

Curriculum for Dual degree (B.A. & M.A.) Program in Economics

1. The total credit requirement and nature of courses under **Dual degree (B.A. & M.A.) Program** is as tabulated below:

Semester	Core Course	Discipline Specific Elective (DSE) Course	Generic Elective (GE) Course equivalent to our ED Course	Ability Enhancement Compulsory Course (AECC)	Skill Enhancement Course (SEC)	Number of courses in the semester
1	2	0	1	1	0	4
2	2	0	1	1	0	4
3	3	0	1	0	1	5
4	3	0	1	0	1	5
5	2	2	0	0	0	4
6	2	2	0	0	0	4
7	4	0	0	0	0	4
8	4	0	0	0	0	4
9	1	3	0	0	0	4
10	0	4	0	0	0	4
Total	23	11	4	2	2	42

The BoS (Economics) Approved Structure of syllabus for Dual degree(B.A. & M.A.) program in Economics

2. Syllabi for **Dual degree (B.A. & M.A.) program in Economics**

Semester 1	Core 1: Eco/B /C1.1 Introductory Microeconomics	Core 2: Eco/ B/C 1.2 Mathematical Methods in Economics BI	AEC 1: B/AEC1.1 English Communication / Environmental Science	GE 1: B/GE 1 Mathematics 1	
Semester 2	Core 3: Eco/B /C 2.1 Introductory Macroeconomics	Core 4: Eco/ B/C 2.2 Statistical Methods for Economics	AEC 2: B/AEC 2.1 English Communication/ Environmental Science	GE 2 B/GE 2 Mathematics 2	
Semester 3	Core 5: Eco/B /C 3.1 Microeconomics BI	Core 6: Eco/B /C 3.2 Macroeconomics BI	Core 7: Eco/B / C 3.3 Mathematical Methods in Economics BII	GE 3: Any One B/GE 3 Computer Applications 1/ Any GE (ED) subjects offered by the Faculty of Arts, JU	SE 1: Eco/ B/SE 3.1 Advance Statistics
Semester 4	Core 8: Eco/ B/C 4.1 Microeconomics BII	Core 9: Eco/B /C4.2 Macroeconomics BII	Core 10: Eco/ B/C 4.3 Introductory Econometrics	GE 4: Any One B/GE 4 Computer Applications 2/Any GE (ED) subjects offered by the Faculty of Arts, JU	SE 2: Any one of the following Eco/ B/SE 3.2/1 Applied Economics Eco/B/SE 3.2/2 General Equilibrium Theory Eco/B/SE 3.2/3 Linear Programming

					and Input-Output Analysis
Semester 5	Core 11: Eco/ B/C 5.1 International Economics BI	Core 12: Eco/B /C 5.2 Public Economics BI	DSE 1: Any one of the following Eco/B /DSE 5.1/1 Economics of Health and Education Eco/B /DSE 5.1/2 Issues in Indian Economy Eco/B /DSE 5.1/3 Resource and Environmental Economics BI	DSE 2: Any one of the following Eco/B /DSE 5.2/1 Financial Economics BI Eco/ B/ DSE 5.2/2 Economic Thought and Society Eco/ B/DSE 5.2/3 Topics in Microeconomics I	
Semester 6	Core 13: Eco/B /C 6.1 Indian Economy BI	Core 14: Eco/ B/C 6.2 Development Economics BI	DSE 3: Any one of the following Eco/B /DSE 6.1/1 Money and Financial Markets Eco/B /DSE 6.1/2 Issues in Open Economy Eco/B /DSE 6.1/3 Topics in Microeconomics II	DSE 4: Any one of the following Eco/B /DSE 6.2/1 Project Eco/B /DSE 6.2/2 Term Paper	
Semester 7	Core 15 Eco/A /C 7.1 Microeconomics AI	Core 16 Eco/A /C 7.2 Macroeconomics AI	Core 17 Eco/A /C 7.3 Econometrics AI	Core 18 Eco/A/ C 7.4 Development Economics AI	
Semester 8	Core 19 Eco/A / C 8.1 General Equilibrium and welfare	Core 20 Eco/A / C 8.2 Macroeconomics AII	Core 21 Eco/A / C 8.3 Econometrics AII	Core 22 Eco/A/ C 8.4 Indian Economy AI	
Semester 9	Core 23 Eco/A / C 9.1 Microeconomics AII	DSE 5 : Any one of the following Eco/A /DSE 9.1 Advanced Econometrics AI Eco/A / DSE 9.2 Advanced Economic Theory AI Eco/A / DSE 9.3 Financial Economics AI Eco/A /DSE 9.4 Indian Economy A II: Indian Economic History Eco/ A/ DSE 9.5 Institutional Economics AI Eco/A /DSE 9.6 International Economics AI (Pure theory of trade) Eco/A /DSE 9.7 Public Economics AI	DSE 6 : Any one of the following Eco/A /DSE 9.1 Advanced Econometrics AI Eco/A / DSE 9.2 Advanced Economic Theory AI Eco/A / DSE 9.3 Financial Economics AI Eco/A /DSE 9.4 Indian Economy A II: Indian Economic History Eco/ A/ DSE 9.5 Institutional Economics AI Eco/A /DSE 9.6 International Economics AI (Pure theory of trade) Eco/A /DSE 9.7 Public Economics AI Eco/A /DSE 9.8	DSE 7: Any one of the following Eco/A /DSE 9.1 Advanced Econometrics AI Eco/A/ DSE 9.2 Advanced Economic Theory AI Eco/A / DSE 9.3 Financial Economics AI Eco/A /DSE 9.4 Indian Economy A II: Indian Economic History Eco/ A/ DSE 9.5 Institutional Economics AI Eco/A /DSE 9.6 International Economics AI (Pure theory of trade) Eco/A /DSE 9.7 Public Economics AI	

		Eco/A/DSE 9.8 Resource & Environmental Economics AI (Local Issues) Eco/A /DSE 9.9 Agricultural Economics Eco/A / DSE 9.10 Experimental Economics Eco/A /DSE 9.11 Operations Research	Resource & Environmental Economics AI (Local Issues) Eco/A /DSE 9.9 Agricultural Economics Eco/A / DSE 9.10 Experimental Economics Eco/A /DSE 9.11 Operations Research	Eco/A /DSE 9.8 Resource & Environmental Economics AI (Local Issues) Eco/A/DSE 9.9 Agricultural Economics Eco/A / DSE 9.10 Experimental Economics Eco/A /DSE 9.11 Operations Research	
Semester 10	DSE 8: Any one of the following : Eco/A / DSE 10.1 Advanced Econometrics A II (Pre requisite advanced econometrics AI) Eco/A /DSE 10.2 Advanced Economic theory A II (Games and Information) Eco/A / DSE 10.3 Financial Economics AII (Corporate Finance) (Prerequisite Financial Economics AI) Eco/A /DSE 10.4 Indian Economy AII: Economic Policies Eco/A / DSE 10.5 Institutional Economics A II : (Law and Economics) (Prerequisite Institutional Economics A I) Eco/A/ DSE 10.6 International Economics AII (Money, BOP & exchange rate) (Prerequisite International Economics AI) Eco/A / DSE 10.7 Public Economics AII Eco/A / DSE 10.8 Resource	DSE 9 : Any one of the following : Eco/A / DSE 10.1 Advanced Econometrics A II (Pre requisite advanced econometrics AI) Eco/A/DSE 10.2 Advanced Economic theory AII (Games and Information) Eco/A/ DSE 10.3 Financial Economics AII (Corporate Finance) (Prerequisite Financial Economics AI) Eco/A /DSE 10.4 Indian Economy AII: Economic Policies Eco/A / DSE 10.5 Institutional Economics A II : (Law and Economics) (Prerequisite Institutional Economics A I) Eco/A/ DSE 10.6 International Economics AII (Money, BOP & exchange rate) (Prerequisite International Economics AI) Eco/A / DSE 10.7 Public Economics AII Eco/A / DSE 10.8 Resource	DSE 10: Any one of the following : Eco/A / DSE 10.1 Advanced Econometrics A II (Pre requisite advanced econometricsAI) Eco/A /DSE 10.2 Advanced Economic theory AII (Games and Information) Eco/A / DSE 10.3 Financial Economics AII (Corporate Finance) (Prerequisite Financial Economics AI) Eco/A /DSE 10.4 Indian Economy AIII: Economic Policies Eco/A / DSE 10.5 Institutional Economics A II : (Law and Economics) (Prerequisite Institutional Economics A I) Eco/A/ DSE 10.6 International Economics AII (Money, BOP & exchange rate) (Prerequisite International Economics AI) Eco/A / DSE 10.7 Public Economics AII Eco/A / DSE 10.8 Resource	DSE 11 : Any one of the following : Eco/A / DSE 10.1 Advanced Econometrics A II (Pre requisite advanced econometrics AI) Eco/A /DSE 10.2 Advanced Economic theory AII (Games and Information) Eco/A / DSE 10.3 Financial Economics AII (Corporate Finance) (Prerequisite Financial Economics AI) Eco/A /DSE 10.4 Indian Economy AIII: Economic Policies Eco/A / DSE 10.5 Institutional Economics A II : (Law and Economics) (Prerequisite Institutional Economics A I) Eco/A/ DSE 10.6 International Economics A II (Money, BOP & exchange rate) (Prerequisite International Economics AI) Eco/A / DSE 10.7 Public Economics AII Eco/A / DSE 10.8 Resource	

&Environmental Economics AII (Global Issues) (Prerequisite Resource and Environmental Economics AI)
Eco/A /DSE 10.9 Special Topics in Econometrics
Eco/A / DSE 10.10 Special Topics I In Financial Economics (Financial Institutions)
Eco/A/DSE 10.11 Special Topics II in Financial Economics : International Finance and risk management (Prerequisite Financial Economics AI)
Eco/A / DSE 10.12 Special Topics In Indian Economic Policy :State economy
Eco/A / DSE 10.13 Special Topics I in International Economics : Trade & Development
Eco/A / DSE 10.14 Special Topics II in international Economics (Uncoordinated & Coordinate trade policies & regulation)
Eco/A/DSE 10.15 Special Topics in Public Economics
Eco/A /DSE 10.16 Urban Economics
Eco/A /DSE 10.17 Behavioral Economics
Eco/A /DSE 10.18 Economics of Social Sector
Eco/A /DSE 10.19 Industrial Economics

&Environmental Economics AII (Global Issues) (Prerequisite Resource and Environmental Economics AI)
Eco/A /DSE 10.9 Special Topics in Econometrics
Eco/A / DSE 10.10 Special Topics I In Financial Economics (Financial Institutions)
Eco/A /DSE 10.11 Special Topics II in Financial Economics : International Finance and risk management (Prerequisite Financial Economics AI)
Eco/A / DSE 10.12 Special Topics In Indian Economic Policy :State economy
Eco/A / DSE 10.13 Special Topics I in International Economics : Trade & Development
Eco/A / DSE 10.14 Special Topics II in international Economics (Uncoordinated & Coordinate trade policies & regulation)
Eco/A /DSE 10.15 Special Topics in Public Economics
Eco/A /DSE 10.16 Urban Economics
Eco/A/DSE 10.17 Behavioral Economics
Eco/A /DSE 10.18 Economics of Social Sector
Eco/A /DSE 10.19 Industrial Economics

&Environmental Economics AII (Global Issues) (Prerequisite Resource and Environmental Economics AI)
Eco/A /DSE 10.9 Special Topics in Econometrics
Eco/A / DSE 10.10 Special Topics I In Financial economics (Financial Institutions)
Eco/A /DSE 10.11 Special Topics II in Financial Economics : International Finance and risk management (Prerequisite Financial Economics AI)
Eco/A / DSE 10.12 Special Topics In Indian Economic Policy :State economy
Eco/A / DSE 10.13 Special Topics I in International Economics : Trade & Development
Eco/A / DSE 10.14 Special Topics II in international Economics (Uncoordinated & Coordinate trade policies & regulation)
Eco/A /DSE 10.15 Special Topics in Public Economics
Eco/A /DSE 10.16 Urban Economics
Eco/A /DSE 10.17 Behavioral Economics
Eco/A /DSE 10.18 Economics of Social Sector
Eco/A /DSE 10.19 Industrial Economics

&Environmental Economics AII (Global Issues) (Prerequisite Resource and Environmental Economics AI)
Eco/A /DSE 10.9 Special Topics in Econometrics
Eco/A / DSE 10.10 Special Topics I In Financial Economics (Financial Institutions)
Eco/A /DSE 10.11 Special Topics II in Financial Economics : International Finance and risk management (Prerequisite Financial Economics AI)
Eco/A / DSE 10.12 Special Topics In Indian Economic Policy :State economy
Eco/A / DSE 10.13 Special Topics I in International Economics : Trade & Development
Eco/A / DSE 10.14 Special Topics II in international Economics (Uncoordinated & Coordinate trade policies & regulation)
Eco/A /DSE 10.15 Special Topics in Public Economics
Eco/A /DSE 10.16 Special Topics in Public Economics
Eco/A /DSE 10.16 Urban Economics
Eco/A /DSE 10.17 Behavioral Economics
Eco/A /DSE 10.18 Economics of Social Sector
Eco/A /DSE 10.19 Industrial Economics

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Suggested Choices for DSE 1 to 11

Semester 5	
DSE 1	DSE 2
Economics of Health and Education Eco/B /DSE 5.1/1	Financial Economics BI (New) Eco/B /DSE 5.2/1
Issues in Indian Economy Eco/B /DSE 5.1/2	Economic Thought and Society (New) Eco/B /DSE 5.2/2
Resource and Environmental Economics BI Eco/B /DSE 5.1/3	Topics in Microeconomics BI Eco/B /DSE 5.2/3

Semester 6	
DSE 3	DSE 4
Money and Financial Markets Eco/B /DSE 6.1/1	Project Eco/B /DSE 6.2/1
Issues in Open Economy(New) Eco/B /DSE 6.1/2	Term Paper Eco/B /DSE 6.2/2
Topics in Microeconomics BII Eco/B /DSE 6.1/3	

Semester 9	Semester 10
DSE 5, DSE6, DSE 7	DSE8, DSE9, DSE10, DSE 11
Advanced Econometrics AI Eco/A /DSE9.1	Advanced Econometrics AII Eco/A /DSE 10.1 Pre-requisite: Advanced Econometrics AI
Advanced Economic Theory AI Eco/A /DSE9.2	Advanced Economic Theory AII (Games and Information) Eco/A /DSE 10.2 No Pre-requisite
Financial Economics AI Eco/A /DSE9.3	Financial Economics AII (Corporate Finance) Eco/A /DSE 10.3 Pre-requisite: Financial Economics AI
Indian Economy AII: Economic History Eco/A /DSE 9.4	Indian Economy AIII: Economic Policies Eco/A /DSE 10.4 No Pre-requisite
Institutional Economics AI Eco/A /DSE 9.5	Institutional Economics AII (Law and Economics) Eco/A /DSE 10.5 Pre-requisite: Institutional Economics I
International Economics AI (Pure Theory of Trade) Eco/A /DSE 9.6	International Economics AII (Money, BOP and Exchange Rate) Pre-requisite: International Economics I Eco/A /DSE 10.6
Public Economics AI Eco/A /DSE 9.7	Public Economics AII Eco/A /DSE 10.7 No pre-requisite
Resource & Environmental Economics AI (Local Issues) Eco/A /DSE 9.8	Resource & Environmental Economics AII (Global Issues) Eco/A /DSE 10.8 Pre-requisite: Resource & Environmental Economics I
Agricultural Economics Eco/A /DSE 9.9	Special Topics in Econometrics Eco/A /DSE 10.9 Pre-requisite: Advanced Econometrics I
Experimental Economics	Special Topics I in Financial Economics

Eco/A /DSE 9.10	(Financial Institution) Eco/A /DSE 10.10 Pre-requisite: Financial Economics I
Operation Research Eco/A /DSE9.11	Special Topics II in Financial Economics (International Finance & Risk Management) Eco/A /DSE 10.11 Pre-requisite: Financial Economics I
	Special Topics in India's Economic Policies: State Economy Eco/A /DSE 10.12 No Pre-requisite
	Special Topics I in International Economics (Trade and Development) Eco/A /DSE 10.13 No Pre-requisite
	Special Topics II in International Economics (Uncoordinated and Coordinated Trade Policies and Regulations) Eco/A /DSE 10.14 Pre-requisite: International Economics I
	Special Topics I in Public Economics (Economics of Corruption) Eco/A /DSE 10.15 No Pre-requisite
	Urban Economics Eco/A /DSE 10.16 No Pre-requisite
	Behavioral Economics Eco/A /DSE 10.17 No Pre-requisite
	Economics of Social Sectors Eco/A /DSE 10.18 No Pre-requisite
	Industrial Economics Eco/A /DSE 10.19 No Pre-requisite

**DEPARTMENT OF ECONOMICS
JADAVPUR UNIVERSITY**

**SYLLABUS UNDER INTEGRATED DUAL DEGREE (BA& MA) PROGRAMME WITH DUAL DEGREE
BA Level (b level)**

CORE COURSES

Each course will be of 40-45 lectures

SEMESTER I

Core 1:

Course number: Eco/B/C 1.1

Introductory Microeconomics

Exploring the subject matter of Economics

Why study economics? Scope and method of economics; the economic themes: scarcity and efficiency; thinking like an economist: the question of what to produce, how to produce and how to distribute output; marginal benefits and marginal costs; opportunity cost (private and social); the basic competitive model; prices, property rights, the role of property rights in markets and profits; incentives and information; rationing; opportunity sets; economic systems; reading and working with graphs.

Supply and Demand: How Markets Work, Markets and Welfare

Supply and Demand: How Markets Work, Markets and Welfare

1. Elementary theory of demand: determinants of household demand, market demand, and shifts in the market demand curve
2. Elementary theory of supply: factors influencing supply, derivation of the supply curve, and shifts in the supply curve
3. The elementary theory of market price: determination of equilibrium price in a competitive market; the effect of shifts in demand and supply; the excess demand function: Existence, uniqueness, and stability of equilibrium; consumer surplus, producer surplus and efficiency of competitive markets (graphical approach); the idea of market failure; Elasticities and their applications.
4. Government intervention and their impact on market equilibrium and efficiency:- controls on prices (Price ceilings and price floors); indirect taxation

The Households

The consumption decision - budget constraint, consumption and income and price changes, demand for all other goods and price changes; description of preferences- most preferred bundle and its properties; consumer's optimum choice; income and substitution effects; Marshallian and compensated demand curves; Price consumption curve, income consumption curve, and Engel

curve; Homothetic tastes; labour supply and savings decision - choice between leisure and consumption.

The Firm and Perfect Market Structure

Defining a firm- firm's legal forms; profit maximization hypothesis; Contractual theories and organizational theories of firms (concepts only); Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output

in the long run.

Imperfect Market Structure

Monopoly and anti-trust policy; measuring monopoly power; government policies towards competition; various types of imperfect competition

Input Markets

Theory of rent-Ricardo, Marshall, and Modern theory of rent; Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves, competitive labour markets; labour market and public policy.

Reference Books

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

Core 2:

Course number: Eco/B/C 1.1

Mathematical Methods in Economics BI

1. Preliminaries Logic and proof techniques; sets and set operations; relations; functions and their properties; number systems.
2. Functions of one real variable Graph; elementary types of functions: quadratic, polynomial, power, exponential, logarithmic; sequences and series: convergence, algebraic properties and applications; continuous functions: characterizations, properties with respect to various operations and applications; differentiable functions: characterizations, properties with respect to various operations and applications; second and higher order derivatives: properties and applications.
3. Single-variable optimization Geometric properties of functions: convex functions, their characterizations and applications; local and global optima: geometric characterizations, characterizations using calculus and applications.
4. Functions of several real variables Geometric representations: graphs and level curves; differentiable functions: characterizations, properties with respect to various operations and applications; second order derivatives: properties and applications; the implicit function theorem, and application to comparative statics problems; homogeneous and homothetic functions: characterizations and applications.

5. Multi-variable optimization Convex sets; geometric properties of functions: convex functions, their characterizations, properties and applications; further geometric properties of functions: quasi-convex functions, their characterizations, properties and applications; unconstrained optimization: geometric characterizations, characterizations using calculus and applications; constrained optimization with equality constraints: geometric characterizations, Lagrange characterization using calculus and applications; properties of value function: envelope theorem and applications.

Reference Books

1. Apostol T.M. Calculus, Volume 1, One-variable calculus, with an introduction to linear algebra, (1967) Wiley, ISBN 0-536-00005-0, ISBN 978-0-471-00005-1
2. Alpha Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill, 2005.
3. A. Mukherji and S. Guha: *Mathematical Methods and Economic Theory*, Oxford University Press, 2011
4. Lawrence Blume and Carl Simon. *Mathematics for Economists*, W. W. Norton and Company, 1994.
5. Sydsaeter Knut and Peter J. Hammond. *Mathematics for Economic Analysis*, PHI, 1995
6. Avinash Dixit *Optimization in Economic theory* .Oxford University Press.

SEMESTER II

Core 3:

Course number: Eco/B/C 2.1

Introductory Macroeconomics

National Income Accounting, unemployment, and open economy issues

Macroeconomic data- National Income accounting and cost of living; Concept of Growth- role of savings, investment, and financial intermediation; Open Economy- Balance of Payments, exchange rates, and capital flow; Concept of unemployment- Types and their characteristics; Growth accounting and Solow residual.

Money and Inflation

Monetary system- definitions of money and determinants of money supply – money multiplier and central bank's role in controlling money supply; quantity theory of money; inflation and its costs.

The Closed Economy in the Short Run

Theory of aggregate demand- components and their interrelations - crowding out- Factors causing shift in the function; Theory of aggregate supply- determinants of supply and shift factors; Interaction of aggregate demand and supply.

Reference Books

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. *Principles of Macroeconomics*, Indian Imprint of South Western by Cengage India, 6th edition, 2015.
3. Richard T. Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.

4. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
5. J.R.Hicks. *The Social Framework: An Introduction to Economics*, Clarendon Press, 3rd edition, 1960
6. SikdarSoumyen, *Principles of Macroeconomics*, Oxford University Press

Core 4:

Course number :Eco/B/C 2.2

Statistical Methods for Economics

Nature of statistical data –inaccuracies and approximation, interpolation Newton’s forward, backward and Lagrangian

Tabular and graphical presentation of non-frequency type data

Univariate frequency distributions and their graphical representation

Measures of Central tendency-The mean, median mode and other quartiles

Measures of Dispersion

Moments, Skewness and Kurtosis

Bivariate frequency distribution-Simple and multiple correlation and regression

ANOVA Tables

Time series – components, measurement of trend and statistical fluctuations

Index Numbers – Price, quantity

Reference Books

1. J. F. Kenney and E. S. Keeping. *Mathematical Statistics: Part 1 & Part II*, Chapman and Hall, New York, 1954.
2. F. E. Croxton, D. J. Cowden and S. Klein. *Applied Statistics*, Prentice Hall; *Applied General Statistics*. 3rd ed., Prentice-Hall, Inc., 1960.
3. R.G.Hogg and A.T.Craig. *Introduction to Mathematical Statistics*, Prentice Hall; 6th Edition, 2004
4. A. M. Goon, M. K. Gupta and B. Dasgupta. *Fundamentals of Statistics*, The World Press, 1996

SEMESTER III

Core 5:

Course number:Eco/B/Core 3.1

Microeconomics BI

Consumer Theory

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

Production and Costs

Technology- general concept of production function; returns to factor and returns to scale, isoquants and diminishing rate of factor substitution – elasticity of substitution –some examples of technology (fixed proportion, perfect substitute, Cobb– Douglas Production Function, CES Production Function), General concept of homogenous and homothetic production function and their properties; production with one and more variable inputs; isocost line and firms equilibrium and expansion paths; short run and long run costs; cost curves in the short run and long run; relation between short run and long run costs.

Competitive Equilibrium

Short run and long run equilibrium; determination of the supply curve of the firm and the industry: with reference to external economies and diseconomies of scale.

Input market in perfect competition

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

Reference Books

1. Hal R. Varian, Intermediate Microeconomics, a Modern Approach, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
2. C. Snyder and W. Nicholson, Fundamentals of Microeconomics, Cengage Learning (India), 2010.
3. B. Douglas Bernheim and Michael D. Whinston, Microeconomics, Tata McGraw- Hill (India), 2009.
4. Hugh Gravelle and Ray Rees. Microeconomics, Prentice Hall (UK); 3rd edition, 2004.

AnindyaSen , Microeconomics: Theory and Applications, Oxford University Press Pindyck, Rubinfeld and Mehta, Microeconomics, Pearson

Core 6:

Course number: Eco/B/Core 3.2

Macroeconomics B I

Income Determination in the short-run

1. **Simple Keynesian System:** Multipliers; equilibrium in both closed and open economy and stability; autonomous expenditure, balanced budget, and net exports; paradox of thrift.
2. **IS-LM Model** - equilibrium, stability and comparative statics; effects of fiscal and monetary policies, real balance effects; IS-LM in the open economy under fixed and flexible exchange rate with perfect and imperfect capital mobility (Mundell-Fleming model).

Aggregate Demand and Aggregate Supply

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

Inflation, Unemployment and Expectations

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

Reference Books

1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
2. 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. SikdarSoumyen, Principles of Macroeconomics, Oxford University Press
8. AcharyaRajat, International Economics, OUP

Core 7:

Course number:Eco/B/C 3.3

Mathematical Methods in Economics B II

1. Differential equations
2. Linear algebra 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.
3. Integration of functions
4. Difference equations

Reference Books

1. Lawrence Blume and Carl Simon. *Mathematics for Economists*, W. W. Norton and Company, 1994.
2. Sydsaeter Knut and Peter J. Hammond. *Mathematics for Economic Analysis*, PHI, 1995

3. Alpha Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill, 2005.
4. Alpha C. Chiang *Elements of Dynamic Optimization* McGraw-Hill, 2005.
5. J.R.Hicks. *A Contribution to Theory of Trade Cycle*, Oxford University Press, New York, 1951.

SEMESTER IV

Core 8:

Course number: Eco/B/C4.1

Microeconomics B II

General Equilibrium, Efficiency, and Welfare

1. Exchange Economy, Consumption Allocation and Pareto Optimality; Edgeworth box and contract curve; Equilibrium and efficiency under pure exchange.
2. Pareto efficiency with production: concepts of PPF, SIC, and resource allocation;
3. Perfect competition, Pareto efficiency and market failure (externalities and public good); property right and Coase Theorem.

Market Structure and Game Theory

1. Monopoly; pricing with market power; degree of monopoly; price discrimination-different degrees; multiplant monopoly; peak-load pricing; two-part tariff; monopolistic competition.
2. Oligopoly and game theory (Cooperative and Non-cooperative static games; simultaneous move and sequential move games; non-cooperative games of perfect information; the Prisoner's dilemma, Nash equilibrium in pure and mixed strategies; Backward induction solutions and SPNE); Applications of game theory in oligopolistic markets (Cournot Equilibrium, Bertrand Equilibrium, Stackleberg Equilibrium) ; concept of collusion and cartels; Solution by backward induction.

Input Market under Imperfect Competition

Monopsony, bilateral monopoly in labour market; Externalities; public goods and markets with asymmetric information.

Reference Books

1. Hal Varian. *Microeconomic Analysis*, Third Edition, Selected chapters, W. W. Norton and Company, 2013.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010
3. Jean Tirole. *Theory of Industrial Organization*, MIT Press, 1988
4. Robert Gibbons. *A Primer in Game Theory*, Princeton University Press, 1992.
5. Erik Rasmusen. *Games and Information: An Introduction to Game Theory*, Basil Blackwell, 1999.
6. K. Binmore. *Fun and Games: A Text on Game Theory*, OUP, 1991

7. Anindya Sen, Microeconomics: Theory and Applications, OUP, 1999
8. Pindyck and Rubinfeld, Microeconomics, Prentice Hall
9. Mascollel and Green, Microeconomic Theory, OUP
10. W.W. Norton and Company/Affiliated East-West Press (India), 2010. The workbook by Varian and Bergstrom could be used for problems.

Core 9:

Course number :Eco/B/C 4.2

Macroeconomics B II

Schools of Macroeconomic Thoughts

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

Macroeconomic Foundations

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.

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

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

Monetary Policy

Government debt and Ricardian equivalence; high-powered money; money multiplier analysis; monetary policy – OMO, Bank rate, variable reserve ratio, repo and reverse repo.

Economic Growth

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

Reference Books

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

7. Errol D'Souza. Macroeconomics, Pearson Education (New Delhi), 2009
8. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010

Core 10:

Course number : Eco/B/C 4.3

Introductory Econometrics

Nature and Scope of Econometrics

1. Definition and Scope of Econometrics; Importance of Error Term.
2. The two-variable linear regression model: least-squares estimators of the regression parameters, the properties of the estimators, testing of hypothesis.
3. Introduction to two variable non-linear relationship.
4. Violation of assumptions and simple least-squares methods in two variable linear regression models: autocorrelation, heteroscedasticity, test of autocorrelation and heteroscedasticity.
5. K-variable model- multicollinearity problem, consequences and testing.
6. Dummy variables, dummy variable for changes in intercept term, slope coefficient, dummy variable trap, dummy variables for testing in the regression coefficient.
7. Introduction to Logit and Probit Models.

Reference Books

1. G.S.Maddala. Introduction to Econometrics, John Wiley & Sons Ltd, 2009.
2. Jack Jhonston. Econometric Methods, 3rdEdition JanKmenta. Elements of Econometrics, Indian Reprint, Khosla Publishing House, 2nd edition, 2008
3. Jan Kmenta. *Elements of Econometrics*, Macmillan Publishing Company, 1991
4. William H. Green, *Econometric Analysis*, 7th Edition, Prentice Hall, 2011
5. D. N. Gujarati and D.C. Porter, Essentials of Econometrics, McGraw Hill, 4th edition, International Edition, 2009.
6. Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 3rd edition, Indian edition, 2007
7. James H. Stock and Mark W. Watson Introduction to Econometrics, 3rd Edition, 2011

SEMESTER V

Core 11:

Course number :Eco/B/C 5.1

International Economics BI

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.

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

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.

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.

Balance of Payments & Exchange Rate:

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

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 12:

Course number : Eco/B/C 5.2

Public Economics BI

Nature and Scope of Public Economics

Definition and Scope of Public Economics; Externalities, Market Failure and Government Intervention; Coase Theorem; Public Expenditure to finance Development.

Theory of Public Good

Overview of Public Good; Characteristics of Pure Public Good; Distinction between Pure Public Good and Private Good; Market Failure in case of Pure Public Good; Optimal provision of Public Goods; Private Provision and Public Provision of Public Goods; Lindahl Equilibrium, Voting Equilibrium.

Taxation:

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

Public Expenditure and Public Debt

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.

Reference Books

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

SEMESTER VI

Core 13:

Course number : Eco/B//C 6.1

Indian Economy BI

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.

Population and Human Development

Demographic trends and issues; education; health and malnutrition.

Growth and Distribution

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

Economic Reforms in India

Monetary, Fiscal, and Trade Policy Reforms.

Reference Books

1. Jean Dreze and Amartya Sen, 2013. *An Uncertain Glory: India and its Contradictions*, Princeton University Press.
2. Jean Dreze and Amartya Sen: *Economic Development and social opportunity*, OUP
3. Sukhomoy Chakraborty: *Development Planning: The Indian Experience*, OUP
4. Uma Kapila: *Indian Economy since independence*, Academic Foundation
5. Ahluwalia and Little (ed): *India's Economic Reforms and Development*, OUP
6. Joshi and Little: *India's Economic Reforms*, OUP
7. Pulapre Balakrishnan, 2007, *the Recovery of India: Economic Growth in the Nehru Era*, Economic and Political Weekly, November.
8. Rakesh Mohan, 2008, —*Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment*, Economic and Political Weekly, May.
9. S.L. Shetty, 2007, —*India's Savings Performance since the Advent of Planning*, in
10. K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India's Development*.
11. Himanshu, 2010, *Towards New Poverty Lines for India*, Economic and Political Weekly, January
12. Jean Dreze and Angus Deaton, 2009, *Food and Nutrition in India: Facts and Interpretations*, Economic and Political Weekly, February.
13. Himanshu. 2011, —*Employment Trends in India: A Re-examination*, Economic and Political Weekly, September.
14. Rama Baru et al, 2010, —*Inequities in Access to Health Services in India: Caste, Class and Region*, Economic and Political Weekly, September.
15. Geeta G. Kingdon, 2007, —*The Progress of School Education in India*, Oxford Review of Economic Policy
16. J.B.G. Tilak, 2007, —*Post Elementary Education, Poverty and Development in*

- India, International Journal of Educational Development.
17. T. Dyson, 2008, —India's Demographic Transition and its Consequences for Development in Uma Kapila, editor, Indian Economy Since Independence, 19th edition, Academic Foundation.
 18. KaushikBasu, 2009, —China and India: Idiosyncratic Paths to High Growth, Economic and Political Weekly, September.
 19. K. James, 2008, —Glorifying Malthus: Current Debate on Demographic Dividend in Indian Economic and Political Weekly, June.
 20. ReetikaKhera, 2011, —India's Public Distribution System: Utilisation and Impact Journal of Development Studies.
 21. Aniruddha Krishna and DevendraBajpai, 2011, —Lineal Spread and Radial Dissipation: Experiencing Growth in Rural India, 1992-2005, Economic and Political Weekly, September.
 22. KaushikBasu and A. Maertens, Eds, 2013, The New Oxford Companion to Economics, Oxford University Press.

Core 14:

Course number: Eco/B/C 6.2

Development Economics BI

Meaning of Economic Development

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

Economic Growth

An overview and policy implications of one sector growth models- Harrod- Domar, and Solow; Sources of economic growth, international comparisons.

Poverty and Inequality

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.

Political Institutions and the State

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.

Reference Books

1. Debraj Ray, Development Economics, Oxford University Press, 2009.
2. ParthaDasgupta, Economics, a Very Short Introduction, Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and DilipMookerjee, 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. Daron Acemoglu and James Robinson, Economic Origins of Dictatorship and Democracy, Cambridge University Press, 2006.
 8. Robert Putnam, Making Democracy Work: Civic Traditions in Modern Italy, Princeton University Press, 1994
 9. Meier and Rauch (ed)- Leading Issues in Development Economics, OUP
 10. Todaro and Smith: Economic Development, Pearson Education, 2009
 11. Hayami and Godo, Development Economics, OUP , 2005
 12. Bardhan and Udry, Development Microeconomics, OUP , 1999

ABILITY ENHANCEMENT COURSE(AECC)

SEMESTER 1`

AEC 1:

Course Number : B/AEC 1.1

English Communication / Environmental Science

SEMESTER 1I

AEC2 :

Course Number : B/AEC 1. 2`

English Communication/ Environmental Science

GENERIC ELECTIVE COURSE

SEMESTER 1`

GE 1

Course number : B/GE1

Mathematics I

Set Theory and Algebra

(a) Set Theory : Sets and set operations, Cartesian product of sets, Relations, Equivalence relations, partial order relations, functions, one-to-one and onto functions, bijective functions, Cardinality of sets, Composite functions, Inverse functions and Binary operations. Natural Numbers, Integers, Rational and

Irrational Numbers Set of Real Numbers; Absolute value and Intervals.

(b) Expansion of series; Geometric series, Binomial series, exponential series, logarithmic series, trigonometric series (sin, cos)

Real Sequence and Single Variable Calculus

a) Sequence: Real sequences, Limit of a sequence, Monotonic sequences, Cauchy sequences.

(b) Calculus: Limit, Continuity and Differentiability of single variable functions, Rules of differentiation ; Rolle's Theorem, Mean Value Theorems, Taylor's Theorem, Maclaurine's Theorem, Expansion of functions; Indeterminate forms and La'Hôpital's Rule.

(c) Directional derivative, Partial derivative, Total derivative, Euler's theorem on homogeneous functions

Reference Books

1. T. S. Blyth and E. F. Robertson. *Basic Linear Algebra*. Springer, 2002.
2. R. Courant and F. John. *Introduction to Calculus and Analysis*, (Vol. I & Vol. II). Springer, 1998.
3. D. V. Widder. *Advanced Calculus*. Prentice Hall, 1947.
4. R. G. Bartle and D.R. Sherbert. *Introduction to Real Analysis*. John Wiley, New York, 2011.
5. M. D. Raisinghania. *Ordinary and Partial Differential Equations*. S Chand & Co Ltd., 2005.
6. S. L. Ross. *Differential Equations*. Wiley, 1984.
7. S. A. Mollah. *Numerical Analysis*. Books and Allied Publishers, 2013.
8. S. K. Mapa. *Introduction to Real Analysis*, Sarat Book House, 2013.
9. S. K. Mapa. *Higher Algebra (Abstract and Linear)*, Sarat Book House, 2011

SEMESTER II

GE 2

Course number : B/GE 2

Mathematics II

Matrices, Algebra of Matrices, Different types of matrices, Determinants

Inverse of a square matrix, Elementary row operations, Determinants and their properties : Rank of a matrix, Cramer's rule, Solution of system of linear equations by matrix inversion method, Characteristic equation, Eigen values and eigenvectors.

Integral Calculus

Partition, Upper and Lower integrals of bounded functions, Definite integrals, principles of double integration.

Differential Equations and First Degree Difference Equations

Definition and Examples, Linear First Order Equations and integrating factors, Second Order Equations, Fundamental Existence and Uniqueness Theorem, Geometric Interpretation, Linear differential equations with constants Coefficients.

Difference Equations

First and Second Order, First and Second Order Simultaneous Equations, solutions and Concepts.

Reference Books

1. T. S. Blyth and E. F. Robertson. *Basic Linear Algebra*. Springer, 2002.
2. R. Courant and F. John. *Introduction to Calculus and Analysis*, (Vol. I & Vol. II). Springer, 1998.
3. D. V. Widder. *Advanced Calculus*. Prentice Hall, 1947.
4. R. G. Bartle and D.R. Sherbert. *Introduction to Real Analysis*. John Wiley, New York, 2011.
5. M. D. Raisinghania. *Ordinary and Partial Differential Equations*. S Chand & Co Ltd., 2005.
6. S. L. Ross. *Differential Equations*. Wiley, 1984.
7. S. A. Mollah. *Numerical Analysis*. Books and Allied Publishers, 2013.
8. S. K. Mapa. *Introduction to Real Analysis*, Sarat Book House, 2013.
9. S. K. Mapa. *Higher Algebra (Abstract and Linear)*, Sarat Book House, 2011

SEMESTER III

GE 3 :Any one of the following

Course number : B/GE 3

Computer Applications 1

Any GE (ED) subjects offered by the Faculty of Arts, JU

SEMESTER 4

GE 4 :Any one of the following

Computer Applications 2

Any GE (ED) subjects offered by the Faculty of Arts, JU

SKILL ENHANCEMENT COURSE

Each course will be of 40-45 lectures

SEMESTER III

SE 1:

Eco/B/SE 3.1

Advanced Statistics

1. Probability and Distribution

- (a) Introduction to probability theory
- (b) Probability measure/ Probability set function.
- (c) Probability Space.
- (d) Conditional probability and independence, Bayes Theorem.
- (e) Random variables: discrete and continuous types.
- (f) Properties of distribution functions, mass functions and density functions.
- (g) Expectation of a random variable
- (h) Transformations of variables: discrete and continuous types.
- (i) Extensions of the change of variable techniques.
- (j) Expectations of functions of random variable. Some special expectations :
moment generating function
- (k) Convergence in Probability

2. Multivariate Distributions

- (a) Distribution of two random variables.
- (b) Continuous distributions and Expectations.
- (c) The correlation coefficient.
- (d) Independent random variables.
- (e) Extension to several random variables.

3. Some Special Distributions:

- (a) Uniform distribution, Binomial and related Distributions; Poisson, Normal and Bivariate Normal, Beta, Chi-Square, t and F
- (b) Convergence in Distribution.
- (c) Limiting Distributions: Central Limit Theorem

4. Distributions of Functions of Random Variables

- (a) Sampling Theory.
- (b) Distributions of sample mean and sample variance.

5. Introduction to Statistical Inference

- (a) Point Estimation.
- (b) Confidence Intervals for means.
- (c) Confidence Interval for difference of means
- (d) Test of statistical hypothesis, Z test, t test, Chi-square test, F test
- (f) Anova
- (g) Some non-parametric test: test for Goodness of fit, test of independence, test of homogeneity

Reference Books

1. J.E. Freund. *Mathematical Statistics with Applications*, 7th edition, Pearson Prentice Hall, 2004.
2. Irwin Miller and M. Miller. *Probability and Statistics*, Prentice Hall, 2003.
3. F. Kenney and E. S. Keeping. *Mathematical Statistics: Part 1 & Part II*, Chapman and Hall, New York, 1954.
4. Hogg, R.G and A.T. Craig. *Introduction to Mathematical Statistics*, Pearson Education (Indian Edition), 2004.
5. V. K. Rohatgi and A. K.M. E Saleh. *An Introduction to Probability and Statistics*, 2nd Edition, Wiley, 2000.

SEMESTER IV

SE 2: Any one of the following

Course number: Eco/B/SE 4.1

Applied economics

This course will be different from other courses as it visualizes a fully computer lab based teaching course. This course also provides a basic idea of how problem can be formulated, how to take up a research project and also the steps that need to follow in any primary data based research study. This course is so sequenced that students will be able to apply the knowledge on Statistical and Econometric methods that they have already gathered in their earlier semesters. This course design aims at providing students with necessary skill to handle Statistical and Econometric packages using data sets and computer facilities of the Computer Laboratory of the Department. The students are expected to acquire enough competence in handling application of computer packages so that they can use that knowledge in their group research Project Work in semester 6.

A. Essential Steps in Primary Data Collection

Problem selection, Testing of hypothesis and Inference, sample design, designing of questionnaire pre-testing of questionnaire for collection of primary data, introduction to secondary data sources.

B. Application of Statistics

Estimation of descriptive statistics: mean, median, mode, measures of dispersion, skewness and kurtosis, 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 table, ANOVA based Tests.

C. Application of Econometrics

Linear regression model and test for linear restriction on parameters test of heteroscedasticity, autocorrelation, multicollinearity, application of dummy variable models; Simple models with limited dependent variable; Examples from economic behaviours.

Reference Books

1. G. Maddala. *Introduction to Econometrics*, Willey, 2002.
2. G. Hadley. *Linear Programming*, Addison-Wesley Pub Co., 1962.
3. W. G. Cochran. *Sampling Techniques*, Wiley; 3rd Edition, 1977.
4. J.W. Wooldridge. *Introduction to Econometrics*, South-Western Division of Thomson Learning; International Ed edition, 2005.
5. J. F. Kenney and E. S. Keeping. *Mathematics of Statistics*, Part I & II, D. Van Nostrand Company Inc; 2nd Edition, 1951.
6. F. E. Croxton, D. J. Cowden and S. Klien. *Applied General Statistics*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1967.

Course number Eco/B/SE 4.2

General Equilibrium Theory and Welfare Economy

Introductory Analysis

Partial Equilibrium vs. General Equilibrium techniques; Inter-relationship amongst markets; characteristics and assumptions of competitive General equilibrium; Walras' Law and its implications.

Exchange Economy

Offer curve and stability of competitive allocation; contract curve and Pareto set; concept of Core and Core allocation; Social indifference curves and their properties; Principle of compensation and Pareto Comparability

A two sector production economy

Efficiency in resource allocation, Production Possibility Curve and its properties, concavity of PPF; Rybczynski and Stolper-Samuelson theorems in a two sector production economy; magnification effects and duality, price-output response ;General equilibrium with production and conditions of Pareto optimality.

Competitive General equilibrium

Existence, uniqueness and stability of competitive general equilibrium in multi-markets- notions of information, non-convexity and presence of externality. Tatonnement and Non-Tatonnement adjustments. First and Second Fundamental Welfare Theorems, and welfare properties of competitive equilibrium, and exceptional cases.

Introduction to Theory of Second Best and Social Welfare

Market Failures (Externality, Public Goods), theory of Second Best and Optimal interventions; Property rights and Coase Theorem; Social Welfare functions and Pareto criterion: Compensation tests according to Scitovsky, Hicks, Kaldor and Samuelson criteria; Basic Ideas of Arrow's Impossibility Theorem, Voting and Social choice.

Reference Books

1. Mascollel, Whinston and Green. *Microeconomic Theory* (only graphical analysis and problems), Oxford University Press, 2012.
2. Anjan Mukherjee. *Walrasian and Non-Walrasian General Equilibrium*, OUP, 2002.
3. Hal Varian. *Microeconomic Analysis*, Third Edition, Selected chapters, W. W. Norton and Company, 2013.
4. Satya. R.Chakravarty. *Microeconomics*, Allied Publishers Pvt Ltd., 2002
5. J. Hindriks and G. Myles. *Intermediate Public Economics*, The MIT Press, Second Edition, 2013.

Course Number :Eco/B/SE 4.3**Linear Programming and Input-Output Analysis**

The algebra of Linear Programming the Primal and Dual Problem; the Simplex method

Input-Output Table: relation to national account.

The Static Leontief System, technical assumptions, The Hawkins-Simon Conditions, Solving an Input-Output System.

Applications of input-output analysis

Partial and General Equilibrium approach to the solutions

The solutions under different closing rules.

Social Accounting Matrix

Reference Books

1. Dorfman Samuelson and Solow(1968) :Linear Programming and Economic Analysis
2. Hertel T.W (Edited) : Global Trade Analysis,Cambridge University Press
3. Pradhan B.K.,Saluja M.R.AND Shalabh K Singh (2006) Social Accounting Matrix for India : Concepts, Construction and Applications, Sage publication.

DICIPLINE SPECIFIC COURSE**SEMESTER V****DSE 1: Any one of the following****Course Number:Eco/B/DSE 5.1/1****Economics of Health and Education**

Introduction: (Meaning, definition, scope and importance of economics of health and education)

Scope of health and education in Economics

Market failure and the role of Government in healthcare services and education sector: Externalities of health and education

Role of health and education in Human Development

Spill-over and intergenerational impact of education and health

Private and social returns from health and educational outcome

Inequality of health and education and its impact on Economy: Government policy and financing of Education and Health

Inequality of health and education and its impact on Economy: Government policy and financing of Education and Health

Foundations of Health Economics

Health Indicators: Mortality, Morbidity and Burden of Disease

Health as human capital: Health and Economic growth

Health and Poverty: Causal inter-linkage

Production of health and healthcare services

Different types of healthcare market

Foundations of Economics of Education

Role of education in economic growth-endogenous growth models and human capital

Returns to education
Demand and supply considerations of educational attainment
Poverty, Human capital accumulation and low level trap

Reference Books

Barro, R. J. and Sala-i-Martin, X., (1995), *Economic growth*, New York, McGraw-Hill.(Selected chapter dealing with human capital and growth)

Blaug. M (1972) *An Introduction to the Economics of Education*: London: Penguin

Hurley J. (2000), *An Overview of the Normative Economics of the Health Sector*, Cuyler A. J. And Newhouse J.P., (eds.), *Handbook of Health Economics*, (Vol I), Elsevier, Netherlands.

Majumdar, T. (1983) *Investment in Education and Social Choice*: Cambridge, Cambridge University Press.

Pascharopoulos. G. (ed):(1987): *Economics of education Research and Studies* Oxford, Pergamon Press.

Santerre R.E. and Neun S.P. (2010), *Health Economics: Theories, Insights and Industry Studies (5th ed.)*, South-Western Cengage Learning, USA

Sloan, Frank. A. and Chee-Ruey Hsieh (2012): *Health Economics*, The MIT Press, 55 Hayward Street, Cambridge, MA, 02142.

Zweifel P., Breyer F and Kifmann M. (1997), *Health Economics (2nd Ed.)*, OUP.

Course Number: Eco/B/DSE 5.1/2

Issues in Indian Economy

WTO and India

Different rounds of trade negotiations

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

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.

Policies and Performance in Industry

Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment, globalization and Indian industry.

Trends and Performance in Services

Formal and Informal Sectors, banking and insurance; trade in services.

Reference Books

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. B.N. Goldar and S.C. Aggarwal, 2005, —Trade Liberalisation and Price-Cost Margin in Indian Industries, The Developing Economics, September.

Course Number: Eco/B/DSE 5.1/3
Resource and Environmental Economics

Introductory Lectures

The Environment-economy Interaction, Elements of Ecology – Ecosystem Cycles; general issues regarding environmental problems.

Economics of Natural Resources

Renewable resources (growth curve and rate of exploitation) and Non-renewable resources (optimal extraction rule); Natural Capital, Indicators of sustainable development, Green accounting, UN system of satellite accounting beyond System of National Accounts.

The Case of Market Failure Applied to Environmental and Resource Economics

Introduction to non-market Valuation

The meaning of Environmental Valuation, The uses of Economic Value, Costs, Benefits, Willingness to Pay and willingness to Accept, Total Economic Value, option Value, existence Value, Empirical measures of option and Existence Value, Description of Valuation Methodologies: revealed preference versus stated preference, Hedonic prices, travel cost method, contingent valuation .

Reference Books

Topic 1

N. Hanley, J. Shogren and B. White. *Introduction to Environmental Economic,s* CUP (1999), Ch 1

Topic 2

N. Hanley, J. Shogren and B. White. *Introduction to Environmental Economics*, CUP (1999), Ch. 8, 9, 10, 14

Topic 3

T. W. Pearce and R. K. Turner. *Economics of Natural Resources and the Environment*, 1990, Chapters 4, 5, 6, 7 & 8

Topic 4

T. W. Pearce and R. K. Turner. *Economics of Natural Resources and the Environment*, 1990, chapters 9, 10

Further Reference Books

1. Allen. V. Kneese. *Natural Resource Economics: Selected Papers of Allen V. Kneese (New Horizons in Environmental Economics)*, Chapter 1, Edward Elgar Publishing, 1995.
2. C.Kolstad. *Environmental Economics*, OUP, 2000.
3. Bhattacharya R (ed), *Economics of the Environment: An Indian Perspective*, OUP, 2000.
4. Sengupta R., *Ecology and Economics: An Approach to Sustainable Development*, OUP, 2001.
5. N. Hanley, J. Shogren and B. White. *Introduction to Environmental Economics*, CUP, 1999.
6. G. Hardin. *The Tragedy of the Commons*, Reprinted In: U. Sankar, ed. *Environmental Economics*, OUP, 2001.
7. R. S. Pindyck and D. L. Rubinfeld, *Microeconomics*, Chapter 18, Prentice Hall; 7th Edition, 2008.
8. Roger Perman, Yue Ma, Michael Common, David Maddison, James McGilvray *Natural Resource and Environmental Economics*, 4th Edition, Addison Wesley, 2011.

DSE 2: Any one of the following

Course Number: Eco/B/DSE 5.2/1

Financial Economics BI

Corporate Finance

- a. Evolution of limited liability companies; alternative sources of fund for a firm; 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 ; convertibles; Concepts of primary market and secondary market
- b. Financial Statement analysis: Basic accounting concepts, how to read balance sheets, profit and loss accounts and cash flow statements. Ratio analysis.
- c. Capital structure & Cost of capital

Investment Theory and Portfolio Analysis

a. Deterministic cash-flow streams

Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed-income securities; bond prices and yields; interest rate sensitivity and duration; immunisation;

b. Interest Rates

The term structure of interest rates; yield curves; spot rates and forward rates. Determination; sources of interest rate differentials; theories of term structure of interest rates;

c. Single-period random cash flows

Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis:

d. CAPM

The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Options and Derivatives

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; 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.

Reference Books

1. Brealey , RA. and Myers, S.C.- Fundamentals of Corporate Finance
2. Ross, W.A., Westerfield, RW. and Jordan, B.D.- Fundamentals of Corporate Finance,TataMcgraw Hill.
3. S. Kevin: Portfolio Management
4. John Hull : Fundamentals of futures and options market
5. P.Chandra : Financial management theory and practice .
6. Burton G. Malkiel, *A Random Walk Down Wall Street*, W.W. Norton & Company, 2003

Course Number: Eco/B/DSE 5.2/2

Economic Thought and Society

Two Traditions in the History of Economic Thought

Economics for the poor: Economic Ideas of Smith, Thompson, Hodgkins, Veblen and Marx - An Introduction

Society recommended by the economics for the poor: Socialism - An Introduction

Economics for the rich: Economic ideas of Malthus, Bentham, Bastiat, Jevons, Mill, Menger, Walras, Marshall

Society recommended by the economics for the rich: Capitalism: An Introduction

Neoclassical Economics: Culmination of the Economic Ideas for the Rich

Neoclassical Microeconomics: An Overview and Assessment

Neoclassical Macroeconomics: An Overview and Assessment

Neoclassical Economics and Capitalism: An Assessment

Marxian Economics

Capitalism and Marx: Theory of exploitation and surplus value, Theories of Crises, Marxian economics and Socialism

Performance of the Capitalist World

A brief history of capitalism: Birth of capitalism, progress of capitalism, colonisation and crises

Theory of Imperialism: Hobson, Luxemburg and Lenin

Current performance of the capitalist world

Assessment of Neoclassical economics and Marxian Economics in the light of the performance of the capitalist world

Performance of the Socialist World

History of the Rise and Fall of the USSR

Current performance of other socialist states: China, Cuba, Venezuela and others

Socialism and Developing Countries: The Case of India

Dependency Theory and India

How the capitalist powers have been trying to conquer the socialist states: the case of the USSR, China, India and Cuba

Reference Books

Topic 1

History of Economic Thought: A Critical Perspective, E.K.Hunt and M. Lautzenheiser, PHI Learning Private Limited, Delhi.

Topic 2

Intermediate Microeconomics, H.Varian

Public Finance: C. Ghosh and a.Ghosh, PHI Learning Private Limited, Delhi.

Macroeconomics: G.Mankiw, Worth Publishers, New York.

Macroeconomics: C.Ghosh and A.Ghosh, PHI Learning Private Limited, Delhi

Topic 3

Mrarx's Capital: Ben Fine and Alfredo Saad-Filho, Viva Books, New Delhi.

History of economic Thought: A Critical Perspective, E.K.Hunt and M. Lautzenheiser, PHI Learning Private Limited, Delhi.

Topic 4

History of economic Thought: A Critical Perspective, E.K.Hunt and M. Lautzenheiser, PHI Learning Private Limited, Delhi.

Frederic Mishkin (2011). Over the Cliff: From the Subprime to the Global Financial Crisis: Journal of Economic Perspectives—Volume 25, Number 1—Winter 2011—Pages 49–70

Alan S. Blinder and Mark Zandi,How the Great Recession was Brought to an End: 7 July 2010 (Mimeo)

The Financial Crisis: Lessons for the Next One: Alan S. Blinder and Mark Zandi, October 15, 2015 (mimeo).

Price of Inequality: How Today's Divided Society Endangers Our Future: Joseph Stiglitz, 2013, W.W. Norton and Company, New York

The European Sovereign Debt Crisis: Phillip Lane, Journal of Economic Perspectives

The Holy Grail of Macroeconomics: Lesson from Japan's Great Recession: Richard C. Koo, John Wiley & Sons, New York.

The Return of Depression economics and the Crisis of 2008: Paul Krugman, Norton & Company, New York.

Topic 5

Symposium on Economic Transition in the Soviet Union and Eastern Europe, Peter Murrell, Journal of Economic Perspectives, Fall 1991.

Understanding China's Growth: Past, Present and Future, Xiaodong Zhu, Journal of Economic Perspectives, Fall 2012.

Indian Economy: A Macro-Theoretic Analysis, Ghosh,C. And Ghosh, A., PHI Learning Private Limited, Delhi

Diana Raby (2009). Why Cuba Still Matters:, Monthly Review, Volume 60, Issue 8.

Samir Amin (2013). China 2013, , Monthly Review, Volume 64, Issue 10.

The Rise and Fall of the Soviet economy, Hanson Phillip, Routledge, London

Pravda Alex (2010). "The Collapse of the Soviet Union, 1990-91 in Leffer, Melvyn, P.,Westad, Odd Arne, The Cambridge History of the Cold war, Vol.3: Findings: Cambridge University Press

A Study of the Soviet Economy, The IMF, 1991.

Course Number: Eco/B/DSE 5.2/3

Topics in Microeconomics I

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?

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.

Extensive form games with perfect information

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

Reference Books

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

SEMESTER VI

DSE 3: Any one of the following

Eco/B/DSE 6.1/1

Money and Financial Markets

Money

Concept, functions, measurement; theories of money supply determination.

Markets, Instruments and Financial Innovations

- a. Role of financial markets and institutions; problem of asymmetric information –adverse selection and moral hazard;
- b. Money market or market for short term funds- Call money market, Commercial bills market, market for Commercial Papers and Commercial Deposits, Treasury bills markets, Repo and reverse repo markets.
- c. Capital markets or markets for long term funds-Debt market, equity market, market for government securities.
- d. Stock market- characteristics –stock index –Indian stock market and role of SEBI

Financial Institutions

a. Necessity of Financial Intermediaries and their functions

b. Banking System: Balance sheet and portfolio management. . Indian banking system: Changing role and structure; banking sector reform

c. Non-bank financial institutions: venture capital funds, development banks, mutual funds, Insurance companies. The entire discussion is done with examples from India.

Central Banking and Monetary Policy

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

Reference Books

1. F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6th edition, 2009.
2. F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial*

Markets and Institutions, Pearson Education, 3rd edition, 2009.

3. M. R. Baye and D. W. Jansen, *Money, Banking and Financial Markets*, AITBS, 1996.

4. Rakesh Mohan, *Growth with Financial Stability- Central Banking in an Emerging Market*, Oxford University Press, 2011.

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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 (1

Eco/B/DSE 6.1/2

Issues in Open Economy

Trade and Growth

Trade Patterns: Country Experiences; Concentration in Production; Economic Growth and Changing Comparative Advantage; Trade as Engine of Growth; Trade as Vent for Surplus; Trade, Growth and Terms of Trade: import-biased versus export-biased growth, TOT and welfare (Bhagwati'simmiserizing growth hypothesis); Product Variety, Trade and Growth

Exchange Rate and Balance of Payments:

(a) International monetary system: Gold Standard; Bretton Woods; post Bretton Woods era

(b) Foreign Exchange Market

- i) Concepts of spot market –demand for foreign exchange and supply of foreign exchange and exchange rate determination under clean float; Marshall Lerner condition for stability;
- ii) Alternative Regimes: Fixed exchange rate regime with exchange control; Dirty Float; Target Zone
- iii) Asset market, portfolio choice and exchange rate: Covered and uncovered interest parity; money, exchange rate and BoP
- iv) Purchasing power parity (PPP): concepts, basic issues and the PPP puzzle
- v) India's BOP and Exchange Rate Policy:the 1991 crisis and current developments; Current scenario of managed float and market determined exchange rate (flexible exchange rate regime) of India and other exchange rate policies

BOP Adjustment Policies under Pegged Exchange Rate Regime

Synthesis approach; expenditure-reducing and expenditure-switching policies – fiscal and monetary policies, devaluation, import tariff; Laursen-Metzler effect; internal and external balance and policy conflict

Reference Books

1. R. E. Caves, J. A. Frankel and R. W. Jones. *World Trade and Payments: An Introduction*, Pearson Education, 2007.
2. Rudiger Dornbusch. *Open Economy Macroeconomics*, Basic Books, 1980.
3. P. Krugman and M. Obstfeld. *International Economics; Theory and Policy*, Pearson Education, 6th Edition, 2004.
4. Giancarlo Gandolfo. *International Finance and Open Economy Macroeconomics*, Springer Link, 2004.
5. Francisco L. Rivera-Batiz and Luis A. Rivera-Batiz, *International Finance and Open Economy Macroeconomics*, 2nd Edition, 1994.

Eco/B/DSE 6.1/3

Topics in Microeconomics II

Repeated Games with complete information

Repeated games: Folk theorem and repeated prisoner's dilemma; Finitely repeated games and backward induction; infinitely repeated games; credibility and sub game perfect Nash equilibrium, one-step deviation property;

Simultaneous move games with incomplete information (Bayesian games)

Strategies; Bayesian Nash equilibrium; higher order beliefs.

Extensive form games with imperfect information

Strategies; beliefs and sequential equilibrium; applications.

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.

Reference Books

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

DSE 4: Any one of the following

Course Number: Eco/B/DSE 6.2/1

Project

Course Number: Eco/B/DSE 6.2/2

Term Paper

SEMESTER VII

Core 15

Course number : Eco/A/C7.1: Microeconomics AI

(45 lectures including Internal Assessment)

1. Math Tools: An introduction to Real Analysis and Static Optimization.
2. Introduction to institutional and evolutionary foundations of Microeconomics.
3. Consumer Behaviour, Production including Profit Maximization and Profit function.
4. Uncertainty : Preferences over Lotteries, Expected Utility Theorem - application and its critique, attitudes towards risk, measures of absolute and relative risk aversion, Stochastic Dominance
5. Markets and Strategies: Topics in Monopoly, Quantity and Price competition, Stackelberg Equilibrium, Limit Pricing and Entry Deterrence

Suggested Readings:

1. A. Mas-Colell, M. Whinston and J Green. *Microeconomic Theory*, Oxford University Press, 1995.
2. H. Varian. *Microeconomic Analysis*, W.W. Norton and Company, 3rd Edition, 1992.
3. Samuel Bowles. *Microeconomics: Behavior, Institutions and Evolution*. Oxford.
4. H. Gravelle and R. Rees. *Microeconomics*, Pearson Education, 3rd Edition, 2004.
5. F. Cowell. *Microeconomics*, Oxford University Press, 2006.
6. G. Jehle and J. Reny. *Advanced Microeconomic Theory*, Pearson Education, 2000.
7. Jean Tirole, *The Theory of Industrial Organization*, MIT Press, 1988
8. Oz Shy, *Industrial Organization*, MIT Press, 1996.

Core 16

Course number : Eco/A/C7.2: Macroeconomics AI

(45 lectures including Internal Assessment)

1. Keynesian Analysis in Walrasian Framework: Disequilibrium Models

Incompatibility of Walras Law and neoclassical synthesis of Keynes's General Theory- contribution of Clower, Leijonhufvud, Barro-Grossman-Non-Walrasian microfoundation of Keynes consumption function and effective demand. Malinvaud's approach-concept of temporary equilibrium. Benassy's formalization of non-Walrasian disequilibrium macroeconomics.

2. Rational Expectations and New Classical Macroeconomics

The basic concepts- the Phillips curve and Lucas supply equation- first and second generation currency crisis.

3. New Keynesian Macroeconomics

Price setting under monopolistic competition, menu cost, time-dependent rules, staggering and the effects of money- State dependent rules and the effects of money- Labour market: efficiency wages- Financial markets and credit rationing.

4. Structuralist Macroeconomics

Seminal ideas of Lewis, Kaldor and Taylor: economic structure matters for economic outcome, development of Kaldor's idea into an agriculture-industry macro model of the world economy- alternative role of intersectoral terms of trade and agricultural marketable surplus for industrial development. 'Stagnationism' and 'exhilarationism' – development of neo-Kaleckian macro model –wage-led growth vis-à-vis profit-led growth. (12)

Suggested Readings:

1. Wendy Carlin and David Soskice. *Macroeconomics and the Wage Bargain: A Modern Approach to Employment, Inflation, and the Exchange Rate*, Oxford University Press, 1990.
2. Brian Snowdon and Howard R. Vane. *Modern Macroeconomics: Its Origins, Development and Current State*, Edward Elgar Cheltenham, UK • Northampton, MA, USA, 2005.
3. J.P. Benassy. *Macroeconomics: An Introduction to the Non-Walrasian Approach*, Academic Press, New York, 1986.
4. R.J. Barro and H.I. Grossman. *A General Disequilibrium Model of Income and Employment*, American Economic Review, 61, 82-93, 1971.
5. Robert W. Clower. *The Keynesian Counter-Revolution: A Theoretical Appraisal*, in R. W. Clower, ed., *Monetary Theory*. London Penguin Books, 1969.
6. Amit Bhaduri and Rune Skarstein. *Effective demand and the terms of trade in a dual economy: a Kaldorian perspective*, Cambridge Journal of Economics, 2003.
7. Amit Bhaduri and Stephen Marglin. *Unemployment and the real wage: the economic basis for contesting political ideologies*, Cambridge Journal of Economics, 1990.
8. Amit Bhaduri. *On the dynamics of profit-led and wage-led growth*, Cambridge Journal of Economics, 2007.
9. Lance Taylor. *Reconstructing Macroeconomics. Structuralist Proposals and Critiques of the Mainstream*, Harvard University Press, Cambridge, MA, 2004.
10. Lance Taylor. *Structuralist Macroeconomics*, Basic Books, New York, NY, 1983.

Core 17

Course number : Eco/A/C7.3 Econometrics I

**(Theory supported by computer Applications)
(45 lectures including Internal Assessment)**

Single Equation Models

1. Linear Models

- (a) Properties of Conditional Expectation, Linear Projections
- (b) Basic Asymptotic Theory
- (c) K variable Classical Linear Regression Model ;summary
- (d) Violation of CLRM assumptions, Generalized least square estimator, properties of generalized least square estimator, different test for heteroscedasticity and autocorrelation, omitted variable , errors in variable
- (e) Instrumental variable method, two stage least square method

2. Non linear Models

- (a) Maximum Likelihood Method : K variable case, properties of maximum likelihood estimator, Limited information maximum likelihood method of estimation.
- (b) Limited dependent variable :limited Dependent Variable :Linear Probability model, Logit and probit model

Suggested Readings :

1. J.W. Wooldridge. *Econometric Analysis of Cross section and Panel Data*, MIT Press, 2010.

2. A. Collin Cameron and P.K.Trevedi. *Micro Econometric Methods and Applications*, Cambridge University Press, 2005.
3. W. H. Green. *Econometric Analysis*, Pearson Education, 2003.

Core 18

Course number: Eco/A/C7.4:Development Economics(45 lectures including Internal Assessment)

1. Macro Perspective: The idea of Vicious Circle of Poverty, Industrialization and Balanced Growth. The problem of Coordination failures.
2. Growth and Development:
3. Rural Informal Financial System ; The Importance of Collateral
4. Insurance, Risk and Vulnerability in an Agrarian Economy
5. Economics of Micro-finance : The Basic concepts of Micro-Finance :
6. Empirical Issues of Development Economics:
 - a). Application of Logit and Probit model to tackle different problems of Development Economics
 - b). Impact Evaluation Technique:
 - (i). The Difference between Natural Experiment, Quasi Experiment and Randomized Control Trial
 - (ii). Double Difference Method, Difference-in-Difference Method, Treatment Effect Model, Sample Selection Model with Endogeneity problem. The theories should be discussed with suitable example from selected papers.
7. The Economics of Social Capital
 - i). Measurement of Social Capital: The World Bank Method
 - (ii) Importance of Social Capital in Micro-finance
 - (iii) Relationship between Social Capital and Subjective Well-Being
 Reference: Relevant papers from different Journals.

Suggested readings

Agenor P.R. and P. J. Montiel, *Development Macroeconomics*, Princeton University Press, 2015.

Bardhan, P and C. Udry, *Development Microeconomics*, Oxford University Press, 1999;

Bardhan, P and C. Udry (eds.), *Readings in Development Economics*, vols 1 and 2, MIT Press, 2000;

P. Bardhan and U. Udry, Chapter 8 (risk and insurance) ; *Development Micro Economics*

Basu, K. *Analytical Development Economics*, OUP, 2010.

Basu Kaushik (1999) *Collected Papers in Theoretical Economics*, OUP, 2005

Beatriz Armendariz de Aghion, Jonathan Morduch *Economics of Micro-Finance*”, PHI, 3rd Edition

Deaton, Angus, *The Analysis of Household Surveys*, Johns Hopkins University Press, 1996;

Handbook of Development Economics, vols 1-4, Elsevier;

Weimann Joachim, A.Knabe, R. Schob, Measuring Happiness: The Economics of Well-Being, The MIT Press, Cambridge

Wooldridge: Cross Section and Panel data

Additional Journal Articles will be prescribed by the course instructor

SEMESTER VIII

Core 19

Course number : Eco/A/C8.1 General equilibrium and Welfare

(45 Lectures including Internal Assessment)

- 1. Introduction** Partial equilibrium vs. General Equilibrium techniques, Concept of General equilibrium; Pure Exchange Economy: Offer curves, existence and uniqueness of competitive equilibrium; One consumer, one producer economy, 2x2 economy, price-taking assumption, Edgeworth box, welfare properties, Pareto efficiency, and Walrasian equilibrium,
- 2. Welfare Analysis** Equilibrium and Optimality. Private ownership economies. The welfare theorems. The role of convexity of preferences and technologies. Aggregation and Welfare Social welfare functions and Pareto criterion: Hicks-Kaldor compensation tests; Arrow Impossibility Theorem (Samuelsonian representative consumer).
- 3. The Positive Theory of General Equilibrium - I. Definition**, Existence, uniqueness and Stability, of Walrasian equilibrium Scitovskian social indifference curves, compensation principle and Pareto comparability. Measurability, Comparability of Social Welfare Function – Rawlsian Social Welfare Functions•
- 4. Cooperative foundations of equilibrium** Core and equilibria. Public good and Market failure. Coase theorem.
- 5. General equilibrium under uncertainty** Arrow-Debreu Equilibrium. A market economy with contingent commodities, sequential trade, asset markets, incomplete markets, firm behavior in general equilibrium market under uncertainty

Suggested Readings:

1. Mas Colell, Whinston and Green, Chs. 15-19
2. H. Varian, Microeconomic Analysis
3. A. Mukherji, Walrasian and Non-Walrasian General Equilibrium
4. R.W. Jones, 1965, Structure of two sector general equilibrium model, Journal of Political Economy.
5. P.A. Samuelson, 1953, Prices of Goods and Factors in General Equilibrium, Review of Economic Studies.

Core 20

Course number: Eco/A/C8.2 :

Macroeconomics A II

(45 lectures including Internal Assessment)

1. Basic Infinite Horizon Models
Ramsey Problem: Command Economy, decentralized economy, dynamic efficiency- Government in the decentralized economy
2. Overlapping Generations Model
OLG with production: two period lives, dynamic inefficiency and altruism. Social Security models under OLG.
3. Theory of Real Business Cycles
Unpredictable shocks and their effects on output and employment, mainly in Ramsey Infinite horizon models. Fluctuations of income under two period OLG model
4. Modern Theory of Growth
Dissatisfaction with neoclassical theory- One sector models of endogenous growth: the AK model- Endogenous growth and human capital formation: the Lucas model- Endogenous growth and R&D- Romer model

Suggested Readings:

1. O.J. Blanchard and S. Fischer. *Lectures on Macroeconomics*, Prentice Hall of India, 1989
2. R. J. Barro and X. Sala-i-Martin. *Economic Growth*, Prentice Hall of India, 2004.
3. R. Solow. *Growth Theory: An Exposition*, New York, Oxford University Press, 2000.
4. David Romer. *Advanced Macroeconomics*, N.Y.: McGraw Hill, 1996.
5. Aghion Philippe and Peter Howitt. *The Economics of Growth*, MIT Press, 2008.
6. Acemoglu, Daren. *Introduction to Modern Economic Growth*, Princeton university Press, 2009.
7. Handbook of Economic Growth, North Holland, volumes 1, 1B and 2.

Core 21

Course number: Eco/A /C 8.3 :

Econometrics A II

(Theory supported by computer Applications)

(45 Lectures including Internal Assessment)

System of Equations

A. Linear Models

1. Introduction to system of equation **(4 lectures)**
 - (a) Seemingly Unrelated Regression Equation Model
 - (b) Panel Model : Introduction to static Panel Model
2. Simultaneous Equation Model
 - (a) Single equation Method of estimation : Indirect least square estimator(ILS), two stage least square estimator (2SLS), Instrumental variable estimator(IV)
3. An introduction to time series data: Structure of time series AR, ARMA, MA, ARIMA, identification of series –Box Jenkins approach, Concept of stationarity, distinction between Trend stationary process and Difference stationary process, unit root test, co integration and error correction, Engle Granger Methodology

B. Non Linear Models

- (c) Full information maximum likelihood method of estimation

(d) Generalized Method of Moment estimator

Suggested Readings:

1. J.W. Wooldridge. *Econometric Analysis of Cross section and Panel Data*, MIT Press, 2010.
2. A. Collin Cameron and P.K.Trevedi. *Micro Econometric Methods and Applications*, Cambridge University Press, 2005.
3. W. H. Green. *Econometric Analysis*, Pearson Education, 2003.
4. W. Enders. *Applied Time Series Econometrics*, Wiley, 2004

Core 22

Course number : Eco/A/ C8.4 :

Indian Economy AI

(45 Lectures including Internal Assessment)

Indian Economy, A Macroeconomic Perspective of Performance, Policies and Emerging Issues

The course instructor(s) need to choose four modules, taking module 1 as compulsory.

Module 1.

Indian economy in the Post-independence period – objectives of long term economic policy; development strategy; an overview of monetary, fiscal and external policies; long term macroeconomic performance, short term departures from long term objectives and corrective measures (explanation in terms of economic principles and political motives); rationale of economic reforms in India (including discussion on political economy aspects of reforms) and typology of reforms (9).

Module 2.

Financial sector and monetary policy in India – general overview; elements of financial sector reforms; progress and emerging issues in major financial segments- banking, insurance, pension and capital market; a review of India's monetary policy: past experience, present framework and future possibilities (12).

Module 3.

India's fiscal policy – general overview; profile of fiscal reforms (separate discussions of Centre and states); fiscal decentralisation and role of local bodies in the delivery of public services; federal fiscal relations; critical appraisal of fiscal consolidation framework; recent fiscal developments and emerging issues (12).

Module 4.

India's external sector – general overview; contours of external sector reforms; joining hands with WTO and its impact on India; trends, determinants and impact assessment of balance of trade and balance of payments position; impact of capital inflows and issues related to accumulation of foreign exchange reserves; capital account liberalisation; review of foreign trade policy and related issues. (12)

Module 5.

Poverty and inequality in India- measurement issues, regional and sectoral dimensions in poverty and inequality; multi-dimensional poverty indices; recent debates on poverty and inequality during reforms; public policies for poverty eradication and reduction of inequality in India with a focus on inclusive growth strategy. (12)

Module 6.

Issues in India's social sector and environmental concerns- India's progress in human development vis-à-vis peer countries; Disaggregated analysis of India's human development position across states: identifying constraints; detailed examination of India's education and health sectors: policies, progress and challenges; issues related to environment and climate change; an overview of government's efforts. (12)

Suggested Readings

1. Kapila, U. (ed.) Indian economy since Independence. 2015-16, Academic Foundation, 27th Rev.Ed.
2. Joshi, V. India's long road, the search for prosperity. 2017, Oxford University Press.
3. Panagariya, A. and J. Bhagwati India's tryst with destiny. 2014, HarperCollins.
4. Dreze, J. and A. Sen An Uncertain Glory: India and its contradictions. 2014, Penguin, UK.
5. Reddy, Y.V., N. Valluri and P. Ray Financial and fiscal policies: Crises and new realities. Oxford University Press, New Delhi.
6. Nayak, P.B. (ed) Economic Development of India. Series: Critical Concepts in Economics, USA: Taylor and Francis, Routledge.
7. Mohan, R. (ed) India Transformed: 25 years of economic reforms. 2017, Penguin Random House India pvt.ltd.
8. Supriyo, De India's fiscal policy: Prescriptions, pragmatics and practice. 2017, Cambridge University Press.
9. Tendulkar, S. and T.A. Bhavani Understanding reforms. New Delhi: Oxford University Press (latest available edition).
10. Joshi, V. and I.M.D. Little India: Macroeconomics and political economy 1964-1991. 1994, Oxford University Press (latest available edition).
11. Malhotra, R. India Public Policy Report 2014, tackling poverty, hunger and malnutrition. Oxford University Press.
12. Balakrishnan, P. Economic growth in India. 2010, Oxford University Press (latest available edition).

13. Chakravarty, R. The financial sector in India. 2006, Oxford University Press (latest available edition).
14. Mukherji, R. Political economy of reforms in India. 2014, Oxford India Short Introductions Series.
15. Government of India Economic survey (various issues), Ministry of Finance.
16. India Development Report (various issues), Oxford University Press.
17. UNDP Human Development Reports and National Human Development Reports (various issues).
18. Survey articles from different sources as well as articles from Economic and Political Weekly on various themes, including the theme volumes published by EPW, that are relevant to the course.

SEMESTER IX

Core 23

Course number: Eco/A/C9.1 :

Microeconomics AII

(45 Lectures including Internal Assessment)

1. Static Games of Complete Information
Solution Concepts-Pure and Mixed strategy Nash, Applications.
2. Dynamic Games of Complete Information
Solution Concepts - Subgame Perfect Nash, Backward Induction, Repeated games, Applications.
3. Static Games of Incomplete Information
Solution Concepts - Bayesian Nash Equilibrium, Applications.
4. Dynamic Games of Incomplete information
Solution Concepts - Perfect Bayesian Equilibrium and its refinements, Signaling Games, Applications.
5. Principal Agent Models: Hidden Action, Hidden Information and Screening Models
6. Applications of Contract Theory to Institutional Economics..

Suggested Readings:

1. D. Fudenberg and J. Tirole. *Game Theory*, The MIT Press, 1991.
2. R. Gibbons. *Game Theory for Applied Economists*, Princeton University Press.
3. Martin J. Osborne. *An Introduction to Game Theory*, the MIT Press, 2003.
4. A. Mas-Colell, M. Whinston and J Green. *Microeconomic Theory*, Oxford University Press, 1995.
5. J. J. Laffont and D. Martimort. *Theory of Incentives: The Principal Agent Model*, Princeton University Press, 2001.
6. P. Bolton and M. Dewatripont. *Contract Theory*, The MIT Press, 2005.

7. C. D. Aliprantis, and S. K. Chakraborti. *Games and Decision Making*, Oxford University Press, 2000.
8. Avinash Dixit, Susan Skeath and David Reilly, *Games of Strategy*, Norton, 2014.
9. Jean Tirole, *The Theory of Industrial Organization*, MIT Press, 1988
10. Peyton Young, *Strategic Learning and its Limits*, Oxford University Press, 2004

DICIPLINE SPECIFIC COURSE SEMESTER IX

DSE 5 :

Any one of the following

Course number : Eco/A DSE 9.1 :

Advanced Econometrics I

(45 Lectures including Internal Assessment)

1. Model Specification and specification Error
2. Full information maximum likelihood method of estimation
3. Generalized Method of Moments for System of Equations
4. Dynamic Panel Models
5. Advanced topics in limited dependent variables models- multinomial and ordered Logit, Probit
6. Selection models

Suggested References

1. J.W. Wooldridge. *Econometric Analysis of Cross section and Panel Data*, MIT Press, 2010.
2. A. Collin Cameron and P.K. Trevedi. *Micro Econometric Methods and Applications*, Cambridge University Press, 2005.
3. W. H. Green. *Econometric Analysis*, Pearson Education, 2003.
4. R. Davidson and J.G. Mackinnon. *Econometric Theory and Methods*, Cambridge University Press, 2004.
5. Badi H. Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons, Ltd, 2013

6. Manuel Arellano, *Panel Data Econometrics*, Oxford University Press, 2003
7. Maddala, G.S. *Limited Dependent and Qualitative Variables*, Cambridge University Press, 1983.

Course number: Eco/A DSE 9.2 :

Advanced Economic Theory I

(45 Lectures including Internal Assessment)

A. Dynamic optimization (22 Lectures)

(i) Optimal control theory

The maximum principle, The Rationale of maximum Principle

Alternative terminal conditions and corresponding Transversality conditions

Sufficient Condition

Optimal control with Different Types of Constraints: Applications

(ii) Dynamic programming

Bellman's equation

Solution procedure

Economic Application

Deterministic Finite-horizon Problems

Deterministic Infinite horizon Problems

Stochastic Infinite horizon Model

B. Mathematical Analysis (23 Lectures)

Real numbers: Set notation; the set of real numbers; inequalities; roots; quadratic equations; irrational numbers; modulus

Continuum Property: The continuum property; Supremum and infimum; Maximum and minimum; Intervals; Manipulations with supremum and infimum

Natural numbers: Introduction; Archimedean property; Principle of induction

Convergent sequences: Sequences; Definition of convergence; Criteria for convergence; Monotone sequences; some simple properties of convergent sequences; divergent sequences

Subsequences: Definition with example; Bolzano Weierstrass Theorem; lim sup and liminf; Cauchy sequences

Series: Definitions; Series of positive terms; Elementary properties of Series; Series and Cauchy sequences; Absolute and conditional convergence; Manipulations with Series

Functions: Notation; Polynomial and Rational Functions; Combining Functions; Inverse Functions; Bounded Functions.

Limits of functions: Limits from the left and right; definition of limit, continuity at a point; connection with convergent sequences; Properties of limits; limits of composite functions; divergence

Vectors: Introduction, Length and angle in \mathbb{R}^n , Inequalities, Distance, Direction, Lines, hyperplanes, flats, vector functions; linear and affine functions; convergence of sequences in \mathbb{R}^n , convergence of functions, continuity at a point, properties of limits, limits along a path

Vector Derivatives: Directional derivatives; Partial derivatives; Notation; Local maxima and minima; differentiable functions; derivatives; gradient; manipulation of derivatives; chain rule; stationary

points; second derivatives; mean value theorems ; Eigen values; Principal Minors; Classification of stationary points ; differentials

All sections will be supplemented by suitable economic examples.

Suggested Readings:

1. A. C. Chiang. *Elements of Dynamic Optimization*, Mc Graw Hill, 1992.
2. V. Morton, I. Kamien and Nancy L. Schwarz. *The Calculus of Variation and Optimal Control in Economics and Management*, 2nd Edition, Elsevier, 1991.
3. M. D. Intriligator. *Mathematical Optimization and Economic Theory*, New Delhi: PHI Limited, 2013.
4. T. J. Sargent. *Dynamic Macroeconomic Theory*, Harvard College, 1987.
5. J. Adda and R. Cooper. *Dynamic Economics- Quantitative Methods and Applications*, MIT Press, 2003.
6. R. K. Sundaram. *A First Course in Optimization* , OUP, 1996
7. K. C. Binmore. *Mathematical Analysis*, Cambridge University Press, 1991.

Course number :Eco/A DSE 9.3 :

Financial Economics AI

(45 Lecturesincluding Internal Assessment)

This paper provides a broad overview in basic issues in Finance relating to Corporate Finance, Portfolio theory, Financial Markets and Risk & Insurance

1 Portfolio Theory

Mean Variance Criterion-Systematic & Unsystematic risk

Portfolio Diversification- Simple & Markowitz

Efficient Frontier & Capital Market Line

Capital Asset Pricing Model

Arbitrage Pricing Theory

2. Corporate Finance

Capital Budgeting- Net Present Value and Other Investment Criteria

Capital Structure- Financial Leverage & Capital Structure Policy, Modigliani-Miller Propositions,

Short Term Financial Planning- Net working Capital, Operating cycle & Cash Cycle, Alternative

financing policies for current assets, Cash budget, short term borrowing, Cash & Liquidity

Management.

Dividends & Dividend Policy– Basic Issues, Cash Dividends & Dividend

Payments, Stock repurchase, Stock Splits & Stock Dividends

Debt Financing- Valuing Risky Debt, Term structure of interest rates (Expectation Hypothesis,

Liquidity- Preference Hypothesis & some new theories of Term Structure), Yield to Maturity, Duration

& Volatility, Default Risk & Bond Ratings

3. Financial Markets

Analysis of Financial Markets -Fundamental analysis, Technical analysis, Efficient Market Hypothesis

Functioning of different Financial Markets (Advanced level) – Money Market, Stock market, Bond

market, Forwards Market, Futures & Options Market, Currency Futures & Currency Options Market,

Foreign Exchange Market, Commodity Futures Market etc.

International Financial Markets & Fundamental Parity conditions

4. Financial Risk & Insurance

Basic concepts

Functioning of the Insurance sector

Risk Management techniques- Non insurance methods
Insurance as a Risk management Techniques- Principles & Policy Provisions
Innovative Financial Instruments for ex ante Disaster Risk Management

Suggested Readings:

1. S.A.Ross, R.W.Westerfield and B.D. Jordon, *Fundamentals of Corporate Finance*. McGraw Hill/ Irwin, 2012.
2. R.A. Brealey and S.C. Myers. *Principles of Corporate Finance*. McGraw Hill/ Irwin, 2007.
3. S. Kevin. *Portfolio Management*; Prentice Hall India, 2006.
4. J. C. Hull. *Options, Futures and Other Derivatives*, Pearson Education, 2014.
5. P. Chandra. *Financial Management: Theory and Practice*, McGraw Hill Education Pvt. Ltd., 2011.
6. J.S. Trieschmann, R.E. Hoyt and D.W. Sommer. *Risk Management and Insurance*, Cengage Learning, 2004.

Course number: Eco/A DSE 9.4

: Indian Economy AII: Indian Economic History

Indian Economic History (Pre-British period (Economy under Muslim rulers)- British period – Independent India 1947-1989)

(45 Lectures including Internal Assessment)

1. Background: The paper will contextualise the major issues in the light of some major debates in global history. Some such examples may be transition from feudalism to capitalism or the division of the world into North (Centre) and South (Periphery).
2. Growth and structural change in the Indian economy ; Changes at the regional level
3. Agriculture :
 - a. Land holding patterns in pre British period; changes in British period ; Changes after independence
 - b. Agricultural pattern and growth in British period ; Growth of plantations ;
 - c. Changes after independence : Green revolution
4. Industry :
 - a. Industry in the pre-British period
 - b. De-industrialization in the British period ;
 - c. The managing agency system
 - d. Rise of industrial capital and indigenous capitalist class in India.
 - e. Planning and industrialization
5. Trade :
 - a. Maritime history of India in the pre-British period
 - b. Colonization of India by European powers
 - c. Maritime history & Indian trade during the British Period & Economic drain
 - d. Indian trade after 1947
6. Infrastructure
 - a. Infrastructure before British rule
 - b. Growth of infrastructure during the British period - growth of railways and its impact
 - c. Growth of infrastructure after independence during the planning era

7. Demography and supply of labor
 - a. Changes in the population : pre-British period & British period ; Scenario after 1947
 - b. Famines
 - c. Supply of labor

Suggested Readings:

1. The economic history of India (1857-1947) : Tirthankar Roy ; Oxford
 2. Indian economy under early British rule 1757-1857 : Irfan Habib
 3. A people's history of India 28-Indian Economy 1858-1914 Irfan Habib
 4. The Cambridge economic History of India Vol.I c.1200-c.1750 edited by Tapan Raychaudhuri and Irfan Habib
 5. The Cambridge economic History of India, Vol.II c.1757- 1970 Dharma Kumar
 6. Colonialism and Indian Economy , Amiya kumar Bagchi
 7. Private Investment in India 1900-1939 Amiya kumar Bagchi
 8. Development Planning: The Indian Experience Sukhomay Chakraborty
 9. Political Economy of Development in India , Pranab Bardhan
 10. A new economic history of colonial India. Edited by L. Chaudhury, B. Gupta, T.Roy and A.V.Swamy.
 11. An economic history of India . D. Rothermund .
 12. Traditional industry in the economy of colonial India . By Tirthankar Roy.
- This list of references will be supplemented by papers from journals and other sources

**Course number : Eco/A /DSE 9.5 : Institutional Economics AI
(45 Lectures including Internal Assessment)**

1. A framework for the study of institutions: Vertical hierarchies, horizontal/ circular networks (6 Lectures)
2. Examination of vertical hierarchies: government and corporation- Role of state in growth and development- Firms and transaction cost economics (12 lectures)
3. Examination of circular/ horizontal networks including informal social networks with emphasis on (i) learning and technology adoption; (ii) credit and insurance (iii) estimation of social capital and (iv) implications for economic development (20 lectures)
4. Examination of the relationships between the various components of the framework mentioned in 1.in the light of knowledge gained in 2 and 3. (7 lectures)

Readings

Arrow, K.J. (1974). *The Limits of Organization*. New York: W.W Norton
 Coase, R.H. (1988). *The Firm, the Market and the Law*. Chicago: University of Chicago Press
 Williamson, O.E. (1985). *The Economic Institutions of Capitalism*. New York: The Free Press
 P. Bardhan and C. Udry (1999). *Development Microeconomics*, OUP.
 North, Douglass (1990), *Institutions, Institutional Change and Economic Performance*, CUP.
 Aoki, M. (1992). *Toward a Comparative Institutional Analysis*. MIT Press
 Acemoglu, D et al (2005), "Institutions as a Fundamental Cause of Long run Development" in Handbook of Economic Growth, Volume 1A. North Holland.
 Stiglitz, J (1989). *The Economic Role of the State*. Blackwell Publishers.
 Bardhan, P (2016). "The State and Development" in *Journal of Economic Literature*, September.

S.Bowles. *Microeconomics: Behavior, Institutions and Evolution*, Princeton University Press, 2006.

Jackson M (2008). *Social and Economic Networks*, Princeton University Press.

Newman M. E. J. (2010). *Networks: An Introduction*. Oxford: Oxford University Press.

Shy Oz (2001). *The Economics of Network Industries*, Cambridge University Press.

Articles from various journals will supplement this reading list.

Course number : Eco/A/DSE 9.6 : International Economics AI (Pure Theory of Trade)

(45 Lectures including Internal Assessment)

This course will cover generalization of competitive trade models in many commodity-many factor cases, implications of trade on unemployment, inequality and growth, theories of intra-industry trade and its recent developments, and trade in factors and in services. The allocation of total number of 45 lectures is to be decided upon by the concerned teacher.

- **Inter-Industry Trade and Comparative Advantage in Higher Dimensions and Measurement Issues**
Comparative advantage with continuum of goods; Factor content and HOV theorem; Price magnification, output magnification and FPE theorem in multi-good-multi-factor cases.
- **Digressions on HOS Model**
Non-traded good, specific factors
- **Trade, Unemployment and Income Inequality**
- **Theories of Intra-industry Trade:**
Love of variety approach; characteristic approach; gains at the extensive margin; strategic trade theory: Reciprocal dumping theory; intra-industry trade in quality-differentiated goods; Firm heterogeneity and intra-industry trade
- **Trade Empirics**
Leontief paradox and test of comparative advantage; measuring comparative advantage; intra-industry trade indices
- **Trade in Services**
- **Trade in Factors of Production and in Intermediate Goods**
Mundell's GPE result; capital inflow and welfare; emigration versus capital inflow; fragmentation, outsourcing and trade.

Suggested Readings:

1. J. N. Bhagwati, A. Panagariya and T.N. Srinivasan. *Lectures on International Trade*, MIT Press, 1998.

2. L. Rivera-Batiz and M. Olivia. *International Trade: Theory, Strategies and Evidence*, Ch.3, Oxford University Press, 2003.

3. Feenstra, R (2015). *Advanced International Trade*. Princeton University Press

4. Handbook of International Economics, Volumes. 1-4, North Holland
5. Selected papers from Journals.

Course number :Eco/A / DSE 9.7 : Public Economics AI

(45 Lecturesincluding Internal Assessment)

1. Introduction: Scope of a Government (Welfare Theorems, Externalities and Public Goods)
2. Tax Incidence in Partial and General Equilibrium Framework
3. Tax Design (Theory of Optimum Commodity and Income Taxation, Value Added Tax, Political Economy of Taxation)
4. Fiscal Federalism

Suggested Readings:

Auerbach, A. and M. Feldstein (1985): Handbook of Public Economics, Vol 1 and 2, Elsevier.
 Auerbach, A., R. Chetty, M. Feldstein and E. Saez(2013): Handbook of Public Economics, Vol 5, Elsevier.
 Atkinson, A. and J. Stiglitz (1980): Lectures on Public Economics, McGraw Hill.
 Congdon, W., J. Kling and S. Mullainathan (2011): Policy and Choice: Public Finance through the Lens of Behavioral Economics, Brookings Institution Press.
 Hindriks, J. and G. Myles (2013): Intermediate Public Economics, 2nd Edition, The MIT Press.
 Mirrlees et al (2010): Dimensions of Tax Design: The Mirrlees Review, Oxford University Press.
 Mirrlees et al (2010): Tax by Design: The Mirrlees Review, Oxford University Press.
 Myles, G. (1995): Public Economics, Cambridge University Press.
 Persson, T. and G. Tabellini (2000): Political Economics: Explaining Economic Policy, The MIT Press.
 Rangarajan, C. and D. Srivastava (2011): Federalism and Fiscal Transfers in India, Oxford University Press.
 Salanie, B. (2003): Economics of Taxation, The MIT Press.
 Select Journal papers recommended by the course instructor.

Course number : Eco/A / DSE 9.7 Eco/A / DSE 9.8 :

Environmental and Resource Economics AI

(The case of local resources)

(45 Lecturesincluding Internal Assessment)

1. Renewable resources and fund pollutants – Analysing the evolution of their levels over time taking into account concepts such as absorptive and regenerative capacity, differences in ‘access to resources’/ ‘property rights’, policies for pollution control and prevention of excessive resource exploitation
2. Non-renewable resource and stock pollutants: modelling optimal depletion taking into account factors such as ‘market form’ and ‘nature of taxation’
3. Forestry as a local resource – optimal rotation (privately and socially); property right issues and relationship to economic development, income distribution and poverty
4. Sustainable Development: emphasis on concepts such as the Solow-Hartwick rule; the use of natural resource accounting; community management of common property resources etc.

Suggested Readings:

1. N. Hanley, J. Shogren and Ben White. *Environmental Economics-In Theory and Practice*, Palgrave Macmillan, 2007.
2. A. C. Chiang. *Elements of Dynamic Optimisation*, Waveland Pr Inc, 1999.
3. J. M. Conrad and C. W. Clark. *Natural Resource Economics*, Cambridge University Press, 1987.
4. P. S. Heal and G. M. Dasgupta, *Economic theory and Exhaustible Resource*, Cambridge University Press, 1979.
5. N. Hanley, J.F. Shrogen and J. M. Hartwick. *Intergenerational Equity and Investing Rents from Exhaustible Resource*, AER, Vol. 67 no.5, 1977.
6. Elinor Ostrom. *Governing the Commons: The Evaluation of Institutions for Collective Actions*, Cambridge University Press, Cambridge, 1990.
7. Tom Tietenberg and Lynn Lewis. *Environmental and Natural Resource Economics*, 8th Edition, Pearson, 2008.
8. Select Journal papers as recommended by the Course Instructor.

Course number : Eco/A / DSE 9.9 -Agricultural Economics
(45 Lectures including Internal Assessment)

1. **Agriculture and Economic Development:** Nature and scope of agricultural and rural economics; Structure of Back ward Agriculture ; causes of low investment and low productivity; Role of agriculture in economic development; Interdependence between agriculture and industry- some empirical evidence; Agricultural development, poverty and environment, Economics of Rural Infrastructure, Use of land, water and energy; Rural transport, communication, banking, extension services, role, modes and problems of rural electrification; Rural social infrastructure-education, health and information dissemination; The role of diversification of rural economic activity; Fishery and poultry, Agro-Forestry, Horticulture, and Floriculture; Development of Agro-based industries.
2. **Models of Agriculture Development:** Agricultural Development and Rural markets; Theory of inter linkages transactions and inter-linkages of rural markets.
3. **Agricultural Production, Efficiency and Productivity :** Agricultural production- Resource use and efficiency; Production function analyses in agriculture; Factor combination and resource substitution; Cost concepts and cost curves; Size of farm and laws of returns; Supply curves; Supply response of individual crops and aggregate supply; The concepts of efficiency and total factor productivity; Different models of efficiency and total factor productivity relating to agricultural development.
4. **Risk and Uncertainty in Agricultural Production:** input related risk and risk aversion; Adoption of modern technology under production uncertainty; Theoretical models of risk and uncertainty relating to Agriculture.
5. **Theory of Agrarian Institutions:** Tenancy, Rent, Cost & Risk sharing; Credit market imperfection; Role of capital and rural credit; Organized and unorganized capital market; Rural savings and capital formation; Characteristics and sources of rural credit- Institutional and non-institutional. Role of Agricultural Marketing; Marketing efficiency, Marketing margins, price spreads, market structure and market imperfections ; Marketed and marketable surplus Marketing and government policy.

6. **Agricultural Prices** : Theories relating to formation of Agricultural prices, Price and income stability; Terms of trade between agricultural and non-agricultural sectors; Need for government intervention; Objectives of agricultural price policy- Instruments and evaluation.
7. **Land Reforms and Land Policy** : Principles of land utilization; Land distribution- structure and trends; Land values and rent; Land tenures and farming systems- Peasant, capitalist, collective and state farming; Tenancy and crop sharing- Forms, incidence and effects; Land reform measures and performance; Problems of marginal and small farmers.
8. **Rural Labour Market** : Rural labour supply; Interlocking of factor markets; Mobility of labour and segmentation in labour markets; marginalization of rural labour; Nature, extent and trends in rural unemployment; Agriculture wages ; Gender issues in agricultural services; Male-female wage differences; Agricultural employment- Trends and determinants.
9. **Agricultural and External Sector:** International trade in agricultural commodities; Issues in liberalization of domestic and international trade in agriculture- The role of WTO.
10. **Problem of Food Security:** Different dimensions of food security, problems relating states of hunger and nutritional status, the concepts and the problem of Food insecurity.
11. **Sustainable Agricultural Development:** Optimal use of natural resources and sustainable growth in agriculture; Problem of Soil degradation and water management; Theoretical models relating to sustainable agricultural development; Public Policy for Agricultural Growth and resource management.
12. **Agricultural situation in India:** Recent trends in agricultural growth in India; Inter regional variations in growth of output and productivity; Cropping pattern shifts; Supply of inputs- Irrigation, power, seed and fertilizers; Pricing of inputs and role of subsidies; Distribution of gains from technological change; Agriculture wages in India; Role of Public investment and capital formation in Indian agriculture; Strategy of agricultural development and technological progress; Sustainable agriculture- indigenous practices; Bio-technological practices and growth potential, Food security in India and public distribution system, Globalization of Indian economy; Problems and prospects of Indian agriculture; Impact of World Trade Organization on Indian agriculture

Suggested Readings:

- Acharya, S S and N.L. Agarwal (1994), Agricultural Prices- Analysis and Policy, Oxford and IBH, New Delhi.
- Alagh, Munish, (2011) Agricultural Prices in a Changing Economy : An empirical study of Indian Agriculture, Academic Foundation, New Delhi.
- Alexandrates, N. (ed) (1988), World Agriculture: Towards 2000 : A FAO study Belhaven Press, London.
- Bardhan, P (ed) The Economic Theory of Agrarian Institutions Clarendon Press Oxford 1989
- Bardhan, K (1977) : Rural unemployment, wages and labour markets in India : A survey of Research EPW, Vol 27 & 28
- . Bardhan P. and C. Udry - Development Microeconomics, OUP, 1999 (Chapters 6 and 9).
- Basu.K.(1997), Analytical Development Economics, Oxford University Press, New Delhi.

Basu, K.(1994), Agrarian Questions, Oxford University Press, New Delhi.
Basu, K. (1990), Agrarian Structure and Economic Development, Hardware Economic Publisher.
Basu, K. (1984), Less Developed Economy: A Critique of Contemporary Theory, Basil Blackwell, Oxford and New York,

Basu, K. and P. Nayak (1992), Development Policy and Economic Theory, Oxford University Press, New Delhi.

Bhaduri, A.(1983), The Economic Structure of Backward Agriculture, Macmillan India Limited.
Bharadwaj, K.(1994), Accumulation, Exchange and Development, Sage Publications , New Delhi.
Ellis, F. (1992), Agricultural Policies in Developing Countries, Cambridge University Press
Feder, Gershon (1980) “ Farm Size, Risk Aversion and the Adoption of New Technology under uncertainty, Oxford Economic Papers, Volume 32, Issue 2.
Khumbhakar S.C and Lovell C.A.Knox (2000) Lovell Stochastic Frontier Analysis, Cambridge University Press.

Mitra, A(1977) :. Terms of trade and class relations, Frank Cass

Nicholls, W.H (1995) “Imperfect Competition in Agricultural Industries”, in H.G. Halcrow(ed) contemporary readings in Agricultural Economics, Printice Hall, New York

Penson John B, C. Parr Rosson III , Oral T. Capps , Richard T Woodward (2017) , *Introduction to Agricultural Economics* , Pearson , 7th Edition

Radha Krishna, R Food Trends,(1996) Public Distribution system and Food Security

Rudra, A.(1982) : Indian Agriculture: Myths and Realities, Allied Publishers , New Delhi

Schmidt P (1986). “Frontier Production Functions.” *Econometric Reviews* 4: 289-328.

Singh Nirvikar: "Theories of Sharecropping" in P. Bardhan (ed)- *The Economic Theory of Agrarian Institutions*, OUP, 2004.

World Bank 1996. Managing price risks in India’s liberalized agriculture: can futures markets help? Report No.15453-IN. Washington, DC, World Bank.

Select Journal papers as recommended by the Course Instructor.

Course number: Eco/A / DSE 9.10: Experimental Economics

(45 Lectures including Internal Assessment)

1. History, Basics of Experimental Methods, Advantage and Limitation.
2. Decision and Games: Prisoners Dilemma, Ultimatum game and Trust Game
3. Public Goods game and the Voluntary Contribution mechanism
4. Expected utility hypothesis, Allais Paradox, Lottery Indifference Curve
5. Field and Natural Experiments
6. Non-monetised experiment
7. Protocol and Instruction
8. Practical with Z-TREE

Suggested Readings:

1. R. Plott and V. L. Smith. *Hand book of Experimental Economics*, Elsevier, 2008.
2. D. Davis and C. A. Holt. *Experimental Economics*, Princeton University Press, 1993.
3. A. Chaudhuri. *Experiments in Economics*, Routledge, 2008.
4. Gautam Gupta. *An Introduction to Experimental Economics*, Orient BlackSwan, Hyderabad, 2015.

Course number: Eco/A / DSE 9.11: Operations Research

(45 Lectures including Internal Assessment)

Analysis of the purpose of the subject; Basic steps in operations research and any Three from the following topics

- 1) Markov Analysis**
[Markov Chains – concepts, characteristics and long run properties; Continuous time Markov Chains; Markov decision process]
- 2) Network Analysis**
[Theory of graph and Network Construction; Maximal flow problem and its solution; Application of network theory in Project management]
- 3) Inventory Control Theory**
[Concepts relating inventory; Model Building; Solutions under different conditions]
- 4) Simulations**
[Concepts and procedures; Applications of simulations in different fields]
- 5) Integer Linear Programming**
[Concepts and Procedure of solution; Applications]
- 6) Queuing Theory**
[Concepts and features; different types of queuing models and the techniques of solutions].

Suggested Readings:

- 1) F. S. Hiller and G. J. Liberman. *Introduction to Operations Research*, Mc Graw Hill, 1990.
- 2) H. A. Taha. *Operations Research: An Introduction*, Pearson, 2010.
- 3) J. K. Sharma. *Quantitative Techniques for Managerial Decisions*, Macmillan, 2001.
- 4) M. K. Starr and D. W. Miller. *Inventory Control – Theory and Practice*, Prentice Hall, 1962.

DSE 6 :

Any one of the following

Course number : Eco/A DSE 9.1 to Course number : Eco/A DSE 9.11

DSE 7:

Any one of the following

Course number : Eco/A DSE 9.1 to Course number : Eco/A DSE 9.11

SEMESTER X

DSE 8 :

Any one of the following

Course Number : ECO/A/DSE 10.1 : Advanced Econometrics A II

Pre-requisite: Advanced Econometrics I

(45 Lectures including Internal Assessment)

- 1. Non parametric regression (10 lectures)**

2. Advanced Topics in time series : multivariate time series, VAR, VECM, Impulse response function, variance decomposition, ARCH/GARCH Models, Panel cointegration **(10 lectures)**
3. Data Envelopment Analysis (10 lectures)
4. Applied Analysis : Production and Demand (15 lectures)

Suggested Readings:

1. J. W. Wooldridge. *Econometric Analysis of Cross section and Panel Data*, The MIT Press, 2010.
2. A. Collin Cameron and P.K. Trevedi. *Micro Econometric Methods and Applications*, Cambridge University Press, 2005.
3. W. H. Green. *Econometric Analysis*, Pearson Education, 2003.
4. R. Davidson and J. G. MacKinnon. *Econometric Theory and Methods*, Cambridge University Press, 2004.
5. W. Enders. *Applied Time Series Econometrics*, Wiley, 2004.
6. R. Chambers. *Applied Production Analysis*, Cambridge University Press, 1988.
7. S.C. Ray. *Data Envelopment Analysis*, Cambridge University Press, 2004.

Course number: ECO/A/DSE 10.2 :Advanced Economic Theory AII (Games and Information)

No Pre-requisite

(45 Lectures including Internal Assessment)

At least two topics of the following will be covered spread over 40 lectures.

1. Complete Contracting Theory (Pre and Post Contractual Problems): Advanced Treatment of Single Agent and Multi Agent Models.
2. Incomplete Contracting Theory- Renegotiation and Hold-up problems, Specific Investments, Strategic ambiguity, Applications.
3. Mechanism Design and Implementation – Dominant Strategy Implementation (Groves-Clarke-Vickery Mechanism), Bayesian Implementation, Bilateral Trading Mechanisms.
4. Aspects of Cooperative Game Theory- TU Games, Core, Shapley Value, NTU Games, Cooperative Bargaining.

Suggested Readings:

1. A. Mas-Colell, M. Whinston and J Green. *Microeconomic Theory*, Oxford University Press, 1995.
2. J. J. Laffont and D. Martimort. *Theory of Incentives: The Principal Agent Model*, Princeton University Press, 2001.
3. P. Bolton and M. Dewatripont: *Contract Theory*, The MIT Press, 2005.
4. D. Fudenberg and J. Tirole: *Game Theory*, The MIT Press, 1991.
5. Martin J. Osborne. *An Introduction to Game Theory*, The MIT Press, 2003.
6. Select Journal papers as recommended by the Course Instructor.

Course number : ECO/A/DSE 10.3 : Financial Economics AII
(Corporate finance)**1. Corporate Finance**

- a. Theories of Capital Structure
 - i. Modigliani-Miller Hypothesis revisited
 - ii. Agency Cost theories
 - iii. Theories relating to Asymmetric Information: Pecking order hypothesis and Signaling.
 - iv. A flavor of other theories about capital structure.
- b. Dividend policy- forms of dividends –Lintner model-dividend irrelevance hypothesis- role of taxes, transaction costs, agency problems and asymmetric information
- c. Corporate finance and product markets
- d. Earnings manipulations

2. Valuation of Companies

- a. Alternative ways of calculating cost of capital:
- b. Alternative methods of valuation of companies
- c. Use of financial statements in valuing a company

3. Market for corporate control.

- a. Financial structure and issues relating to corporate governance
- b. Takeovers and Mergers.

4. Financial Intermediation

- a. A brief discussion of theories about necessity of financial intermediation in general.
- b. Bank Intermediary-Special role of banks, Industrial Organization approaches to banking.
- c. Bank runs, role of deposit insurance, role of banking regulations, role of prudential norms.
- d. A discussion of Basel Accord in this context.

5. Other financial intermediaries

- a. Mutual funds
- b. Insurance
- c. Venture capital Funds.

6. Financial services as networks.

- Adoption of internet economy by financial services sector and financial markets
- b. Impact of e-finance on different agents: theory and evidence.

7. Financial Modeling (meant to be a project based topic)

- a. A discussion of sources of data.
- b. Financial modeling using EXCEL Functions.
- c. Analyzing problems in financial economics using Econometric Techniques (time series, Panel data techniques, Limited dependent variable models).
- d. Factor analysis and Cluster analysis techniques, Analysis of Variance.

Suggested Readings:

1. R.A. Brealey and S.C. Myers. *Principles of Corporate Finance*. McGraw Hill, 2007.
 2. J. Tirole. *The Theory of Corporate Finance*, Princeton University Press, 2006.
 3. R. N. Bebczuk. *Asymmetric Information in Financial Markets: Introduction and Applications*. Cambridge University Press, 2003.
 4. F. Allen and D. Gale. *Comparing Financial Systems*. The MIT Press, 1999.
 5. F. Xavier and J.C. Rochet. *Microeconomics of Banking*, The MIT Press, 2008.
 6. S. Benninga. *Financial Modeling*, The MIT Press, 2008.
 7. C. Brooks. *Introductory Econometrics for Finance*. Cambridge University Press, 2002.
 8. Y. Lengwiler. *Micro foundations of Financial Economics*. Princeton University Press, 2004.
- This reading list will be supplemented by articles from different Journals and selected chapters from other books.

Course number :ECO/A/DSE 10.4: Indian Economy AII: Economic Policies

No Pre-requisite

(45 Lectures including Internal Assessment)

The course instructor(s) need to choose four modules, taking module 1 as compulsory.

Module 1: Non-economic foundations of economic policies –

Understanding the social realities of Indian society and their implications for economic policies- cultural diversity, social norms, forms and basis of social stratification, inequality and marginalisation- schisms in terms of caste, religion, language, region and economic implications; Sociological and psychological determinants of economic outcomes; Economic philosophy of Gandhi, Nehru and Rao; Interrelationship between India's social and economic systems and the role of political influence; Emergence of civil societies, NGOs and self help groups and their role in India's economic activities; Economics of climate change in India. (12)

Module 2: India's Economic Growth, Drivers and Distribution –

India's economic growth- sectoral composition in growth and distribution; structural transformation and remaining bottlenecks, infrastructural constraints and the role of human capital; Role and impact of institutions in India's economic development; determinants' analysis of income distribution in India. (12)

Module 3: India's Rural Sector, the Gateway to Economic Prosperity –

A discussion of the microeconomic aspects of India's agriculture policies- land reforms, green revolution and increasing use of technology; effects of price policy and price support; issues related to farm productivity, food security, farmers' earning and rural indebtedness; orientation of agriculture to climate change; urbanisation, trade liberalisation and Indian agriculture; Issues related to non-farm sector- quality, financing and marketisation; Role of rural institutions and organisations. (12)

Module 4: Issues in India's Labour and Employment -

Labour policies and labour reforms in India; Functioning of labour market and issues related to labour laws/regulations; industrial organisation, market structure and economies of scale; Organised sector employment and issues of firm asymmetry and competitiveness; 4th Industrial revolution, automation and future prospects of India's formal jobs; Interlinkages between India's formal and informal sectors; India's informal sector- size and composition; issues related to informal sector- job security and working conditions; monopoly in individual markets; regulatory, environmental and governance related challenges. (12)

Module 5: Public Distribution System and Delivery of Public Services –

Understanding delivery mechanisms of public services in India; A review of public distribution system in India; Role of product-based subsidies and their consequences for India's fiscal policy; Problem of supply chain management and sector-specific inflation; Role of state, technology and governance at the doorstep; matters related to consumer affairs. (12)

Suggested Readings

1. Ahuja, R. Indian Social System. 1993, Rawat Publication, New Delhi.
2. Crompton, R. and J. Gubbay Economy and class structure,. 1978, St. Martin's Press, New York.
3. Basu, K. An economist in the real world: the art of policymaking in India. 2016, Viking.
4. Basu, K. Beyond the invisible hand, groundwork for new economics. 2016, Princeton University Press.
5. Prasad, C.S. Agriculture and rural development in India since 1947. 2009, New Century Publication.
6. Pushpangadan, K. and Shanta, N. The dynamics of competition, understanding India's manufacturing sector. 2009, Oxford University Press.
7. Chakrabarti, S. Inclusive growth and social change: Formal-informal-agrarian relations in India. 2016, Oxford University Press.
8. Government of India Economic Survey (selected chapters), Ministry of Finance.
9. Special articles from Economic and Political Weekly and other sources.
10. Select Journal papers as recommended by the Course Instructor.

Course number :ECO/A/DSE 10.5 : Institutional Economics AII
(Law and Economics)

Pre-requisite: Institutional Economics I
(45 Lecturesincluding Internal Assessment)

1. Introduction: Law as an instrument of policy -- how law can enable coordination and cooperation (5 lectures)
2. Property rights (covering intellectual and other property) and their relevance for economic outcomes (5 lectures)
3. Inducing efficient outcomes: Coase, Pigou and others (5 lectures)
4. Contracts: Need, the problem of ‘credibility’, remedies for breach of contract (5 lectures)
5. The Economics of Torts, Regulation and Competition with specific reference to Indian law (12 lectures)
6. Lawless Economics: Analysis of economic interactions in the case of significant breach of law (13 lectures)

Suggested Readings:

Cooter, Robert and Thomas Ulen, Law and Economics, 6th Edition, Berkeley Law Books (Available for downloading at <https://scholarship.law.berkeley.edu/books/2/>)

Dixit, Avinash (2007), Lawlessness and Economics: Alternative Modes of Governance, Princeton University Press

Trebilcock Michael and Mariana Mota Prado - Advanced Introduction to Law and Development, Edward Elgar, 2014

Other references will be provided by the instructor to the students in class.

Course number ECO/A/DSE 10.16:International Economics A II (Money, BOP and Exchange Rate)

Pre-requisite: International Economics I

(45 Lectures including Internal Assessment)

macro-econometric modelling of exchange rate, exchange rate pass-through, and relation between money, prices and exchange rate, currency crises, monetary unions and optimum currency areas.

1. Inter –temporal Trade, factor flows and Current Account: Representative Agent and Overlapping Generation models
2. Theories of Exchange Rate and Balance of Payments
3. Monetary and fiscal policies with capital mobility: Mundell –Flemming analysis
4. Purchasing Power Parity and exchange rate pass-through
5. Money, Prices and the Exchange Rate
6. Portfolio Choice, Risk Premia, Capital Mobility and Exchange Rate; Portfolio Management and Macroeconomic Equilibrium
7. Open Economy Macro econometric Models, Econometric Models of Exchange Rate and Current Account

Suggested Readings:

1. M. Obstfeld and K. Rogoff. *Foundations of International Macroeconomics*, MIT Press, 1996.
2. P. Krugman and M. Obstfeld. *International Economics: Theory and Policy*, Pearson Education, Indian Edition, 2000.
3. P. Krugman, *Currency and Crises*, MIT Press, 2000.
4. R. C. Feenstra, and A. M. Taylor. *International Economics*, New York: Worth Publishers, 2008.

5. F. L. Rivera-Batiz and L. A. Rivera-Batiz. *International Finance and Open Economy Macroeconomics*, 2nd Edition, New Jersey: Prentice Hall Publishers, 1994.
6. Handbook of International Economics, Volumes 1-4, North Holland

Course number ECO/A/DSE 10.7 : Public Economics AII

No pre-requisite

1. Government as an Institution (Tax Evasion and Corruption)
2. Social Security and Pension
3. Regulation
 - i. Cost Reimbursement Rules, Yardstick Competition, Underinvestment
 - ii. Pricing
 - iii. Introduction to Auctions

Suggested Readings:

- Bardhan, P. (1997): Corruption and Development, *Journal of Economic Literature*.
- Dasgupta, A. and D. Mookherjee (1998): Incentives and Institutional Reform in Tax Enforcement, Oxford University Press.
- Graetz, M., J. Reinganum and L. Wilde (1986): Toward an Interactive Theory of Tax Enforcement, *Journal of Law, Economics and Organization*.
- Hindriks, J. and G. Myles (2013): Intermediate Public Economics, 2nd Edition, The MIT Press.
- Krishna, V. (1999): Auction Theory, Academic Press.
- Laffont, J. and J. Tirole (1993): A Theory of Incentives in Procurement and Regulation, The MIT Press.
- Myles, G. (1995): Public Economics, Cambridge University Press.
- Salanie, B. (2003): Economics of Taxation, The MIT Press.
- Sandmo, A. (2005): The Theory of Tax Evasion: A Retrospective Survey, *National Tax Journal*.
- Svensson, J. (2005): Eight Questions about Corruption, *Journal of Economic Perspective*.
- Train, K. (1991): Optimal Regulation: Economic Theory of Natural Monopoly, The MIT Press.

Course number ECO/A/DSE 10.8 : Resource & Environmental Economics AII (Global Issues)

Pre-requisite: Resource & Environmental Economics I

1. A Brief Introduction to commons not restricted to a country: climate; forests; river water; and oceanic fisheries (7 lectures)
2. Valuation techniques: Contingent valuation, Hedonic valuation and Travel cost methods (8)
3. Local resources influenced by and influencing global economic and environmental conditions (e.g. timber reserves and mineral wealth)
4. The economics of the linkages between trade and the environment
5. Climate change economics in more detail

Suggested Readings:

1. N. Hanley, J. Shogren, Ben White. *Environmental Economics-In Theory and Practice*, Palgrave Macmillan, 2007
2. C.D. Kolstad. *Environmental Economics*, OUP, 2010.

3. Tom Tietenberg and Lynn Lewis. *Environmental and Natural Resource Economics*, 8th Edition, Pearson, 2008.
4. B. Copeland and S. Taylor, Trade, Growth and the Environment, *Journal of Economic Literature*.
5. Richard S.J. Tol (2014), "Climate Economics: Economic Analysis of Climate, Climate Change and Climate Policy", University of Sussex, UK and Vrije Universiteit Amsterdam, the Netherlands, Edward Elgar Publishing

Course number ECO/A/DSE 10.9: Special Topics in Econometrics

**Pre-requisite: Advanced Econometrics I
(45 Lectures including Internal Assessment)**

Topics 1 and 2 and any one of 3 and 4 will be taught

1. Quantile regression
2. Generalized linear models
3. Structural Estimation (Dynamic discrete choice etc.)
4. Computable General Equilibrium Models

References :

1. J.W. Wooldridge. *Econometric Analysis of Cross section and Panel Data*, MIT Press, 2010.
2. A. Collin Cameron and P.K. Trevedi. *Micro Econometric Methods and Applications*, Cambridge University Press, 2005.
3. W. H. Green. *Econometric Analysis*, Pearson Education, 2003.
4. R. Davidson and J.G. Mackinnon. *Econometric Theory and Methods*, Cambridge University Press, 200
5. Angus Deaton. *Understanding Consumption*, Clarendon Press, Oxford, 1994.
6. Tom Hertel. *Global Trade Analysis: Modeling and Applications*, Cambridge University Press, 1997.

Course number ECO/A/DSE 10.10: Special Topics I in Financial Economics (Financial Institution)

Pre-requisite: Financial Economics I

(Any one of topic 4 and 5 will be taught)

1. Financial Intermediation: A brief discussion of theories about necessity and evolution of financial intermediation in general.
2. Bank Intermediation
 - a. Special role of banks, Industrial Organization approaches to banking.
 - b. Risk & Risk management in banking industry
 - c. Securitization of bank loans
 - d. Problems of deposit contracts, adverse information and Bank runs
 - e. Role of banking regulations & role of prudential norms
 - f. Capital adequacy and Basel Accord.
3. Macroeconomic effects of financial intermediation
 - a. Models with credit rationing
 - b. Transmission channels of monetary policy: Credit view and money view
 - c. Financial fragility and banking crises
 - d. Financial development and economic growth

4. Insurance and risk sharing
 - a. Theoretical foundations of insurance – optimum risk sharing equilibrium
 - b. Problems with imperfect information
 - c. Regulation of Insurance sector

5. Financial services as networks-
 - a. Effects of adoption of internet economy by financial services sector and financial markets
 - b. Impact of e-finance on different agents: theory and evidence.

Suggested Readings

1. Xavier, F. & Rochet. Microeconomics of Banking
- 2.: Xavier Freixas, Luc Laeven, and José-Luis Peydró. Systemic Risk, Crises, and Macro-prudential Regulation
3. Oz Shy . The Economics of Network Industries
4. Jean Tirole. Financial crises, liquidity and international monetary system
5. Jean-Charles Rochet. Why Are There So Many Banking Crises?: The Politics and Policy of Bank Regulation
6. Mathias Dewatripont , Jean-Charles Rochet. & Jean Tirole Balancing the Banks: Global Lessons from the Financial Crisis
7. Mark Carey and René M. Stulz (editors). The risks of financial institutions
8. Guillaume Plantin Jean-Charles Rochet . When Insurers Go Bust An Economic Analysis of the Role and Design of Prudential Regulation
9. **Kent Matthews, John Thompson - The Economics of Banking (2005, Wiley)**

Course number ECO/A/DSE 10.11:

Special Topics II in Financial Economics

(International Finance & Risk Management)

Pre-requisite: Financial Economics I

(45 Lectures including Internal Assessment)

This course will deal with the analysis of financial market behaviour including issues relating to international financial market, derivatives and options market with implications on corporate finance and financial risk assessment. Case studies and application of estimation techniques shall be covered for relevant topics.

At least five topics will be covered from the following:

1. Risk & Exposure in Financial Market Foreign Exchange Exposure & Risk

Hedging Risk & Exposure

Speculation, Market efficiency & forecasting

2. International Financing

Bond Financing

Equity Financing

Bank Financing, Direct Loans & Swaps

3. International Portfolio Investment

International Correlation Structure & Risk Diversification

Optimal International Portfolio Selection

International Capital Asset Pricing Model

Segmentation vs. Integration of Capital Markets

4. International Corporate Finance

International Capital Structure & Cost of capital

International Capital Budgeting

5. Options & Option Valuation

Call & Put Options – Put-Call Parity

Behavior of Stock Prices & Markov property

Black- Scholes Model & Options Pricing Theory

Implied Volatilities

Options & Capital Structure

Options & Capital Budgeting

Options & Corporate Mergers

6. Financial Risk Hedging Strategies & Greek Letters

Stop Loss Strategy

Delta, Gamma, Theta, Vega, Rho

Scenario Analysis

Portfolio Insurance

7. Volatility Smiles

Put-Call Parity revisited

Foreign Currency Options

Equity Options

Volatility Term Structure & Volatility Surfaces

8. Financial Risk Estimation

Market Risk, Credit Risk, Operational Risk

Value-at-Risk models (VaR)-Variance-Covariance, Historical Simulation,

Monte Carlo Simulation

Principal Component Analysis

Stress Testing, Back Testing

Extreme Value Theory

Suggested Readings:

1. R. A Jarrow and Rkadev Chatterjea. *An Introduction to Derivative Securities, Financial Markets and Risk Management*. W. W. Norton and Company, 2013.
2. S. A. Ross, R.W.Westerfield and B.D. Jordon. *Fundamentals of Corporate Finance*, McGraw Hill, 2012.
3. S. A. Ross., R.W.Westerfield and J.Jaffe. *Corporate Finance*, McGraw Hill, 2008.
4. R.A. Brealey and S.C. Myers. *Principles of Corporate Finance*. McGraw Hill, 2007.
5. J.C. Francis. *Investments: Management and Analysis*, McGraw Hill, 1991.
6. J. C. Hull. *Options, Futures and Other Derivatives*, Pearson Education, 2014.
7. M.D. Levy. *International Finance*, McGraw Hill, Inc, 2009.

Coursenumber ECO/A/DSE 10.12 :Special Topics in India's Economic Policies: State Economy

(West Bengal Economy)

(45 lectures including Internal Assessment)

1. Objective of studying Regional Economics.
2. Overall Economic Characteristics of West Bengal.
3. Growth Scenario: The State Domestic Product and its Components, 1970-2000.
4. Problems in the Agricultural Sector: Institutional Reforms, Technical Change, Agricultural Finance and Marketing.
5. Industrialisation: Formal versus informal, large versus small –scale.
6. Employment Scenario for the last three decades.
7. Problems of Service sector: Government and private sector
8. Decentralization: Institutional (like Panchayats) and financial (like municipal and Panchayat).

Suggested Readings:

1. V. K. Ramachandran & M Swaminathan (eds) ‘Financial Liberalization and Rural Credit in India’ Tulika Book (2005)
2. Dilip. Mukherjee and Debraj Roy (eds) ‘Readings in the Theory of Economic Development’ Oxford University Press (2005)
3. B. A. de. Aghion & J. Morduch ‘ The Economics of Micro Finance’ Prentice-Hall of India (2007)
4. Abhijit Vinayak Banerjee. Roland Benabou and Dilip Mukherjee (eds) ‘Understanding Poverty’ Oxford University Press (2006)
5. Karla Hoff, A. Braverman and Joseph E. Stiglitz (eds) ‘The Economics of Rural Organization’ Oxford University Press (1997)
6. Pranab Bardhan: Poverty, Agrarian Structure, and Political Economy in India. Oxford University Press, New Delhi, 2003.
7. Pranab Bardhan and Christopher Udry: ‘Development Micro Economics’ Oxford University Press, 1999.
9. Ajitava Raychaudhuri and Tuhin Das (eds) West Bengal Economy, Delhi: Allied Publishers, 2005
10. Various Papers from Journals and Edited Book

Course number ECO/A/DSE 10.1 :

Special Topics I in International Economics

(Trade and Development)

No Pre-requisite

(45 Lectures including Internal Assessment)

Topics to be covered depends on the instructor

1. International Trade and Development Paradigms

Mercantilist Theory of Trade and Development; Classical Political Economists on Trade and Growth; the Post-World War II Debate on Free Trade vs. Trade Protection; Export Pessimism and Legacy of Inward-Looking Development Strategy; recent development crises

2. Problems of Trade in Primary Commodities

Prebisch-Singer Hypothesis of Unequal Distribution of Gains; Critique of Secular Deterioration of TOT; Unequal Exchange

3. Uneven Development, Trade and Growth

Structuralist Theories: Foreign Exchange, Savings, and Growth; Lewis-Nurkse Growth Process and Economic Dependence; North-South Trade, TOT, and Growth: exogenous growth models: Neo-Ricardian, Neo-Classical, Neo-Keynesian and Neo-Kaleckian and Neo-Marxian models; endogenous growth model (innovation, imitation and growth): scale and non-scale economies and uneven growth.

4. Trade, Poverty and Inequality

Both short run and long run (or growth) effects of international trade and Globalization; Convergence debate and inequality among nations.

5. Capital Mobility and Labour Migration

International capital mobility and economic growth- alternative models of uneven growth ; FDI, Growth and Welfare; Technology Transfer; Outsourcing, Role of MNCs; Labour mobility /Migration and its impact on economic development. International trade in services

6. WTO and the Multilateral Trade Agreements

Evolution, structure and function of WTO; WTO Rules of and Principles of Trade policy; Dispute Settlement Mechanism; the WTO Agreements: Agriculture and Services .

Suggested Readings:

1. Debraj Ray. *Development Economics*, Princeton University Press, 1998.
3. Arghiri Emmanuel. *Unequal Exchange*. Monthly Review Press, 1969.
4. John Spraos. *Inequalising Trade*, Oxford University Press, 1983.
5. Amitava Krishna Dutt. *Growth, Distribution and Uneven Development*, Cambridge University Press, 1984.
6. R. Acharyya and Saibal Kar. *International Trade and Economic Development*, Oxford University Press, 2014.
7. Adrian Wood. *North-South Trade, Employment and Inequality*, Oxford University Press, 1994.
8. J. N. Bhagwati, A. Panagariya and T. N. Srinivasan. *Lectures on International Trade*, The MIT Press, 1998.
9. Robert Feenstra, *Advanced International Trade*. The Princeton University Press, 2015.
10. P. Aghion and P. Howitt. *Endogenous Growth Theory*, The MIT Press, 1997.
11. Ronald Findlay. *Survey of Trade and Development*, in Handbook of International Trade;
12. Select Articles as chosen by the instructor.

Course number ECO/A/DSE 10.1 :

Special Topics II in International Economics

(Uncoordinated and Coordinated Trade Policies and Regulations)

Pre-requisite: International Economics I

(45 Lectures including Internal Assessment)

This course will cover unilateral, regional and reciprocated/coordinated trade policy issues, political economy of trade policies, and role of institutions, standards and regulations.

- **Unilateral and Non-Cooperative Trade Policies**

Revisiting protectionist trade policies in competitive framework; Strategic trade policies; Trade and industrial policy under information externality

- **Political Economy of Trade Policy I**

Lobbying and endogenously determined trade policies: The different approaches; level and mode of protection under political-support function approach; lobbying and contribution approaches; cross-country evidences

- **Political Economy of Trade Policy II**

Lobbying or rent-seeking activities under trade protection and welfare implications: Monopoly-seeking lobby; rent-seeking under import quota; rent-seeking versus tariff-seeking

- **Reciprocated and Coordinated Trade Policies**

Vinerian theory: trade creation and trade diversion effects of Free Trade Agreements; delegations of trade policy setting in Customs Union; coalition games and equilibrium structure of trade blocs; Evolution of European Union as a case study; Contemporary Regionalism and the East Asian experience; regional versus global free trade (Spaghetti bowl effect; political economy approach towards resolutions of conflict)

- **Product Standards, Regulations and Trade**

Labour standards, child labour and trade sanctions; Technical barriers to trade and quality regulations; TRIPS, innovation and parallel imports; Environmental standards and trade; evidences on migration of dirty industries.

Suggested Readings :Select Papers from Journals and

1. . Handbook of International Economics, Volumes 1-4, North-Holland.
2. Select Papers from Journal Articles.

Course number ECO/A/DSE 10.15 :Special Topics I in Public Economics

(Economics of Corruption)

No Pre-requisite

(45 Lecturesincluding Internal Assessment)

The course covers

1. Theory and empirics of costs and benefits of corruption
2. Corruption in hierarchies and bureaucracies
3. Design of incentives and organizations
4. Relation between competition and corruption.

Suggested Readings

1. S. Rose-Ackerman. *Corruption and Government: Causes, Consequences and Reform*, Cambridge University Press, 1999.
2. A. Misra (ed). *Economics of Corruption*, Oxford University Press, 2005.
3. Various Papers from Journals.

Course number ECO/A/DSE 10.16: Urban Economics

No Pre-requisite

(45 Lecturesincluding Internal Assessment)

No Pre-requisite

1. Origin of Cities
2. Urban Spatial Model
3. Congestion
4. Housing Market
5. Local Public Goods and Services
6. Pollution
7. Crime
8. Urban Quality-of-Life Measurement

Suggested Readings:

Brueckner, J. (2011): Lectures on Urban Economics, The MIT Press.

Handbook of Urban and Regional Economics, Vol. 2, 3 and 5, Elsevier Science.

Course number ECO/A/DSE 10.17 :

Behavioural Economics

No Pre-requisite

(45 Lectures including Internal Assessment)

- 1). Psychology and Economics.
- 2). Bounded Rationality and Choice Architecture.
- 3). Heuristics and Biases.
- 4). Prospect Theory and Risk Preferences.
- 5). Time Preference and Dynamic Consistency.
- 6). Fairness.
- 7). Gift Exchange.
- 8). Emotions.
- 10). Public Policy.
- 11). Behavioural Contract Theory: Single agent Models, Multi-agent models, Screening models.

Suggested Readings:

1. Behavioural Economics, by Edward Cartwright. Routledge, 2014.

2. An introduction to Behavioural Economics, Nick Wilkinson and Matthias Klaes. Palgrave Macmillan, 2012.

3. Behavioural Economics and its applications, edited by Peter Diamond and Hannu Vartiainen. Princeton University Press, 2007.
4. A course in Behavioural Economics by Erik Angner. Palgrave Macmillan 2012.
5. Bounded Rationality and Behavioural Economics by Graham Mallard. Routledge Advances in Behavioural Economics and Finance. Routledge, 2015.
6. The Foundations of Behavioural Economic Analysis by Sanjit Dhami Oxford University Press, 2016.
7. Misbehaving: The Making of Behavioural Economics, Richard Thaler. W. W. Norton, 2015.

(Journal articles will be referred to by the instructor during coursework).

Course number ECO/A/DSE 10.18 :

Economics of Social Sectors

No Pre-requisite

(45 Lectures including Internal Assessment)

1. Introduction: Welfare economics and Social Sector

2. Social Development and Deprivation

(a) Economics of Education and Health

(b) Human Development and Deprivation - Different Indices and their Components: Human Development: Evolution and Conceptual Foundation –Methodology for building the Human Development Index (HDI)- Inequality Adjusted HDI; Gender Development Index (GDI); Gender Empowerment Measure (GEM) and associated problems of measurement.

(c) Human Deprivation: Uni-Dimensional Measure: Sen's Index, FGT Index; Multidimensional Deprivation: Human Poverty Index (HPI), Multidimensional Poverty Index (MPI), Gender Development Index (GDI), Gender Empowerment Measure (GEM) associated problems of measurement, components of different development indices: outcome indices and process indices.

(d) Planning and Financing for Human Development, setting the priorities- allocation of social expenditure (social priority ratio, human expenditure ratio etc.): Some case studies

3. Demography and Development

(a) Fertility decline, demographic transition and demographic dividend

(b) Demographic dividend, human capital accumulation and Economic Growth

(c) Demographic dividend and emerging health issues in Indian context with special reference to Reproductive and Child Health

(d) Health Inequality and Socio-Economic Status. Concentration Index and Concentration Curve: Individual and Group based data.

4. Physical and Social Infrastructure

(a) Role of Public Infrastructure in Economic Growth: A Theoretical Outline

(b) Construction of Physical and Social Infrastructure Indices

(c) Application of Infrastructure Stock Indices addressing Inclusive Growth Strategy

Suggested Readings:

1. Alkire, S. and Foster, J. (2009). Counting and Multidimensional Poverty Measurement. OPHI Working Paper 32. University of Oxford, UK.
3. Alkire, S. (2002): *Valuing Freedoms- Sen's Capability Approach and Poverty Reduction, Indian Edition*, Oxford University Press, New Delhi, 2002.
4. Banerjee, A. and E. Duflo (2011): *Poor Economics*, Public Affairs, 2011.
5. Bardhan, P. and C. Udry. (1999) *Population Chapter (Section IV), Development Microeconomics*, OUP
7. Birdsall, N. (1988): *Economic Approaches to Population Growth* in H. Chenery and T.N. Srinivasan (eds.) *Handbook of Development Economics*, Volume-I, Elsevier Science Pubs. B.V.
8. Canning, D., and Pedroni, P. (2004): The Effect of Infrastructure on Long Run Economic Growth, Working Paper, Harvard University. web.williams.edu/Economics/wp/pedroniinfrastructure.pdf
9. Cowell, F. (1995). *Measuring inequality* (2nd ed.). Prentice Hall.
10. Dinniwidy, C.L. and F. J. Teal. (1996): *Principles of Cost-Benefit Analysis for Developing Countries*, CUP.
11. Dreze Jean and Sen, A. (2013): *An Uncertain Glory: India and its Contradictions*, Princeton University Press.
12. Homedes, N. (1996). *The Disability Adjusted Life Years (DALYs)- Definition, Measurement and Potential Use*, Human Capital Development Working Papers, 16128.
13. Human Development Reports, Technical Notes: UNDP-various issues
14. *India Development Report*, IGIDR
15. *India Infrastructure Report*, OUP
16. *India-Social Development Report*, Council for Social Development, OUP-Variou Issues.
19. Select Journal publication recommended by Course Instructor.

Course number ECO/A/DSE 10.19:

Industrial Economics

No Pre-requisite

(45 Lectures including Internal Assessment)

At least five topics will be covered

1. Monopoly

Durable good monopoly

Supply Chain

Quality Choice

Advertising

Nonlinear pricing

2. Oligopoly: Static and Dynamic models

Quantity and price choice models
Collusion

3. Product Differentiation Models: Monopolistic Competition; Linear and Circular City Models; Quality Choice

4. Search models

5. Entry Deterrence models

6. Network and Internet Economics

7. Empirical IO

8. Auctions

Suggested Readings:

J. Church and R. Ware (2000): *Industrial Organization: A Strategic Approach*, McGraw-Hill.

M. Motta (2007): *Competition Policy Theory and Practice*, Cambridge University Press.

Tirole, J. (1988): *The Theory of Industrial Organization*. MIT press.

Belleflamme, P. and M. Peitz, (2010): *Industrial Organization: Markets and Strategies*. Cambridge University Press.

Camerer, C., G. Lowevenstein and M. Rabin (2004): *Advances in Behavioral Economics*, Princeton University Press.

V. Krishna (2009): *Auction Theory*. Academic Press.

S. Martin (1993): *Advanced Industrial Economics*, Blackwell.

Outcomes". *The Bell Journal of Economics* 3: 326-337.

Hand Book of Industrial Organization, Elsevier, Volumes 1, 2 and 3.

DSE 8 :

Any one of the following

Course number : Eco/A DSE 10.1 to Course number : Eco/A DSE 10.19

DSE 9 :

Any one of the following

Course number : Eco/A DSE 10.1 to Course number : Eco/A DSE 10.19

DSE 10:

Any one of the following

Course number : Eco/A DSE 10.1 to Course number : Eco/A DSE 10.19

DSE 11:

Any one of the following

Course number : Eco/A DSE 10.1 to Course number : Eco/A DSE 10.19