Syllabus in Economics (Hons) and Generic Elective under CBCS (*Approved by the BOS meeting held on 08.02.2019)*

Department of Economics
Rabindra Bharati University

Session : 2019-20 & onwards

1. Scheme for CBCS Curriculum

Credit Distribution across Courses

Course Type	Total Papers	Credits	
		Theory + Practical	Theory*
Core Courses	14	14*4 =56 14*2 =28	14*5 =70 14*1=14
Discipline Specific Electives	4	4*4=16 4*4=2	4*5=20 4*1=4
Generic Electives	4	4*4=16 4*4=2	4*5=20 4*1=4
Ability Enhancement Language Courses	2	2*2=4	2*2=4
Skill Enhancement Courses	2	2*2=4	2*2=4
Totals	22	140	140

*Tutorials of 1 Credit will be conducted in case there is no practical component

1.2 Scheme for CBCS Curriculum in Economics

Semester	Course Name	Course Detail	Credits
I	Ability EnhancementCompulsoryCourse (AECC)–1.1	English communication / EnvironmentalScience	2
	Core Course(CC)–1.1	Introductory Microeconomics	6
	Core Course(CC)–1.2	Introductory Macroeconomics	6
	Genetic Elective(GE)–1.1		6
II	Ability Enhancement Compulsory Course (AECC)–2.1	English communication / Environmental Science	2

	Core Course(CC)–2.1	Intermediate Microeconomics-I	6
	Core Course(CC)–2.2	Intermediate Macroeconomics-I	6
	Generic Elective(GE)–2.1		6
III	Core Course(CC)–3.1	Mathematical Methods for Economics-I	6
	Core Course(CC)–3.2	Intermediate Macroeconomics-II	6
	Core Course(CC)–3.3	Statistical Methods for Economics	6
	Skill Enhancement Course(SEC)–3.1		2
	Generic Elective(GE)–3.3		6
IV	Core Course(CC)–4.1	Intermediate Microeconomics-II	6
	Core Course(CC)–4.2	Mathematical Methods for Economics-II	6
	Core Course(CC)–4.3	Introductory Econometrics	6
	Skill Enhancement Course(SEC)-4.1		2
	Generic Elective(GE)–4.1		6
V	Core Course(CC)–5.1	International Economics	6
	Core Course(CC)–5.2	Development Economics	6
	Discipline Specific Elective(DSE)–5.1		6
	Discipline Specific Elective(DSE)–5.2		6
VI	Core Course(CC)–6.1	Indian Economy	6
	Core Course(CC)–6.2	Public Economics	6
	Discipline Specific Elective(DSE)–6.1		6
	Discipline Specific Elective(DSE)–6.2		6

1.3 Choices for Skill Enhancement Courses(SEC)

Skill Enhancement Course- 3.1 & 4.1	
Data Exploration, or	Data Analysis with basic computer application, or
Managerial Economics	Understanding the Union Budget

1.4 Choices for Discipline Specific Electives(DSE):

DisciplineSpecificElective–5.1 & 5 2		DisciplineSpecificElective–6.1 & 6.2	
Preliminary issues on social sector		Contemporary Issues in Indian Economy	
Political economy of development		Economic History of India (1857-1947)	
Introduction to Environmental and Resource Economics		Issues in Development Economics	
Financial Economics		Money and Financial Markets	
Topics in Microeconomics		Dissertation/Project	

Semester I
Core Course(CC): 1.1
Introductory Microeconomics
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. Exploring the subject matter of Economics   **(0.5 Credit, 6 classes)**

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.

2. **Supply and Demand: Elasticity and Market**   **(1 Credits, 12 classes)**

 Demand / Supply: Determinants of individual demand/supply- Law of demand and Law of supply - demand/supply schedule and demand/supply curve -- market versus individual demand/supply. The concept of equilibrium: statics, dynamics and comparative statics. Shifts in the demand/supply curve – Market Equilibrium- Existence, Uniqueness, and Stability. The concept of elasticity of demand -- relation between own price elasticity and slope of the demand curve-relation between own price elasticity of demand and total expenditure. Cross price elasticity and income elasticity of demand – measurement of price elasticity of demand (Revenue Method and Point Method)- Demand elasticities and classification of commodities - elasticity of supply -- Markets and competition- how prices allocate resources - controls on prices - taxes and the costs of taxation - consumer surplus, producer surplus and the efficiency of the markets.

3. **Consumer Behaviour**   **(3 Credits, 36 classes)**

Cardinal utility theory: Law of diminishing Marginal Utility, Law of Equi-marginal utility-derivation of the Marshallian demand curve and its elasticity implications.

   Ordinal utility theory: axioms – indifference curves Budget constraint/ line – shifts of budget line. Description of   preferences– representing preferences with indifference curves – properties of indifference curves-consumer's optimum choice budget constraint and consumer's equilibrium – comparative static – income and substitution effects – compensating and equivalent variation substitution effect and income effect : Hicks and Slutsky – ordinary vs compensated demand curves (normal, inferior and Giffen goods). –Income consumption curve and price consumption curve – income consumption curve and income elasticity of demand – price consumption curve and price elasticity of demand. Engel's curve. Labour supply and savings decision – choice between leisure and consumption: Revealed Preference approach: Strong and weak axioms of revealed preference –properties of demand function.

4. Production and Costs   **(1.5 Credits , 18 Classes)**

Producer Theory : Technology and technological efficiency – general concept of production function – types of production function – law of diminishing returns to factors – concepts of total product, average product and marginal product – returns to scale – isoquants – economic regions of production – diminishing rate of factor substitution – isoquants and returns to scale – iso-cost lines – optimizing behavior of firm – expansion path –isoclines – General concept of homogenous and

homothetic production function and their properties – elasticity of substitution – some examples of technology (fixed proportion, perfect substitute – Cobb– Douglas Production Function, CES Production Function).

Cost Analysis: Economic cost, Opportunity cost, Accounting cost, Sunk cost, Time dimension of cost – short run cost – total cost: fixed and variable cost –marginal cost – average cost – derivation of short run cost – long run cost function – functional coefficient and shape of long run average cost – relation between short run and long run cost – expansion path and relation with long run total cost curve.

Readings
1. N. Gregory Mankiw, *Principles of Microeconomics,* Indian Edition, Cengage Learning, 4th Edition, 2006
2. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007.
3. 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.
4. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007.
5. Pindyck, Rubinfeld and Mehta: Microeconomics, Pearson Education.
6. Varian H.R: Intermediate Microeconomics: A Modern Approach, East West Press.

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Semester I
Core Course(CC): 1.2
Introductory Macroeconomics
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

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1. National Income Accounting
   Economy's income and expenditure, Components of GDP, Real vs Nominal GDP, GDP deflator and price indices.

2. Income Determination in the short-run
Simple Keynesian System: Multipliers; equilibrium in both closed and open economy and stability; autonomous expenditure, balanced budget, and net exports; paradox of thrift, open economy SKM.

3. Classical System
Classical System: Say's law and quantity theory; Friedman's restatement; classical dichotomy and neutrality of money;

Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
N. Gregory Mankiw. Principles of Macroeconomics, Indian Imprint of South Western by Cengage India, 6th edition, 2015.
Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
Sikdar Soumyen, Principles of Macroeconomics, Oxford University Press
  Ambar Nath Ghosh and Chandana Ghosh, Macroeconomics, Prentice Hall, India

Semester II
Core Course(CC): 2.1
Intermediate Microeconomics-I
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit   : 6 (72 classes)

1. **Perfect Competition**   **(1 Credit , 12 Classes)**

Assumptions – economic vs. accounting profit – short-run profit maximization – short run supply curve of the firm and the industry - Output choice and competitive equilibrium in the long run – long-run industry supply curve under constant, increasing and decreasing costs. Consumer's and producer's surplus – effects of tax and subsidy – price ceiling in a competitive industry.

2. **Imperfect Competition**   **(3.5 Credits, 42Classes)**

- Monopoly: Monopoly –chareteristics – optimum output determination. monopoly power : mark-up pricing – sources of monopoly power – Measuring monopoly power – Profit maximization of a single plant monopolist – effects of tax – the multiplant monopoly – natural monopoly – limiting market power: price regulation – taxation --antitrust laws – Different Pricing Strategies: Capturing consumer surplus – Price Discrimination : First and Second degree – two part tariff – Third degree – Bilateral monopoly. Welfare Cost of Monopoly

- Monopolistic Competition: Assumptions – Product Differentiation and demand curve – concept of Group – equilibrium of the firm: short run and long run – Excess capacity and its interpretation.

- Oligopoly: strategic interaction and conjectural variation –Theories of oligopoly: Simultaneous Quantity Setting: Cournot Equilibrium – Simultaneous Price Setting: Bertrand Equilibrium – Quantity Leadership: Stackelberg Equilibrium – Price Leadership: Collusion and formation of Cartel – Price Rigidity: Sweezy equilibrium.

3. **Market for Inputs**   **(1.5 Credits, 18Classes)**

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

Factor demand in imperfect competition – Single input case – several inputs – exploitation and role of trade union – Rent and Quasi-rent.

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Semester II
Core Course(CC): 2.2
Intermediate Macroeconomics-I
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

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1. **IS-LM Model**

IS-LM Model - equilibrium, stability and comparative statics; effects of fiscal and monetary policies.

2. Complete Keynesian Model

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; including real balance effect and wage cut policy. Keynesian vs classical system.

3. Theories of Consumption

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

4. Investment Function

MEC and MEI- Jorgenson's neo-classical theory- Acceleration principle- fixed and variable.

Semester III
Core Course(CC): 3.1
Mathematical Methods for Economics - I
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. Set Theory, Functions and Correspondences   **(1 Credit , 12 Classes)**

(i)   Definition of a set and discussion of related concepts; Set types; Operations on sets; Nested sets; Cartesian product; Concept of Euclidean Space.

(ii)   Definitions; Concepts of 'range', 'domain' and 'mapping'; Concept of function; Explicit and implicit functions – economic illustrations. Linear, quadratic and cubic functions - Homogeneous and Homothetic function –Basic log operations- Exponential function; Equations of Straight line, Circle, Parabola and Rectangular Hyperbola- their graphical representation.
Economic applications:

2. Basic Calculus with applications in Economics   **(3 Credits , 36 Classes)**

(i) <u>Differential Calculus</u>
Concept of 'limit and continuity', Concept of differentiation, Rules of differentiation- partial and total differentiation, Euler's Theorem. Applications in Economics: Demand function, Elasticity of demand, Marginal revenue, Marginal Utility, Relation between average revenue and marginal revenue, slope and curvature of indifference curve, point of inflexion, returns to scale, Properties of Cobb-Douglas Production function, linear, quadratic and cubic cost functions.

(ii) <u>Maxima and Minima (Extrema) of Functions</u>
Relative (local) and absolute (global) extrema - The first derivative and the second derivative test Convexity and Concavity of functions; Extrema of functions of several variables without and with constraints - First and second order conditions for

optimization without constraints; Optimization with constraints - The method of Lagrange multiplier. Derivation of Slutsky Equation. Relation between AP and MP, Relation between AC and MC, Profit maximization, Utility maximization subject to budget constraint, output maximization subject to cost constraint, cost minimization subject to output constraint.

(iii) <u>Integral Calculus</u>

Concept of Integration as a reverse process of differentiation - Rules of Integration - Techniques of definite integral. Applications in Economics: Finding out total functions(TR, TC, Consumption function, Saving function) when marginal functions are given, Consumer's surplus, Producer's surplus.

3. **Linear Programming(LP)**   **(2 Credits , 24 Classes)**

General Formulation of the LP Problem- Graphical Solution(Maximisation and Minimisation Problem)- Concepts of Slack and surplus variables, Basic Feasible Solution- Solution by Simplex Method- Assignment Problem- Transportation- Duality- Economic Interpretation of Duality.

Readings:

1. Sydsaeter, K. and Hammond, P.: *Mathematics for economic analysis*, Pearson Education Asia, Delhi, 2002.
2. Archibald, G.C & Lipsey: An Introduction to a Mathematical Treatment of Economics, New, Delhi, All India Traveller Bookseller, Indian Reprint
3. Chiang : Fundamental Methods of Mathematical Economics (3rd edition)

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Semester III
Core Course (CC): 3.2
<u>Intermediate Macroeconomics-II</u>
<u>Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]</u>
<u>Credit : 6 (72 classes)</u>

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1. Schools of Macroeconomic Thoughts

Basic tenets of Classical System, Keynesian System, Monetarism, Neo-Classical System, Supply-side Economics, New Classical and New Keynesian System.

2. Inflation, Unemployment and Expectations

Expectation augmented aggregate supply curve, Inflation and unemployment trade-off- Short run and long- run Phillips curve under adaptive expectations-outcome under rational expectations (non-rigorous).

3. Demand for Money

Demand for money: Regressive expectations and Tobin's portfolio choice models; Baumol's inventory theoretic money demand.

4. Supply of Money

Demand for money: Regressive expectations and Tobin's portfolio choice models; Baumol's inventory theoretic money demand.

Money Supply: Asset liability accounting of Central and Commercial banks, high-powered money; alternative definitions of money supply, money multiplier analysis. Monetary policy – OMO, Bank rate, variable reserve ratio, repo and reverse repo.

5. Growth Theories
Harrod- Domar model and Solow one sector growth models; golden rule; dynamic efficiency, technological progress.

Reference Books
2. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
3. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
3. Steven M. Sheffrin, Rational Expectations, Cambridge University Press, 2nd edition, 1996.
4. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
5. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 10th edition, 2016.
6. William Branson. Macroeconomic Theory and Policy, Indian reprint, East West Press, 3rd edition, 2014.
7. Sikdar Soumyen, Principles of Macroeconomics, Oxford University Press
8. Ambar Nath Ghosh and Chandana Ghosh, Macroeconomics, Prentice Hall Pub.

Core Course(CC): 3.3
Statistical Methods for Economics
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. Descriptive Statistics
Presentation of Data; Frequency Distribution; Measures of Central Tendency, Dispersion,
Moments, Skewness and Kurtosis; Bivariate Frequency Distribution- Correlation and Regression**.**
2. Elementary Probability Theory
Sample spaces and events; Probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

3. Random Variables and Probability Distributions

Defining random variables; probability distributions; expected values of random variables and of functions of random variables; properties of commonly used discrete and continuous distributions (uniform, binomial, normal, Poisson and exponential random variables).

4. Jointly Distributed Random Variables

Density function of bivariate normal distribution and obtaining means, variances, and correlation coefficients.

5. Sampling

Concept of sampling and random sampling; Principal steps in a sample survey; methods of sampling- SRSWR, SRSWOR; Sampling and non-sampling error.

6. Estimation

Parameters and statistics; Point estimation- Properties of a good estimator; Maximum Likelihood Method and the method of moments; Estimation of population parameters using SRSWR and SRSWOR; Interval estimation. Testing of Hypothesis, Type I & Type II Error.

Readings:

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 11 and its Applications, Prentice Hall, 2011.
 4. William G. Cochran, Sampling Techniques, John Wiley, 2007.
5. Goon, Gupta and Dasgupta, Fundamentals of Statistics, Volumes 1 and 2.

Skill Enhancement Course(SEC)-1
(Choice: either SEC- 3.1 or 3.2)
SEC- 3.1

Data Exploration

Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 2

1.   Sources of data

Introduction, aims and objectives, methodology of data collection, different types of data source

2.   Collection of Primary data

Objectives, questionnaire designing, sample survey, data presentation and interpretation

3.   Different Sources of Secondary data

Discussion on the sources of different national and international data base

Brief discussion on the Economic Survey, CSO, NSSO, ASI, RBI, data base of Ministry of Health, Ministry of Human Resource Development, Government of India, various state level data source etc

Brief discussion on various international level data base with special reference to World Bank Data base, IMF database, WHO database, Unite Nation Statistical Accounting, WITs etc.

References:

M. R. Saluja: Indian Official Statistical Systems.
CSO (MOSPI) Publication: Statistical System in India.
United Nations publications
RBI: Handbook of Statistics for the Indian Economy (various years)
Economic Survey, Govt. of India, Ministry of Finance (various years)
R. Ramkumar: Technical Demography.

K. Srinivasan: Demographic Techniques and Applications.
B. D. Mishra: An Introduction to the Study of Population.
H. S. Shryock: The Methods and Materials in Demography.
Goon, Gupta and Dasgupta – Basic Statistics
Gupta and Kapoor – Fundamental of Mathematical Statistics.
N. G. Das – Statistical Method (Part I & II)
13. Goon, Gupta and Dasgupta – Fundamental of Statistics, Vol. I & II

Skill Enhancement Course(SEC)-I
SEC- 3.2
MANAGERIAL ECONOMICS
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 2

1.Meaning and Scope of Managerial Economics -   Organisational   Goals   –   Profit maximization hypothesis, Critique of profit maximization hypothesis- alternative goals of the firm – Managerial theories- Baumol , Marris , Williamson,Behavioural Theory of the Firm.

2. Demand Analysis:
Demand forecasting, Methods of demand forecasting: Survey Method, Statistical Methods – Trend Projection method, Regression Method, Leading Indicator Method. (Simple numerical problems)

3. Price determination under different structures:
Methods of price determination in practice – Mark up pricing, Limit pricing, Average cost pricing, Peak load pricing, Multiple product pricing, Transfer pricing.(Simple numerical problems).

4. Risk and Uncertainties in Managerial Decision Making
Distinction between risk and uncertainties; Measuring risk with probability distributions ; Different criteria for decision making under risk ; Expected utility theory ; Decisions under uncertainties. (Simple numerical problems)

5. Real and Financial Investment decisions:
Types of real capital investment decisions, evaluation of investment, financial investment alternatives, market for shares and bonds.

References:
Koutsoyiannis .A: Modern Microeconomics, MacMillan.
Hague: Managerial Economics, ELBS.
Cyert and March: A Behavioural Theory of the Firm, Prentice Hall.
Henderson and Quandt: Microeconomic Theory. McGraw Hill
Stonier and Hague: A Text Book of Economic Theory, ELBS.
Baumol : Economic Theory and Operation Analysis, Prentice Hall.
Maheswari and Varsheny : Managerial Economics, S.Chand & Co.
Thomas. C.R., Maurice, S.C., Sarkar, S : Managerial Economics , Tata McGraw Hills.
Peterson, C.H., Lews, W.C, Jain, S.K : Managerial Economics ,Peason Edition.
Mithani, D.M : Managerial Economics- Theory and Applications, Himalya Publishing House.
Damodaran, S.: Managerial Economics, Oxford University Press.,New Delhi.
Mehta, P.L.: Managerial Economics – Analysis, Problems and Cases, S. Chand and Sons.
Goon, Gupta and Dasgupta: Basic Statistics, World Press.
N.G .Das: Statistical Methods.

Semester IV
Core Course(CC): 4.1
Intermediate Microeconomics-II
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. **Choice under Uncertainty and Economics of Information**   **(2 Credits, 24 Classes)**
   Utility function and expected utility – risk aversion and risk preference – insurance and investor's choice. Asymmetric information-adverse selection and moral hazard

2. **General Equilibrium and Welfare Economics**   **(2 Credits, 24 Classes)**
   Interdependence in the economy – the Walrasian system – existence, uniqueness and stability of general equilibrium – Pareto optimality and welfare – $2 \times 2 \times 2$ general equilibrium model – equilibrium of production (under perfect competition) – Production Possibility frontier – equilibrium of consumption – Utility Possibility Frontier – Grand Utility Possibility Frontier – General Pareto Optimality – Social Welfare Function(concept only).

3. **Market Failure**   **(1 Credits, 12 Classes)**
   Market failure and policies: Market Failure under externality – Coase Theorem – Pareto optimality with public goods and market failure**.**

4. **Market structure and Game Theory**   **(1 Credits, 12 Classes)**
   - Game theory: Description of game – strategic form and extensive form game – Prisoner's Dilemma – Nash equilibrium – mixed strategy game- application in market structures.

Readings
1. Varian H.R: Intermediate Microeconomics: A Modern Approach, East West Press8[th] edition,2010. The workbook by Varian and Bergstrom may be used for problems.
2. Pindyck, Rubinfeld and Mehta: Microeconomics, Pearson Education Asia
3. Maddala and Miller: Microeconomics- Theory and Applications, McGraw Hill
4. Satya R. Chakravarty, Microeconomics, Allied Publishers Pvt Ltd

Semester IV
Core Course(CC): 4.2
Mathematical Methods for Economics - II
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. **Differential Equations**   **(1.5 Credits, 18 Classes)**
   - First order and second order differential equations
   - Applications in Economics: Time path of price and quantity in competitive markets, time path of income in simple Keynesian model, Stability analysis, Time path of inflation and unemployment rates, Harrod-Domar model ,Solow growth model.

2. **Difference Equations**   **(1.5 Credits, 18 Classes)**

- First and second order difference equations
- Applications in Economics: Cobweb model, Market model with inventory, Samuelson's multiplier -accelerator interaction model, inflation and unemployment in discrete case.

3. **Elements of Matrix Algebra**   **(1.5 Credits , 18 Classes)**
   Elementary operations, Determinants, Rank of matrix., Inverse of matrix, Hessian Determinant, Bordered Hessian Determinant, Technique of solving simultaneous equation by Cramer's rule. Applications in Economics: Partial Market Equilibrium Model, Simple National Income Determination Model. The IS-LM model and Comparative Static Analysis,

4. **Input –Output Analysis**   **(1 Credits, 12Classes)**
   Structure of an input output model, the open model, price-output solution in an input output model, Hawkins-Simon Condition and its economic interpretation, the Solow condition, the closed input-output model.

5. **Game Theory**   **(0.5 Credit, 6 Classes)**
   Structure of game, pay-off matrix, two person zero sum game, non-zero sum game, Nash equilibrium, pure and mixed strategies.

Readings
1. Sydsaeter, K. and Hammond, P.: *Mathematics for economic analysis*, Pearson Education Asia, Delhi, 2002.
2. Chiang : Fundamental Methods of Mathematical Economics (3rd edition)
3. Henderson & Quandt: Microeconomic Theory (3rd edition)
4. Dorfman, Samuelson & Solow: Linear Programming & Economic Analysis Intrilligator, Mathematical Optimization and Economic Theory, (1971).
5. Taro Yamana: Mathematics for Economist- An Elementary Survey
6. Sharma: Operation Research- Theory and Applications, Macmilan India Ltd.

Core Course(CC): 4.3
<u>Introductory Econometrics</u>
<u>Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]</u>
<u>Credit : 6 (72 classes)</u>

1. **Nature and Scope of Econometrics**

2. **Statistical Concepts**
Sampling Distributions-Normal distribution; chi-square, t- and F-distributions; Testing of Hypotheses: defining statistical hypotheses; distributions of test statistics; Type I and Type II errors; power of a test; testing hypotheses related to population parameters.

3. Simple Linear Regression Model: Two Variable Case
The model and the role of disturbance term ; Estimation of model by method of ordinary least squares (OLS); properties of estimators; Gauss-Markov theorem, Reverse Regression; goodness of fit; Testing of hypotheses and confidence intervals; scaling and units of measurement; prediction.

4. Multiple Linear Regression Model
Estimation of parameters; properties of OLS estimators; goodness of fit – R^2 and adjusted R^2 ; Partial regression coefficients; Testing hypotheses – individual and joint; functional forms of regression models; qualitative (dummy) independent variables.

5. Violations of Classical Assumptions: Consequences, Detection and Remedies Problems of Multi-collinearity, Heteroscedasticity, and Auto correlation; Consequences of applying OLS under Heteroscedasticity and Autocorrelation and their detection– Durbin-Watson Test, Glesjer Test, Goldfeld-Quandt Test.

6. Specification Analysis

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

Readings:

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. Maddala- Introduction to Econometrics, Wiley
6. Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 3rd edition, Indian edition, 2007.
7. Jan Kmenta, Elements of Econometrics, Indian Reprint, Khosla Publishing House, 2nd edition, 2008.

Skill Enhancement Course(SEC)-2
(Choice: either SEC- 4.1 or 4.2)

SEC- 4.1
Data Analysis with Basic Computer Application
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 2

It is a Lab Based Practical Paper. The student shall learn the operations through Lectures, Hands-on Practical Training followed by practical tests.

1. **Basic Statistics**: Population census versus sample surveys, Random sampling, Frequency distribution and summary Statistics

2. **Spread Sheet Analysis** : Basic features of Spreadsheets; Data entry, Mathematical Functions, Financial functions, Statistical Functions, Creating simple Line, Bar and Pie charts

3. **Regression Analysis** : Simple 2 variable regressions, multivariate regression, Correlation analysis in suitable econometric package

Reference Books

► Goon, Gupta and Dasgupta – Basic Statistics
► Gupta and Kapoor – Fundamental of Mathematical Statistics.

- ► N. G. Das – Statistical Method (Part I & II)
- ► Goon, Gupta and Dasgupta – Fundamental of Statistics, Vol. I & II
- ► Data Analysis Using Microsoft Excel, STATA, EVIEWS etc

Skill Enhancement Course(SEC)-2
SEC- 4.2
Understanding the Union Budget
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 2

1. Current macroeconomic Scenario of India
   Growth performance, fiscal policy and monetary policy: need for government spending, public debt: its relevance and importance

2. Union budget
   Need for the budget, analyzing the budget in terms of

   (i) Receipts: revenue account, capital account, proposed sources of revenue, tax structure: direct and indirect
   (ii) Expenditure: allocation of the resources, sectors which have received higher or lower shares of expenditure, reasons and consequences thereof, subsidies given
   (iii) Deficits: trends in fiscal and revenue deficits

3. Fiscal federalism
   Centre – state allocation of power and responsibilities

Selected Readings:

1. *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.
2. 'Understanding the Budget Concepts and Terminologies', Centre for Budget and Governance Accountability http://www.cbgaindia.org/files/documents/Understanding%20the%20Budget%20Concepts%20and%20Terminologies.pdf
3. *The Key to Budget Documents, Budget At A Glance, Macroeconomic Framework Statement, Medium Term Fiscal Policy Statement and Fiscal Policy Strategy Statement* , all available at indiabudget.nic.in.
4. Pranab Mukherjee (2012), "Budget Making", in K. Basu and A. Maertens (eds), *The New Oxford Companion to Economics in India*, OUP.
5. Dipak Dasgupta and Supriyo De (2012), "Fiscal Deficit", in Basu and Maertens.
6. Uma Kapila (2016), "Fiscal and Budgetary Developments", in *Indian Economy Since Independence*, Academic Foundation, latest edition.
7. Chandana Ghosh & Ambar Nath Ghosh: Indian Economy: A Macro Theoretic analysis, Prentice Hall, 2016
8. RBI, Different Reports on Monetary Policies, Macroeconomic Aggregates.

Semester V
Core Course(CC):5.1
International Economics
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. **Basics of Trade Theory**

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.

2. **Technology and Trade (Ricardian Model):**

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

3. **Factor Endowment & Trade (Heckscher-Ohlin-Samuelson Model):**

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.

4. **Trade Policy:**

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.

5. **Balance of Payments & Exchange Rate:**

Balance of Payment accounts in an open economy; Determination of National Income, 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. , IS-LM in the open economy under fixed and flexible exchange rate with perfect and imperfect capital mobility (Mundell-Fleming model).

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

Core Course(CC):5.2
Development Economics
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. Introduction

Different concepts of development- Sustainable development, Participatory development, Inclusive development, Human development; Growth and development- Broad indicators of economic development, Basic needs approach and PQLI; Capability approach; Human development index; Gender empowerment measures

2. Economic Growth
   Growth models- Harrod-Domar and introduction to Solow
3. Development and Underdevelopment as a Historical Process
   Dependency theory of Baran; Frank's theory of colonial exploitation; Merchant capital in shaping underdevelopment (Kay); Emmanuel's theory of unequal exchange
4. Persistence of Underdevelopment and Way to Develop
   Characteristics and obstacles of underdevelopment; Vicious circle of poverty; Low level equilibrium trapand critical minimum effort thesis; Concept of surplus labour- Lewis and Harris-Todaro models; Rostow's Stage Theory
5. Development Strategy
   Capital intensive versus labour intensive techniques- model of choice of technique in a labour surplus economy
6. Poverty and Inequality
   Poverty line and Absolute versus Relative poverty; poverty measurements: Head Count Ratio, Income Gap Approach; HPI; Inequality axioms; Common measures of inequality- Gini Index and measures of inequality

References:

Debraj Ray, Development Economics, Oxford University Press, 2009.

Partha Dasgupta, Economics, a Very Short Introduction, Oxford University Press, 2007.

Abhijit Banerjee, Roland Benabou and DilipMookerjee, Understanding Poverty, Oxford University Press, 2006.

Thomas Schelling, Micromotives and Macrobehavior, W. W. Norton, 1978.

Albert O. Hirschman, Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States, Harvard University Press, 1970.

RaghuramRajan, Fault Lines: How Hidden Fractures Still Threaten the World Economy, 2010.

ElinorOstrom, Governing the Commons: The Evolution of Institutions for Collective Action, CambridgeUniversity Press, 1990.

DaniRodrik, The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist, Oxford University Press, 2011.

Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.), Globalization in Historical Perspective, University of Chicago Press, 2003

Discipline Specific Elective Course(DSEC) – 5.1

Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

Discipline Specific Elective Course(DSEC) – 5.2
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

The Department will offer the specific course of the DSE 5.1 and DSE 5.2 to be taken by the students according to the availability of the faculty members of the respective courses.

(I) Preliminary Issues on Social Sector: 6 Credits

1. Introduction to the idea of Social Sector
What constitutes social sector and its role in the economy. The importance of economy-society interface. Issues on economic growth and development.

2. Education:

Role of education; Literacy rate, enrolement ratio, rate of school dropouts; Structure and role of private and public educational institutions; Class and gender gap in education with reference to the Indian scenario.

3. **Health:** Notion and impact of health burden; Baic health indices, maternal mortality, infant mortality rates and their outcomes; Private and public health care sectors; Issues on availability and affordability of health care; the Indian context.

4. **Poverty and Unemployment:**

Notions of formal and informal sector; The unorganized, unemployed and working poor; Concept of social security and decent labour;

5. **Poverty and Food Security:**

Concept of food security, basic calorie intake and poverty line; the current status of food security and inequality in distribution; Public distribution system in India.

6. **Gender and Social identities:**

Gender Gap and gender eqity; Issues on class, caste and gender; Cultural, social and economic hierarchies.

Reference

Jean Dreze and Angus Deaton, 2009, Food and Nutrition in India: Facts and Intepretations, Economic and Political Weekly, February.

Himanshu. 2011, ―Employment Trends in India: A Re-examination, Economic and Political Weekly, September.

Rama Baru et al, 2010, ―Inequities in Access to Health Services in India: Caste, Class and Region, Economic and Political Weekly, September.

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.

Reetika Khera, 2011, ―India's Public Distribution System: Utilisation and Impact Journal of Development Studies.

UNDP, "Gender Related Poverty Index" and "Gender Empowerment Measure" access at http://hdr.undp.org/reports/global/2004/ (from pdf file on Human Development Indicators, pages 217- 237)

Sen, "Gender Inequality and Women's Agency" (excerpts) (Sen 2002: 229 -274).

(II) Political Economy of Development : 6 Credits

1. **Introduction to Political Economy**

   Approach of political economy and 'crtique' as a tool of analysis; broad perspectives on political economy.

2. **Capitalist Development:**

Emergence of capitalist economy; Organisation of production and labour process; Market and the welfare state; limitations and success within capitalist development .

3. **The Changing Dynamics of Capitalism:**

Change in organization of production; Fordist production system and capitalist economy; Globalization and post-Fordist mode of production; Change in capital and labour relations; Production value-chain and surplus.

4. **Labour :**

Labour process and forms of labour; Transformation of labour forms; Work-contracts and outsourcing; Labour rights and labour-flows; Women labour – issues on participation, discrimination and feminization.

5. **Uneven development:**

Poverty and exclusion; Gender Gap; Social Inequalty; Labour migration

Reference

Edmund S Phelps -- Political Economy and Introductory Text, 2010.

John Isbister, Promises Not Kept: Poverty and the Betrayal of Third World Development, (West Hartford: Kumarian Press, 2004).

Oswaldo de Rivero, The Myth of Development: The NonViable Economies of the 21[st]Century (London: Zed Books, 2001).

Engels, "Historical Introduction,""The Industrial Proletariat," and "The Great Towns" (excerpt) (Engels 1968 (1845): 9,33).

Marx, "The British Rule in India" and "The Future Results of British Rule in India" (Marx and Engels 1972 (Marx 1853): 35-41, 81 – 87).

Nehru, "The Plunder of Bengal helps the Industrial Revolution in England" and "The Destruction of India's Industry" (Nehru 1946: 295 - 302).

(III)   Topics in Microeconomics : Credits : 6

1. **Introduction**: 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.

2. **Normal form games**: 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.

3. **Extensive form games with perfect information:** The game tree; strategies; sub game perfection; backward induction; sequential equilibrium; bargaining; Rubinstein bargaining, and Nash bargaining.

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

References:
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.
4. Anindya Sen, Microeconomics.
5. Satyaranjan Chakraborty, Microecnomics

(IV)   Introduction to Environmental and Resource Economics, Credits : 6

1. **Introduction**
   Interaction between man and nature and emergence of environmental and resource economics, key environmental issues and problems.
2. **The Theory of Externalities**
   Pareto optimality and market failure in the presence of externalities, concepts cost-benefit analysis, internalization of externalities.
3. **Property Rights**
   Concepts of property rights, Coarse Theorem, common property resources.
4. **The Design and Implementation of Environmental Policy**
   Overview, Pigouvian taxes and effluent fees, tradable permits, choice between taxes and quotas under uncertainty.
5. **International environmental Problems**
   Trans-boundary problems, economy of climate change, trade and environment.
6. **Institutions for Pollution Control**

Local-national-international level, UNEP, IPCC, CPCB, Green Bench.
7. **Sustainable Development**
   Concepts and measurement.
8. Resource Economics
   Concepts of renewable and non-renewable resources.

References:

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

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

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

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

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

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

(V) **Financial Economics**, Credits : 6

1. **Financial Statements and ratio analysis:** Balance Sheet, Profit and loss account, relation between balance, financial ratios and their importance

2. Time Value of Money, discounting and present value; valuation of bonds and shares

3. Basic concepts of asset return and risk, mean-variance portfolio analysis, portfolio diversification

4. Options and Derivatives : Introduction to derivatives and options; forward and futures contracts; call and put options; factors affecting option prices; basic concepts of strategies and pricing of options

5. Concepts of capital structure and cost of capital

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. Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, McGraw-Hill, 7th edition, 2002.
4. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan,Fundamentals of Corporate Finance. McGraw-Hill, 7th edition, 2005.
   William Sharpe, Gordon Alexander and Jeffery Bailey, Investments, Prentice Hall of India, 6th edition, 2003

Semester VI
Core Course(CC):6.1
Indian Economy
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. **Economic Development since Independence**:
   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.

2. **Population and Human Development** : Demographic trends and issues; education; health and malnutrition.
3. **Growth and Distribution** : Trends and policies in poverty including Sen's Entitlement Analysis; inequality and unemployment.
4. **Economic Reforms in India** : Monetary, Fiscal, and Trade Policy Reforms

References

1. Jean Dreze and AmartyaSen: Economic Development and social opportunity, OUP
2. Sukhomoy Chakraborty: Development Planning: The Indian Experience, OUP
3. Uma Kapila: Indian Economy since independence, Academic Foundation
4. Ahluwalia and Little (ed): India's Economic Reforms and Development, OUP
5. Joshi and Little: India's Economic Reforms, OUP
6. Pulapre Balakrishnan, 2007, the Recovery of India: Economic Growth in the Nehru Era, Economic and Political Weekly, November.
7. Rakesh Mohan, 2008, ―Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, Economic and Political Weekly, May.
8. Himanshu, 2010, Towards New Poverty Lines for India, Economic and Political Weekly, January.

Core Course(CC):6.2
Public Economics
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

1. **Introduction**
Meaning, objectives and scopes of Public Finance; Public versus private goods; Externalities and market failure;Model of optimal provision of public good; Free riding; Coase Theorem.
2. **Principles of Taxation**
Benefit versus Ability to pay Principles of taxation- degree of progression bases of taxation, Income versus expenditure taxes;Incidence of taxation;Excess burden of indirect tax; Progressive versus proportional taxes; Effects of taxation on savings, investments and work efforts
3. **Public Expenditure and Public Debt**
Classification of public expenditures; Government budget, budget deficit and public debt; internal versus external public debts; Burden of public debt
4. **Compensatory Fiscal Policy**
Effects of changes in government expenditures and taxation- balanced budget multiplier- anti inflationary fiscal policy; Fiscal Federalism in India.

References:
A.B. Atkinson and J.E. Stigliz, Lectures on Public Economics, McGrow Hill Inc., US, 1980.
C.V.Brown and P.M.Jackson, Public Sector Economics, Wiley-Blackwell; 4th Edition, 1991.
J.F.Dueand A.F.Friendlander, Government Finance- Economics of Public Sector, AITBS, Publishers and Distributors, 1994.
J.Hindriks and G.D. Myles, Intermediate Public Economics, The MIT Press, Annotated Edition, 2006.
R.A.Masgrave and P.B.Masgrave, Public Economics in Theory & Practice, McGraw Hill Pub., 5th Edition, 1989.

Amarash Bagchi(ed.), Readings in Public Finance, OUP.
J.E.Stigliz, Economics of Public Sector, W.W. Norton and Co., 3rd Edition, 2000.
R.J.Chelliah(ed.) Towards Sustainable Growth, OUP, 2009.
A. Ghosh and C. Ghosh, Public Finance, Prentice hall India Learning Private Ltd., 2nd Revised Edition, 2014.

Discipline Specific Elective Course(DSEC) – 6.1
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

Discipline Specific Elective Course(DSEC) – 6.2
Full Marks: 50[40(Exam) + 10 (Continuous Internal Assessment)]
Credit : 6 (72 classes)

The Department will offer the specific course of the DSEC 6.1 and DSE 6.2 to be taken by the students according to the availability of the faculty members of the respective courses.

(I). Contemporary Issues in Indian Economy   Credits 6

1. **WTO and India :** Different rounds of trade negotiations
2. **Macroeconomic Policies and Their Impact**: Fiscal Policy; trade and investment policy; financial and monetary policies; inflation and measures to control inflation, labour laws and regulation, SEZ
3. **Policies and Performance in Agriculture** : Growth; productivity; agrarian structure and technology; capital formation; trade; food security and food policy, pricing and procurement; globalization and Indian agriculture.
4. **Policies and Performance in Industry** : Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment, globalization and Indian industry.
5. **Trends and Performance in Services** : Formal and Informal Sectors, banking and insurance; trade in services.
6. **Global economic Crisis and India :**
7. **The Global Crisis and the Consensus Macroeconomics**[1]

References
1. Shankar Acharya, 2010, ―Macroeconomic Performance and Policies 2000-8,‖ in Shankar Acharya and Rakesh Mohan, editors, India's Economy: Performances and Challenges: Development and Participation, Oxford University Press.
2. Rakesh Mohan, 2010, ―India's Financial Sector and Monetary Policy Reforms in Shankar Acharya and Rakesh Mohan, editors, India's Economy: Performances and Challenges: Development and Participation, Oxford University Press.
3. PulapreBalakrishnan, Ramesh Golait and Pankaj Kumar, 2008, ―Agricultural Growth in India Since 1991, RBI DEAP Study no. 27.
4. J. Dennis Rajakumar, 2011, ―Size and Growth of Private Corporate Sector in Indian Manufacturing, Economic and Political Weekly, April.
5. Ramesh Chand, 2010, ―Understanding the Nature and Causes of Food InflationEconomic and Political Weekly, February.

6. BishwanathGoldar, 2011, ―Organised Manufacturing Employment: Continuing the Debate‖, Economic and Political Weekly, April.
7. A. Raychaudhury and P De, International Trade in Services in India: Implications for Growth and Inequality in a Globalizing World, OUP, 2012

Mihir rakshit ,Global Economic Crisis Stagflationary Phase,Money & Finance, 2 0 0 9

Mihir rakshit, The Global Crisis and theConsensus Macroeconomics Money & Finance October.2013.

(II) Economic History of India(1857-1947) : 6 Credits

1. Agriculture in colonial period:

Pre-colonial land revenue system; Permanent Settlement and its impact; Tenuerial structure in India and its types; Commercialization of agriculture and plantation economy.

2. Industry in colonial period:

Debate on de-industrialization and drain of wealth; Nature of small industry and artisan-production; Initiation of large scale industry and impact of world war I and II; jute, iron/steel, cotton industry in India.

3. Railways:

Spread of railways; need for transportation and expansion of market; employment connectivity and revenue issues.

4. Economy and State:

Imperial priorities and the role of state; trade policies and colonial economy; financial policies; managing agency; labour policy and its impact.

References

Chandra B. (2010): Rise and Growth of Economic Nationalism in India, HarAnand Publications, 2010.
Tirthankar Roy, The Economic History of India 1857-1947, Oxford University Press, 3rd edition, 2011.
Irfan Habib, Indian Economy 1858-1914, A People's History of India, Vol.28, Tulika, 2006.
Ira Klein, 1984, ―When Rains Fail: Famine relief and mortality in British India‖,IESHR 21.
Jean Dreze, Famine Prevention in India in Dreze and Sen (eds.) Political Economy of Hunger, WIDER Studies in Development Economics, 1990, pp.13- 35.
John Hurd, Railways, CEHI, Chapter 8, pp.737-761.
Rajat Ray (ed.), Entrepreneurship and Industry in India, 1994.
A.K. Bagchi, ―Deindustrialization in India in the nineteenth century: Some theoretical implications Journal of Development Studies, 1976.
M.D Morris, Emergence of an Industrial Labour Force in India, OUP 1965, Chapter 11, Summary and Conclusions.
Daniel Thorner, Agrarian Prospect in India, 1977.

(III)   Issues in Development Economics   Credits : 6

1. **Demographic Concepts:**

Birth and death rates, age structure, fertility and mortality; demographic transitions during the process of development; gender bias in preferences and outcomes and evidence on unequal treatment within households; connections between income, mortality, fertility choices and human capital accumulation; migration.

2. Land, Labor and Credit Markets

The distribution of land ownership; land reform and its effects on productivity; contractual relationships between tenants and landlords; land acquisition; nutrition and labor productivity; informational problems and credit contracts; microfinance; inter- linkages between rural factor markets.

3. Individuals, Communities and Collective Outcomes

Individual behavior in social environments, multiple social equilibria; governance in organizations and in communities; individual responses to organizational inefficiency.

4. **Environment and Sustainable Development:** Defining sustainability for renewable resources; a brief history of environmental change; common-pool resources; environmental externalities and state regulation of the environment; market based instruments, economic activity and climate change.
5. **Globalization**

Globalization in historical perspective; the economics and politics of multilateral agreements; trade, production patterns and world inequality; financial instability in a globalized world.
India in the Global Economy.

References:
Debraj Ray, Development Economics, Oxford University Press, 2009.
Partha Dasgupta, Economics, a Very Short Introduction, Oxford University Press, 2007.
Abhijit Banerjee, Roland Benabou and DilipMookerjee, Understanding Poverty, Oxford University Press, 2006.
Thomas Schelling, Micromotives and Macrobehavior, W. W. Norton, 1978.
Albert O. Hirschman, Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States, Harvard University Press, 1970.
RaghuramRajan, Fault Lines: How Hidden Fractures Still Threaten the World Economy, 2010.
ElinorOstrom, Governing the Commons: The Evolution of Institutions for Collective Action, CambridgeUniversity Press, 1990.
DaniRodrik, The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist, Oxford University Press, 2011.
Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.), Globalization in Historical Perspective, University of Chicago Press, 2003

(IV)   Money and Financial Markets, Credits : 6

1. **Money and capital markets**: Organization, structure and reforms in India; role of financial derivatives and other innovations.
2. **Financial Institutions, Markets, Instruments and Financial Innovations**: Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises**.**
3. **Financial Markets and Interest Rates Behaviour**: Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.
4. **Central Banking and Monetary Policy**: Functions; goals, targets, indicators and instruments of monetary control; monetary management in an open economy; current monetary policy of India.
5. **Indian banking system:** Changing role and structure; banking sector reforms.

References:

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,Macmillan, 2006.
8. R.B.I. – Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998.
9. R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest).

(V) Dissertation/ Project

Students will have to prepare a project report .It can be an empirical work based on either field survey data or secondary data. The project report will be evaluated by the departmental teachers and 20 marks will be allotted for that. For viva-voce and/or presentation of the project report 20 marks will be allotted. 10 marks will be allotted for internal assessment. During the viva-voce and/or presentation one external will be present along with the departmental teachers for evaluation. **No supervisor will be allotted for each student. Students will be given a list of topics and the concerned teachers will give some general guidelines. Students will have to prepare the project reports on their own. There can be some demonstration classes about the use of field survey data or secondary data in the context of rural economics. The concerned teacher/teachers can mention in the class some of the sources of these secondary data. In case of field survey , the concerned teacher/teachers can give a guideline for the questionnaire and can administer the field survey to be done by the students.**

Semester I
Generic Elective(GE)- 1.1
Introductory Microeconomics
Full Marks: 100[80(Exam) + 20 (Continuous Internal Assessment)]

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

Why study economics? -- Scope of economics -- the economic problem: scarcity and choice -- economic systems—Basic questions for an economic system – problem of resource allocation.

2. **Supply and Demand: Elasticity and Market**

Demand / Supply: Determinants of individual demand/supply- Law of demand and Law of supply - demand/supply schedule and demand/supply curve -- market versus individual demand/supply – normal , inferior and giffen goods -- shifts in the demand/supply curve – different concepts of elasticity of demand -- elasticity of supply.

3. **The Households**

Cardinal utility theory: Law of diminishing Marginal Utility, Law of Equi-marginal utility. Ordinal utility theory: Budget constraint/ line – shifts of budget line - indifference curves and their properties -- consumer's optimum choice – income and substitution effects.

4. **Firm Behaviour**

Production function – properties of production function with one variable input (Labour) : average product and marginal product- law of diminishing returns – Isoquants and their properties – isocost curves – optimizing behavior of firm –returns to scale – concepts of Total Revenue, Marginal Revenue and Average Revenue – Total Cost : Various Measures of Cost– Fixed, Variable, Average and Marginal Costs – Costs in the Short run and in the Long Run

5. **Perfect Market Structure** - Assumptions – Firm behavior in short run – short run supply curve of the firm and the industry - Output choice and competitive equilibrium in the long run – long-run industry supply curve under constant, increasing and decreasing costs.

6. **Imperfect Market Structure :** Monopoly –chareteristics – optimum output determination – Concepts of Monopolistic Competition and Oligopoly (No specific model).

7. **Market for Inputs :**

 Postulates of Marginal Productivity Theory – Different categories of factor income: rent, wage, interest and profit --Factor pricing under perfect competition.

Readings

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.
4. Samuelson , P.A and William. D. Nordhaus,: Economics , McGraw Hill Book Co. Singapore.
5. Lipsey, R.G: An Introduction to positive Economics, Weidenfeld and Nicholson, London.
6. Ferguson and Gould: Microeconomic Theory, published by All India Traveller Book Seller

Semester II
Generic Elective(GE)-   2.1
Introductory Macroeconomics

1. **National Income Accounting** :
Circular flow of Product and Income, Different concepts: GDP,GNP, NNP,NDP,NI,DI,GNP deflator, GDP deflator and price indices-Estimation of National income through different method and their shortcomings, National income in open economy.
2. **Keynesian and Classical Approach** :
Keynesian approach to National Income and Employment determination, Difference between Keynesian and Classical employment approach, Theories of Multiplier and Acceleration Principles.
3. **Quantity Theory of Money and Banking** :
Quantity Theory of Money, Theories of demand for money, commercial banks-Credit creation, Central bank-functions and policy of credit control.
4. **Theories of Inflation and Business Cycle** :
Inflation, Types of inflation, Theories of inflation- demand pull and cost push and their management policies.

Readings:
1. Dornbusch , Fischer and Starz, Macroeconomics, McGraw Hill, 11th edition,2010.
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition,2010.
3. Richard T. Froyen. Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
4. Oliver Blanchard. Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
5. Samuelson , P.A and William. D. Nordhaus,: Economics , McGraw Hill Book Co. Singapore.
6. Lipsey, R.G: An Introduction to positive Economics, Weidenfeld and Nicholson, London.

Semester III

Generic Elective(GE)-   3.1

(*Choice: Any one from Group A*)

Full Marks: 100[40(Exam) + 20 (Continuous Internal Assessment)]
Credit Hours : 6 (72 classes)

Group A:

(I) : Indian Economy - I

1. Structure of Indian Economy / Economic development since Independence
Trends in India's national income since Independence- Sectoral composition of National income in India – Structural changes in the Indian Economy during the plan period – Trend in Saving and Investment in Indian Economy – Pattern of Capital formation in India.
2.Population and Human Development
Population growth and Economic development – Population Policy and its effectiveness – Measures of Human Development -- Human Development in India – Education, Health and Malnutrition.
3.Growth and Distribution
Inequality in income distribution in India – poverty and its measurements – Measures taken for the alleviation of poverty in India – Pattern and trend of Unemployment in India, Government initiatives taken for remedies of unemployment problem in India during the plan period.
4.International comparison

Structure and Direction of Foreign Trade – Trends in Balance of Payments – Problems of Balance of payments – Trade sector reforms.

Readings:
Dutta R. and K.P.M. Sundaram: Indian Economy, S. Chand and Co. New Delhi
Misra S.K.V. K. Puri: Indian Economy, Himalayas Publishing Co. Mumbai.
Agarwal A.N: Indian Economy, Vikash Publishing Co. Delhi
Jean Dreze and Amartya Sen, 2013. An Uncertainty Glory : India and its Contradictions, Princeton University press.
Pulapre Balakrishnan, 2007, The Recovery Of India : Economic Growth in Nehru era, EPW, November.
Rakesh Mohan, 2008,- Growth Record of Thdian Economy : 1950 -2008. A Story of Sustained Savings and investment, EPW, May.
Himanshu, 2010, - Towards New Poverty Lines for India, EPW, January.
Jean Dreze and Angus Deaton, 2009, - Food and Nutrition in india : Facts and Interpretations, EPW, February.
Himanshu,2011, - Employment Trends in India : A Re- examination, EPW, September.
Rama Baru et al, - Inequalities in Access to Health Services in India : Caste, class and region, EPW, September.
Geera G. Kingdon, 2007, - The Progress of School Education in india, Oxford Review of Economic Policy.
T. Dyson, 2008, - India's Demographic transition and its Consequences for Development in Uma Kapila, editor, Indian Economy Since Independence, 19th edition, academic Foundation.
Reetika Khera, 2011, - India's Public distribution System : Utilisation and Impact, Journal of Development Studies.
Kaushik Basu and A. Maertens, eds, 2013, oxford Companion to Economics in India, Oxford University Press.

(II) : Money and Banking

1. **Money**
   Concept, Functions, Kinds, Measurement of Money, Theories of determination of Money supply.
2. **Financial Institutions, and Financial Markets**
   Basic concept of Money Market: Organization, structure and reforms in India, Interaction of Money Supply & Demand, Role of Financial markets & Institutions : Basic idea , Concept of Financial Instruments, Call Money, Commercial Paper, Certificate of Deposit, Treasury Bill, Repo, Commercial Bill
3. **Banking System**
   Financial Intermediation - Business of Banking- Balance Sheet & portfolio management Indian Banking System : Changing role & Structure
4. **Central Banking & Monetary Policy**
   Functions, Balance Sheet, Goals, Targets, Monetary Policy Transmission and mechanism - Current Monetary Policy of India

Readings:
1. F.S. Mishkim and S.G. Eakins, Financial Markets and Institutions, Pearson Education, 6th Edition, 2009
2. L.M. Bhole and J. Mahakud, Financial Institutions and Markets, Tata McGrawHill, 5th edition, 2011
3. F.J. Fabozzi, F. Modigliam, F.J. Jones, M.G. Ferri, Foundations of Financial Markets and Institutions, Pearson Education, 3rd edition, 2009
4. M.Y. Khan, Indian Financial System, Tata McGrawHill, 7th edition, 2011
5. F.S. Mishkim, The Economics of Money, Banking and Financial Markets,Prentice Hall, 2007.
6. Various latest issues of RBI Bulletins, Annual Reports, Reports on Currency and Finance and Reportd of the Working Group, IMF Staff Papers.
7. Gupta, S.B.: Monetary Planning in India, Oxford University Press, Delhi

8. Gupta S.B: Monetary Economics, S.Chand and Co. New Delhi

(III) : Environmental Economics

1. **Introduction** Key environmental issues and problems, Link between economy and environment: basic ideas, Pareto optimality and Market failure in the presence of externalities; Concept of property rights, the Coase theorem. Distinction among public, private, open access and common property resources

2. **The Design and Implementation of Environmental Policy**
   Overview, Pigouvian taxes and effluent fees, tradable permits, choice between taxes and quotas, Implimentation of environmental policies in India; Trans-boundary environmental problems; Economics of climate change; Trade and environment.

3. **Environmental Valuation method**
   Valuation of non-market goods and services—theory and practices,measurement methods, Cost- Benefit Analysis of environmental policies and regulations.

4. **Sustainable Development**
   Concepts, measurements; perspectives from Indian experience

Readings:

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. Pearce and Turner: Economics of natural resource and environment, Prentice Hall
5. Rabindra Nath Bhattacharyya: Environmental Economics, Oxford
6. Kenneth Arrow et al., " Are we consuming Too Much?" Journal of Economic Perspectives, 18(3): 147-172, 2004.
7. IPCC(Intergovernmental Panel on Climate Change), Fifth Assessment Report(forthcoming 2014).

Semester IV
Generic Elective(GE)-   4.1
(*Choice: Any one from Group B*)

Full Marks: 100[40(Exam) + 20 (Continuous Internal Assessment)]
Credit Hours : 6 (72 classes)

Group B:

(I) : Indian Economy – II

1.Macroeconomic Policies and their impact
Fiscal Policy- Trade and Investment policy - Financial and Monetary Policies – Labour regulation.

2.Policies and Performance in Agriculture
Importance of agriculture and its growth in Indian Economy – Productivity of Indian agriculture – New Agricultural Strategy – Land reforms – New Economic Policy and agriculture – National Agricultural Policy and Food Security – Agricultural marketing – Pricing and procurement.

3.Policies and performances in Industry
Trends of Industrial development in India during the plan period – Growth of Industrial production – Industrial

Policy- Importance and problems of Small Scale Industries – Role of Public Sector in India – Privatisation of Public sector – Foreign Direct investment in India.

4.Trends and Performance of Services

References:

Shankar Acharya, 2010,- Macroeconomic Performance and Policies 2000-8, in Shankar acharya and Rakesh Mohan, editors, India's Economy : Performances and Challenges : Development and Participation, Oxford university Press.

Rakesh Mohan, 2010, - India's financial sector and Monetary policy reforms, in Shankar acharya and Rakesh Mohan, editors, India's Economy : Performances and Challenges : Development and Participation, Oxford university Press.

Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, 2008,- Agricultural Growth in India Since 1991, RBI DEAP Study no. 27.

Kunal Sen, 2010, - Trade , Foreign Direct Investment and Industrial Transformation in India, in Premachandra Athukorala, editor, The Rise of Asia, Routledge.

A. Ahsan, C. Pages and T. Roy, 2008, - Legislation, Enforcement and Adjudication in Indian Labour Markets : Origins, Consequences and the Way Forward, in D. Mazumdar and S. Sarkar, editors, Globalization, labour Markets and Inequality in India, Routledge.

Ramesh Chand, 2010, Understanding the Nature and Causes of Food Inflation, EPW, February.

Kaushik Basu and A. Maertens, eds, 2013, oxford Companion to Economics in India, Oxford University Press.

Dutta R. and K.P.M. Sundaram: Indian Economy, S. Chand and Co. New Delhi

Misra S.K.V. K. Puri: Indian Economy, Himalayas Publishing Co. Mumbai.

Agarwal A.N: Indian Economy, Vikash Publishing Co. Delhi

(II) : Economic History of India (1857 – 1947)

1. **Introduction: Colonial India: Background and Introduction**
   Overview of colonial economy.
2. **Macro Trends**
   National Income; population; occupational structure.
3. **Agriculture**
   Agrarian structure and land relations; agricultural markets and institutions – credit, commerce and technology; trends in performance and productivity; famines.
4. **Railways and Industry**
   Railways; the de-industrialization debate; evolution of entrepreneurial and industrial structure; nature of industrialization in the interwar period; constraints to industrial breakthrough; labor relations.
5. **Economy and State in the Imperial Context**
   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.

Readings:

1. Lakshmi Subramanian, History of India 1707-1857, Orient Blackswan, 2010, Chapter 4.
2. 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. Irfan Habib, 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‖, IESHR, 21.
7. Jean Dreze, Famine Prevention in India in Dreze and Sen (eds.) Political Economy of Hunger, WIDER Studies in Development Economics, 1990, pp.13-35. 16
8. John Hurd, Railways, CEHI, Chapter 8, pp.737-761.

9. Rajat Ray (ed.), Entrepreneurship and Industry in India, 1994. 18

10. AK Bagchi, 1976, ―Deindustrialization in India in the Nineteenth century: Some Theoretical Implications‖, Journal of Development Studies.

11. MD Morris, Emergence of an Industrial Labour Force in India, Oxford University Press, 1965, Chapter 11, Summary and Conclusions.

12. K.N. Chaudhuri, Foreign Trade and Balance of Payments, CEHI, Chapter 10.

13. B.R. Tomlison, 1975, India and the British Empire 1880-1935, IESHR, Vol.XII.

14. Dharma Kumar, The Fiscal System, CEHI, Chapter 12.

15. Basudev Chatterjee, Trade, Tariffs and Empire, Oxford University Press, 1992, Epilogue.
    Background reading for students: Irfan Habib, Indian Economy 1858-1914: A People‘s History of India, Vol.28, Tulika 2006. Daniel Thorner, Agrarian Prospect in India, 1977. L. Visaria and P. Visaria, Population, CEHI, Chapter 5

(III): Public Finance

Part 1 : Theory

1. Overview of Fiscal Functions. Tool of Normative Analysis, Pareto Efficiency, Equity and Social Welfare

2. **Public Goods:** Characteristics; Exclusion Principle; Non-Applicability of exclusion Principle; Market Failure and Externalities.

3. **Principles of Taxation:** Benefit and Ability to Pay Approach-Direct and Indirect Taxation–Regressive, Progressive, Proportional Taxation

4. **Theory of Public Debt :** Internal versus External debt-Burden of public debt.

Part 2 : Issues from Indian Public Finance:
- Current Issues of India‘s Tax System
- Working of (Monetary and) Fiscal Policies
- Analysis of Budget and Deficits
- Fiscal Federalism in India
- State and Local Finance

Readings

1. R .A. Musgrave and P. B. Musgrave, Public Finance in Theory & Practice, Mc Graw-Hill Publications 5th Edition.
2. Mahesh Purohit. Value Added Tax: Experience of India and Other Countries. Gayatri Publications.
3. Kaushik Basu and A Maertens(ed). The Oxford Companion to Economics in India. OUP.
4. M. M. Sury. Government Budgeting in India. Commonwealth Publishers.
5. Shankar Acharya, " Thirty years of tax reform" in India, Economic and Political Weekly, May 2005.
6. Government of India. Report of 13th Finance Commission.
7. Economic Survey. Government of India(latest).