

# WEST BENGAL STATE UNIVERSITY

## Draft Syllabus for three year B.A. /B.Sc. Honours course in Economics

### Under CBCS semester system

## **B.A. /B.Sc HONOURS IN ECONOMICS**

With effect from the session: 2018 – 2019

Approved in the BOS meeting held on 26<sup>th</sup> April,2018

### Undergraduate Programme: B.A/B.SC. Honours in Economics

Eligibility for admission to B.A. /B.Sc. honours in Economics: Given the quantitative requirements of the programme, only students who have passed Mathematics at the XII level are eligible for admission.

Sem.	Core	AECC	SEC	DSE	GE
<b>Sem-1</b>	<b>Core Course-1</b> <b>Introductory</b> <b>Microeconomics</b> ECOACOR01T  <b>Core Course-2</b> <b>Mathematical Methods for</b> <b>Economics-I</b> ECOACOR02T	(English Communicatio n/MIL)/ Environmental Science			<b>GE1</b>
<b>Sem-2</b>	<b>Core Course-3</b> <b>Introductory</b> <b>Macroeconomics</b> ECOACOR03T  <b>Core Course-4</b> <b>Statistical Methods for</b> <b>Economics-I</b> ECOACOR04T	Environmental Science/(Englis h/MIL Communicatio n)			<b>GE2</b>

Sem-3	<p><b>Core Course- 5</b> <b>Intermediate</b> <b>Microeconomics-I</b> ECOACOR05T</p> <p><b>Core Course-6</b> <b>Intermediate</b> <b>Macroeconomics-I</b> ECOACOR06T</p> <p><b>Core Course- 7</b> <b>Mathematical Methods for</b> <b>Economics-II</b> ECOACOR07T</p>		SEC -1		GE3
Sem-4	<p><b>Core Course-8</b> <b>Intermediate</b> <b>Microeconomics-II</b> ECOACOR08T</p> <p><b>Core Course-9</b> <b>Intermediate</b> <b>Macroeconomics-II</b> ECOACOR09T</p> <p><b>Core Course-10</b> <b>Statistical Methods for</b> <b>Economics-II</b> ECOACOR10T</p>		SEC -2		GE4
Sem-5	<p><b>Core Course-11</b> <b>Introductory Econometrics</b> ECOACOR11T</p> <p><b>Core Course-12</b> <b>Development Economics</b> ECOACOR12T</p>			DSE-1 DSE -2	
Sem-6	<p><b>Core Course-13</b> <b>Indian Economy</b> ECOACOR13T</p> <p><b>Core Course-14</b> <b>International Economics</b> ECOACOR14T</p>			DSE-3 DSE-4	

**DSE Courses**

<b>Group A (DSE-1 and DSE-2) (Sem-5)</b>	<b>Group B (DSE-3 and DSE-4) (Sem-6)</b>
(Any <b>two</b> from the given options)	<b>(Project work and any one</b> from the given options)
a) Applied Econometrics ECOADSE01T  b) Public Economics ECOADSE02T  c) Economics of Health & Education: ECOADSE03T	a) Contemporary Development Economics ECOADSE04T  b) Financial Economics ECOADSE05T  c) Project/Dissertation ECOADSE06P

**SEC Courses**

<b>SEC-1</b>	<b>Survey Methodology</b> ECOSSEC01M
<b>SEC-2</b>	<b>Indian Official Statistics</b> ECOSSEC02M

**NOTE:** 4 Generic Elective courses should be selected for two subject/Discipline following central Generic Elective combination from eight groups stipulated by the WBSU.

**Core Courses: Credit: 6 (5L+1T)**

**Full Marks - 75**

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*Sem-1: Core Course-1 (ECOACOR01T)*

**INTRODUCTORY MICROECONOMICS**

Total number of Lecture hours: 75

Total number of tutorial hours: 15

**Topics**

**1. Exploring the subject matter of Economics**

**(8 hours)**

Why study economics? Scope and method of economics; the economic problem: scarcity and choice; Distinction between Microeconomics and Macroeconomics; the question of what to produce, how to produce and how to distribute output; the basic competitive model; prices,

property rights and profits; incentives and information; rationing; opportunity sets; economic systems.

**2. Supply and Demand: How Markets Work, Markets and Welfare (12 hours)**

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus and the efficiency of the markets.

**3. The Households (30 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 (Hicks & Slutsky); Ordinary and Compensated demand curves, Inferior goods and Giffen goods, Price consumption and income consumption curves

**4. Production and Cost (15 hours)**

Production function, Total, Average and Marginal products, Isoquants and economic regions of production, Cost minimization and expansion path, Elasticity of substitution, Economies of scale, Cobb Douglas, Fixed coefficient and CES functions, Short run and long run costs, Derivation of the cost function from production function.

**5. Market Structure (10 hours)**

Different types of market structures- Perfect competition, Monopoly, Monopolistic Competition and Oligopoly (**concepts only**)

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings:**

Lipsey-Positive Economics

Maddala & Miller – Microeconomics

Koutsoyiannis – Modern Microeconomics

Ryan & Pearce – Price Theory

Henderson & Quandt – Microeconomic Theory- A Mathematical Approach (3<sup>rd</sup> Edition)

Ferguson & Gould – Microeconomics Theory

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*Sem-1: Core Course-2 (ECOACOR02T)*

**MATHEMATICAL METHODS FOR ECONOMICS-I**

Total number of Lecture hours: 75

Total number of tutorial hours: 15

**Topics**

**1. Preliminaries**

**(10 hours)**

**Concept:** Sets and set operations; relations; functions and their properties; number systems.

**Set Theory:** Definition of a set and discussion of related concepts; Set types; Operations on sets; Nested sets; Cartesian product; Concept of Euclidean Space

**Functions and Relations:** Definitions; Concepts of ‘range’, ‘domain’ and ‘mapping’; Explicit and implicit functions; Types of functions and correspondences (polynomial, exponential, logarithmic, power)

**2. Brief Review of Differential and Integral Calculus:**

**(15 hours)**

Concepts of ‘limits and continuity’, ‘derivative’, ‘partial derivative’, ‘total differential’ and ‘integral’ (stress on both intuitive and mathematical understanding); differentiable functions: Applications of differential and integral calculus to the study of functions: level curves; slope and curvature of functions, area under a curve etc. second and higher order derivatives: properties and applications.

**Applications:** Expenditure function and its properties; Shepherd’s Lemma; Indirect Utility Function; Roy’s Identity; Slutsky equation and decomposition of price effect; Properties of demand functions. Work-leisure choice; savings function, Total average and marginal Cost & Production, Consumption function, saving & investment function.

**3. Simultaneous Linear Systems and Related Applications of Matrix Algebra: (12 hours)**

Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and elementary operations; systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications.

**4. Other Topics:**

**(8 hours)**

Concepts of various types of series (arithmetic, geometric, logarithmic, exponential, Taylor’s and McLaurin’s); Brief review of trigonometric functions and associated curves.

**5. Single-variable optimization**

**(15 hours)**

Geometric properties of functions: convex functions, distinction between concave and convex functions; their characterizations and applications; local and global optima (maxima and minima); geometric characterizations, characterizations using calculus and applications.

**Applications:** Equilibrium under cardinal utility theory; Maximization of Revenue and Profit, Minimization of cost of production in short run.

**6. Multi-variable optimization**

**(15 hours)**

Free and constrained optimization; Examples of constrained optimization from consumer and producers theories; Static and dynamic optimization problems; applications  
**Applications:** Equilibrium under cardinal and ordinal utility theory; Maximization of Profit in different market form, Minimization of cost of production in long run.

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings:**

K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002.

Blume, Lawrence and Carl Simon (1994), *Mathematics for Economists*, Norton. Chiang, Alpha and Kevin Wainwright (2005), *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill

Baldani, Bradfield and Turner, *An Introduction to Mathematical Economic*, Cengage Learning: 2007.

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*Sem-2: Core Course-3 (ECOACOR03T)*

**INTRODUCTORY MACROECONOMICS**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1. Introduction to Macroeconomics and National Income Accounting (20 hours)**

Basic issues studied in macroeconomics; measurement of gross domestic product; income, expenditure and the circular flow; different methods of calculating NI; measurement of cost of living – CPI, GDP deflator; measuring joblessness – Unemployment rate, Unemployment and GDP – Okun’s Law; national income accounting for an open economy; balance of payments: current and capital accounts; NI as a measure of economic welfare.

**2. Money (15 hours)**

Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy.

**3. Inflation (20hours)**

Inflation and its social costs; Demand Pull and Cost Push inflation; hyperinflation; anti-inflationary policies

**4. The Closed Economy in the Short Run (20 hours)**

Classical and Keynesian systems (difference in concepts)

Simple Keynesian model of income determination, Multipliers, ISLM model; fiscal and monetary multipliers.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

**Suggested Readings:**

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. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.
6. Branson, *Macroeconomics* (2<sup>nd</sup>) edition

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*Sem-2: Core Course-4 (ECOACOR04T)*

**STATISTICAL METHODS FOR ECONOMICS-I**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1. Basic concepts:**

**(8 hours)**

Population and sample, parameter and statistic; Data Collection: primary and secondary data, methods of collection of primary data; Presentation of Data: Univariate frequency distribution; cumulative frequency; graphic and diagrammatic representation of data

**2. Measures of Central tendency**

**(12 hours)**

The mean, median, mode and other quartiles Measures of Central Tendency: mean, median, mode; geometric mean, harmonic mean, their relative merits and demerits

**3. Measures of Dispersion**

**(10hours)**

Measures of Dispersion: absolute and relative - range, mean deviation, standard deviation, coefficient of variation, quartile deviation, their merits and demerits

**4. Measures of Skewness and Kurtosis:** Interpolation and Extrapolation.

**(5 hours)**

**5. Bivariate frequency distribution:**

**(12 hours)**

Simple Correlation: scatter diagram, sample correlation coefficient - Karl Pearson's correlation coefficient and its properties, probable error of correlation coefficient, Spearman's rank correlation coefficient, partial and multiple correlation, Regression Analysis: Properties of linear regression, explained and unexplained variation regression in bivariate frequency distribution.

**6. ANOVA Tables(concepts only)**

**(5 hours)**

**7. Time series**

**(8 hours)**

Components, measurement of trend and statistical fluctuations; Two variable linear curve fitting analysis - estimation of regression lines (Least square method) and regression coefficients - their interpretation and properties, standard error of estimate

**8. Index Numbers****(10 hours)**

Price, quantity Index Numbers: Index number as weighted averages, Price and quantity index numbers, Problems in the Construction of Index Numbers, Tests for index Numbers, Chain based Index, Cost of Living Index Number, Wholesale Price Index and Cost of Living Index, Uses of Index Numbers, Index numbers as indices of wellbeing, Stock market indices.

**9. Vital statistics****(5hours)**

Measures of crude birth rate, death rate, age sex specific birth and death rates; infant mortality rate; construction and use of life table.

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings:**

1. Kenny and Keeping : Mathematical Statistics, Part 1 & Part II
2. Croxton, Cowden and Klein : Applied Statistics, Prentice Hall; Applied General Statistics. 3d. ed., Prentice-Hall, Inc., 1960.
3. Das, N.G., *Statistical Methods*, The World Press Pvt. Ltd., Calcutta.
4. Fundamentals of Statistics: Goon, Gupta, Dasgupta, The World Press, 1996
5. M. R. Saluja: Indian Official Statistical Systems.
6. CSO (MOSPI) Publication: Statistical System in India.
7. RBI: Handbook of Statistics for the Indian Economy (various years)
8. Economic Survey (latest), Government of India, Ministry of Finance. Full chapter (excluding boxed items) on 'Economic Outlook, Prospects, and Policy Challenges' and 'Fiscal Framework'. Other selections to be determined each year.
9. K. Srinivasan: Demographic Techniques and Applications.
10. B. D. Mishra: An Introduction to the Study of Population.

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*Sem-3: Core Course-5 (ECOACOR05T)*

**INTERMEDIATE MICROECONOMICS – I**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics****1. Consumer Theory Revisited****(25 hours)**

- (i) Preference; utility; budget constraint; choice; demand
- (ii) Application of indifference curve approach: Derivation of labour supply and intertemporal choice- Saving and borrowing
- (iii) Choice under risk: Describing Risk, Preferences towards risk, Reducing risk, the demand for Risky assets-the trade-off between Risk & Return
- (iv) Revealed Preference – the weak axiom and substitution effect.

**2. Market Structure: Perfect Competition****(15 hours)**



Features, Short run and long run equilibrium of the firm, Short run supply function, Industry equilibrium; Long run industry supply with or without external economies or diseconomies.

**3. Imperfect Market Structure: Monopoly (25 hours)**

- (i) Monopoly and anti-trust policy; government policies towards competition; Sources of monopoly power, Index of monopoly power.
- (ii) Equilibrium with single plant, multiple plants, Constrained revenue maximisation, Natural monopoly; Dead-weight loss of Monopoly
- (iii) Price discrimination; peak-load pricing; bundling; two-part tariff.
- (iv) Monopsony.

**4. Imperfect Market Structure: Monopolistic Competition (10 hours)**

Concept: Product diversification; Short-run & Long-run equilibrium; Excess Capacity.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

**Suggested Readings:**

- 1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*,
- 2. Pindyck & Rubinfeld – *Microeconomics*
- 3. Koutsoyiannis – *Modern Microeconomics*
- 4. Henderson & Quandt – *Microeconomic Theory- A Mathematical Approach* (3<sup>rd</sup> Edition)

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*Sem-3: Core Course-6 (ECOACOR06T)*

**INTERMEDIATE MACROECONOMICS – I**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1. The classical system (15 hours )**

The Classical view of macroeconomics in respect of the determination of employment, output and prices.

Say's law and Walras' law – The dichotomy between the real sector and monetary sector – neutrality of money.

**2. The Complete Keynesian model (20 hours )**

- Derivation of aggregate demand and aggregate supply curve – Keynesian labour supply function – determination of equilibrium – wage rigidity – involuntary unemployment – Underemployment equilibrium – effects of change in money supply and other factors on complete Keynesian model – money illusion.

- Comparison with the Classical system – price flexibility – Real balance effect.

**3. Inflation, Unemployment and Expectations (20 hours )**

(i) Phillips curve; adaptive and rational expectations; policy ineffectiveness debate.

(ii) Aggregate supply and Phillips curve; Inflation, unemployment and Phillips curve, Shift of Phillips curve, Disinflation and sacrifice ratio.

**4. Open Economy Models (20 hours)**

Short-run open economy models; Mundell-Fleming model; exchange rate determination; purchasing power parity; asset market approach; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

**Suggested Readings:**

1. N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
2. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
4. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009
5. Branson, *Macroeconomics* (2<sup>nd</sup>) edition
6. Soumyen Sikdar - Principles of Macroeconomics (OUP)
6. R. T. Froyen. *Macroeconomics-Theories and Policies*, Prentice Hall; 9th Edition, 2008.

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*Sem-3: Core Course-7 (ECOACOR07T)*

**MATHEMATICAL METHODS FOR ECONOMICS-II**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1. Multi-variable function: some concepts (12hours)**

Convex sets; geometric properties of convex functions, their characterizations, properties and applications; quasiconvex functions, their characterizations, properties and applications; the implicit function; homogeneous and homothetic functions: characterizations and application to comparative statics problems: Maximum (and Minimum) Value Functions; Envelope Theorem; Shadow prices; envelope theorem and applications.

**2. Classical Optimization (12hours)**

First Order condition for optimum; Second Order Condition and sufficiency requirement; Local and Global Optima and Local-Global Theorem; Constraint qualification and Kuhn Tucker condition; Lagrangean Technique for optimization and its interpretation.

**3. Linear Programming and Duality (10 hours)**

Basic concepts and solution methods (graphical and simplex); Duality theorem.

**Applications:** Duality in Consumer Theory: Producer's Theory: Wong-Viner Theorem; Properties of cost functions.

**4. Simultaneous Equation Systems: (15hours)**

Systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications. Linear and non-linear simultaneous systems. Eigen Values, Eigenvectors and Jacobean Transformations.

**Applications:** Simple Linear Input-Output models with fixed coefficients and their Solutions (open and closed model). Two good general equilibrium systems: existence of equilibrium, and comparative statics.

**5. Dynamical Methods: algebraic and geometric exposition. (15hours)**

Single Equation linear Difference and Differential equations systems: Monotonic and oscillatory convergence, divergence and Lyapunov stability.

**Applications:** Cobweb models. Simple small open economy trade models, and the existence of equilibrium and comparative statics

**6. Game Theory and its Applications (11hours)**

Constant and non-constant sum game, two person zero sum game, concept of pure strategy and mixed strategy, Nash equilibrium method and method of dominance.

Application: Cournot model, problem of prisoner's dilemma.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

**Suggested Readings:**

1. Intrilligator, Mathematical Optimization and Economic Theory, (1971).
2. A. Dixit, Optimization in Economic Theory, OUP, (1995).
3. Dorfman, Samuelson and Solow, Linear Programming and Economic Analysis.
4. Simon and Blume, Mathematics for Economists, Norton and Company, 1994.
5. K. Sydsaeter, P Hammond, Mathematics for economic analysis, Pearson Education, (2002).
6. A.C. Chiang, Mathematical Economics, McGraw Hill, 1995.

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*Sem-4: Core Course-8 (ECOACOR08T)*

**INTERMEDIATE MICROECONOMICS – II**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1 . Market Structure: Oligopoly and Strategic Behaviour of Firms (25 hours)**

Conjectural Variation & Reaction functions, Analysis of Cournot&Stackelberg; Collusive Oligopoly & Prisoners' dilemma in cartel stability, Nash equilibrium of game.

**2. Market Failure (15 hours)**

Externalities; public goods and markets with asymmetric information-Moral hazard and adverse selection (concepts only)-Market for Lemons

**3.Input Markets (20 hours)**

Derived demand for a single input & multiple input in competitive & imperfectly competitive markets, Firm demand & industry demand, Adding up problem, Collective bargaining & exploitation, Rent & Quasi-rent.

**4.General Equilibrium, Efficiency and Welfare (15 hours)**

Equilibrium and efficiency under pure exchange and production; Conditions of Pareto optimality; overall efficiency and welfare economics.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

**Suggested Readings:**

1. Robert Gibbons. *A Primer in Game Theory*, Princeton University Press, 1992.
2. Gravelle&Ress, *Microeconomics* (3<sup>rd</sup> Edition)
3. Pindyck&Rubinfeld – *Microeconomics*
4. Koutsoyiannis – *Modern Microeconomics*
5. Maddala& Miller – *Microeconomics*

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*Sem-4: Core Course-9 (ECOACOR09T)*

**INTERMEDIATE MACROECONOMICS – II**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1. Economic Growth (25hours)**

Harrod-Domar model; Solow model; golden rule; technological progress and elements of endogenous growth.

**2. Microeconomic Foundations (40 hours)**

**a. Consumption:** Keynesian consumption function; Fisher's theory of optimal intertemporal choice; life-cycle, Duesenberry's relative income hypothesis and permanent income hypotheses; rational expectations and random-walk of consumption expenditure.

**b. Investment:** determinants of business fixed investment; residential investment and inventory investment. Tobin's q, Accelerator model of investment.

**c. Demand for money:** Transaction demand for money, Precautionary demand for money, Speculative demand for money, The Regressive Expectations Model, The portfolio balance approach, The Baumol-Tobin models of Cash Management, Money as a consumer's and producer's good.

### **3. Schools of Macroeconomic Thoughts (10 hours)**

Mercantilism, Physiocracy, Classical; Keynesians; New-Classicals and New-Keynesians.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

#### **Suggested Readings:**

1. N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
2. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
4. Charles I. Jones, *Introduction to Economic Growth*, W.W. Norton & Company, 2nd edition, 2002.
5. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.
6. Robert J. Gordon, *Macroeconomics*, Prentice-Hall India Limited, 2011.
7. Branson, *Macroeconomics* (2<sup>nd</sup> edition)
8. R. T. Froyen. *Macroeconomics-Theories and Policies*, Prentice Hall; 9th Edition, 2008.

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### *Sem-4: Core Course-10 (ECOACOR10T)*

#### **STATISTICAL METHODS FOR ECONOMICS-II**

Total number of Lecture hours:75

Total number of Tutorial hours:15

#### **Topics**

##### **1. Introduction and Overview (10 hours)**

The distinction between populations and samples, between population parameters and sample statistics; measures to describe and summarize data; population moments and their sample counterparts

##### **2. Elementary Probability Theory (15hours)**

Random variable, Sample spaces and events; probability axioms and properties; counting techniques; Permutations and Combinations; conditional probability and Bayes' rule; independence

##### **3. Random Variables and Probability Distributions (15hours)**

Defining random variables; probability distributions; properties of discrete and continuous distributions, expected values of random variables;

Concepts of some special distributions (Uniform distribution; Binomial and related Distributions; Poisson, Normal and Bivariate Normal distributions; Beta, Chi-Square, t and F distributions), Transformations of variables: discrete and continuous types, Expectations of functions of random variable.

##### **4. Random Sampling and Jointly Distributed Random Variables (10hours)**

Properties of distribution functions, mass functions and density functions for jointly distributed random variables; Computation of expected values; covariance and correlation coefficients.

**5. Sampling****(10hours)**

- (a) Principal steps in a sample survey; methods of sampling; the role of sampling theory;  
(b) Distributions of sample mean and sample variance, properties of random samples.

**6. Introduction to statistical Inference****(15hours)**

Point and Interval Estimation, properties of estimators; confidence intervals for population parameters, Estimation of population parameters using methods of moments and maximum likelihood procedures;

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings:**

1. John E. Freund's Mathematical Statistics with Applications (7th Edition), Irwin Miller (Author), Marylees Miller (Author), Prentice Hall (2003)
2. Kenny and Keeping : Mathematical Statistics, Part I &Part II
3. R.G.Hogg and A.T.Craig : Introduction to Mathematical Statistics, Pearson Education (Indian Edition)
4. V. K. Rohatgi and A. K. M. E. Saleh, An Introduction to Probability and Statistics, 2nd Edition, Wiley (2000).
5. Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010.
6. John E. Freund, *Mathematical Statistics*, Prentice Hall, 1992.
7. Richard J. Larsen and Morris L. Marx, *An Introduction to Mathematical Statistics*

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**Sem-5: Core Course-II (ECOACOR11T)****INTRODUCTORY ECONOMETRICS**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics****1. Classical Statistical Inference:****(20 hours)**

Basic concepts of Estimation: Desirable properties of estimators-Unbiasedness, Minimum Variance- Simple methods of point Estimation-Maximum Likelihood, Estimators and their properties

Testing of hypothesis: Confidence intervals- Testing of Hypothesis- p-values- Type-I and Type-I errors- Simple applications of tests for the mean and variance of Univariate Normal Population. Non-parametric tests.

**2. Linear Regression:****(15 hours)**

Specifications of the model- Assumptions- Ordinary Least Squares (OLS) Estimation-Gauss Markov Theorem- Estimation of the Error Variance- Statistical Inference in the Linear Regression Model- Confidence Intervals for the Estimated Parameters and the Testing of Hypotheses- Coefficient of Determination- Prediction with the Simple Regression model.

**3. Problems in OLS Method:****(20 hours)**

Violation of assumptions and simple least-squares methods in two variable linear regression models: Analysis of Residuals and consequences of applying OLS under autocorrelation, heteroscedasticity, test of autocorrelation and heteroscedasticity, multicollinearity problem, consequences and testing

**4. Multiple Regression with qualitative information:****(15hours)**

Describing qualitative information, single and multiple dummy independent variable, interaction of dummy independent variables, A binary Dependent variable: the linear probability model.

**5. Specification Analysis:****(5hours)**

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

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings**

1. G.S.Maddala, Introduction to Econometrics, 3rd edition, John Wiley & Sons Ltd (2005).
2. Jan Kmenta, Elements of Econometrics, Macmillan Publishing company(1991)
3. D. Gujrati, Basic Econometrics, McGrawhill Higher Education (2003)
4. Greene W.H. : Econometric Analysis, 4th edition, Pearson Education (2000)

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*Sem-5: Core Course-12 (ECOACOR12T)*

DEVELOPMENT ECONOMICS  
Total number of Lecture hours:75  
Total number of Tutorial hours:15

**Topics****1. Basic concepts of development****(20 hours)**

Different concepts of development –Sustainable development, Participatory development, Inclusive development, Human development, Growth and Development– Broad Indicators of Economic Development–Per capita Income–Human Development Index–Gender Development Index–Gender Empowerment Measure–Human Poverty Index. International variations in development measures; Comparing development trajectories across nations and within them. Dependency school of development.Theory of unequal exchange and development.

## **2. Persistence of Underdevelopment and Strategies of Development (25 hours)**

Characteristics of underdevelopment – Obstacles to underdevelopment – Trap Models – Vicious circle of poverty – Critical minimum effort thesis – Low level equilibrium trap – Process of cumulative causation – Big push argument targeting the big push-balanced vs. unbalanced growth; Hirschman model, Choice of technique and investment criteria, Concept of surplus labour – Surplus labour as potential saving – Economic development with unlimited supplies of labour (Lewis Model). Harris-Todaro model.

## **3. Poverty and Inequality (20 hours)**

Meaning of inequality, Inequality measures: Lorenz Curve, Range, Coefficient of variation, Gini-coefficient, Poverty, relative and absolute deprivation with respect to income, Poverty line, Poverty measures – Head count ratio, Poverty gap ratio, Income gap ratio, Human Poverty Index, hunger index etc.. Tackling Poverty – The World Bank Approach

## **4. Globalization (10 hours)**

Globalization in historical perspective- Brettonwoods and its aftermath. The economics and politics of multilateral agreements; trade, production patterns and world inequality; financial instability in a globalized world.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

### **Suggested Readings**

1. Thirlwall: Growth and Development
2. Debraj Roy: Development Economics
3. G.M. Meier and J.E. Rauch. Leading Issues in Economic Development. Oxford University Press. (8th edition or latest)
4. K. Basu: Analytical Development Economics, OUP
5. Debesh Bhattacharya: Political Economy of Development
6. Todaro and Smith: Economic Development, Pearson Education, 2009
7. Y. Hayami, "Development Economics", (Oxford University Press)
8. Dani Rodrik, *The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist*, Oxford University Press, 2011.
9. Soumyen Sikdar (2013) Contemporary Issues in Globalization: An Introduction to Theory and Policy in India, OUP

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### *Sem-6: Core Course-13 (ECOACOR13T)*

#### INDIAN ECONOMY

Total number of Lecture hours: 75

Total number of Tutorial hours: 15

#### Topics

## **1. Economic Development since Independence (25 hours)**

Major features of the economy at independence; Structural constraints; Economic planning- Evolution of Indian Planning and its development goals and strategies: 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 change, savings and investment.

**2. Population and Human Development (15 hours)**  
Demographic trends and issues; education; health and malnutrition.

**3. Growth and Distribution (15 hours)**  
Trends and policies in poverty; inequality and unemployment. Indian growth pattern in post liberalisation era.

**4. Macroeconomic Policies and Their Impact (20 hours)**  
Fiscal Policy; trade and investment policy; financial and monetary policies; labour policy

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

### **Suggested Readings**

1. Datt&Sundaram, Indian Economy(latest Ed.)
2. Mishra &Puri, Indian Economy(latest Ed.)
3. Uma Kapila, Indian Economy: Performance and Policies(latest Ed.)
4. Uma Kapila, Indian Economy Since Independence(latest Ed.)
5. Jean Dreze and AmartyaSen, 2013. *An UncertainGlory: India and its Contradictions*, Princeton University Press.
6. Himanshu. 2011, —Employment Trends in India: A Re-examination, *Economic and Political Weekly*, September.

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### *Sem-6: Core Course-14 (ECOACOR14T)*

#### INTERNATIONAL ECONOMICS

Total number of Lecture hours:75

Total number of Tutorial hours:15

#### **Topics**

**1. International Trade: Ideas and Concepts (25 hours)**

- a. What is International Economics all about?-Meaning and scope of International Economics- Arbitrage as basis and direction of International Trade – difference between international trade and intranational trade.
- b. Concept of Absolute advantage and comparative advantage; externalities, regulation and perverse comparative advantage;

- c. International Equilibrium: Derivation of Offer Curve using TIC and Trade Triangle- TOT-Equilibrium with TIC-Stability of Offer Curve- Offer Curve under constant Opportunity Cost Condition
- d. Gains from Trade: Concept (and significance of shape) of PPF- Decomposition of GFT- Production and Exchange Gain-Substitution possibilities and magnitude of GFT. Exceptional cases where there is only one of the gains or even no gain.

## 2. Theories of International Trade

(20 hours)

- a. **Technology and Trade:** Ricardian Theory of Trade in two-country two-commodity framework-Multi-commodity and two-country framework-Complete Specialization and indeterminacy of TOT-Limitation of Ricardian Trade Theorem.
- b. **Factor Endowment and Trade:** Hecksher-Ohlin Theorem of Trade using Price and Physical definition-Factor Price Equalization Theorem-Rybszynsky Theorem- Stolper Samuelson Theorem-Demand Bias and H-O Theorem, Factor Intensity Reversal and H-O Theorem-Leontief Paradox, Effects of trade on factor price and income distribution, factor price equalization, factor intensity reversal & factor price equalization.
- c. **New trade theories-** i) Intra industry trade policy model-Krugman Model(1979),ii) strategic trade policy model-Brander and Spencer's model(1985) ; the international location of production; firms in the global economy — outsourcing and multinational enterprises.

## 3. Trade Policy(15 hours)

Effect of Instruments of Trade Policy: Effect of imposition of Tariff in partial equilibrium framework for small and large country , Quota, Quota- Tariff equivalence & non-equivalence, effects of tariff, quota, subsidy and voluntary export restraint; Effect of Export Subsidy in partial equilibrium framework for small country, 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.

## 4. Balance of Payment: (15 hours)

- a. 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;
- b. Fixed & Flexible Exchange Rate: adjustment of demand and supply of Foreign Exchange, Effect of devaluation,
- c. Pegged Exchange Rate and BoP: Expenditure Switching Policy (Elasticity Approach) and Expenditure Reducing Policy (Absorption Approach)-Synthesis Approach.
- d. Effects of exchange rate on domestic prices and ToT, Marshall-Lerner Condition, J-Curve effect.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

### Suggested Readings

1. Soderstein. Bo : International Economics, 2nd Edition
2. Kennen,P : International Economics
3. Caves, Frandel and Jones: World Trade and Payments.
4. Krugman and Obstfeld: International Economics- Theory and policy, 8th Edn Pearson
5. RajatAcharyya: International Economics - - Oxford University Press
6. International Economics : Trade & Finance, Dominick Salvatore, 11 thEdn Wiley Publication
7. International Economics :Theory and policy, Krugman and Obstfeld, 8th Edn Pearson
8. Chacholiades M.(1990): International economics , McGraw-Hill

## DSE Courses: Credit: 6 (5L+1T) Full Marks: 75

*Sem-5: DSE Course-Group A(a) (ECOADSE01T )*

APPLIED ECONOMETRICS  
Total number of Lecture hours:75  
Total number of Tutorial hours:15

### *Topics*

**1. Stages in Empirical Econometric Research (10hours)**  
Research Methodology

**2. Essential steps in Primary data collection (10 hours)**  
Problem selection, designing of questionnaire, sample design, pre-testing of questionnaire for collection of primary data, introduction to secondary data sources.

**3. Application of Statistics (15hours)**  
Estimation of descriptive statistics: mean, median, mode, standard deviation, simple correlation, rank correlation. Graphical representation of data sets: pie-chart, bar chart, linear and nonlinear curve fitting.  
Introduction to probability theory, random sampling using random number, Testing of hypothesis.

**4. Application of Econometrics (30hours)**  
Linear regression model and test for linear restriction on parameters test of heteroscedasticity, autocorrelation, multicollinearity, application of dummy variable models.  
Interpretation: Estimated parameters; goodness of fit -  $R^2$  and adjusted  $R^2$ ; partial regression coefficients; testing hypotheses – individual and joint.

**Dummy variables**, dummy variable for changes in intercept term, slope coefficient, dummy variable trap, dummy variables for testing in the regression coefficient

**5.Introduction to Econometric Software Package (10 hours)**  
SPSS; E-VIEWS; STATA (any one)

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings:**

1. Maddala, G, Introduction to Econometrics, Willey, (2002).
2. Hadley, Linear Programming, Addison-Wesley Pub Co ( 1962)
3. Cochran, Sampling Techniques , Wiley; 3rd edition (1977)
4. Wooldridge, J.W : Introduction to Econometrics, South-Western, Division of Thomson Learning; International ed edition (2005)
5. Kenney and Keeping: Mathematics of Statistics, Part I & II, D. Van Nostrand Company Inc; 2nd edition (1951).
6. Madnani, Introduction to Econometrics, S. Chand, (2000).

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*Sem-5: DSE Course-Group A(b) (ECOADSE02T )*

**PUBLIC ECONOMICS**

Total number of Lecture hours:75

Total number of Tutorial hours:15

**Topics**

**1. Nature and Scope of Public Economics (15 hours )**

Definition and Scope of Public Economics; Externalities, Market Failure and Government Intervention; Coase Theorem; Fiscal functions: an overview.

**2. Theory of Public Good (20 hours)**

Definition of Public Good; Characteristics of Pure Public Good; Distinction between Pure Public Good, impure public good and Private Good; Free riding problem; 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.

**3. Taxation (20 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; dead weight loss and distortion, efficiency and equity considerations, tax incidence, optimal taxation; the Laffer curve.

#### **4. Public Expenditure and Public Debt (20 hours)**

Meaning and Classification of Public Expenditure; government budget and its types; government expenditure and tax multipliers, balanced budget multiplier; Fiscal Federalism in India; Meaning of Public Debt; Sources of Public Borrowings: internal and external borrowing; Effects of Public Debt.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

#### **Suggested Readings:**

1. J. Hindriks, G. Myles: *Intermediate Public Economics*, MIT Press, 2006.
2. H. Rosen, T. Gayer: *Public Finance*, 9th ed., McGraw-Hill/Irwin, 2009.
3. J. E. Stiglitz, *Economics of the Public Sector*, W.W. Norton & Company, 3<sup>rd</sup> edition, 2000.
4. R.A. Musgrave and P.B. Musgrave, *Public Finance in Theory & Practice*, McGraw Hill Publications, 5th edition, 1989.
5. Mahesh Purohit, *Value Added Tax: Experiences of India and Other Countries*, 2007.
6. 7. M.M. Sury, *Government Budgeting in India*, 1990.
8. A.B. Atkinson and J.E. Stiglitz, *Lectures on Public Economics*, McGraw-Hill Inc., US, 1980.
9. J. F. Due and A. F. Friedlander. *Government Finance-Economics of Public Sector*, AITBS Publishers and Distributors, 1994
10. Amaresh Bagchi (ed), *Readings in Public Finance*, OUP
11. R.J. Chelliah (ed), *Towards Sustainable Growth*, OUP, 2009
12. A Ghosh and C. Ghosh, *Public Finance*, Prentice Hall India Learning Private Limited; 2nd Revised edition (2014)

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### *Sem-5: DSE Course-Group A(c) (ECOADSE03T)*

#### **ECONOMICS OF HEALTH & EDUCATION**

Total number of Lecture hours:75

Total number of Tutorial hours:15

#### *Topics*

#### **1. Role of Health and Education in Human Development (15hours)**

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

#### **2. Microeconomic Foundations of Health Economics (15hours)**

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

#### **3. Evaluation of Health Programs (15hours)**

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

#### **4. Health Sector in India: An Overview(10hours)**

Health outcomes, health systems, health financing.

#### **5. Education: Investment in Human Capital (10hours)**

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

### 6. Education Sector in India: An Overview (10 hours)

Literacy rates, school participation, school quality measures.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

#### Suggested Readings:

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. The economics of social Determinants of health And health inequalities: World Health Organization 2013
4. Ronald G., Ehrenberg and Robert S., Smith, *Modern Labor Economics: Theory and Public Policy*, Addison Wesley, 2005.
5. Encyclopedia of Health Economics (1st Ed.) 2014, Editor-in-Chiefs: A J. Culyer
6. Economics Of Social Sector And Environment Paperback, 2006, Sangya Srivastava (Author), S. C. Srivastava (Author)
7. Social Sector in India: Issues and Challenges, Himanshu Sekhar Rout, Padmaja Mishra Cambridge Scholars Publishing, 2015

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### Sem-6: DSE Course-Group B(a) (ECOADSE04T)

#### CONTEMPORARY DEVELOPMENT ECONOMICS

Total number of Lecture hours: 75

Total number of Tutorial hours: 15

#### Topic

#### 1. Meaning of Economic Development (10 hours)

Income Approach and Capability Approach, construction and interpretation of HDI; international variations in development measures; comparing development trajectories across nations and within them.

#### 2. Poverty and Inequality (10 hours)

Inequality axioms; a comparison of commonly used inequality measures; Gender Inequality, connections between inequality and development; poverty measurement, HPI; poverty traps and path dependence of growth processes.

#### 3. Political Institutions and the State (10 hours)

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.

**4. Individuals, Communities and Collective Outcomes (15 hours)**  
Individual behavior in social environments, multiple social equilibria; governance in organizations and in communities; individual responses to organizational inefficiency.

**5. Environment and Sustainable Development (15hours)**  
Defining sustainability for renewable resources; a brief history of environmental change; common-pool resources; environmental externalities and state regulation of the environment; economic activity and climate change.

**6. Globalization (15 hours)**

- I. Development as historical processes- Dependency Approach, Unequal exchange.
- II. Evolution of New international economic order- Post Second World War Development Scenario Neo liberalism, Washington consensus, North-South Divide, formation of IMF, WB, UNCTAD, GATT and the Dunkel Draft controversy-World Trade Organization (WTO).
- III. Foreign Finance, Investment and Development: Private foreign direct investment and Multinational Corporations, private portfolio investment, development assistance debate.

[Note: Values in parentheses indicate number of Lecture hours for the corresponding unit]

### Suggested Readings

1. Debraj Ray, Development Economics, Oxford University Press, 2009.
2. Partha Dasgupta, Economics, a Very Short Introduction, Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.
4. Kaushik Basu, The Oxford Companion to Economics in India, OUP, 2007.
5. Kaushik Basu, Analytical Development Economics, OUP
6. Amartya Sen, Development as Freedom, OUP, 2000.
7. Meier and Rauch (ed)- Leading Issues in Development Economics, OUP
8. Todaro and Smith: Economic Development, Pearson Education, 2009
9. Hayami and Godo, Development Economics, OUP, 2005
10. Bardhan and Udry, Development Microeconomics, OUP, 1999

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*Sem-6: DSE Course-Group B(b) (ECOADSE05T )*

FINANCIAL ECONOMICS  
Total number of Lecture hours:75  
Total number of Tutorial hours:15

**Topics**

**1. Investment Theory and Portfolio Analysis (25 hours)**

**a. Deterministic cash-flow streams(10 hours)**

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; immunisation;

**b. Single-period random cash flows(10 hours)**

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.

**c. CAPM (5 hours)**

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.

**2. Options and Derivatives (15 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.

**3. Corporate Finance (35 hours)**

- a. Patterns of corporate financing: common stock; Concepts of primary market and secondary market; debt and common equity - a very brief discussion of advantages and disadvantages associated with each type of instrument due to asymmetric information and agency problems - other instruments: preference shares; preferences; convertibles; Capital structure and the cost of capital; corporate debt and dividend policy; the Modigliani-Miller theorem. (15L)
- b. Evolution of limited liability companies; alternative sources of fund for a firm; (3L)
- c. Financial Statement analysis: Basic accounting concepts, how to read balance sheets, profit and loss accounts and cash flow statements. Ratio analysis.(12L)
- d. Capital structure & Cost of capital (5L)



- e. Application to corporate finance: Net present value and capital budgeting (10L)
- Credit spread
  - Term structure of interest rates

[Note: *Values in parentheses indicate number of Lecture hours for the corresponding unit*]

**Suggested Readings:**

1. David G. Luenberger, Investment Science, Oxford University Press, USA, 1997.
2. Hull, John C., Options, Futures and Other Derivatives, Pearson Education, 6<sup>th</sup> edition, 2005.
3. Thomas E. Copeland, J. Fred Weston and KuldeepShastri, Financial Theory and Corporate Policy, Prentice Hall, 4th edition, 2003.
4. Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, McGraw-Hill, 7th edition, 2002.
5. Stephen A. Ross, Randolph W. Westerfield and Bradford D. 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.
8. Brealey , RA. and Myers, S.C.- Fundamentals of Corporate Finance Ross, W.A., Westerfield, RW. and Jordan, B.D.- Fundamentals of Corporate Finance, TataMcgraw Hill.
9. S. Kevin: Portfolio Management
10. John Hull : Fundamentals of futures and options market
11. P.Chandra : Financial management theory and practice .

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*Sem-6: DSE Course-Group B(c) (ECOADSE02P)*

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**PROJECT/DISSERTATION**

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The course is aimed at providing students the scope to develop the skill of taking up independent analytical research project where they can learn how to select a real life problem, transform the problem into a research question and to apply an analytical framework based on theories learnt and use quantitative tools and problem designing skill. The students are supposed to come up with a conclusive answer to the research question. Finally a report will have to be submitted by the student. This exercise is expected to enhance analytical skill of the students.

## SEC Courses: Credit: 2

Full Marks: 25

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### SEC Course-1 (ECOSSEC01M)

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#### SURVEY METHODOLOGY

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##### Topics

#### 1. Introduction, Inference and Error in Surveys

Introduction to survey methodology; Steps of the process of a survey, Examples of Large-Scale Survey Instruments, Introducing the Concepts of Validity and Reliability, Sources of Error: Sampling and Measurement, Different Theories of Measurement

**Readings:** Groves, et al. (2009), Chapters 1 and 2

#### 2. Sampling in Survey Research

Being Clear about the Population of Interest, Developing a Sampling Frame, Probability sampling; Simple Random and Systematic sampling; Stratification, Cluster and multistage sampling; Other probability designs, Sampling frames; Selection weights; Computing sampling errors, Examples of sample designs

**Readings:** Groves, et al. (2009), Chapters 3 and 4

#### 3. Mode of Data Collection

Face-to-face, Telephone, Self-administered, and Administrative records, Methods of computer assisted data collection; Impact on survey errors, Web surveys, Overview of response behavior; Comprehension; Memory search, Estimation and judgment; Delivery of response

**Pretesting:** Focus groups; Cognitive interviews; Expert review; Pretests; Pilot tests

**Readings:** Groves, et al. (2009), Chapter 5, 7 & 8

#### 4. Nonresponse

Contacting sample units; Gaining the cooperation of sample units, Monitoring the progress of data collection; Response rates

**Readings:** Groves, et al. (2009), Chapter 6

#### 5. Post-Survey Processing; Estimation (Lepkowski)

**Lecture:** Editing data; Coding; Imputation; Construction of unit weights, Variance estimation; Analysis of survey data

**Readings:** Groves, et al. (2009), Chapter 10

#### Required Materials:

Groves, Robert et al. (2009): Survey Methodology, 2 nd Edition. New York: WileyThe textbook will be available online.

Converse, J., & Presser, S. (1986). Survey Questions: Handcrafting the Standardized Questionnaire. Newbury Park: Sage Publications.  
(availableonline:<http://mirlyn.lib.umich.edu/Record/012841736>)

Kalton, G. (1983). An Introduction to Survey Sampling, Beverly Hills: Sage Publications. (available online: <http://mirlyn.lib.umich.edu/Record/012841441>)

Fowler, F., & Mangione, T. (1990). Standardized Survey Interviewing, Newbury Park: Sage Publications. (available online: <http://mirlyn.lib.umich.edu/Record/012841712>)

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*SEC Course-2 (ECOSSEC02M)*

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**INDIAN OFFICIAL STATISTICS**

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**1. Introduction**

What is Official Statistics? Methods of Collecting Official Statistics, Aims and Objectives, Indian Statistical System: Main functions of Statistical System in Indian, Institutional Framework- Official Organizations for collecting/compiling/ publishing national/state level data on different variables

**2. Economic Census**

Economic Statistics, Population Statistics, Employment Statistics, Agriculture Statistics, Financial Statistics - Main Publications, Who collects - Periodicity and Features

**3. Sources of demographic data** - Registration of Vital events. Rates and ratios. Measures of mortality. Measures of fertility and Reproduction. Use of demographic data for policy formulation. **L-8**

**4. International Statistical System:** Comparison of major macro variables - National Income/GDP. Selected topics from: Purchasing power parity; Indicators relating to Energy, environment, Gender, Industry, National accounts, Social Statistics and Trade. **L-5**

Reference Texts:

1. M. R. Saluja: Indian Official Statistical Systems.
2. CSO (MOSPI) Publication: Statistical System in India.
3. United Nations publications
4. RBI: Handbook of Statistics for the Indian Economy (various years)
5. Economic Survey, Govt. of India, Ministry of Finance (various years)
6. R. Ramkumar: Technical Demography.
7. K. Srinivasan: Demographic Techniques and Applications.
8. B. D. Mishra: An Introduction to the Study of Population.
9. H. S. Shryock: The Methods and Materials in Demography.