable estimation; simultaneous equation models.

**Unit 4: Panel Data Models** **20 lecture hours**

Methods of estimation; fixed effects model; random effects model.

**Unit 5: Introduction to Econometric Software Package** **9 lecture hours**

GRETL; E-VIEWS; STATA (any one).

- **Course Outcomes:**

This is a practical based course. Econometrics is a set of research tools used to estimate and test economic relationships. The course work consists of econometric methods and models that can be used in empirical economic research, marketing, management and in many social science disciplines. It will impart knowledge and skills that can help bridge the gap between being "a student of economics" and being "a practicing economist". They should be able to use a statistical/econometric computer packages such as Stata and /or R to estimate an econometric model and be able to report the results of their work in a non-technical and literate manner. The student will learn the diagnostics of regression – functional forms, model selection, specification errors. Students will learn to apply these methods for analysing and estimating cross-section (as in NSSO), time series (as in NAS) and panel data (as in Indian Official Statistics) with the help of Stata/R. In the ultimate a student will be able to distinguish between economic and statistical importance, be able to critique reported regression results in applied academic papers and interpret the results for someone who is not trained as an economist.

**Reference Books**

**1.** Jeffrey M. Wooldridge, Econometrics, CENGAGE learning, India Edition, 2009.
**2.** Dimitrios Asteriou and Stephen Hall, Applied Econometrics: A Modern Approach, Palgrave Macmillan, 2007.
**3.** Damodar Gujarati, Econometrics by Example, Palgrave Macmillan, 2011.

## Or

## Paper: DSE1T: Economic History of India (1857-1947)

**Unit 1: Introduction: Colonial India: Background and Introduction** **15 lecture hours**
Overview of the colonial economy

**Unit 2: Macro Trends** **15 lecture hours**
National Income; population; occupational structure.

**Unit 3: Agriculture** **15 lecture hours**
Agrarian structure and land relations; agricultural markets and institutions – credit, commerce and technology; trends in performance and productivity; famines, commercialization of agriculture.

**Unit 4: Railways and Industry** **15 lecture hours**

Railways; the de-industrialisation debate; evolution of entrepreneurial and industrial structure; nature of industrialisation in the interwar period; constraints to industrial breakthrough; labor relations.

**Unit 5: Economy and State in the Imperial Context** **15 lecture hours**

The imperial priorities and the Indian economy; drain of wealth; Emergence of Economic Nationalism, Laissez Faire; international trade policies, capital flows and the colonial economy – changes and continuities; government and fiscal policy, , Managing Agency System.

- **Course Outcomes:**

Colonialism had a deep and everlasting effect on the Indian economy and polity, so much so, that its legacy influenced many economic decisions and structural arrangements even after attainment of freedom and in the contemporary too. The aim of this course is to impart a deep understanding of the reasons behind the rise of economic nationalism in India from 1857 to the eve of its independence, the economic and social consequences of de-industrialisation, commercialization of agriculture and drain of resources. Students also get acquainted with the land policy, discriminating protection, currency policy, early industrialization policy followed by the colonial rulers as well as their efforts in infrastructure development with Railways. This course helps students to gain knowledge on the economic dimensions of the colonial era (1857-

1947) the most important phase of India's freedom struggle, their interlinkages on the economic framework and relate them with the persistence of India's underdevelopment.

**Reference Books**


1. Chandra B. (2010): Rise and Growth of Economic Nationalism in India, HarAnand Publications, 2010.
2. Lakshmi Subramanian, "History of India 1707-1857", Orient Blackswan, 2010, Chapter 4. Sumit Guha, 1991, Mortality decline in early 20th century India', Indian Economic and Social History Review (IESHR), pp 371-74 and 385-87.
3. Tirthankar Roy, The Economic History of India 1857-1947, Oxford University Press, 3rd edition, 2011.
4. J. Krishnamurty, Occupational Structure, Dharma Kumar (editor), The Cambridge Economic History of India, Vol. II, (henceforth referred to as CEHI), 2005, Chapter 6.
5. IrfanHabib, Indian Economy 1858-1914, A People's History of India, Vol.28, Tulika, 2006.
6. Ira Klein, 1984, ―When Rains Fail: Famine relief and mortality in British India‖,
7. IESHR 21.
8. Jean Dreze, Famine Prevention in India in Dreze and Sen (eds.) Political Economy of Hunger, WIDER Studies in Development Economics, 1990, pp.13- 35.
9. John Hurd, Railways, CEHI, Chapter 8, pp.737-761.
10. Rajat Ray (ed.), Entrepreneurship and Industry in India, 1994.
11. AK Bagchi, ―Deindustrialization in India in the nineteenth century: Some theoretical implications Journal of Development Studies, 1976.
12. MD Morris, Emergence of an Industrial Labour Force in India, OUP 1965, Chapter 11, Summary and Conclusions.
13. K.N. Chaudhuri, Foreign Trade and Balance of Payments, CEHI, Chapter 10.
14. B.R. Tomlison, 1975, India and the British Empire 1880-1935, IESHR, Vol.XII.
15. Dharma Kumar, The Fiscal System, CEHI, Chapter 12.
16. BasudevChatterjee, Trade, Tariffs and Empire, OUP 1992, Epilogue.
17. IrfanHabib, Indian Economy 1858-1914 (A People's History of India), Vol.28, Tulika 2006.
18. Daniel Thorner, Agrarian Prospect in India, 1977.
19. Visaria and P. Visaria, Population. CEHI, Chapter


## Paper: DSE2T: Political Economy – I

**Unit 1: Introduction and Historical Overview** **15 lecture hours**

Introduction (States-markets and society) -Emergence of Private property rights-Perspective on political economy with a historical overview: capitalist development in the pre-second world war period, the golden age and later.

**Unit 2: Changing Dynamics of Capitalist Production, Organisational Form and Labour Process** **13 lecture hours**

For dist and post-for dist production; changing dynamics of organisation of production, markets and labour process; the changing nature of job security and labour rights.

**Unit 3: The State in the Era of Globalisation: Welfare, Development and Autonomy**
**12 lecture hours**

Globalisation and the limits of the welfare state, development and state autonomy.

**Unit 4: The Changing Role of Finance** **13 lecture hours**

The changing role of finance in capital accumulation and corporate structure; finance and globalisation - financialisation, financial liberalisation and financial crisis.

**Unit 5: The Social Dimension** **10 lecture hours**

Globalisation and uneven development – growth, inequality, poverty and exclusion.

**Unit 6: New Perspective** **12 lecture hours**

Gender in work, accumulation and globalisation; issues in environment and sustainability; alternatives ahead.

- **Course Outcomes:**

As a result of completing this course, students should be able to advance the knowledge of global political and economic issues from a variety of perspectives, analyze the dynamics and needs of a globalized society in an increasingly knowledge-based economy with persistent structural inequality, debate the evolving theoretical and conceptual debates in the dynamic field of political economy, Critically evaluate existing theory, policy, and practices in the era of economic globalization and global climate change, Determine local and global linkages within political and economic practices, policies, and institutions to extend knowledge in the interdisciplinary area of political economy, Create connections with political and economic policy communities in the academic, government, non-governmental, and the private sectors.

**Reference Books**


1. Alfred Saad-Filho and Ben Fine. Marx's Capital, Fifth Edition, Pluto Press, 2010
2. Michel Beaud, A History of Capitalism, 1500-2000, trans. by Tom Dickman and Anny Lefebvre, New York: Monthly Review Press, 2001.
3. Ash Amin (ed.), Post-Fordism: A Reader, Blackwell, 1994.
4. Fran Tonkiss, Contemporary Economic Sociology: Globalisation, Production, Inequality, Chapter 4 (Fordism and After), Routledge India 2008 reprint, 2006.
5. S. Hymer, "The Multinational Corporation and the Law of Uneven Development", in H. Radice (ed.) International Firms and Modern Imperialism, Penguin Books, 1975.
6. G. Gereffi, J. Humphrey and T. Sturgeon, 2005, ―The Governance of Global Value Chains‖, Review of International Political Economy, Volume 12: 78–104.
7. Narasimha Reddy, ―Economic Globalisation, Past and Present – The Challenges to Labour‖ in Jomo K.S. &KhooKhay Jin (ed.) Globalization and Its Discontents, Revisited, Sephis -Tulika Books, 2003.
8. David Harvey, A Brief History of Neoliberalism, OUP, 2005.
9. Andrew Glyn, ―Challenges to Capital‖, in Capitalism Unleashed: Finance,Globalization and Welfare, Oxford: Oxford University Press, (Ch. One, pp. 1-24), 2006.
10. G Dumenil and D Levy, The Crisis of Neoliberalism, Harvard University Press, 2011.

**11.** K.S. Jomo (ed.), The Long Twentieth Century: The Great Divergence: Hegemony, Uneven Development and Global Inequality, OUP, 2006.
**12.** Gary Dymsky, 2005, ―Financial Globalization, Social Exclusion and Financial Crisis‖, International Review of Applied Economics, Vol. 19: 439–457.
**13.** E. Stockhammer, ―Financialization and the Global Economy, in G. Epstein and
**14.** M.H. Wolfson (ed.) The Political Economy of Financial Crises, Oxford University Press, 2010. [Also in Working Paper Series, No. 240, Political Economy Research Institute, University of Massachusetts Amherst]
**15.** J.P. Smith and M.P. Ward, 1989, ―Women in the Labour Market and in the Family, Journal of Economic Perspectives, Volume 3: 9-23.
**16.** Marilyn Power, 2004, ―Social Provisioning as a Starting Point for Feminist Economics, Feminist Economics, Volume 10: 3-19.
John Bellamy Foster, Ecology against Capitalism, Monthly Review Press, 2002

**Or**

## Paper: DSE2T: Money and Financial Markets

**Unit 1: Introduction to money and Banking Money** **15 lecture hours**
Concept, functions, measurement; theories of money supply determination.

**Unit 2: Financial Institutions, Markets, Instruments and Financial Innovations** **15 lecture hours**

1. Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises.
2. Money and capital markets: organization, structure and reforms in India; role of financial derivatives and other innovations.

**Unit 3: Financial Markets and Interest Rates Behaviour** **15 lecture hours**
Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.

**Unit 4: Banking System** **15 lecture hours**
Balance sheet and portfolio management; Multiple Deposit Creation, Determinants of the Money Supply, Indian banking system: Changing role and structure; banking sector reforms.

**Unit 5: Central Banking and Monetary Policy** **15 lecture hours**

Functions, balance sheet; goals, targets, indicators and instruments of monetary control; monetary management in an open economy; current monetary policy of India.

- **Course Outcomes:**

Money and banking which is an integral part of the actual macro-economy of a nation. Students shall acquire understanding about functions of money and how money supply is measured, the role of financial and capital markets and associated problems of asymmetric information resulting in adverse selection, moral hazard and financial crisis, structure of Indian money

market, reforms, banks as leveraging institutions, interest rate behavior-term structure of interest rates and sources of interest rate differentials with special reference to India the operational aspects of a banking system, India's banking system and banking system reforms functions balance sheet, instruments of monetary control and management in an e open economy and monetary policy of India.

**Reference Books**


**1.**F. S. Mishkin and S. G. Eakins, Financial Markets and Institutions, Pearson Education, 6th edition, 2009.
**2.**F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, Foundations of Financial Markets and Institutions, Pearson Education, 3rd edition, 2009.
**3.**M. R. Baye and D. W. Jansen, Money, Banking and Financial Markets, AITBS, 1996.
**4.**Rakesh Mohan, Growth with Financial Stability- Central Banking in an Emerging Market, Oxford University Press, 2011.
**5.**L. M. Bhole and J. Mahukud, Financial Institutions and Markets, Tata McGraw Hill, 5th edition, 2011.
**6.**M. Y. Khan, Indian Financial System, Tata McGraw Hill, 7th edition, 2011.
**7.**N. Jadhav, Monetary Policy, Financial Stability and Central Banking in India,
**8.**Macmillan, 2006.
**9.**R.B.I. – Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998.
R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest)


**Or**

## Paper: DSE2T: Financial Economics

**Unit 1: Introduction:** **10 lecture hours**

Evolution of limited liability companies; Time value of money and concepts of security markets

**Unit 2: Investment Theory and Portfolio Analysis** **30 lecture hours**

1. Deterministic cash-flow streams: Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed-income securities; bond prices and yields; interest rate sensitivity and duration; immunisation; the term structure of interest rates; yield curves; spot rates and forward rates.
2. Single-period random cash flows: Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis: the Markowitz model and the two-fund theorem; risk-free assets and the one-fund theorem.
3. CAPM: The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

**Unit 3: Options and Derivatives** **15 lecture hours**

Introduction to derivatives and options; forward and futures contracts; options; other derivatives; forward and future prices; stock index futures; interest rate futures; the use of futures for hedging; duration-based hedging strategies; option markets; call and put options; factors affecting option prices; put-call parity; option trading strategies: spreads;

straddles; strips and straps; strangles; the principle of arbitrage; discrete processes and the binomial tree model; risk-neutral valuation.

**Unit 4: Corporate Finance** **10 lecture hours**

Patterns of corporate financing: common stock; debt; preferences; convertibles; Capital structure and the cost of capital; corporate debt and dividend policy; the Modigliani-Miller theorem.

- **Course Outcomes:**

Financial economics is a broad field covering corporate finance, asset pricing, and financial intermediation. Financial economics is important in making investment decisions, identifying risks, and valuing securities and assets. The course covers the basic concepts of Financial Economics – Investment Theory and Portfolio Analysis which deal with deterministic cash-flow streams and single-period random cash flows. There is a section which develops the notions of derivatives and options and different patterns of corporate financing. Students also acquire a sound understanding about the Capital Asset Pricing Model which evaluates the risks and returns that come with a risky asset in order to determine its price and proposes that the risks taken on by investors need to be countered with the appropriate compensation.

**Reference Books**


1. David G. Luenberger, Investment Science, Oxford University Press, USA, 1997.
2. Hull, John C., Options, Futures and Other Derivatives, Pearson Education, 6th edition, 2005.
3. Thomas E. Copeland, J. Fred Weston and Kuldeep Shastri, Financial Theory and Corporate Policy, Prentice Hall, 4th edition, 2003.
4. Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance,
   a. McGraw-Hill, 7th edition, 2002.
5. Stephen A. Ross, Randolph W. Wester field and BradfordD.
   a. Jordan, Fundamentals of Corporate Finance. McGraw-Hill, 7th edition, 2005.
6. Burton G. Malkiel, A Random Walk Down Wall Street, W.W. Norton &Company, 2003.
7. William Sharpe, Gordon Alexander and Jeffery Bailey, Investments, Prentice Hall of India, 6th edition, 2003.

# Semester-VI

## Paper: CC-13: Indian Economy

**Unit 1: Economic Development since Independence** **28 lecture hours**

Major features of the economy at independence; Planning: Evolution of India's development goals and strategies -Structural constraints and Indian development strategy: Debates between Growth and distribution, Public sector vs. Private sector, Consumer goods vs. Capital goods, Import substitution vs. Export promotion ; growth and development under different policy regimes—goals, constraints, institutions and policy framework; an assessment of performance—sustainability and regional contrasts; structural changes, savings and investment including the saving-investment paradox.

**Unit 2: Population and Human Development** **20 lecture hours**

Demographic trends and issues; education; health and malnutrition.

**Unit 3: Growth and Distribution** **15 lecture hours**

Trends and policies in poverty including Sen's Entitlement Analysis; inequality and unemployment.

**Unit 4: Economic Reforms in India** **12 lecture hours**

Monetary, Fiscal, and Trade Policy Reforms**.**

- **Course Outcome**

In this course, students will acquire an understanding about major trends in economic indicators and policy debates in India in the post-independence period and critical evaluation of various economic policies adopted post-independence.

**Reference Books**


1. Jean Dreze and AmartyaSen, 2013. An Uncertain Glory: India and its Contradictions, Princeton University Press.
2. Jean Dreze and AmartyaSen: Economic Development and social opportunity, OUP
3. Sukhomoy Chakraborty: Development Planning: The Indian Experience, OUP
4. Uma Kapila: Indian Economy since independence, Academic Foundation
5. Ahluwalia and Little (ed): India's Economic Reforms and Development, OUP
6. Joshi and Little: India's Economic Reforms, OUP
7. PulapreBalakrishnan, 2007, the Recovery of India: Economic Growth in the Nehru Era, Economic and Political Weekly, November.
8. Rakesh Mohan, 2008, ―Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, Economic and Political Weekly, May.
9. S.L. Shetty, 2007, ―India's Savings Performance since the Advent of Planning, in
10. K.L. Krishna and A. Vaidyanathan, editors, Institutions and Markets in India's Development.

11. Himanshu, 2010, Towards New Poverty Lines for India, Economic and Political Weekly, January.
12. Jean Dreze and Angus Deaton, 2009, Food and Nutrition in India: Facts and Intepretations, Economic and Political Weekly, February.
13. Himanshu. 2011, ―Employment Trends in India: A Re-examination, Economic and Political Weekly, September.
14. Rama Baru et al, 2010, ―Inequities in Access to Health Services in India: Caste, Class and Region, Economic and Political Weekly, September.
15. Geeta G. Kingdon, 2007, ―The Progress of School Education in India, Oxford
16. Review of Economic Policy
17. J.B.G. Tilak, 2007, ―Post Elementary Education, Poverty and Development in India, International Journal of Educational Development.
18. T. Dyson, 2008, ―India‘s Demographic Transition and its Consequences for Development‖ in Uma Kapila, editor, Indian Economy Since Independence, 19th edition, Academic Foundation.
19. KaushikBasu, 2009, ―China and India: Idiosyncratic Paths to High Growth,
20. Economic and Political Weekly, September.
21. K. James, 2008, ―Glorifying Malthus: Current Debate on Demographic Dividend in India‖ Economic and Political Weekly, June.
22. ReetikaKhera, 2011, ―India‘s Public Distribution System: Utilisation and Impact
23. Journal of Development Studies.
24. Aniruddha Krishna and Devendra Bajpai, 2011, ―Lineal Spread and Radial Dissipation: Experiencing Growth in Rural India, 1992-2005, Economic and Political Weekly, September.
25. Kaushik Basu and A. Maertens, Eds, 2013, The New Oxford Companion to Economics, Oxford University Press.


## Paper: CC-14: Development Economics

**Unit 1: Meaning of Economic Development 18 lecture hours**

Meaning of economic development,distinguish between growth and development, indicators of economic development (National income, per capita income, PQLI,basic needs approach, Standard of living index, HDI, Capability Approach) , definition of underdeveloped economy and characteristics of underdevelopment; alternative approaches to economic development.

**Unit 2: Economic Growth 28 lecture hours**

**Stages of economic growth**:- the clark- fisher thesis and kuznets' investigation, rostrow's theory of stages of economic growth, Marxian theory of stages of economic growth,

**Sources of economic growth:-** theory of demographic transition (optimum and Malthusian theorey), nelson's model of low level equilibrium trap, Lebeinstein's critical minimum effort thesis, Big push theory, Dualism, technical progress (hicks neutral, harrod neutral, solow-neutral)An overview and policy implications of one sector growth models- Harrod-Domar, and Solow.

**Unit 3: Poverty and Inequality 14 lecture hours**

Concept of poverty, measurement of poverty (income measure & capability measure); Lorenz curve, gini coefficient; connections between inequality and development; HPI; poverty traps and path dependence of growth processes, gender development index, women and development, women health and productivity.

**Unit 4: Problem of Labour Surplus Economy, Political Institutions and the State**
**15 lecture hours**

Concept of disguised unemployment, economic development with unlimited supplies of labour-lewis model, renis-fei model of economic development, Harris –Todaro model.

Definition of institutions, Evolution of Political and Economic Institutions; The determinants of democracy; alternative institutional trajectories and their relationship with economic performance; within- country differences in the functioning of state institutions; state ownership and regulation; government failures and corruption.

- **Course Outcome**

In this course students will acquire thorough understanding in the relationship between Demographic characteristics and scope of development in developing economies. At the end of the course, students will learn about the basic demographic concepts of birth and death rates, demographic transition and development process, problem of labour surplus economy, human capital formation and be able to identify India's position in the global economy as a developing nation.

**Reference Books**


**1.** Debraj Ray, Development Economics, Oxford University Press, 2009.
**2.** ParthaDasgupta, Economics, a Very Short Introduction, Oxford University Press, 2007.
**3.** Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.
**4.** KaushikBasu, The Oxford Companion to Economics in India, OUP, 2007.
**5.** KaushikBasu, Analytical Development Economics, OUP
**6.** AmartyaSen, Development as Freedom, OUP, 2000.
**7.** DaronAcemoglu and James Robinson, Economic Origins of Dictatorship and Democracy, Cambridge University Press, 2006.
**8.** Robert Putnam, Making Democracy Work: Civic Traditions in Modern Italy, Princeton University Press, 1994
**9.** Meier and Rauch (ed)- Leading Issues in Development Economics, OUP
**10.** Todaro and Smith: Economic Development, Pearson Education, 2009
**11.** Hayami and Godo, Development Economics, OUP
**12.** Bardhan and Udry, Development Microeconomics, OUP


## Paper: Department Specific Electives (DSE3T): Political Economy – II

**Unit 1: Analysing Social Change in Historical Perspective** **22 lecture hours**

The method of historical materialism; the transition from feudalism to capitalism; capitalism as a historical process – alternative perspectives; Emergence of socialism: social mode of extraction of surplus and socialist planning.

**Unit 2: Capitalism as an Evolving Economic System** **28 lecture hours**

Basic features; Functioning of the Capitalist System-

a) Classical Political Approach of Smith, Ricardo and Marx and (b) Neoclassical Economics and Capitalism accumulation and crisis; the modern corporation; monopoly capitalism— alternative perspectives.

**Unit 3: The State in Capitalism** **25 lecture hours**

The state and the economy – contestation and mutual interdependence; the state as an arena of conflict; imperialism – the basic foundations.

- **Course Outcome**

As a result of completing this program, students should be able to advance the knowledge of global political and economic issues from a variety of perspectives, analyze the dynamics and needs of a globalized society in an increasingly knowledge-based economy with persistent structural inequality, debate the evolving theoretical and conceptual debates in the dynamic field of political economy, critically evaluate existing theory, policy, and practices in the era of economic globalization and global climate change, apply the theoretical knowledge to research on specific problems/issue areas, determine local and global linkages within political and economic practices, policies, and institutions to extend knowledge in the interdisciplinary area of political economy, create connections with political and economic policy communities in the academic, government, non-governmental, and the private sectors.

**Reference Books**


1. J. Gurley, "The Materialist Conception of History", Ch.2.1 in R. Edwards, M. Reich and T. Weisskop (ed.), The Capitalist System, 2nd edition, 1978.
2. O. Lange, Political Economy, vol. 1, 1963, Chapters 1 and 2.
3. E.K. Hunt, History of Economic Thought, M.E. Sharpe, Indian edn, Shilpi Publications, 2004.
4. IrfanHabib, 1995, "Capitalism in History", Social Scientist, Vol. 23: 15-31.
5. R.L. Heilbroner, "Capitalism", in the New Palgrave Dictionary of Modern Economics, Macmillan, 1987. Also reprinted as Chapter 2 in Behind the Veil of Economics by R.L. Heilbroner, W.W. Norton, 1988.
6. P. Sweezy, The Theory of Capitalist Development, Monthly Review Press, 1942,chapters 2, 4, 5, 6, 8 and 10.
7. Anwar Shaikh, Entries on "Economic Crises" and "Falling Rate of Profit" in T. Bottomore et al (eds.), The Dictionary of Marxist Thought, OUP, Indian edition, Maya Blackwell, 2000.
8. VamsiVakulabharanam, 2009, ―The Recent Crisis in Global Capitalism: Towards a Marxian Understanding, Economic and Political Weekly, March 28, Vol. 44: 144-150.
9. J. Schumpeter, Capitalism, Socialism and Democracy, George Allen and Unwin 1976, Chapters 6, 7 and 8.
10. P. Baran (1957), The Political Economy of Growth, Chapter 3, Pelican edition, 1973.
11. R. Heilbroner, ―The Role of the State, Ch.4 in The Nature and Logic of Capitalism, 1985.
12. M. Kalecki, ―Political Aspects of Full Employment, in E.K. Hunt and J.G. Schwarz (eds.), A Critique of Economic Theory, Penguin Books, 1972.
13. AmitBhaduri, ―Nationalism and Economic Policy in the Era of Globalization, Ch.in Deepak Nayyar (ed), Governing Globalization: Issues and Institutions, OUP, 2002 [also WIDER Working Paper no.188, WIDER website (2000)].

**14.** PrabhatPatnaik, ―"Lenin's Theory of Imperialism Today", in K.S. Jomo (ed.) The Long Twentieth Century: The Great Divergence: Hegemony, Uneven Development and Global Inequality, OUP.

## Or

## Paper: DSE-3: Environmental Economics

**Unit 1: Introduction** **8 lecture hours**

What is environmental economics; review of microeconomics and welfare economics.

**Unit 2: The Theory of Externalities** **12 lecture hours**

Pareto optimality and market failure in the presence of externalities; property rights and the coase theorem.

**Unit 3: The Design and Implementation of Environmental Policy** **18 lecture hours**

Overview; pigouvian taxes and effluent fees; tradable permits; choice between taxes and quotas under uncertainty; implementation of environmental policy.

**Unit 4: International Environmental Problems** **14 lecture hours**

Trans-boundary environmental problems; economics of climate change; trade and environment.

**Unit 5: Measuring the Benefits of Environmental Improvements** **15 lecture hours**

Non-Market values and measurement methods; risk assessment and perception.

**Unit 6: Sustainable Development** **8 lecture hours**

Concepts; measurement.

- **Course Outcome**

At the end of the course, the student will be able to: grasp the essential nature of environmental economics and how microeconomics and welfare economics are related to it and the relation between environment and economy and apply economic principles to resolve specific environmental problems and issues, identify the sources of externalities, 'market failure' (inefficiency) specially in case of free and public goods, property rights and Coase theorem and the distinction between public good and public bad, apply microeconomic principles to measure the values of environmental costs and benefits

**Reference Books**

**1.** Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition, 2010.
**2.** Robert N. Stavins (ed.), Economics of the Environment: Selected Readings, W.W. Norton, 5th edition, 2005.
**3.** Roger Perman, Yue Ma, James McGilvray and Michael Common, Natural Resource and Environmental Economics, Pearson Education/Addison Wesley, 3rd edition, 2003.
**4.** Maureen L. Cropper and Wallace E. Oates, 1992, ―Environmental Economics: A

Survey Journal of Economic Literature, Volume 30:675-740

**Or**

## Paper: DSE3T: Topics in Microeconomics – I

**Unit 1: Introduction of Game Theory** **25 lecture hours**

Game Theory Basics: What is a game; games and decisions; different kinds of games; Zero-sum games: secure strategy, min-max theorem, value of a game.

**Unit 2: Normal form games** **28 lecture hours**

The normal form; dominant and dominated strategies; dominance solvability; iterated dominance; mixed strategies and mixed strategy equilibrium; symmetric single population games; n-person games in normal form; Nash equilibrium; applications.

**Unit 3: Extensive form games with perfect information** **22 lecture hours**

The game tree; strategies; sub game perfection; backward induction; sequential equilibrium; bargaining; Rubinstein bargaining, and Nash bargaining.

- **Course Outcome**

If you complete the course successfully, students should be able to acquire knowledge about the fundamental concepts of non-cooperative game theory, they are able to apply solution concepts to examples of games, and to state and explain them precisely, and solve unseen games that are variants of known examples.

**Reference Books**


1. Martin J. Osborne, An Introduction to Game Theory, Oxford University Press, New Delhi, 2004.
2. Robert Gibbons. A Primer in Game Theory, Princeton University Press, 1992
3. Prajit K. Dutta. Strategies and Game: Theory and Practice, MIT Press, 1999


## Paper: DSE4T: Comparative Economic Development (1850-1950)

**Theory and Concepts** **75 lecture hours**

1. Introduction and Perspectives on Comparative Economic Development
2. An Overview of Economic Development of the countries selected for case studies
3. AgricultureAgrarian surplus and the role of the peasantry in economic development.
4. Industry the industrial revolution in Britain; Industrialisation in late industrialisers.
5. The Factory System and Making of the Industrial Working ClassDivision of labour, structure of industrial authority, organisation of work and industrial production, relationship between workers and managers.
6. The Role of the State in Industrial and Developmental Transition

- **Course Outcome**

This course explores the different strategies and policies that underlie the initiation of development processes in different countries of the world. It imparts an understanding about laissez faire and free trade and strategy of industrialization in the Soviet Union. The course also covers contrasting contemporary development experiences of countries like Japan, South-East Asia and China which are success stories and Latin America and Africa are plagued by periodic economic and political crises and failures.

**Reference Books**


1. E.J. Hobsbawm, World of Labour: Further studies in the history of labour, London Weidenfeld& Nicholson, 1984.
2. E.J. Hobsbawm, Industry and Empire: An Economic History of Britain since 1750, Weidenfeld& Nicholson, 1968.
3. Peter Mathias, the First Industrial Nation, an Economic History of Britain, 1700-1914. 2nd edition Methuen, 1983.
4. T. Nakamura, Economic Growth in Pre-War Japan, Tr. by Robert A Feldman, Yale University Press, 1983.
5. Okochi, Karsh and Levine, Workers and Employees in Japan, The Japanese Employment Relations System, University of Tokyo, 1965.
6. Y. Hayami, A Century of Agricultural Growth in Pre-War Japan: Its Relevance to Asian Development, University of Minnesota Press, 1975.
7. Chalmers Johnson, MITI and the Japanese Miracle: The Growth of Industrial Policy 1925-1975, Stanford University Press, 1982.
8. W.W. Lockwood, Economic Development of Japan, Expanded edition, Princeton University Press, 1966.
9. Dobb M., Soviet Economic Development since 1917, Universal Book Stall, New Delhi, 1995.
10. Paul R. Gregory and Robert C. Stuart, Soviet Economic Structure and Performance, Harper & Row, 3rd edition, 1986.
11. Timothy W. Guinnane, 2002, ―Delegated Monitors, Large and Small: Germany‘s banking System, 1800 –1914‖, Journal of Economic Literature, Volume XL: 73-124.
12. Richard A. Easterlin, Davis and Parker, American Economic Growth: An economist’s History of the United States, Harper & Row, 1972.
13. Hughes and Cain, American Economic History, HarperCollins College Publishers, 4th edition, 1994.
14. Angus Maddison, Dynamic Forces in Capitalist Development, a Long-Run Comparative View, Oxford University Press, 1991.
15. P.K.O‘Brien, 1986, ―Do we have a Typology for the Study of European Industrialization in the XIXth Century, Journal of European Economic History, XV 3:291-333.


**Or**

## Paper: DSE4T: Topics in Microeconomics – II

**Unit 1: Repeated Games with complete information 22 lecture hours**
Repeated games: Folk theorem and repeated prisoner's dilemma; Finitely repeated games and backward induction; infinitely repeated games; credibility and sub game perfect Nash equilibrium, one-step deviation property;

**Unit 2: Simultaneous move games with incomplete information (Bayesian games) 18 lecture hours**
Strategies; Bayesian Nash equilibrium; higher order beliefs.

**Unit 3: Extensive form games with imperfect information 15 lecture hours**
Strategies; beliefs and sequential equilibrium; applications.

**Unit 4: Uncertainty and Information 20 lecture hours**
Expected utility Theory; measures of risk aversion, applications- investment in risky assets, insurance, the principal agent problem: adverse selection and moral hazard, signalling, introduction to auction and mechanism design, VCR mechanisms.

- **Course Outcome**

If you complete the course successfully, students should be able to acquire knowledge about the fundamental concepts of non-cooperative game theory, they are able to apply solution concepts to examples of games, and to state and explain them precisely, and solve unseen games that are variants of known examples.

**Reference Books**


1. Martin J. Osborne, An Introduction to Game Theory, Oxford University Press, New Delhi, 2004.
2. R. Gibbons. Game Theory for Applied Economists, Princeton University Press, 1992
3. Eric. Rasmusen, Games and Information: An Introduction to Game Theory, Wiley-Blackwell, 2006


**Or**

## DSE-4: Project Work

- **Course Outcome**

The purpose of the dissertation is to encourage students to undertake independent economic research and to foster research- related skills, which should benefit future study and employment. On successful completion of this dissertation students will be able to demonstrate specialist knowledge in the area of their research, demonstrate the ability to initiate research and to formulate viable research questions, demonstrate the capacity to design, conduct and report sustained and original research