M.A/M.Sc. Economics Syllabus

Under

Choice Based Credit System

Department of Economics

School of Economics, Management and Information Sciences

NORTH-EASTERN HILL UNIVERSITY, SHILLONG

M.A/M.Sc. ECONOMICS SYLLABUS
(Approved in 96ᵗʰ AC Meeting held on 28.06. 2016 & w.e.f. August 2016)

STRUCTURE OF SYLLABUS

The entire P.G. Syllabus of Economics is spread over in four semesters consisting of 72 Credits of which 60 Credits are assigned to the **Core Courses** and the remaining 12 Credits are **open courses**. The Department would decide every year to offer **any one or more** out of the various open courses listed for Semester-II and Semester-III. Out of the open courses, 4 Credits in Semester-II and 8 Credits in Semester-III would be required to be chosen by the students from the list(s) of open courses either offered by the Department of Economics or any other Department in the University on the advice of student advisor(s) to be appointed by the Department from time to time. Every Unit in each paper of the syllabus carries a weight of one Credit.

SEMESTER	Course Code	Name of the Course	Contact Hours	Credit	Page Nos.
CORE AND OPEN COURSES					
I	ECO(C)-101	Microeconomic Analysis-I	48	4	2-3
	ECO(C)-102	Macroeconomic Analysis-I	48	4	4
	ECO(C)-103	Mathematics for Economists	48	4	5
	ECO(C)-104	Economics of Growth & Development - I	24	2	6
	ECO(C)-105	Classical Political Economy	48	4	7-8
II	ECO(C)-201	Microeconomic Analysis-II	48	4	9-10
	ECO(C)-202	Macroeconomic Analysis-II	48	4	11
	ECO(C)-203	Techniques of Statistical Analysis	48	4	12
	ECO(C)-204	Economics of Growth & Development - II	24	2	13
	ECO(O)-205	**Open Course to be chosen from 205A to 205E**	48	4	26-35
III	ECO(C)-301	Elementary Econometrics	24	2	14
	ECO(C)-302	International Economics	48	4	15-16
	ECO(C)-303	Industrial Economics	48	4	17
	ECO(O)-304	**Open Course to be chosen from 304A to 304E**	48	4	36-41
	ECO(O)-305	**Open Course to be chosen from 305A to 305E**	48	4	42-52
IV	ECO(C)-401	Fundamentals of Financial Markets	24	2	18
	ECO(C)-402	Indian Economic Problems and Policy	48	4	19-20
	ECO(C)-403	Environmental Economics	48	4	21-22
	ECO(C)-404	Economics of Social Sector	48	4	23
	ECO(C)-405	Public Economics	48	4	24-25
OPEN COURSES					
II	ECO(O)-205A	Budgetary Theory and Practice	48	4	26-27
	ECO(O)-205B	Computer Applications in Economic Analysis	48	4	28-29
	ECO(O)-205C	Econometrics - I	48	4	30
	ECO(O)-205D	Institutional Economics- I	48	4	31-33
	ECO(O)-205E	Labour Economics	48	4	34
	ECO(O)-205F	Welfare Economics	48	4	35
III	ECO(O)-304A	Financial Economics	48	4	36
	ECO(O)-304B	Demography	48	4	37-38
	ECO(O)-304C	Econometrics - II	48	4	39
	ECO(O)-304D	Economics of Agriculture	48	4	40
	ECO(O)-304E	Economics of Law	48	4	41
	ECO(O)-305A	Economics of Gender	48	4	42-43
	ECO(O)-305B	Economy of North-Eastern Region	48	4	44-45
	ECO(O)-305C	Experimental Economics	48	4	46-47
	ECO(O)-305D	Institutional Economics - II	48	4	48-50
	ECO(O)-305E	Mathematical Economics	48	4	51-52

ECO(C)-101 MICROECONOMIC ANALYSIS - I

Unit-I: Consumer Behavior (12)

Axioms of preference ordering: lexicographic ordering; Properties of demand functions; Utility function: direct and indirect; homotheticity, additivity and separability; Duality in consumption; Revealed Preference theory; Lancaster's model of consumer technology; Pragmatic approach to demand analysis; Linear expenditure systems.

Unit-II: Production and Costs (12)

Production function: Concept, Elasticity of substitution; Homogeneity and homotheticity; Two-inputs production functions with constant elasticity of substitution; Production functions with multiple inputs; problems in defining elasticity; McFadden-Uzawa impossibility theorems; Allen-Uzawa elasticity of substitution; Morishima's gross elasticity of substitution; Economies of scale; Modern theories of costs – Empirical evidences: Derivation of cost functions from production functions; Duality in production; Unbiased and biased technical progress: Hicks and Harrod.

Unit-III: Market (12)

Non-collusive oligopolistic models of Cournot; Bertrand, Stackelberg, Chamberlin and Sweezy (Kinked demand curve); Collusive models of oligopoly; Elements of game theory: Definitions, Concept of a game; Strategies – Simple and mixed; Nash equilibrium; Value of a game; Saddle point solution; Simple applications.

Unit-IV: Risk and Uncertainty (12)

Individual behaviour towards risk, expected utility and uncertainty equivalence approaches; Risk and risk aversion – gambling and insurance, the economics of insurance, cost of risk, risk pooling and risk spreading, mean-variance analysis and portfolio selection; efficient market hypothesis; Economics of information.

Basic Reading List

1. Baumol, W.J. (1985): *Economic Theory and Operations Analysis*, Prentice Hall.
2. Henderson, J. and R.A. Quandt (1984): *Microeconomic Theory*, McGraw Hill, Tokyo.
3. Koutsoyiannis, A. (1980): *Microeconomic Theory*, MacMillan.
4. Lancaster, K. (1972): *Consumer Demand: A New Approach*, CUP, NY.
5. Layard, P.R.G. and A.A. Walters (1978): *Microeconomic Theory*, McGraw Hill, NY.
6. Mas Colell, A. M. D. Winston and J. R. Green (1995), Microeconomic Theory, Oxford Univ. Press, NY.
7. Sen, A. (1999): *Microeconomics: Theory and Applications*, OUP, ND.
8. Shepherd, R.W. (1970): *Theory of Cost and Production Functions*, Princeton Univ. Press, N.J.
9. Salvatore, D. (2003): *Microeconomics: Theory and Applications,* OUP, New Delhi.
10. Varian, H. (2000): *Intermediate Microeconomics: A Modern Approach* (5e), Affiliated East-West Press.
11. Varian, H. (2000): *Microeconomic Analysis*, W.W. Norton, NY.

Additional Reading List

1. Arrow, K.J. and M.D. Intriligator (eds.) (1981): *Handbook of Mathematical Economics*, Vol.-I, North Holland, Amsterdam.

2. Barberà, S., P.J. Hammond and C. Seidl (eds.) (1998): *Handbook of Utility Theory*. Vol.1 Principles, Kluwer Academic Publishers, Dordrecht.

3. Blackorby, C and RR (1989): Will the Real Elasticity of Substitution Please Stand Up? (A Comparison of the Allen/Uzawa and Morishima Elasticities) *The American Economic Review*, Vol. 79, No. 4, pp.882-888.

4. Borch, K.H. (1968): *The Economics of Uncertainty*, Princeton Univ. Press, Princeton.

5. Deaton, A. and J. Muelbauer (1980): *Economics and Consumer Behavior*, CUP.

6. Debreu, G. (1959): *Theory of Value*, John Wiley, NY.

7. Diamond and Rothschild (eds.) (1978): *Uncertainty in Economics*, Academic Press, NY.

8. Ferguson, C.E. (1969): *The Neo-Classical Theory of Production and Distribution*, CUP, Chs. 1-6.

9. Gravelle, H. and R. Rees (1981): *Microeconomics*, Longman, London.

10. Green, H.A.J. (1976): *Consumer Theory*, MacMillan, London.

11. Johansen, L. (1972): *Production Functions*, North Holland, London.

12. Mishra, S.K. (2007): A Brief History of Production Functions. http://ssrn.com/abstract=1020577

13. Osborne, M. J. (2004): *An Introduction to Game Theory*, Oxford University Press, New Delhi.

14. Primont, D. and R.R. Russell (2007): The Morishima Gross Elasticity of Substitution. http://www.economics.ucr.edu/seminars/spring07/ets/BobRussell4-16-07.pdf

ECO 102: MACROECONOMIC ANALYSIS-I

Unit-I: National Income, Employment and Income Determination (short-run) (12)

National Income concepts and accounting methods; Circular Flow models – two-sector, three-sector and four sector; Determination of the equilibrium level of income – Classical Keynesianism and the 45° cross, the fiscal models and level of income and employment; Demand and supply of labour – classical view.

Unit-II: The Consumption Expenditure (12)

The absolute income hypothesis; Shifting parameter hypothesis; Relative income hypothesis; Permanent income hypothesis; Life-cycle hypothesis; FRB-MIT (Federal Reserve Bank and Massachusetts Institute of Technology) model; Modern approach - consumption and uncertainty.

Unit-III: The Investment Expenditure (12)

Criteria of investment decisions - present value, internal rate of return, payback period; Keynesian formulation – long and short-run relationships; the flexible accelerator; Neo-classical approach to fixed investment; Investment and levels of current profit; Kalecki's theory and Eisner's reformulation; lags in the Investment Function.

Unit-IV: Monetary Theory (12)

Classical Theory of Money; Say's Law and Walras' Law; Classical dichotomy and the neutrality of money; Friedman's Modern Quantity Theory of Money; Pigou Effect and Real Balance Effect.

Basic Reading List

1. Barro, R. (1997). *Macroeconomics- A Modern Approach*, 5e, MIT Press.
2. Branson, W.H. (1989). *Macroeconomic Theory and Policy*, Harper and Row, New York.
3. Dornbusch, R., Stanley, F. and Richard S, (2000). *Macroeconomics*, Tata McGraw-Hill, New Delhi.
4. Heijdra, Ben J. and Frederick *van der Ploeg*. (2004), *Foundations of Modern Macroeconomics*, OUP, NY.
5. Jha, Raghbendra (1991). *Contemporary Macroeconomic Theory and Policy*, Wiley Eastern Ltd, New Delhi.
6. Laidler, David E.W. (1977). *The Demand for Money: Theories and Evidence*, Harper and Row, NY.
7. Mueller, M.G. (Ed.) (1978). *Readings in Macroeconomics*, Surjeet Publications, New Delhi.
8. Patinkin, D. (1965). *Money, Interest and Prices*, Harper and Row, NY.
9. Shapiro, E. (1996). *Macroeconomic Analysis*, Galgotia Publications, New Delhi.
10. Sikdar, S. (2011). *Principles of Macroeconomics*: Second Edition Paperback, OUP.

Additional Reading List

1. Allen, R.G.D. (1968). *Macroeconomic Theory: A Mathematical Approach*, McGraw Hill, Tokyo.
2. Dernburg, Thomas F. and Duncan M. McDougall (1983). *Macroeconomics: The Measurement*, *Analysis, and Control of Aggregate Economic Activity*, McGraw-Hill International Book Company, New Delhi.
3. Friedman, M. (1957). *The Theory of Consumption Function*, Princeton University Press, Princeton.
4. Gupta, S.B. (1997). *Monetary Economics*, S. Chand and Company, New Delhi.
5. Johnson, D.W. (1976). *Macroeconomics: Money, Prices and Income*, John Wiley, Santa Barbara.
6. Kalecki (1969). *Selected Essays on the Dynamics of the Capitalist Economy*, Augustus M. Kelley, New York.
7. Keynes, J.M. (1936). *The General Theory of Employment, Interest and Money*, Macmillan, London.
10. Rana, K.C. and K.N. Verma (1999). *Macro Economic Analysis*, Vishal Publications, Delhi.
11. Weintraub, S. (1972). *Classical Keynesianism: Monetary Theory and the Price Level*, Green Wood Press, Connecticut.

ECO(C)-103: MATHEMATICS FOR ECONOMISTS

Unit-I: Linear Programming and Input Output Analysis (12)

Linear programming: Concept and formulation of LP problems, Solutions: Graphical and Simplex methods, Dual formulation and interpretation, Duality theorems, Shadow prices and their uses; Static Input-Output Analysis: Open and closed models.

Unit-II: Optimization (12)

Maxima and Minima – One and more than one choice variables, unconstrained and constrained functions; Applications: Multiproduct firm, Price discrimination, Utility maximization, Least-cost input combination; Homogeneous and homothetic functions: Cobb-Douglas and C.E.S production functions.

Unit-III: Game Theory (12)

Game Theory: Concepts of individualism, rationality and mutual dependence; Cooperative and non-cooperative game theory, static and dynamic game theory, Zero and Non-zero Sum game, Prisoners' dilemma, Solution of Zero Sum game: Minimax-Maximin principle, Algebraic method, Graphical method, Linear programming method, Solution of Non Zero Sum game: Rules of Dominance, Nash equilibrium, and Mixed strategy Nash equilibrium.

Unit-IV: Differential and Difference Equations (12)

Solutions of first and second order linear and non-linear differential equations- homogeneous and non-homogeneous cases; Applications: Dynamic market model, Domar growth model, Phase diagram, Time path, Market model with price expectation. Solutions of first order and second order difference equations; Applications: Cobweb model, Market model with inventory, Phase diagram, Market model with price ceiling.

Basic Reading List

1. Chiang, A.C. and K. Wainwright (2013): *Fundamental Methods of Mathematical Economics*, McGraw Hill.
2. Dorfman, Samuelson and Solow (1958): *Linear Programming and Economic Analysis*, McGraw Hill.
3. Hoy, L., Mckenna, Rees and Stengos (2004): *Mathematics for Economics*, Prentice Hall.
4. Sydsaeter, K., P.J. Hammond and A. Strom (2014): *Essential Mathematics for Economic Analysis*, Pearson.
5. Young, H.P. and S. Zamir (eds.) (2015): *Handbook of Game Theory with Economic Applications*, Elsevier.

Additional Reading List

1. Budnick, F.S. (1997): *Applied Mathematics for Business, Economics and Social Sciences*, McGraw Hill.
2. Handry, A.T. (2016): *Operation Research: An Introduction*, Prentice Hall.
3. Nicholson, R.H. (1986): *Mathematics for Business and Economics*, McGraw Hill.
4. Sydsaeter, K., and P.J. Hammond (2012): *Mathematics for Economic Analysis*, Pearson.

ECO(C)-104: ECONOMICS OF GROWTH AND DEVELOPMENT - I

Unit-I: Theories of Growth (12)

Economic growth and development, Classical theory of growth: General, Ricardo and Adam Smith; Harrod-Domar growth model, Instability of growth; Solutions of instability problem; Neo-Classical models of growth: R.M. Solow; Cambridge growth model of Kaldor; Endogenous growth - AK model.

Unit-II: Theories and Approaches to Economic Development (12)

Evolution in the concept of economic development-Growth to sustainable development ; Approaches to development: Income approach and criticism, Sen's capability approach; Establishment space in Economic Development; Theories of economic development: Karl Marx and development of capitalist economy-theory of social change, surplus value and profit; Structural approach-Lewis theory of unlimited supplies of labour-Schumpeter and capitalist development, innovation and role of Unit.

Basic Reading List

1. Behrman and Srinivasan (1995): *Handbook of Development Economics,* Vol. 3, Elsevier, Amsterdam.
2. Hayami, Y. (1997): *Development Economics*, OUP, NY.
3. Meier, G.M. and J.E. Rauch (2000): *Leading Issues in Economic Development*, OUP, NY.
4. Ray, D. (1998): *Development Economics*, OUP, Delhi.
5. Sen, A.K. (1970): *Growth Economics*, Penguin, New Delhi.
6. Sen, A.K. (1999): *Commodities and Capabilities*, OUP, Oxford
7. Thirwall, A.P. (1999): *Growth and Development* (6e), Macmillan, U.K.
8. Todaro and Smith (2010): *Economic Development(11th Edition),* Pearson Education, Delhi

Additional Reading List

1. Alesina, A. and D. Rodrik (1994): "Distributive Politics and Economic Growth," *Quarterly Journal of Economics, Vol.*108, pp.465-90.
2. Bardhan, P. and C. Udry (1999): *Development Microeconomics*, OUP, NY.
3. Barro, R. and X. Sala-i-Martin (1995): *Economic Growth*, McGraw Hill, NY (reprinted MIT Press 2001).
4. Basu, K. (1984): *The Less Developed Economy*, Basil Blackwell, England.
5. Deininger, K. and L. Squire (1998): "New Ways of Looking at Old Issues: Inequality and Growth," J*ournal of Development Economics*, Vol. 57, No.2, pp.259-287.
6. Djankov, S., E. Glaeser, R. La Porta, A. Shleifer, and F. Lopez-de-Silanes (2003): "The New Comparative Economics", *Journal of Comparative Economics*, December.
7. Forbes, K.J. (2000): "A reassessment of the relationship between inequality and growth," *American Economic Review,* Vol.90, No.4, pp.869-887.
8. Lewis, W.A. (1955): *The Theory of Economic Growth*, George Allen and Unwin, London.
9. Myrdal, G. (1957): *Economic Theory and Underdeveloped Regions*, Duckworth, London.
10. Nafziger (2006): *Economic Development,* CUP, NY.
11. Sen, A.K. (1981): *Poverty and Famines: An Essay on Entitlement and Deprivation*, Clarendon Press.
12. United Nations (2003): *Human Development Report*, United Nations, NY.

ECO(C)-105: CLASSICAL POLITICAL ECONOMY

Unit- I: Emergence of Classical Political Economy   **(12)**

Political Economy- Concept and Subject matter: Economic Theory and the class Question, Class conflict and Classical Political Economy. The Rise of Classical Political Economy: The Institutional and Historical Background. Predecessors of Classical School (Basic Doctrines of Mercantilists and Physiocrats)

Unit- II: Classical Factor Classification (in retrospect): The Major Questions   **(12)**

The Classical Theories of Value (including Labour Theory of Value): Smith and Ricardo. Classical Theories of Distribution: Smith, Ricardo, Malthus and Mill. Classical theories of Development: Smith and Mill.

Unit-III: Classical School and Its relevance to Modern Economic Problems and Recent Resurgence   **(12)**

Classical Theories: Their relevance to Contemporary conditions (with special reference to developing economies). Neoclassical Economics: Marginalist Economics- Marginalism and Classical Political Economy. Marxian Political Economy: A synoptic View. Sraffa Revolution and Neo- supply side Economics

Unit- IV: A Schematics of Class Relations   **(12)**

Centerist Politics, Class politics and Indian states: Class politics, Confessional Politics, Minority Politics, Bullock Capitalists and Backward Classes, The constraints of Social Pluralism and Federalism. Types of Politics and Economic Performance: Demand Polity and Command Polity.

Basic Reading List

1. Blaug, Mark (1978): *Economic Theory in Retrospect*, Cambridge University Press, U.K.
2. Bhardwaj, Krishna (1979): *Classical Political Economy and Rise to Dominance of Supply and Demand Theories,* Centre for Studies in Social Sciences, Bangalore.
3. Bhardwaj, Krishna (1971): *Value through Exogenous Distribution.* In G.C Harcourt and N.F Laing (Eds.). *Capital and Growth*, Peguin Books, U.K.
4. Dobb, Maurice (1975): *Theories of Value and Distribution since Adam Smith- Ideology and Economic Theory*, Cambridge University Press, U.K.
5. Gide, Charles and Rist Charles (1915): *A History of Economic Doctrines*, D.C. Heath & Company, Boston.
6. Perelman, Michael (2013) : *Classical Political Economy*, Bloomsbury Academic, London
7. Perelman, Michael (2010): *The Intervention of Capitalism: Classical Political Economy and the secret History of Primitive Accumulation,* Duke University Press, London
8. Roll Eric (1956): *A History of Economic Thought*, Prentice Hall, Englewood Cliffs, NJ
9. Rudolph, L.I. and Rudolph, S. H. (1987): *In Pursuit of Lakshmi*, Orient Longman Limited, Hyderabad.
10. Sraffa, Piero (1975): *Production of Commodities by means of commodities: Prelude to a critique of Economic Theory*, Cambridge University Press, U.K

Additional Reading List

1. Chomsky, Noam(1999): *Profit over People: Neo-liberalism and Global Order*, Seven Stories Press, USA
2. Galbraith, John Kenneth(1958): *The Affluent Society*, Houghton Mifflin Harcourt, USA
3. Mitra, Ashok (1979): *Terms of Trade and Class relations*, Rupa & Co., Calcutta

4. Nayak, B.S. (2007): *The Political Economy of Public Policy in Contemporary India*, Atlantic Publishers, New Delhi

5. Polanyi, Karl (1944) : *The Great Transformation: The Political and Economic Origins of our Time*, Beacon Press, USA

6. Prasad, K.N. (1984): *Studies in Economic Analysis and Policy in Retrospect*, Sterling Publishers Private Limited, New Delhi

7. Robinson, James .A. (2012): *Why Nations Fail: The Origin of Power, Prosperity and Poverty*, Crown Publishing Group, New York

8. Schumpeter, J.A. (2003): *Ten Great Economists*, Simon Publications, U.K.

ECO(C)-201: MICROECONOMIC ANALYSIS – II

Unit-I: Alternative Theories of the Firm (12)

Baumol's theory of sales revenue maximization, Marris' model of managerial enterprise; Williamson's model of managerial discretion; Behavioral theory of the Firm (Model of Cyert and March); Full cost pricing principle; Limit pricing principle (Bains, Sylos-Labini, Modigliani and Bhagawati); Issues regarding existence, purpose and objectives of a firm.

Unit-II: Welfare Economics (12)

Growth of GNP and welfare; Criteria of welfare maximization: Cardinalists criterion, Bentham's Criterion; Pareto optimality criteria; Compensation principle; Social welfare function – Properties and limitations: Theory of second best. Arrow's impossibility theorem; Sen's proof of this theorem; Equity and efficiency; Rawls' contributions to welfare

Unit-III: The Theory of General Equilibrium (12)

Walras model- Properties; Problem of existence, uniqueness and stability of equilibrium; Excess demand function approach to general equilibrium analysis; Fixed point theorem and the existence of the solution; Modern approach: Input-output and Linear programming model of general equilibrium; Determination of output and price (only Static open models); Notion of equilibrium in economics - Equilibrium vs. anti-equilibrium theory of economic system – Hahn vs Kornai.

Unit-IV: Input Markets (12)

Demand and supply of inputs: Firm's and Industry's input demand curves; Monopsony and Monopoly in input markets; Unions as monopolists; Bilateral monopoly; Choice of optimal combination of inputs; Adding-Up Problem; Product Exhaustion theorems – Euler's and Clark-Wicksteed-Walras theorems.

Basic Reading List

1. Baumol, W.J. (2000): *Economic Theory and Operations Analysis* (18e), Prentice Hall, ND.
2. Dobbs, I. (2000): *Managerial Economics*, OUP, ND.
3. Henderson and Quandt (1980): *Microeconomic Theory*: *A Mathematical Approach*, McGraw Hill, ND.
4. Intriligator, M.D. (1971): *Mathematical Optimization and Economic Theory*, Prentice Hall, Englewood Cliffs.
5. Koutsoyannis, A. (1979): *Modern Microeconomics* (2e), Macmillan Press, London.
6. Layard, P.R.G. and A.A. Walters (1978): *Microeconomic Theory*, McGraw Hill, NY.
7. Maddala, G.S. and E. Miller (1989): *Micro Economics- Theory and* Applications, McGraw, New Delhi.
8. Salvatore, D. (2004): *Managerial Economics in a Global Economy with Economic Applications* (5e), CENGAGE Learning/South Western.
9. Sen, A. (1999): *Microeconomics*: *Theory and Applications*, OUP, ND.
10. Varian, H. (2000): *Microeconomic Analysis*, W.W. Norton, NY.

Additional Reading List

1. Coase, R.H. (1937): "The Nature of the Firm," *Economica,* Vol. 4, pp. 386-405.
2. Conner, K. and C.K. Prahalad (1996): "A Resource-Based Theory of the Firm," *Organization Science,* Vol.7, pp. 477-501.
3. Cyert, R.M. and R. March. (1963): *A Behavioral Theory of the Firm*, Prentice Hall, Englewood Cliffs, N.J.

4. Demsetz, H. (1988): "The Theory of the Firm Revisited*," Journal of Law, Economics, and Organization,* Vol. 4, pp. 141-161.

5. Demsetz, H. (1995): *The Economics of the Firm: Seven Critical Commentaries*. CUP, Cambridge.

6. Foss, NJ and Klein, PG (2006): The Emergence of the Modern Theory of the Firm. <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=982094>

7. Graff, J. Dev. (1957): *Theoretical Welfare Economics*, CUP, NY.

8. Hahn, F. (1973): On the Notion of Equilibrium in Economics (Inaugural lecture, Cambridge University).

9. Kornai, J. (1971): *Anti-equilibrium*, North-Holland, Amsterdam/ London.

10. Little, I.M.D. (1957): *Critique of Welfare Economics* (2e), OUP, Oxford.

11. Nickerson, J.A. and T.R. Zenger (2004): "A Knowledge-based Theory of the Firm - A Problem-solving Perspective". <http://ssrn.com/abstract=502282>

11. Osterloh, M. and J. Frost (2000): Motivation in a Knowledge-based Theory of the Firm. <http://www.iou.unizh.ch/orga/downloads/publikationen/16Ost_Frost_LINKOctober.PDF>

12. Stigler, G. (1996): *Theory of Price* (4e), Prentice Hall, ND.

N.B.:   The Reading lists provided for Paper I may also be consulted for this Paper wherever relevant.

ECO(C) 202: MACROECONOMIC ANALYSIS - II

Unit-I: Determination of Long-Term Income **(12)**

Models of steady economic growth-Harrod and Domar models; Joan Robinson model; Duesenberry model; Neo-classical model

Unit-II: Cyclical Fluctuations in the Economy **(12)**

Characteristics of change and movements; Accelerator and Multiplier Principles and their Interactions - Business Cycle Models; Samuelson's Multiplier Accelerator Interaction model; Hicksian model; Goodwin, Kaldor, Schumpeter and Cob-Web models.

Unit-III: Inflation and Macroeconomics of an Open Economy **(12)**

Inflation and Unemployment - Philips Curve Analysis; "Natural" rate of unemployment; Factor and Goods Markets – "full" inflation; IS-LM Analysis of an open Economy; Foreign Trade Multiplier; Mundell-Fleming model – Asset market, expectations and the exchange rate.

Unit-IV: The Demand and Supply of Money **(12)**

Supply of money Measures of money supply; Money Multiplier theory, determinants of money supply; Demand for money - approach of Baumol and Tobin.

Basic Reading List

1. Barro, R. (1997). Macroeconomics- A Modern Approach, 5e, MIT Press.
2. Blanchard, O.J. and S. Fischer (1996). *Lectures on Macroeconomics*, Prentice-Hall of India, New Delhi.
3. Bober, S. (1971). *Economics of Cycles and Growth*, Wiley Eastern, New Delhi.
4. Branson, W.H. (1988). *Macroeconomic Theory and Policy*, Universal Book Stall, New Delhi.
5. D'Souza, E. (2e) (2009). Macroeconomics, Pearson Education.
6. Hamberg, Daniel (1971). *Models of Economic Growth,* Harper & Row Publishers, New York.
7. Heijdra, Ben J. and Frederick *van der Ploeg*. (2004). Foundations of Modern Macroeconomics, OUP, NY.
8. Levacic, R. and A. Rebbman (1982). *Macroeconomics*, Macmillan, London.
9. Mankiw, N.G. (2007). *Principles of Macroeconomics*, Thomson-South Western, Singapore.
10. Mueller, M.G. (ed.) (1977). *Readings in Macroeconomics*, Wiley and Sons, New York.
11. Ott, D., Ott, P, and Yoo, S. (1975). *Macroeconomic Theory*, McGraw Hill, New York.
12. Patinkin, D. (1965). *Money, Interest and Prices*, Harper and Row, New York.
13. Survey of Economic Theory, (1972), *Vol.I: Money, Interest & Prices*, Macmillan, New York.

Additional Reading List

1. Allen, R.G.D. (1968). *Macroeconomic Theory: A Mathematical Approach*, Macmillan, London.
2. Ball, R.J. and P. Doyle (1972). *Inflation: Selected Readings*, Penguin, Harmondsworth, England.
3. Baumol, W.J. (1970). *Economic Dynamics*, Macmillan, New York.
4. Culbertson, J.M. (1971). *Macroeconomic Theory and Stabilization Policy*, McGraw Hill, London.
5. Friedman, M. (Ed) (1956). *Studies in Quantity Theory of Money*, The Univ. of Chicago Press, Chicago.
6. Frisch, H. (1983). *Theories of Inflation*, Cambridge University Press, Cambridge.
7. Gupta, S.B. (1997). *Monetary Economics*, S. Chand and Company, New Delhi.
8. Makinon, G. E. (1980). *Money, the Price Level and Interest Rates*, Prentice Hall, New Delhi.
9. Rana, K.C. and K.N. Verma (1998). *Macroeconomic Analysis*, Vishal Publications, Jalandhar.
10. Samuelson, P.A. (1966). *The Collected Scientific Papers of Paul A. Samuelson*, Oxford and IBH Publishing Company, New Delhi.

ECO(C)-203: TECHNIQUES OF STATISTICAL ANALYSIS

Unit -I: Probability and Distribution   (12)

Probability theory - Different concepts and approaches, Laws and axioms of probability, Conditional probability and concept of interdependence; Concept of random variable: Probability, Mass and density functions, Expectations, Bayes theorem and its applications; Probability distributions: Binomial, Multinomial, Hyper geometric, Poisson, and Normal.

Unit -II: Correlation, Regression and Sampling   (12)

Correlation and Regression analysis: Simple, multiple and partial correlations, Rank correlation, Least squares estimation; Coefficient of determination; Standard error of estimate; Sampling: Concepts and types.

Unit -III: Economic Time Series and Forecasting   (12)

Time series: Components, Approaches to time series, Process of decomposition, Estimation of trend variations, De-trending of time series, Estimation of seasonal and cyclical variations; Forecasting: Types and approaches to forecasting, Forecasting techniques.

Unit -IV: Theory of Estimation and Hypothesis Testing   (12)

Concept of an estimator and its sampling distributions, Properties of good estimator; Formulation of statistical hypotheses- Null and alternative; Goodness of fit; Confidence interval and level of significance; Errors of types II and I, Hypothesis testing: Z, t, F tests, and chi-square test.

Basic Reading List

1. Goon, Gupta and Dasgupta (2005): *Fundamentals of Statistics Vol. I & II*, World Press.
2. Gujarati, D.N., D.C. Porter and S. Gunasekar (2012): *Basic Econometrics*, Tata McGraw Hill.
3. Hooda, R. (2013): *Statistics for Business and Economics*, Vikas Publishing House.
4. Rao, C.R. (2008): *Linear Statistical Inference and Applications*, Wiley and Sons.
5. Sulivan, M. (2012): *Fundamentals of Statistics*, Pearson.

Additional Reading List

1. Chou, Y.L. (1989): *Statistical Analysis for Business and Economics*, Elsevier Publishing Company.
2. Feller, W. (1968): *An Introduction to Probability Theory and Its Applications*, Vol. I (3e), Wiley.
3. Johnson, R.A. and D.W. Wichern (1996): *Applied Multivariate Statistical Analysis*, Prentice Hall, ND.

ECO(C)-204: ECONOMICS OF GROWTH AND DEVELOPMENT - II

Unit-I: Sectoral Aspects of Economic Development   **(12)**

Economic development and the rural economy; Rural Unit and land markets- micro unit and SHGs; Employment and income diversification in rural economy; Role of the rural non-farm sector; Economic development, migration and the urban informal sector; Agriculture and rural development, Infrastructure and Economic Development.

Unit-II: Institutions and Economic Development   **(12)**

Institutions and Economic Development: Theory and Practice; Market and economic development; market failure; Governance and economic development, government failure; Community and economic development-management of common property resources, community failure and its correction; Globalization and economic development-challenges and opportunities, WTO and world trade, international movement of labor and capital.

Basic Reading List

1. Behrman and Srinivasan (1995): *Handbook of Development Economics,* Vol. 3, Elsevier, Amsterdam.
2. Hayami, Y. (1997): *Development Economics*, OUP, NY.
3. Meier, G.M. and J.E. Rauch (2000): *Leading Issues in Economic Development*, OUP, NY.
4. Ros, Jaime. (2013*): Rethinking Economic Development, Growth, and Institutions*, 1e, OUP, U.K
5. Ray, D. (1998): *Development Economics*, OUP, Delhi.
6. Sen, A.K. (1992): *Inequality Reexamined*, OUP, Oxford.
7. Thirwall, A.P. (1999): *Growth and Development,* 6e, Macmillan, U.K.
8. Todaro and Smith (2010): *Economic Development,* 11e*,* Pearson Education, Delhi.

Additional Reading List

1. Alesina, A. and D. Rodrik (1994): "Distributive Politics and Economic Growth," *Quarterly Journal of Economics, Vol.*108, pp.465-90.
2. Bardhan, P. (1997): *The role of Governance in Economic Development: A Political Economy Approach,* Washington Centre Press, Washington
3. Bardhan, P. and C. Udry (1999): *Development Microeconomics*, OUP, NY.
4. Basu, K. (1984): *The Less Developed Economy*, Basil Blackwell, England.
5. Bockstette, V., A. Chanda and L. Putterman (2003): "States and Markets: The Advantage of an Early Start", *Journal of Economic Growth*, Vol.7, pp.347-369.
6. Chadha, G.K. (2002): Rural Non-Farm Employment in India: What Does Recent Experience Teach Us? *Indian Journal of Labour Economics*, Vol. 45, No 4, December.
7. Haggblade, S. and Peter B. R. Hazell (2007) *Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World*, John Hopkins, USA
8. Lanjouw, J.O. and P. Lanjouw (1995): *Rural Non-Farm Employment: A Study,* Policy Research Working Paper 1463, World Bank,Washington.
9. Lewis, W.A. (1955): *The Theory of Economic Growth*, George Allen and Unwin, London.
10. Morduch, J. (1999): "The Microfinance Promise," *Journal of Economic Literature,* 37(4), 1569-1614.
11. Myrdal, G. (1957): *Economic Theory and Underdeveloped Regions*, Duckworth, London.
12. Nafziger (2006): *Economic Development,* CUP, NY.

ECO(C)-301: ELEMENTARY ECONOMETRICS

Unit-I: Basic Econometrics   **(12)**

Econometrics- Nature and Concept; Estimation and Testing of Hypothesis, Z, X^2, t and F Distributions Classical linear regression model — assumptions, estimation through OLS, Gauss-Markov theorem; Method of Maximum Likelihood, Non-spherical disturbances and their implications Aitken's General linear regression model — assumptions, estimation and properties of estimators; R^2 and Adjusted R^2; Problems of Heteroscedasticity, Autocorrelation, — nature, consequences, detection and remedial measures

Unit-II: Regression with Qualitative Variables and other Techniques   **(12)**

Multicollinearity- nature, consequences, detection and remedial measures, Dummy variable — Chow test for structural stability of regression models; Dummy variable trap; Regression with dummy dependent variables — LPM, Logit and Probit models, Autoregressive and Distributed Lag (ADL) Models - Specification, estimation and tests, Hausman specification test. Exogeneity and causality, Instrumental variable technique.

Basic Readings:

1. Bhaumik, SK. (2015), Principle of Econometrics- A Modern Approach, OUP, New Delhi.
2. Dongherty, C. (1992), *Introduction to Econometrics*, Oxford University Press, New York.
3. Green, W. (2002), Econometric Analysis, 5e, Pearson Education.
4. Gujarati*,* D. and S. Sangeetha (2007), Basic Econometrics, 4e, McGraw Hill International.
5. Johnston, J. and J. Dinardo (1997), Econometric Methods, 4e, McGraw Hill.
6. Johnston, J. (1972), *Econometric Methods*, 2e, McGraw Hill International.
7. Wooldridge, J.M. (2000), *Introductory Econometrics,* Southwestern.

Additional Readings

1. Baltagi, B.H. (1998), *Econometrics*, Springer, New York.
2. Goldberger, A.S. (1998), *Introductory Econometrics*, Harvard University Press, Cambridge, Mass.
3. Maddala, G.S. (1997), *Econometrics*, McGraw Hill, New York.
4. Pindyck, R.S. and D.L. Rubinfield (976), *Econometric Models and Economic Forecasts*, McGraw Hill Kogakusha, Tokyo.

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ECO(C) 302: INTERNATIONAL ECONOMICS

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Unit-I: Pure Theory of International Trade (12)

Supply and Demand in International Trade - Gains from trade under constant and increasing opportunity costs; Individual and community indifference curves, equilibrium demand and supply; Mill's Theory of Reciprocal Demand; Marshall's Theory of Offer Curves – elasticity of offer curve; Neo-Classical Model of International Trade – Heckscher - Ohlin Theorem and Theory of Comparative Advantage; Modern Theories of International Trade - Vent-for-Surplus Approach, Availability Approach (I.B. Kravis). Monopolistic Competition and Trade, Increasing Returns to Scale and Trade, other technological explanations

Unit-II: Trade Effects, Foreign Exchange Market and Globalization (12)

Trade and factor prices - Factor-price equalization; Factor price and complete specialization; Trade and Income Distribution; Trade and factor intensity reversals; Leontief Paradox; Trade and National Income; Import function, equilibrium level of national income, trade multiplier; Aim-means method of achieving equilibrium; Foreign Exchange Market - Demand for, and Supply of, foreign exchange; Foreign Exchange Markets - spot and forward markets, premiums and discounts, hedging, interest arbitrage, speculation; Globalization of World Economy and Indian business.

Unit-III: The Balance of Payments and the Exchange Rate (12)

The Balance of Payment Account - Balance of Payment equilibrium and disequilibrium in the Balance of payments; Surplus and deficit in the Balance of Payments; Adjustment   Mechanism in the Balance of Payments – Direct and Indirect mechanisms; The Gold Standard - definition, mechanism, advantages and disadvantages, operation and collapse; Pegged Exchange rates; Flexible Exchange Rates - case for and against; Fixed Exchange Rates - case for and against; Other effects.

Unit-IV: Growth, Trade and Instruments of Protection (12)

Trade and Increase in Factor Endowments - The Rybzynski Theorem; Trade and Technical Progress - Neutral, Capital-saving, and Labour-saving Technical Progress; Theory of Tariffs - Stolper-Samuelson Theorem, measurement of optimum tariff; Quotas & Quantitative Restrictions; State Trading Monopolies - Forms and objectives, merits and demerits; Theory of Customs Unions - Trade creation and diversion, production and consumption effects, other dynamic effects of Customs Unions, Intra-Industry Trade.

Basic Reading List

1. Bhagwati, J. (Ed.) (1981). *International Trade: Selected Readings*, Cambridge University Press, Massachusetts.
2. Chacholiades, Miltiades (1990). *The Pure Theory of International Trade*, McGraw Hill, Kogakusha, Japan.
3. Cherunilam, Francis (2006), *International Economics*, Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
4. Heller, H. Robert (1988). *International Trade: Theory and Empirical Evidence*, Prentice-Hall of India Pvt. Ltd., New Delhi
5. Kenen, Peter B. (1989). *The International Economy*, Prentice-Hall of India Pvt. Ltd., New Delhi.
6. Kindleberger, C.P. (1977). *International Economics*, D.B. Taraporevala Sons & Co. Pvt. Ltd., Bombay.
7. Meade, James Edward (1952). *A Geometry of International Trade*, George Allen and Unwin Ltd., London.
8. Roy, P.N. (1986). *International Trade: Theory and Practice*, Wiley Eastern Ltd., New Delhi.
9. Sodersten, Bo (1991). *International Economics*, The Macmillan Press Ltd., London.

Additional Reading List

1. Batra, Raveendra N. (1975). *The Pure Theory of International Trade under Uncertainty*, The Macmillan Press Ltd., London.
2. Carbough, R.J. (1999). *International Economics*, International Thompson Publishing, New York.
3. Cherunilam, Francis (1988). *International Economics*, Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
4. Dana, M.S. (2000). *International Economics: Study, Guide and Work Book*, Routledge Publishers, London.
5. Dunn, R.M. and J.H.Mutti (2000). *International Economics*, Routledge Publishers, London.
6. Ellsworth, P.T. and J.C.Leith (1975). *The International Economy*, The Macmillan Company, New York.
7. Haberler, G. (1937). *The Theory of International Trade*, Macmillan & Co. Ltd., London.
8. Heller, H. Robert (1968). *International Monetary Economics*, Prentice-Hall of India Pvt. Ltd., New Delhi.
9. Johnson, H.G. (1967). *International Trade and Economic Growth*, Harvard University Press, Cambridge.
10. Kemp, K.C. (1964). *The Pure Theory of International Trade*, Prentice Hall, New Jersey.
11. Neihans, J. (1984). *International Monetary Economics*, John Hopkins University Press, Baltimore.
12. Salvatore, D. (1997). *International Economics*, Prentice Hall, New York.

ECO(C)-303: INDUSTRIAL ECONOMICS

Unit-I: Introduction and Firm's Behavior **(12)**

Introduction and scope of Industrial Economics; Types and choice of organizational firm – ownership and control; Passive and active behavior of firm; The Firm: Emergence and its objectives - Non -profit maximizing models. Cost theory and optimum size of a firm, Determinants of profitability and pricing decisions: Product pricing.

Unit-II: Market and Industrial Efficiency **(12)**

Market structure and market conduct; Industrial Efficiency: concept, determinants, measurement and decision making process. Market concentration, its measurement and effects on market Performance; Product differentiation and advertisement, Diversification, Integration and Merger, Research & Development and Innovation; Theories of growth of firm: Constrained on growth.

Unit-III: Industrial Financing and Locational Analysis **(12)**

Industrial finance and accounting: owned, external and other components of funds, financial statements – Balance sheet; Profit & Loss Account. Analysis of financial ratios, Project appraisal and Capital budgeting. Industrial location Analysis: determinants of Industrial location; Theories of Industrial location factors affecting location.

Unit-IV: Industrialization in India **(12)**

Trends in Industrial growth and diversification; Globalization and its impacts on industries; Industrial Policy in India, Policy initiatives to liberalize Indian industries and its effects; Labour issues and reforms; SSIs and Cottage industries in India-Policy issues and performances; Competition Act 2002
.

Basic Reading List
1. Ahluwallia, I.J. (1992): *Industrial Growth in India*, OUP, Delhi.
2. Bain, J.E. (1959): *Industrial Organization*, Wiley and Sons, NY.
3. Barthwal, R.R. (2007): *Industrial Economics: An Introduction Text Book* (2e), New Age International, ND.
4. Dayananda, D. et al. (2002): Capital Budgeting- Financial Appraisal of Investment Projects, CU Press.
5. Divine, J. *et al*. (1976): *An Introduction to Industrial Economics*, George Allen and Unwin, London.
6. Hay, A.D. and D.J. Morris (1991): *Industrial Economics and Organization: Theory and Evidence*, OUP.
7. Mookherjee, D. (ed.) (1995): *Indian Industry: Policy and Performance*, OUP, Delhi.
8. Panagariya Arvind (2008): India: The Emerging Giant, Oxford University Press
9. Sivayya, K.V. and V.B.M. Das (1996): *Indian Industrial Economy*, S. Chand and Company, ND.
10. Smith, D.M. (1971): *Industrial Location: An Economic and Geographic Analysis*, John Wiley, NY.

Additional Reading List
1. Clarkson, K.W. and R. Millar (1985): *Industrial Organization: Theory, Evidence and Public Policy,* McGraw-Hill, Tokyo.
2. Cyret, R.M. and J.G. March (1963): *Behavioral Theory of the Firm*, Engelwood Cliffs.
3. Ghosh, P.K. (1977): *Government and Industry*, OUP, Delhi.
4. Hennah, L. and J. Kay (1977): *Concentration of Modern Industry*, Macmillan, London.
5. Israd, W. (1956): *Location and Space Economy*, John Wiley, NY.
6. Koutosyiannis, A. (1979): *Modern Microeconomics*, Macmillan, NY.
7. Shepherd, W.G. (1979): *Economics of Industrial Organization*, Prentice Hall.

ECO(C)-401: FUNDAMENTALS OF FINANCIAL MARKETS

Unit-I: Money and Other Markets (12)

Introduction to Financial Markets- Structure and Growth of financial markets in India; Money market: Introduction, Money Market Instruments; Treasury bills, Commercial Paper, Certificates of Deposit; Call money market, Money market Mutual Funds; Repo Market; The Debt Market; Government Securities Market.

Unit-II: The Stock Market (12)

Capital Market: Primary Market; Shares, Bonds and Debentures- Types and their Issuance –Merits and Demerits;; Secondary market- Stock exchange-Methods of trading; Reforms in the Indian stock market; NSE, BSE, OTCEI and SEBI; Stock Indices.

Basic Reading List

1. Bhole, L.M. (2009): *Financial Institutions and Markets*, McGraw Hill, ND.
2. Desai, Vasant (2013): *Financial Markets and Financial Services,* Himalaya Publishing House, Mumbai.
3. Gurusamy, S. (2009): *Financial Markets and Institutions,* McGraw Hill, ND.
4. Khan, M.Y. and P.K. Jain (2015): *Financial Management: Text, Problems and Cases*, McGraw Hill, ND.
5. Mishkin (2011): *Financial Markets and Institutions,* Pearson Educational publishers, ND.
6. Pandey, I.M. (2010): *Financial Markets*, Vikas Publishing, Noida
7. Prasanna Chandra (2011): *Financial Management*: *Theory and Practice*, McGraw Hill, ND.
8. Saha, Siddhartha Sankar (2012): *Indian Financial System and Markets*, McGraw Hill, ND.

Additional Reading List

1. Pathak, Bharati (2014): *Indian Financial System*, Pearson India, ND.
2. Fisher, D.E. and R.J. Jordan (2012): *Security Analysis and Portfolio Management*, McGraw Hill, NY.
3. Levinson, Marc (2009): *Guide to Financial Markets*, Economists Books, London.
4. Machiraju, H.R. (2010): *Indian Financial System,* Vikas Publishing, Noida.

ECO(C)-402: INDIAN ECONOMIC PROBLEMS AND POLICY

Unit-I: Economic Development, Structural Change and Poverty (12)

Role of state and the market, planned economic development, development strategy after independence; Indian economic growth, distribution and structural change since independence; Poverty and Inequality- trends and policies, Evolution of economic reforms

Unit-II: Public Finance, Demography and Social Sector (12)

Indian Public Finance- Recent fiscal trends revenue, expenditure and fiscal imbalance, Fiscal reforms, Issues in fiscal federalism, Demographic features and trends- National population policies; Social Sector- Issues in Health and Education.

Unit-III: Agriculture, Industry and Service Sectors (12)

Indian Agriculture- Land reforms, Agricultural price policy, Agricultural finance, Food Policies in India, Agriculture and WTO; Industrial Sector- Industrial Growth and diversification after 1991, Public Sector Enterprises and their performance, New Industrial Policy and its impact, Importance and performance of MSME (SSI); Performance of service sectors.

Unit-IV Finance and External Sector (12)

Finance and development-Monetary Policy, structure and reforms in banking and financial sector; Trade and Investment-Structure and direction of foreign trade, International trade policies and liberalization, Capital account convertibility and FDI.

Basic Reading List

1. Bhagwati Jagdish and Arvind Panagariya (2013): *Why Growth Matters: How Economic Growth in India Reduced Poverty and the Lessons for Other Developing Countries*, Public Affairs.
2. Bhalla, G.S. (2007): *Indian Agriculture since Independence*, New Delhi: National Book Trust.
3. Byres, T.J. (1998) (Ed.): *The Indian Economy: Major Debates since Independence*, OUP, Delhi
4. Bardhan, P.K. (1999): *Political Economy of Development in India*, OUP, ND.
5. Chakravarty, S. (1987): *Development Planning: The Indian Experience*, OUP, ND.
6. Dantwala, M.L. (1996): *Dilemmas of Growth: The Indian Experience*, Sage, ND.
7. Drèze J. and A.K. Sen (2013), Uncertain Glory: India and Its Contradictions by, Princeton University Press.
8. Kapila, Uma *(*2015*)*: Indian Economy: Performance and Policies: 2015 – 16, Academic Foundation.
9. Kapila, Uma (Ed) (2014): *Indian Economy since Independence*, 25th edition, Academic Foundation, Delhi.
10. Nagaraj R (*Ed) (2012): Growth, Inequality and Social Development in India: Is Inclusive Growth Possible?, London, Palgrave Macmillan*
11. Panagariya Arvind (2008): India: The Emerging Giant, Oxford University Press
12. Ray Partha (2013): *Monetary Policy*, Oxford India Short Introductions, OUP, New Delhi
13. Sandesara, J.C. (1992): *Industrial Policy and Planning, 1947-91: Tendencies, Interpretation and Issues,* Sage, ND.
14. Srivastava, D.K. (2005): Issues in Indian Public Finance New Century Publications, Delhi
15. Tendulkar, S.D and T.A. Bhavani (2007): *Understanding Reforms- Post 1991 India*, OUP.
16. Vaidyanathan, A. (2010): *Agricultural growth in India: Role of technology, incentives and institutions*, New Delhi: Oxford University Press.

Additional Reading List

1. Ahluwalia, I.J and I.M.D. Little (Eds.) (1998): *India's Economic Reforms and Development*, OUP,
2. Bardhan, Pranab (1998): *The Political Economy of Development in India*, (2nd edition), OUP, Delhi.
3. Basu, K. (2007): *The Oxford Companion to Economics in India*, OUP.
4. Economic Survey (latest Issue), Ministry of Finance, Government of India
5. Joshi, V. and I.M.D. Little (1999): *India: Macro Economics and Political Economy, 1964-1991,* OUP, ND.
6. Latest Finance Commission Report, Government of India.

ECO(C)-403: ENVIRONMENTAL ECONOMICS

Unit-I: Basic Environmental Issues (12)

Environment and Ecology; Linkages between Ecology, Environment and Ecosystems; Material Balance Approach; Principles of Uncertainty, Irreversibility, Inter-Temporal Efficiency, Inter-Generational Equity; Environment-Development Trade-Offs; Environmental Costs of Economic Growth, Limits to Growth; Sustainable Development — Concepts and Indicators; Environmental Kuznets Curve.

Unit-II: Welfare Economics, Social Sectors and Environment (12)

Pareto optimality and competitive equilibrium: Market failures; Theories of Externality and Public Goods, Solutions to Externality, Coase's Theorem, Property Rights and Transaction Costs; Free Rider's Problem, Optimal Provision of Public Goods — Lindahl's Equilibrium; Common Property Resources – Tragedy of Commons. Land use: Deforestation, Urbanization and their Impact on Environment; Air and Water Pollution; Pigovian Tax and Subsidy on Pollution Control.

Unit-III: Environmental Valuation (12)

Environmental valuation; Environmental Damages/Benefits, Social Cost Benefit Analysis; Definitions: Use Value, Option Value and Non-Use Values — Total Economic Value. Valuation Techniques – Market and Non-Market: - Scientific, Behavioural and Technological - Production Based, Contingent Valuation, Hedonic-Pricing, Travel Cost Method, Risk Assessment, Environmental Impact Assessment; Valuation of Land, Forest and Mineral Resources.

Unit-IV: Economics of Resource Management (12)

Theories of Optional Use of Exhaustible and Renewable Resources; Integrated Environmental and Economic Accounting and the Measurement Environmentally Corrected GDP; Ecological Footprint Analysis; Comprehensive Wealth and Genuine savings; Global Environmental Governance.

Basic Reading List

1. Baumol, W.J. and W.E. Oates (1988): *The Theory of Environmental Policy* (2e), CUP, Cambridge.
2. Fisher, A.C. (1981): *Resource and Environmental Economics*, CUP, Cambridge.
3. Hanley, Shogren and White (1997): *Environmental Economics in Theory and Practice*, Macmillan.
4. Kolstad, C.D. (1999): *Environmental Economics*, OUP, ND.
5. Pearce, D.W. and R. Turner (1991): *Economics of Natural Resource Use and Environment*, John Hopkins Press, Baltimore.
6. Tietenberg, T. (1994): *Environmental Economics and Policy*, Harper Collins, NY.

Additional Reading List

1. Arrow, K.J., P. Dasgupta, l.H. Goulder, K.J. Mumford and K. Oleson (2012): "Sustainability and Measurement of Wealth", *Environment and Development Economics,* 17(3):317-53.
2. Dorfman and Dorfman (1977): *Economics of the Environment* (2e), W.W. Norton, NY.
3. Freeman A. Myrick III (1979). *The Benefits of Environmental Improvement*, Johns Hopkins Univ. Press, Baltimore.
4. Gibbons, R. (1992): *Game Theory for Applied Economists*, Princeton Univ. Press.

5. Kanemoto, Y. (1988): "Hedonic Price and the Benefits of Public Projects", *Econometrica*, Vol.56, pp. 981-989.

6. Kelly, D.L. (1997): "On Kuznets Curves Arising from Stock Externalities", Working Paper, Dept. of Economics, University of California, Santa Barbara, Oct.

7. Kreps, D.M. (1990): *A Course in Microeconomic Theory*, Princeton Univ. Press, Princeton, N.J.

8. Laffont, J. and J. Laffont (1977): "More on Prices vs. Quantities", *Review of Economic Studies*, Vol.44, pp.177-186.

9. List, A. J. and A.D. Zeeuw (Ed.) (2002): *Recent Advances in Environmental Economics,* Edward Elgar, Cheltenham, U.K.

10. Muthukrishnan, S. (2010): *Economics of Environment, PHI Learning Private Ltd, New Delhi*

11. Pigou, A.C. (1962): *The Economics of Welfare* (4e), Macmillan, London.

12. Sengupta, R. (2013): *Ecological Limits and Economic Development: Creating Space*, Oxford University Press, New Delhi.

13. Shafik, N. (1994): "*Economic Development and Environmental Quality*: *An Econometric Analysis"*, Oxford Economic Papers, Vol.46, pp.757-773.

14. Shafik, N. and S. Bandyopadhyay (1992): "*Economic Growth and Environmental Quality*: *Time Series and Cross-Country Evidence"*, Policy Research Working Paper WPS 904, The World Bank, Washington DC.

15. Shankar, U. (Ed.) (2001): *Environmental Economics*, OUP, ND.

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ECO (C)–404: ECONOMICS OF SOCIAL SECTOR

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Unit-I: Economics of Education (12)

Concept and scope of Economics of Education; Education as consumption and investment goods; Human capital-concept and components of human capital; Education and economic growth; Cost of education-Expenditure on education, private costs and social cost, direct and indirect cost; Benefits of education-Direct and indirect benefits, private and social benefits; Cost-Benefit analysis in education.

Unit-II: Educational Planning and Financing (12)

Approaches to educational planning- Production function models; Manpower Requirement Approach, Input-Output model, Gender based Approach; Educational planning in developing countries with special reference to India, Role of financing in educational development, educational financing in India- equity and efficiency effects of financing education in India.

Unit-III: Health Economics (12)

Concepts, definition and components, Measures of health status; Economic Evaluation of Health care; Health care markets, Demand for Health care, Supply side considerations, Market for health insurance.

Unit-IV: Public Policy on Health and Development Dimensions (12)

Public policy in health care delivery- role of state; Hale and DALY, Health dimension of development – Poverty and Malnutrition; Inequalities in health – Class and gender perspectives, Health care in India: Post Reform Scenario.

Suggested Readings:

1. Berman, P. (Ed.) (1995): Health Sector Reform in Developing Countries: Making Health Development Sustainable, Boston: Harvard series on population and International Health.
2. Blaug, M. (1972): Introduction to Economics of Education, Penguin, London.
3. Cohen, E. and T. Gaske (1989): Economics of Education, Pergamon Press, London.
4. Henderson, J. W. (2007): Health Economics & Policy, (3e), Thomson South-Western, U.K.
5. Klarman, H.E. (1965): The Economics of Health, Columbia University Press, NY.
6. Mc Mohan, W.W. (1999): Education and Development: Measuring the Social Benefits, OUP, Oxford.
7. Psacharopoulos, G. (ed.) (1987): Economics of Education: Research and Studies, Pergamon Press, Oxford.
8. Tilak, J.B.G. (1994): Education for Development in Asia, Sage, ND.
9. Vaizoy (1962): Economics of Education, Faber and Faber, London.
10. Woodhall, M. (1992): Cost Benefit Analysis in Educational Planning, UNESCO, Paris.
11. World Bank (1993): The World Development Report, 1993: Investing in Health, OUP,   NY.

Additional Reading List

1. Baru, R.V. (1998): Private Health Care in India: Social Characteristics and Trends, Sage, ND
2. Becker, G.S. (1974): Human Capital (2e), National Bureau of Economic Research, NY.
3. Berman, P. and M.E. Khan (1993): Paying for India's Health Care, Sage, ND.

ECO(C)-405: PUBLIC ECONOMICS

Unit-I: The Economic Basis of Government Activity and Evaluation of Public Economic Policies **(12)**

Efficiency, markets and governments: Markets, Prices and Efficiency conditions; Market failure: A preview of the basis for Government Activity and the functions of the government, Equity versus efficiency – Positive and normative analysis; Externalities and Government policy: Market failures, Externalities and Efficiency, Public Policies to Internalize the Externalities, Global Pollution: Externalities that cross Borders. Public Economic Policies: Allocation, Distribution and Stabilization, Conflicts among the Public Economic Policies.

Unit-II: Theories of Public Goods, Public Expenditures and Taxation **(12)**

The Theory of Public Goods: Provision of Private Goods and Public Goods: Markets and Government, The Demand for a pure Public good, Efficient output of a pure public good- Partial and General Equilibrium Analysis, Individual Action, Voluntary Cooperation and Efficiency, Local Public Goods, Voting Models of Public Goods. The Theory of Public Expenditure: Pure Theories of Public Expenditures: Tiebout, Samuelson and Buchanan's Contributions. Theories of Taxation: Tax Neutrality, Direct versus Indirect Taxes and Equity, Buoyancy and Elasticity Estimates of Taxation, Tax Efforts, The impact of taxes on Market prices and Efficiency.

Unit-III: Budgeting Fiscal Policies and Income Redistribution **(12)**

Program Budgeting: It's Application, Zero-Based Budgeting, and Budgeting Policies; Theory of Fiscal Policy: Fiscal Policy with Special Reference to Under-developed Countries, Federal-Fiscal Relation in India. Income Redistribution: Taxes, Government Expenditures and the distribution of Income, welfare, social security and the social safety Net. Demographic Changes and the future of Social Security, The Impact of Social Security on Savings and work incentives, Government subsidies and Income support: The basis and Trade-off.

Unit-IV: Evaluation of Public Investment Projects and Decision Making in the Public Sector **(12)**

Public Utilities and Project Evaluation: Cost-Benefit Analysis, Measuring Costs, Measuring Benefits, Market Price, Shadow Prices, Choosing a Discount Rate, Distributional and Political Considerations; Problem of Government Failure: Privatization, Devolution, Rules versus discretion, Citizen Decision making; Public and Private Sectors: Lack of Residual Claimant, Citizens and Rational Ignorance, Collective versus Individual Consumption, Lack of Revealed Preference, Measuring and Valuing Output.

Basic Reading List

1. Bowers, P.F. (1974): *Private Choice and Public Welfare*, Dryden Press, NY.
2. Buiter, W.H. (1990): *Principles of Budget and Fiscal Policy*, MIT Press.
3. David, N. and Nicholas, S. (eds.) (1987): *The Theory of Taxation for Developing Countries*, OUP.
4. Hyman, D.N. (2007): *Public Finance: A Contemporary Application of Theory to Policy*, Thomson Asia Pvt. Ltd., Singapore.
5. Jha, Raghbendra (1987): *Modern Theory of Public Finance*, Wiley Eastern, Delhi.
6. Maxdowell, A., Anderson and J. Richard (1973): *Financing State and Local Governments*.
7. Musgrave, Richard A. (1959): *The Theory of Public Finance*, Tata McGraw Hill, N.Y.
8. Mishra, B. (2006): *Economics of Taxation: Theory and Application*, Akansha Publishing House, ND.
9. Prest, A.R. (1975): *Public Finance in Theory and Practice*, Weidenfeld and Nicholson, London.
10. Ursula, H. (1968): *Public Finance*, James Nisbet and Co., London.

Additional Reading List

1. Davie, B.F. and B.F. Duncombe (1970): *Public Finance*, Holt. Rineha and Winstreet, NY.
2. Duff, L. (1997): *Government and Market*, Orient Longman, New Delhi.
3. Flatters, F., V. Henderson and P. Mieskowski (1974): Public Goods Efficiency and Fiscal Equalization, *Journal of Public Economics*, Vol.3, pp.99-112.
4. Friedman, A. (1986): *Welfare Economics and Social Choice Theory*, Martins Nijhoff, Boston.
5. Hughton, R.C. (ed.) (1975): *Public Finance*, Penguin Publication.
6. Mishan, E.J. (1987): *Cost-Benefit Analysis: An Informal Introduction*, George Allen and Unwin, London.
7. Mishra, B. (2006): *Fiscal Policy in North-East India*, Akansha Publishing House, ND.
8. Spulber, N. (1998: *Reading the State*, Cambridge: Cambridge University Press.
9. Srivastav, D.K. (Ed.) (2000): *Fiscal Federalism in India*, Har-Anand Publications Ltd., ND.
10. Stiglitz, J.E. (1986): *Economic of Public Sector*, Norton, NY.
11. Ulbrich, H. (2004): *Public Finance in Theory and Practice,* Thomson Asia Pvt. Ltd., Singapore.

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ECO(O)-205A: BUDGETARY THEORY AND PRACTICE

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Unit-I: Government and the Market (12)

Government in a Market System: Government and the Market, Production, Provision and Privatization, Efficiency and inefficiency in the Public Sector; The Structure of the Governments: Organizing Public service Delivery, Multiple levels of Government, Designing a Federal Structure, Communications between Governments, The State-Local Relationship, and Evolution of Fiscal Federalism in India; Measuring the Size and Scope of Government: The Challenge of Comparison, Federal Government Revenue and Spending, State and Local Revenue and Expenditures, How big should Government Be? What makes Government Grow?; Constraining the Growth of Government.

Unit-II: Government Spending (12)

Budgeting in the Public Sector: Budgeting Process, Revenue Forecasting, Off-Budget and On-Budget Funds; Budgeting Expenditures; Program, performance and Zero-based Budgeting; Budgeting and Public Choice: Balanced budgets, Deficits and Debts; Cost-Benefit Analysis- The Decision Rule, Kinds of Cost-Benefit Analysis, Present Value and Cost-Benefit Analysis, Technical Issues, Choosing a discount rate, Distributional and Political Considerations; Infrastructure, Capital Spending and Public Sector Borrowing: Efficiency Issues: Why Public Capital?; Equity Issues: Financing Infrastructure, Transportation Infrastructure.

Unit-III: Funding Government: Taxes, Fees and Grants (12)

Principles of Taxation: Efficiency issues in Tax Design, Equity Issues in Tax Design; Practical Problems in Tax Design: Criteria for Tax/Revenue System Design Tax Expenditures, Interstate Tax Issues, Taxation in Global Economy; Fees and Charges as a Revenue Source: Fees or Taxes, Types of Fees and Charges, Equity issues in Fees and Charges, Fees and Charges as Growth management tools, Ricardian Equivalence Theorem.

Unit-IV: Intergovernmental Grants in Theory and Practice (12)

Growth and Decline of Federal Grants: Purposes of Grants, Correcting Spatial Externalities, Redirecting Priorities; Types of Grants: General Purpose vs Categorical; Formula or Project; Lump-sum or Matching; Open ended vs Closed Ended, Matching Grants; - Various Classification; Efficiency and Equity Effects of Grants: Indifference Analysis of Grants, Lump sum Grants, Fungibility and Maintenance of Effort Flypaper Effect.

Basic Reading List

1. Bachanan, J.M. (1958): *Public Principles of Public Debt- A Defense and Restatement*, Richard D. Irwin, Homewood.
2. Bird, R. and O. Oldman (1967): *Readings on Taxation in Developing Countries*, John Hopkins Univ. Press, Baltimore.
3. Buiter, W.H. (1990): *Principles of Budget and Fiscal Policy*, MIT Press.
4. David, N. and S. Nicholas (eds.) (1987): *The Theory of Taxation for Developing Countries*, OUP.
5. David N. Hyman (2007): *Public Finance: A Contemporary Application of Theory to Policy*, Thomson Asia Pvt. Ltd., Singapore.
6. Davie, B.F. and Duncombe, B.F. (1970): *Public Finance*, Holt. Rineha and Winstreet, NY.

7. Hughton, R.C. (Ed.) (1975): *Public Finance*, Penguin Publication.
8. Hyman, David N. (1983): *Public Finance: A Contemporary Application of Theory to Policy*, The Dryden Press, NY.
9. Hyman, D.N. (2007): *Public Finance: A Contemporary Application of Theory to Policy*, Thomson Asia Pvt. Ltd., Singapore.
10. Jha, Raghbendra (1987): *Modern Theory of Public Finance*, Wiley Eastern, Delhi.
11. Maxdowell, A. and J.R. Anderson (1973): *Financing State and Local Governments*.
12. Mishra, B. (2006): *Economics of Taxation: Theory and Application*, Akansha Publishing House, ND.
13. Musgrave, R.A. (1959): *The Theory of Public Finance*, Tata McGraw Hill, ND.

Additional Reading List

1. Bhargava, P.K. (1982): *Centre State Resource Transfers in India*, Academic Press, Gurgaon.
2. Borkar, V.V. (1971): *Income Tax Reform in India*, Popular Prakashan, Bombay.
3. Chelliah, R.J. (Ed.) (1997): *Towards Sustainable Growth*, OUP, ND.
4. Duff, L. (1997): *Government and Market*, Orient Longman, ND.
5. Flatters, F., V. Henderson and P. Mieskowski (1974): "Public Goods Efficiency and Fiscal Equalization", *Journal of Public Economics*, Vol.3, pp.99-112.
6. Ferguson, J.M. (Ed.) (1964): *Public Debt and Future Generations*, North Carolina Univ. Press, Chapel Hill.
7. Friedman, A. (1986): *Welfare Economics and Social Choice Theory*, Martins Nijhoff, Boston.
8. Government of India (1985): *Long Term Fiscal Policy*, ND.
9. Gulati, I.S. (1979): *Centre State Financial Relations*: *An Assessment of the Role of Finance Commission*, M.S. Univ. of Baroda, Baroda
10. Lakdawala, D.T. (1967): *Union State Financial Relations*, Lalwani Publishing House, Mumbai.
11. Mishan, E.J. (1987): *Cost-Benefit Analysis: An Informal Introduction*, George Allen and Unwin, London.
12. Mishra, B. (2006): *Fiscal Policy in North-East India*, Akansha Publishing House, ND.
13. Spulber, N. (1998): *Reading the State*, CUP, Cambridge.
14. Srivastav, D.K. (ed.) (2000): *Fiscal Federalism in India*, Har-Anand Publications, ND.
15. Stiglitz, J.E. (1986): *Economics of Public Sector*, Norton, NY.

ECO(O)-205B: COMPUTER APPLICATIONS IN ECONOMIC ANALYSIS

Unit-I: Fundamentals of Computer (12)

Basics of Computer & Peripherals – Components of System Unit, CPU, I/O Devices, Data Storage and Retrieval, Hardware, Software and Firmware. *Data Representatives- Number system:* decimal, binary, Octal, hexadecimal, binary coding schemes, logic gates. *Operating Systems* – Windows, Mac OS X, UNIX and LINUX. *Secondary Storage Devices-* Hard Disk, Compact Disk. *Fundamentals of Algorithms-* Recursion and iteration, Decomposability of algorithms, Efficiency of Algorithms; Searching and sorting methods. *Programming Languages* - Machine, Assembly, Low and High Level Languages, Other generation programming languages. *Interpreter, Complier and Assembler*. *Introduction to Internet-* Internet Protocols, WWW, Browser, E-mail, Web Search Engines. *E-security:* introduction, concepts, challenges and threats for e-security, solutions: cryptography, digital signatures, authentication, digital certificates, Introduction to cyber law.

Unit-II: Programming Languages used in Economic Analysis (12)

Fundamentals of computer programming; Basic structure of a computer program; von Neumann system vs. evolutionary programming; Elementary *C programming (C and C⁺⁺)*: basics, Keywords, variable naming, statement regarding declaration of types, subscripted variables, logical conditionality (if) structure, repetition, transfer of control, Input output statements; format and data layout, File operations; sequential and random access files; sub-programming, Local and global variables; concept of classes. *Visual Basic, JAVA, Intel Fortran16.0. Introduction to Data Structure-* Stack, Queue, link list etc.
Introduction to Database- DBMS & RDBMS (MS-Access, Oracle, SQL Server).

Unit-III: Programming Statistical and Mathematical formulas (12)

Programming basic operations in matrix algebra: addition, multiplication and inversion of matrices, Eigenvalues and eigenvectors, Generalized inverse; Measures of Central tendency and Dispersion; Correlation, Least Squares Regression Analysis, Minimum Absolute Deviation Estimation. Optimization - linear programming; Non-linear optimization – programming Newton-Gauss, and derivative-free search methods of Box and Nelder-Mead. Simulation, generation of random numbers with various distributions; Population-based random search methods of optimization.

Unit-IV: Software-based Analysis (12)

SPSS/STATISTICA: A package for Statistical Analysis in Social Sciences. Basic Operations; File, Edit, View, Data, Transformation, Graph and Utilities. Statistical Analysis using SPSS/STATISTICA: Summary, Tabulation and Comparison of Summary Statistics; Correlation and Regression (Linear and Non-linear) using SPSS/STATISTICA; Discriminant analysis, Principal Components, Factor Analysis and Cluster analysis by SPSS/STATISTICA; *Scripting Languages:* Use of MATLAB, Mathematica, R, Python, and Julia

Basic Readings List

1. Attaway, S. (2013): Matlab: A Practical Introduction to Programming and Problem Solving, Butterworth-Heinemann Publication.
2. Balbaert, I. (2015): Getting Started with Julia, Packt Publishing Ltd, Birmingham-Mumbai.
3. Brainerd, W.S. (2015): Guide to Fortran Programming 2008 (2nd Edition) Springer Publication.
4. Field, A. (2013): Discovering Statistics Using IBM SPSS Statistics, Sage Publication

5. George and Mallery (2013): IBM SPSS Statistics 21 Step by Step: A Simple Guide and Reference, Routledge Publication.
6. Gardener, M. (2012): Beginning R: The Statistical Programming Language, Publisher John Wiley & Sons.
7. Goel, A. (2010): Computer Fundamentals, Pearson Education India, New Delhi.
8. Kim, D. and Soloman, M.G. (2010) Fundamentals of Information System and Security, Publisher Jones & Bartlett Learning.
9. Krishnamurthy and Sen (1992): *Computer-Based Numerical Algorithms*, Affiliated East-West Press, ND.
10. Lipschultz, M.M. and S. Lipschultz (1982): *Theory and Problems of Data Processing*, Schaum's Outline Series, McGraw Hill, NY.
11. Metcalf. M. and Cohen, M. (2011) Modern Fortran Explained (Numerical Mathematics and Scientific Computation), 4e, Oxford University Press.
12. Rajaraman, V. and Adawala, N. (2014): Fundamentals of Computers, PHI Learning Private Limited.
13. Sanders, D.H. (1988): *Computer Today*, McGraw Hill (3e), NY.
14. Shelly and Vermaat (2011): Discovering Computers, Complete: Your Interactive Guide to the Digital World, Cengage Learning.
15. Sinha, P.K. (1992): *Computer Fundamentals*, BPB Publications, ND.
16. Vermaat, M.E. (2014): Discovering Computer and Microsoft Office: A Fundamental Combined Approach, Cengage Learning, Boston (U.SA.)
17. Waxer, M. B. (2010): Microsoft Office 2010: Illustrated Fundamentals, Cengage learning, Boston (U.S.A.)
18. Wirth, N. (1988): *Algorithms+ Data Structures = Programs*, Prentice Hall, ND.
19. Zelle, J.M. (2004) Python Programming: An Introduction to Computer Science, Publisher Franklin, Beedle & Associates, Inc.

Additional Reading List

1. Bechtel, G.G. (1976): *Multi-dimensional Preference Scaling*, Mouton & Co. The Hague.
2. Gujarati, D.N. (1995): *Basic Econometrics* (2e), McGraw Hill, ND.
3. Gillett, B E (1979): *Introduction to Operations Research: A Computer-oriented Algorithmic Approach*, Tata McGraw Hill, ND.
4. Johnston, J. (1991): *Econometric Methods*. McGraw-Hill, ND.
5. Kerningham, B.W. and D.M. Ritchie (1988): *The C Programming Language*, Prentice Hall, ND.
6. Kim, J. and C.W. Muller (1989): *Factor Analysis: Statistical Methods and Practical Issues*, Sage, ND.
7. Kuester, J.L. and J.H. Mize (1973): *Optimization Techniques with FORTRAN IV*, McGraw Hill, NY.
8. Nie, N.H. (1970): *SPSS – Statistical Package for Social Sciences*, McGraw Hill, NY.
9. Norton, P. and R. Jourdain (1989): *The Hard Disk Companion*, Prentice Hall, ND.
10. Rajasekaran, S. (1986): *Numerical Methods in Science and Engineering*, A.H. Wheeler, Allahabad.
11. Rushton, G., M.F. Goodchild and L.M. Ostresh (1973): *Computer Programs for Location-Allocation Problems*. Monograph 6, Dept. of Geography, Univ. of Iowa, Iowa.
12. Sharma, J.K. (1997): *Operations Research*, Macmillan, Delhi.

ECO(O)-205C: ECONOMETRICS - I

Unit-I: Basic Econometrics **(12)**

Nature, meaning and scope of econometrics; distinction between Statistics and Econometrics; two variable linear regression model — assumptions, estimation through OLS, properties of estimators — Gauss-Markov theorem; Method of Maximum Likelihood General linear regression model — assumptions, estimation and properties of estimators; R^2 and Adjusted R^2; Generalized least square; Problems of Heteroscedasticity, Autocorrelation, Multicollinearity — nature, consequences, detection and remedial measures.

Unit-II: Regression with Qualitative Variables and other Techniques **(12)**

Dummy variable — Testing structural stability of regression models; Dummy variable trap; Regression with dummy dependent variables — LPM, Logit, Probit and Tobit models — their applications; Estimation of non-linear equations and some specific functions like Parabolic, exponential, geometric, hyperbolic, modified exponential; gompertz and logistic functions; Principal component analysis.

Unit-III: Dynamic Econometric Model **(12)**

Autoregressive and distributed lag models — Koyck's approach, partial adjustment and adaptive expectations model, instrumental variables; Problem of auto-correlation — Application; Almon approach to distributed-lag models. Error correction model (ECM), Causality, Granger test and Sim's test, Exogeneity and its testing.

Unit-IV: Some Applications of Single Equation Models **(12)**

Application of single equation technique in demand analysis — Aggression problem, Engle's Law, Slutsky's theorem, the consumer's allocation problem — model in relative prices, and aggregation over consumers. Estimation of demand functions under different conditions, properties of the estimator — static and dynamic analysis; Estimation of consumption function — Cross section and time series. Estimation of Production functions: Cobb Douglas & C.E.S. Production Functions.

Basic Reading List

1. Baltagi, B.H. (1998): *Econometrics*, Springer, NY.
2. Bhaumik, SK. (2015), Principle of Econometrics- A Modern Approach, OUP, New Delhi.
3. Chow, G.C. (1983): *Econometrics*, McGraw Hill, NY.
4. Green, W. (2002), Econometric Analysis, 5e, Pearson Education.
5. Goldberger, A.S. (1998): *Introductory Econometrics*, Harvard Univ. Press, Cambridge, Mass.
6. Gujarati*,* D. and S. Sangeetha (2007), Basic Econometrics, 4e, McGraw Hill International.
7. Johnston, J. and J. Dinardo (1997), Econometric Methods, 4e, McGraw Hill.
8. Koutsoyiannis, A. (1977): *Theory of Econometrics* (2e), Macmillan, London.
9. Maddala, G.S. (1997): *Econometrics*, McGraw Hill, NY.
10. Ramanathan, R. (2002): *Introductory Econometrics with Applications*, 5e, South Western Cengage Learning, ND.
11. Theil, H. (1981): *Introduction to Econometrics*, Prentice Hall, ND.
12. Wooldridge, J.M. (2000), *Introductory Econometrics* Southwestern.

Additional Reading List
1. Intrilligator, M.D. (1978): *Econometric Methods, Techniques and Applications*, Prentice Hall, New Jersey.
2. Intrilligator and Griliches (1983): *Handbook of Econometrics*, Vol. I & II, N. Holland, Amsterdam.
3. Pindyek and Rubinfield (1976): *Econometric Models and Economic Forecasts*; McGraw Hill, Tokyo.
4. Theil, H. (1971): *Principles of Econometrics*, J. Wiley, NY.

ECO(O)–205D: INSTITUTIONAL ECONOMICS-I

Unit-I: Preliminaries of the Old Institutional Economics **(12)**

The concept of Institutions in the old institutional economics; Adam Smith's "The Theory of the Moral Sentiments"; The pragmatic philosophy of William James, Charles Peirce, John Dewey and Clarence Ayers; formation of habits, the rule of thumb, development of customs traditions and mores as regulators of social conduct; development of legal institutions. TB Veblen: The Theory of the Leisure Class - informal institutions/habits and traditions, government as part of the established, institutional system (vested interests), proposal of a system of industrial planning by technical experts, Jungian Archetypes and social psychology; R Commons and JK Galbraith - formal (legalized) institutions, Scientific investigation methods; WC Mitchell- Establishment of Institutions, National Bureau of Economic Research (NBER), Statistical basis for study of institutions, New School for Social Research, origins of agent-based theory; G Myrdal – interdependence of social, political, economic and institutional phenomena, modernization ideals. Religion as an institution: Max Weber's The Protestant Ethic and the Spirit of Capitalism. Kenneth Boulding: Grants Economics; The three-fold taxonomy of social organization

Unit-II: Introduction to Institutional Analysis **(12)**

The concept of institution in the New Institutional Economics: Institutions and organizations. Functions of social and economic institutions; Interaction situations and the types of norms: prisoners' dilemma-type situation; co-ordination situation; inequality situation; Enforcement characteristics; Institutional structure of a society; Formal and informal institutions; Sanctions for disobeying norms (self-enforcing sanctions, guilt, shame, informational sanctions, bilateral costly sanctions, multilateral costly sanctions); Conditions of norms' effectiveness. Interaction of formal and informal institutions; The limits of imitations of institutions from best-performing countries; The problems of their enforceability; A Comparative view of the Old Institutional Economics and the New Institutional Economics and modern institutionalism.

Unit-III: Transaction Costs **(12)**

The concept of transaction; Market and intra-firm transactions; Transaction costs as friction in the economy; Transaction costs and transformation costs; Interdependency between transaction costs and transformation costs; Types of market transaction costs and means of transaction costs minimization (search and information costs; measurement costs; bargaining and decision costs; supervision and enforcement costs); Comparative advantages and shortcomings of the legal enforcement mechanism; Reputation as a contract enforcement device; Ideal model of "perfect reputation"; Shortcomings of the reputation as a contract enforcement mechanism. Reputation and the "free rider problem"; Reputations aided by institutions. Transaction costs, the main types of economic exchange and their institutional structure; Coexistence of the main types of economic exchange in the modern society; Transaction cost measurement.

Unit-IV: Economic Theory of Property Rights **(12)**

The definition of property rights; Property rights in different Laws/traditions; The property rights approach: some basic concepts. Specification of property rights, the bundle of rights, partitioning of property rights, attenuation of property rights; Assigning of property rights: the internalization of externalities; The Coase Theorem; Critic of Coase (dynamic effects of alternative legal rules, wealth effect, distributional effects, strategic behavior and the problem of holding-out, endowment effect, sociological critic, unrealistic assumption about zero transaction costs); Alternative property rights regimes; Common property (open access) and the tragedy of the commons; Exclusive property rights and the conditions for their emergence; The first economic revolution. Communal property; Optimal group size; Private property; Moral and economic aspects of private property; Public property; The emergence of property rights; The optimistic theory of the emergence of property rights (naive model); The interest-group theory of property rights; The costs of collective action; The theory of rent-seeking; Interest-groups and rent-seeking behavior in an economy.

Basic Reading List

1. Barzel, Y. (1982): "Measurement Cost and the Organization of Markets", *Journal of Law and Economics*, Vol.25, pp. 27-48.
2. Blaug, M. (1978): *Economic Theory in Retrospect* (3e), CUP, Cambridge and NY.
3. Coase, R. (1937): "The Nature of the Firm", *Economica*, Vol.4, pp. 386-405.
4. Coase, R.H. (1960): "The Problem of Social Cost", *Journal of Law and Economics*, Vol.3, pp.1-44.
5. Dahlman, C. (1979): "The Problem of Externality", *Journal of Law and Economics*, Vol.22, pp. 141-162.
6. Eggertson, Thr. (………): *Institutions and Economic Behavior,* Ch.1, pp.1-32.
7. Eggertson, Thr. (………): *Institutions and Economic Behavior,* Ch.2, pp.33-78, Ch.4, pp.83-124, Ch.8, pp.247-280, Ch.9, pp. 281-316.
8. Elster, J. (1989): "Social Norms and Economic Theory" *Journal of Economic Perspectives*, 3, 99-117.
9. Menard, C. and M. Shirley (eds.) (2005): *Handbook of New Institutional Economics,* Springer.
10. Milgrom, P. and J. Roberts (1992): *Economics, Organization and Management*, Prentice-Hall Int., Ch.2, pp.19-35, Ch.5, pp.147-149, Ch.8, pp.259-269.
11. Milgrom P. (……...): Roberts J. *Economics, Organization and Management*, Ch.9, pp.288-307.
12. North, D. (1990): *Institutions, Institutional Change and Economic Performance*, CUP, Ch.5, 6, 7.
13. North, D. (1990): *Institutions, Institutional Change and Economic Performance*, CUP, Ch.8.
14. Posner, R. (1997): "Social Norms and the Law: an Economic Approach", *AER*, 87, 365-369.

Additional Reading List

1. Boulding, K. (1973): *The Economy of Love and Fear: A Preface to Grants Economics,* Belmont, Calif.: Wadsworth.
2. Boulding, K. (1976): *Adam Smith as an Institutional Economist,* Memphis: P. K. Seidman.
3. Coase, R. (1974): "The Lighthouse in Economics", *Journal of Law and Economics*, Vol.17, No.2, p.357.
4. Commons, J.R. (1931): "Institutional Economics", *American Economic Review*, Vol.21, pp.648-657.
5. Cooter, R. (1987): Coase Theorem. In: The New Palgrave: A Dictionary of Economics, Macmillan, pp. 457-459.
6. Cooter, R. (1996): "The Theory of Market Modernization of Law", *International Review of Law and Economics*, Vol.16, pp.141-172.
7. Demsetz, H. (1967): "Toward the Theory of Property Rights", *American Economic Review,* Vol.57, pp.349-359.
8. Demsetz, H. (1972): "When Does the Rule of Liability Matter?" *Journal of Legal Studies*, Vol.1, No.1, pp.13-28.
9. Eggertson, Thr. (………): Neoinstitutional Economics. In: Newman P. The New Palgrave Dictionary of Economics and the Law. Vol.2, pp. 665-670.
10. Ellickson, R. (1994): "The Aim of Order without Law", *Journal of Institutional and Theoretical Economics*, Vol.150, pp.97-100.
11. Ellickson, R. (1994): "The Aim of Order without Law", *Journal of Institutional and Theoretical Economics*, Vol.150, pp.97-100.
12. Farnsworth, W. (1999): "Do Parties to Nuisance Cases Bargain after Judgment? A Glimpse inside the Cathedral", *University of Chicago Law Review*, Vol.66, p.373.
13. Green, A., Matter and Pyche (2006): Lewis Mumford's appropriation of Marx and Jung in his appraisal of the condition of man in technological civilization, History of the Human Sciences, Vol. 19, No. 3, 33-64. http://socserv2.socsci.mcmaster.ca/~econ/ugcm/3ll3/commons/institutional.txt
14. Greif, A. (1993): "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders Coalition", *The American Economic Review*, Vol.83, No.3, pp.525-548.
15. Guinnane, T.A. (1994): Failed Transplant: Raiffeisen Unit Cooperatives in Ireland 1894-1914. p. 31 Exploration in Economic History, pp. 38-61.

16. Hazlett, D. (1997): "Teaching Tools: a Common Property Experiment with a Renewable Resource", *Economic Inquiry,* Vol.35, Okt. No. 4, pp.858-861.

17. Libecap, G. (………): Common Property. In: Newman P. The New Palgrave Dictionary of Economics and the Law. Vol.1, pp.317-324.

18. Niehans, J. (1987): *Transaction Costs. In: The Palgrave Dictionary of Economics*. London, Macmillan, 1987, pp. 676-679

19. North, D. (1991): "Institutions", *Journal of Economic Perspective*, Vol.5, pp. 97-112.

20. North, D. (1994): "Integrating Institutional Change and Technical Change in Economic History: A Transaction Cost Approach", *Journals of Institutional and Theoretical Economics*, Vol.150, pp. 609-624.

21. Olson, M. (1965): *The Logic of Collective Action. Public goods and the Theory of the Groups,* Harvard Univ. Press, Cambridge.

22. Olson, M. (1987): Collective action. In: The New Palgrave: A Dictionary of Economics, Macmillan, pp. 474-477.

23. Posner, E. (1998): Efficient Norms. In: Newman P. The New Palgrave Dictionary of Economics and the Law. Macmillan Reference, Vol.2, pp.20-24.

24. Posner, E. (2000): *Social Norms and the Law*, Harvard Univ. Press, Cambridge, Mass., Ch.2 A Model of Cooperation and the Production of Social Norms.

25. Posner, R. and E. Rasmusen (1999): "Creating and Enforcing Norms, with Special Reference to Sanctions", *International Review of Law and Economics*, Vol.19, pp. 369-382.

26. Rose, C. (……….): Evolution of Property Rights. In: Newman P. The New Palgrave Dictionary of Economics and the Law. Vol.2, pp. 93-98.

27. Smith, Adam (1759): *The Theory of the Moral Sentiments*, Edinburgh. http://www.adamsmith.org/smith/tms-intro.htm

28. Tullock, G. (1987): Rent-seeking. In: The New Palgrave: A Dictionary of Economics, Macmillan, pp.147-149.

29. Ullman-Margalit, E. (1977): *The Emergence of Norms,* Oxford, Clarendon Press, Ch.1-4.

30. Veblen, T.B. (1899): *The Theory of the Leisure Class*. http://xroads.virginia.edu/~hyper/VEBLEN/veblenhp.html

31. Weber, Max (1930): The Protestant Ethic and the Spirit of Capitalism (1904-1905) (English Trans. Talcott Parsons, Anthony Giddens, London; Boston: Unwin Hyman). http://xroads.virginia.edu/~HYPER/WEBER/cover.html

32. Williamson, O. (1985): *The Economic Institutions of Capitalism*, The Free Press, N.Y., Ch.2, pp.43-67.

33. Wray, L. Randall, K. Boulding's (1994): "Grants Economics", *Journal of Economic Issues*, Vol.28.

34. Young, P.H. (1996): "The Economics of Convention", *Journal of Economic Perspectives*, Vol.10, pp.105-122.

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ECO (O)-205E: LABOUR ECONOMICS

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Unit-I: Theoretical Issues in Labour Economics (12)

Labour supply: Measuring the labour force, Workers preferences, Time and budget constraints, Hours of work decision; Labour demand: Production function, Employment decision in the short run and long run, Long run demand for labour; Labour market equilibrium: Equilibrium in a single competitive labour market, Competitive equilibrium across labour markets, Non-competitive labour markets, Cobweb model.

Unit-II: Wages, Alternative Pay Schemes and Labour efficiency (12)

Wages: Perfect Competition – Homogenous workers and Jobs, Wage Differentials – Heterogeneous Workers and Jobs, The Hedonic Wage Function. Alternative pay schemes and labour efficiency: Economics of fringe benefits, Theory of optimal fringe benefits, Efficiency wage payments, deferred payments schemes, Labour Efficiency: Education in the labour market, Schooling model.

Unit-III: Labour Productivity, Unemployment and Migration (12)

Labour productivity: Concept and measurement, Wages, Prices and Employment. Unemployment: Measurement, The Stock–Flow model, Frictional, Structural and Demand–Deficient unemployment, reducing unemployment – Public policies. Labour mobility: Types, Migration as an investment in human capital, Determinants of migration, Consequences of migration, The Economic Benefits of Immigration.

Unit-IV: Labour Market Discrimination, Trade Union and Collective Bargaining (12)

Labor market discrimination: Race and gender in the labour market, The Crowding Model, Employer and Employee discrimination, measuring discrimination – The Oaxaca Decomposition. Trade Union – Determinants of union membership, Economic Impact of Unions - Union wage advantage, Efficiency and Productivity of Unionism. Collective bargaining: Economic sanctions of collective bargaining, bargaining power in collective bargains, counteracting pressures – Employer's resistance, Potential impact on union.

Basic Reading List

1. Butler, A.D. (1972): *Labor Economics and Institutions*, American Publishing Company, ND.
2. George, J.B. (1996): *Labour Economics*, McGraw Hill,, NY.
3. Marshall, F.R., V.M. Briggs, and A.G. King (1984): *Labour Economics*, Richard D. Irwin Inc. Homewood, Illinois.
4. McConnell, C.R., S.L. Brue and D.A. Macpherson (2009): *Contemporary Labour Economics*, McGraw Hill, NY.

Additional Reading List:

1. Burton, F.J, L.K. Benham, W.W. Vaughn III and R.J. Hanagan (Eds.) (1971): *Reading in Labour Market Analysis*, Holt. Rinehart and Winston, Inc, USA.
2. Rees, A. (1973): *Economics of Work and Pay*, Harper and Row, NY.
3. Sen, A.K. (1975): *Employment, Technology and Development,* OUP, ND.
4. Solow, R.M. (1990): *Labour Market as an Institution*, Harper and Row, NY.

ECO (O)-205F: WELFARE ECONOMICS

Unit–I: Conceptual and Measurement Issues (12)

Benthamite approach to aggregate welfare; Optimum resource allocation and welfare maximization, Assumption of uniform income – Utility function of individuals; Question of income distribution; Issue of interpersonal comparisons of utility; Marshallian welfare economics: Consumer's surplus; Measurement of consumer's surplus – Difficulties involved and criticism.

Unit –II: Paretian Welfare Economics (12)

Pigovian welfare economics; Divergence between private and social costs; Problems of non-market interdependence; Externalities of production and consumption; External economies and diseconomies; Problem of public goods; Pareto optimality – Optimum exchange conditions, The production optimum, The consumption optimum; Concept of contract curve; Top level optimum; Infinite number of non-comparable optima vs. unique social optimum; Compensation criteria– Contributions of Barone, Kaldor and Hicks; The Scitovsky double criterion.

Unit -III: Modern Welfare Economics (12)

Hicks's four compensation principle, Concepts of consumer's surplus and commodity indifference map; Samuelson's utility possibility curve; Value judgments and welfare in economics; Bergson's social welfare function; Arrow's impossibility theorem.

Unit-IV: Some Recent Developments in Welfare Economics (12)

Review of the two fundamental theorems of the traditional welfare economics, its axioms and their critique, endogeneity of preference, conflict between individual and social rationality, impracticability of redistribution of resources, the principle of normative individualism, evolutionary approach to social welfare, replacement of traditional paradigm of welfare by human development, institutional restructuring of individual choices.

Basic Reading List
1. Arrow, K.J. (1951): *Social choice and Individual Values*, Yale Univ. Press, New Haven.
2. Baumol, W.J. (1965): *Welfare Economics and the Theory of the State*, 2e, Longmans, London.
3. Baumol, W.J. (ed.) (2001): *Welfare Economics*, Edward Elgar, U.K.
4. Broadway, R.W. and N. Bruce (1984): *Welfare Economics*, Basil Blackwell, Oxford.
5. Feldman, A.M. (1980): *Welfare Economics and Social Choice Theory*, Martinus Nijhoff, Boston.
6. Little, I.M.D. (1939): *A. Critique of Welfare Economics*, 2e, OUP, Oxford.
7. Myint, H. (1948): *Welfare Economics*, Macmillan, London.
8. Pigou, A.C. (1962): *The Economics of Welfare*, 4e, Macmillan, London.

Additional Reading List
1. Duesenberry, J.S. (1949): *Income, Saving and the Theory of Consumer Behavior*, Harvard Univ. Press, Cambridge, Mass.
2. Graaff J. de V. (1957): *Theoretical Welfare Economics*, CUP, Cambridge.
3. Marshall, A. (1946): *Principles of Economics*, Macmillan, London.
4. Nicholas, B. (ed.) (2001): *Economic Theory and the Welfare State*, Edward Elgar, U.K.
5. Quirk, J. and R. Saposnik (1968): *Introduction to General Equilibrium Theory and Welfare Economics*, McGraw Hill, NY.
6. Samuelson, P.A. (1947): *Foundations of Economic Analysis*, Harvard Univ. Press, Cambridge, Mass.

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ECO (O)-304A: FINANCIAL ECONOMICS

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Unit-I: Basic Concepts in Finance (12)

Introduction to corporate finance; Forms of business organization; Goals of financial management, Agency problem; Financial statements: Balance sheet; Profit and loss account; Debt and Equity; Ordinary and Preferential Share Capital; Risk and return- It's Measurement; Time value of money-Rationale and practical applications.

Unit-II: Dividends and Valuation (12)

Dividends: Definition, Cash Dividend, Stock Dividend, Stock Split and Buy Back of Shares; Determinants of dividends; Dividend Theories: Irrelevance of dividends: Modigliani and Miller hypothesis; Relevance of dividends: Walter's model and Gordon's model.

Unit-III: Derivative Markets (12)

Options: Introduction; Call option, Put option; Put-Call parity theorem; Futures and Forwards: Origin, Basic elements, Organization; Commodity futures, Financial futures. Swaps: Currency and Interest rate swaps; Swaptions; Equity and commodity swaps.

Unit-IV: Financial Service (12)

Introduction to Financial Services; Merchant Banking; Leasing; Hire Purchase; Venture Capital Financing; Mutual Funds: Types and Valuation; Factoring; Forfaiting; Unit Rating; Depository Services.

Basic Reading List

1. Brigham E.F. and J.F. Houston (2013): *Fundamentals of Financial Management*, South-Western, ND.
2. Desai, Vasant (2013): *Financial Markets and Financial Services,* Himalaya Publishing House, Mumbai.
3. Gupta, S.L. (2009): *Financial Derivatives: Theory Concepts and Problems*, Prentice Hall, ND.
4. John, C. Hull. (2008): *Options, Futures and Other Derivatives*, Prentice-Hall, ND.
5. Khan, M.Y.(2013): *Financial Services*, McGraw Hill, ND.
6. Khan, M.Y. and P.K. Jain (2015): *Financial Management: Text, Problems and Cases*, McGraw Hill, ND.
7. Prasanna Chandra (2011): *Financial Management*: *Theory and Practice*, McGraw Hill, ND.
8. Van Horne, J.C. (2009): *Financial Management and Policy*, Prentice-Hall, ND.

Additional Reading List

1. Bharati Pathak (2014): *Indian Financial System*, Pearson India, ND.
2. Fisher, D.E. and R.J. Jordan (2012): *Security Analysis and Portfolio Management*, McGraw Hill, NY.
3. Keith Redhead. (2008): *Financial Derivatives: An Introduction to Futures, Forwards, Options and Swaps*, Prentice Hall, ND.
4. Rustogi, R.P. (2011): *Financial Management: Theory, Concepts, and Problems*, Galgotia Publishers, ND.
5. Shapiro, A.C. (1991): *Modern Corporate Finance*, Macmillan, NY.

ECO(O)-304B: DEMOGRAPHY

Unit-I: Population and Development   (12)

Meaning and scope of demography, components of population growth and their inter-dependence, Measures of population change, structure, distribution and sources of population data; Theories of population — Malthus, Optimum theory of population; Theory of demographic transition — Views of Meadows, Enke and Simon; Population and development. – Demographic Dividend.

Unit-II: Structure of Population   (12)

Population trends in the twentieth century, population explosion — its dynamics; International aspects of population growth and distribution; Pattern of age and sex structure in more developed and less developed countries; Determinants of age and sex structure; Demographic effects of sex and age structure, economic and social implications, Age pyramids projections.

Unit-III: Fertility, Nuptiality and Mortality   (12)

Fertility — Emerging issues in fertility control, Fertility analysis, Social structure and Fertility change; Nuptiality — Concept and analysis of marital status; Single mean age at marriage, synthetic cohort methods, Trends in age at marriage; Mortality: Death rates, crude age-specific, Mortality at birth and infant mortality rate; Sex and age pattern of mortality, Factors for decline in mortality in recent past, Levels and trends of mortality rate in advanced and less advanced countries; Life table — Construction and uses; Concepts of stable population, Methods of population projection.

Unit-IV: Migration and Urbanization   (12)

Internal and international migration flows: The case of India and Bangladesh; Internal migration — Its effect on population growth and pattern, Factors affecting migration; Theories of migration related to internal migration, process shaping international migration flows, Dynamics of the international migration process; Urbanization — Growth and distribution of rural-urban population in developed and developing countries; Population growth, employment and housing in mega cities in developing countries, the question of mega city transformations, Gravity Model.

Basic Reading List

1. Amsden, A.H. (ed.) (1980): *The Economics of Women and Work*, Penguin, Harmondsworth.
2. Baud, I.S.A. (1992): *Form of Production and Women's Labour, Gender Aspects of Industrialization in India and Mexico*, Sage, ND.
3. Bogue, D.J. (1971): *Principles of Demography*, John Wiley, NY.
4. Bogue, D.J. (1971): *Principles of Demography*, John Wiley, NY.
5. Boserup, E. (1970): *Women's Role in Economic Development*, George Allen and Unwin, London.
6. Chenery, H. and .N. Srinivasan (eds.) (1989): *Handbook of Development Economics*, Vol. I & II, Elsevier, Amsterdam.
7. Chiang, C.L. (1974): *Life Tables and Mortality Analysis*, W.H.O., Geneva.
8. Coale, A.J. and E.M. Hoover (1958): *Population Growth and Economic Development in Low Income Countries: A Case Study of India's Prospects*, Princeton Univ. Press, Princeton.
9. King, M. and M.A. Hill (eds.) (1993): *Women's Education in Developing Countries*: *Barriers, Benefits and Politics*, John Hopkins, Baltimore.

Additional Reading List

1. Lewis (ed.) (1989): *Strengthening the Poor: What Have We Learnt*, OECD, Paris.
2. Novell, C. (1988): *Methods and Models in Demography*, Bellhaven Press, London.
3. Proceedings of the International Population Conference (1989): *Population: Today and Tomorrow – Policies, Theories and Methodologies*, Vol. I, II & III, B.R. Publishing Corporation, Delhi.
4. Simon, J.L. (1992): *Population and Development in Poor Countries*, Princeton Univ. Press.
5. Srinivasan, K. (1998): *Basic Demographic Techniques and Applications*, Sage, ND.
6. Styrock, H. et al. (1973): *The Methods and Materials of Demography*, US Dept. of Commerce, Washington.
7. United Nations (1973): *The Determinants and Consequences of Population Trends*, Vol.I.

ECO (O)-304C: ECONOMETRICS - II

Unit–I: Simultaneous Equation Models: Single Equation Methods   **(12)**

Introduction – Structural form, reduced form, recursive form and final form model; Simultaneous equation bias and inconsistency of OLS estimators; Identification problem order and rank conditions of identification; Estimation of simultaneous equation model – Single equation model: Indirect least squares (ILS); Instrumental variable (IV); 2SLS and their properties. K-class estimators, Limited information maximum likelihood (LIML) and least variance ratio (LVR)

Unit–II: Simultaneous Equation Method and some Applications   **(12)**

Seemingly unrelated regression equations; System estimators: 3SLS, FIML; Klein's model & Klein' Goldberger model; Simultaneous equation models in production function.

Unit–III: Models of Discrete Choice   **(12)**

Discrete choice models; Latent regression; Random utility models; Bivariate and multivariate probit models; Logit model for multiple choices, Ordered probit model.

Unit-IV: Time Series Analysis   **(12)**

Stationary-Unit roots and co-integration; Dickey-Fuller test, Engle-Granger test, Random walk model; Forecasting with ARIMA modelling, Box-Jenkin's methodology, Vector autoregression; Problems with VAR modelling — Applications; Panel data techniques- Random coefficients model, Fix effects model, Random effect model.

Basic Reading List

1. Bridge, J.L. (1971): *Applied Econometrics*, N. Holland Publishing Company.
2. Chow, G.C. (1983): *Econometrics*, McGraw Hill, NY.
3. Green, W. (2000): *Econometric Analysis*, Prentice Hall, ND.
4. Intrilligator, M.D. (1978): *Econometric Methods, Techniques and Applications*, Prentice Hall, NJ.
5. Johnston, J. (1991): *Econometric Methods*, McGraw Hill, London.
6. Johnston, J. and J. Di Nardo (1997): *Econometric Methods*, McGraw-Hill Companies Inc.
7. Judges, G.H., Lütkepohl and Lee (1994): *The Theory and Practice of Econometrics* (4e), John Wiley.
8. Kmenta, J. (1997): *Elements of Econometrics*, Univ. of Michigan Press, NY.
9. Ramanathan, R. (2002): *Introductory Econometrics with Applications* (5e), South Western Cengage Learning, ND.
10. Theil, H. (1971): *Principles of Econometrics*, John Wiley & Sons Inc.

Additional Reading List

1. Gujarati, D.N. (1995): *Basic Econometrics*, 2e, McGraw Hill, ND.
2. Koutsoyiannis, A. (1977): *Theory of Econometrics*, 2e, Macmillan, London.
3. Additional References will be given at the time of teaching.

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Unit– I: Agriculture and Economic Development (12)

Definition, nature and scope of agricultural economics; Role of agriculture in economic development; Interdependence between agriculture and industry; Models of agriculture development: Lewis Model, Ranis and Fei Model, Schultz theory, Mellor's Model, Boserup's theory; Agricultural diversification; Development of agri-business.

Unit–II: Agricultural Infrastructure (12)

Farming system: Peasant farming and capitalist farming; Land reforms: meaning and aspects of land reforms, Women and land reforms, small farms versus large farms, problems and prospects of small farmers; Five Year Plans on Land Reforms.

Unit–III: Agricultural Production, Productivity and Diversification (12)

Concept of production function; Resource use and efficiency; Production relationships, farm size and productivity; Farm budgeting; Supply behaviour in agriculture; Farm mechanisation and agriculture development; Risk and uncertainty in agriculture- types of uncertainty in agriculture and measures for meeting risk and uncertainty in agriculture. Diversification of Agriculture and its contribution to Agricultural Development in India.

Unit–IV: Agricultural Labour and Unit Market (12)

Agricultural workers-categories and nature of employment; Problems of agricultural workers and remedial measures; Interlocking of factor markets; Agricultural Unit and Rural co-operatives; Kisan Credit Cards (KCCs) and NABARD; Agricultural price policy, Food Security and Public Distribution System

Basic Reading List:

1. Bardhan (1984): *Land Labour and Rural Poverty*, OUP, ND.
2. Bhandari, A. (1984): *The Economic Structure of Backward Agriculture*, Macmillan, Delhi.
3. Dantwala, M.L. et al. (1991): *Indian Agricultural Development since Independence*, Oxford & IBH, ND.
4. De, UK (2003), Economics of Crop Diversification, Akansha Pub house, New Delhi.
5. Griffin, K. (1973): *Political Economy of Agrarian Change*.
6. Gulati, A. and T. Kelly (1999): *Trade Liberalization and Indian Agriculture,* OUP, ND.
7. Kahlon and Tyagi (1983): *Agricultural price policy in India*, Allied Publishers, New Delhi. .
8. Prasad, C. S. (2012): *Agriculture and Sustainable Development in India*, New Century Pub., New Delhi.
9. Rao, C.H.H. (1975): *Agricultural Growth, Rural Poverty and Environmental Degradation in India*, OUP, ND.
10. Rudra, A. (1982): *Indian Agricultural Economics: Myths and Reality*, Allied Publishers, ND.
11. Sadhu, A.N. & A. Singh (2002): *Fundamentals of Agricultural Economics, Himalaya Publishing House.*
12. Saini, G.R. (1979): *Farm Size, Resource Use Efficiency and Income Distribution*, Allied Publishers, ND.

ECO (O)–304E: ECONOMICS OF LAW

Unit-I: Basic Principles of the Economics of Law (12)

Plato and Aristotle on Justice, Roman View of Justice, J. Bentham and the Hedonistic conception of Justice, Rawls and Justice. Formalism and legal realism; Legal Pragmatism; Analytic jurisprudence; Legal positivism; normative theories; Feminist jurisprudence; Law and the economy; Posner's Moral relativism; Economic Analysis of Law, Economics of Offence, Efficiency, Market Failure, Ronald Coase's Theorem, Compensation Principle; The Traditional theory of criminal Law, Economic Theory of Crime and punishment, Efficient punishment, Efficiency of Capital Sentence, Addictive Drugs and Crime; The Economics of Corruption, Corruption and Human Rights, Law relating to Economic Offences.

Unit-II: Issues in Economic Justice (12)

Law and Distribution of income and wealth, Inequality, Contract Theory of Distributive Justice, Economic and Social Costs of Poverty; Economics of Social Sector, Economic basis of Justice, Police and Arms, Public Ownership of Resources and Economic activities; Disinvestment in PSUs; Taxation, justice and efficiency; Balancing private and social costs; National and Global Environmental problems and international Environmental Agreements.

Unit-III: Consumers and the Law (12)

Law relating to Consumer activities, Bargain Theory, Economic Role of Contract, Remedies as incentives formation, defenses and performance excuses; Duress, Bargaining power and unconscious ability, Defining tort law, economics of tort liability, tort liability and economic models; Economics of accidents, fault, victim; Fault and strict liability; Function of damages, Consumer Protection, Consumer Courts.

Unit-IV: Producers and the Law (12)

Law and Business organizations; Structure of firm; Corporations; Corporate vest; Capital, Shares, Debentures; Insiders' trading; Antitrust, RBI, IRDA, MRTP and role of SEBI; Economics of mergers, amalgamation and takeovers; Intellectual property rights.

Basic Reading List

1. Burrows, P. and C.G. Veljanovski (eds.) (1981): *The Economic Approach to Law*, Butterworths, London.
2. Cooter, R.D. and T.S. Ulen (2000): *Law and Economics*, Addison Wesley, NY.
3. Florentini, G. and S. Zamagni (1999): *The Economics of Corruption and Illegal Markets*, Edward Elgar, UK.
4. Horne, J. (1997): *Financial Management and Policy*, Prentice Hall, ND.
5. Oliver, J.M. (1979): *Law and Economics*, George Allen and Unwin, London.
6. Posner, R.A. (1998): *Economic Analysis of Law*, Little Brown, Boston.
7. Schmidth, P. (1984): *The Economic Analysis of Crime and Justice*, Academic Press, Orlendo.

Additional Reading List
1. Agarwal, V.K. (2000): *Bharat's Consumer Protection (Law and Practice).* BLH Publishers, ND.
2. Divan, S. and A. Rosencronz (2001): *Environmental Law and Policy in India*, OUP, ND.
3. Ghosh, T. P. (1999): *Buy Back of Shares*, Taxman Allied Services, ND.
4. Verma, G.P. (1993): *State Liability in India: Retrospect and Prospect*, Deep and Deep, ND.

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ECO (O)-305A: ECONOMICS OF GENDER

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Unit-I: Concept, Importance of Gender Studies: Demography of Gender   **(12)**

Importance of gender studies – Women in patriarchal and matriarchal societies and structures – Gender bias in the theories of values, distribution and population; Demography of female population – causes of declining sex ratios and fertility rates in LDCs and particularly India – Women and their access to nutrition, health, education and community resources and their impact in female mortality and fertility; Feminist criticism of development indices, theories of gender inequality.

Unit-II: Decision making, Economic Activity and Women   **(12)**

Factors affecting decision making by women; property rights, access to and control over economic resources, assets, power of decision making at household, class, community level; economic status of women and its effect in WPR, income level, health and education in developing countries; Concept and analysis of women's work; visible and invisible work, economically and socially productive work; Women in pre-industrial and industrial; societies, female contribution to national income.

Unit-III: Labour Market, Technology, Environment and Women   **(12)**

Factors affecting female entry in labor market, supply and demand for female labor in developed and developing countries; studies of female work participation in agricultural and non-agricultural rural activities, internal sector, cottage and small industries, organized industry and services sector, women & SHGS; Wage differentials in female activities; Determinants of wage differentials, gender, education, skill, productivity, efficiency, opportunity; structure of wage across regions and economic sectors; Impact of technological development and modernization on women's work participation; Female activities and ecological and environmental; concerns – Role of new technologies for helping women.

Unit-IV: Social Security, Gender Planning, Development Policies and Governance   **(12)**

Social security for women: entitlements, economic independence and risk coverage, access to Unit and insurance markets, SHGs & social security; Review of legislations for women's empowerment, social security & property rights – Need for affirmative action on the part of the government; Mainstreaming gender into development policies, gender planning techniques, gender budgeting, gender sensitive governance; Democratic decentralization and women's empowerment.

Basic Reading List

1. Amsden, A.H. (Ed.) (1980): *The Economics of Women and Work*, Penguin, Harmondswosrth.
2. Borerup, E.   (1970): *Women's Role in Economic Development*, George Allen and Unwin, London.
3. Engles, F. (1985): *The Origin of the Family*, *Private Property and the State*, Progress Publications, Moscow.
4. Kabeer, N. (1994): *Reversed Realities: Gender Hierarchies in Development Thought, Kali for Women*, ND.
5. Krishnaraj, M., R.M. Sudarshan and A. Shariff (1999): *Gender, Population and Development*, OUP, ND.
6. Kuhn, A. and A.N. Wolpe (Eds.) (1978): *Feminism and Materialism*, Routledge and Kegan Paul, London.
7. Mies, M. (1998): *Patriarchy and Accumulation on a World Scale: Women in the International Division of Labour*, Zed Books, London
8. Mitra, A. (1979): *Implications of Declining Sex Ratio in India's Population*, Allied, ND.
9. Murthy, K.R. (ed.) (2001): Building Women's Capacities.

10. Sen, G. and K. Brown (1987): *Development, Crises and Alternative Visions*, Monthly Review Press, NY.
11. Seth, M. (2000): *Women and Development: The Indian Experience*, Sage, ND

Additional Reading List

1. Agnihotri, S.B. (2000): *Sex Ratio in Indian Population: A Fresh Exploration*, Sage, ND
2. Desai, N. and M.K. Raj (Eds.) (1979): *Women and Society in India*, Research Centre for Women Studies, SNDT University, Mumbai.
3. Dwyer, D. and J. Bruce (Eds.) (1988): *A Home Divided: Women and Income in the Third World*, Standard University Press, Stanford
4. Government of India (1974): *Towards Equality — Report of the Committee on the Status of Women in India*, Department of Social Welfare, Ministry of Education and Social Welfare, ND.
5. ILO (1978): *Women's Participation in the Economic Activity of Asian Countries*, ILO, Geneva.
6. Kalpagam, -- (1994): Labour and Gender, Survival in Urban India, Sage, ND
7. Narasimhan, S. (1999): *An Alternative Strategy of Empowering Women from Rural India*, Sage, Delhi
8. Papola, T.S. and A.N. Sharma (Eds.) (1999): *Gender and Employment in India*, Vikas, ND.
9. Schultz, T.P. (1988): "Education Investments and Returns", in Chenery, H.B. and T.N. Srinivasan (eds.) *The Handbook of Development Economics*, North Holland, NY.
10. Seth, M. (2000): *Women and Development: The Indian Experiences,* Sage, ND.
11. Yong, K. et al (Eds.) (1987): *Serving Two Masters*, Routledge and Kegan Paul, London.

ECO(O)–305B: ECONOMY OF NORTH EASTERN REGION

Unit-I: Local Economy and its Development (12)

The concept of local economic development-Theories of local economic development-Local economic development practice-Theories and models of local economic development planning-Analytical methods for local economic development planning-Profiling the local economy-Developing local economic development strategy

Unit–II: Structural Transformation and Dimensions of Development (12)

North Eastern Region as an economy; Characteristics of the economy; Structural transformation, implications for development, comparison with the Indian economy; demographic features of the NE economy; Poverty, inequality and human development; Recent trends in employment and unemployment.

Unit-III: Sectoral Aspects of NE Economy (12)

Agriculture: features and challenges; Industry: growth, composition and challenges, North East Industrial and Investment Promotion Policy (NEIIPP) 2007; Services sector; Trends, growth and challenges; Rural economy, Diversification of rural employment; Rural Unit market- characteristics, nature and limitations., Infrastructure and regional economic development, Nature and characteristics of Public finance for NER-trends and challenges.

Unit-IV: Institutions and Development (12)

Institutions and economic Development; Market and market failure in taking care of Development, Governance and development-government failure and its correction; local self-government and development; Community participation and development, community failure; Role of DONER and NEC; New development initiatives in NER, Vision Document 2020 and Act East Policy.

Basic Reading List

1. Brunner Hans-Peter (Ed.) (2010): *North East India Local Economic Development and Global Markets*, Sage Publications
2. Banerjee and Kar (1999): *Economic Planning and Development of North-Eastern States*, Kanishka, ND.
3. Deb, B.J & B. Dutta Ray (2006): *Changing Agricultural Scenario in North-East India*, Concept Publication, New Delhi.
4. Dikshit, K. R and J K Dikshit (Eds.) (2014): *North East India Land People and Economy*, Springer Publication.
5. Maithani, B.P. (1997): *Local Self-Government in North-East India: An Appraisal*, NIRD, Hyderabad
6. Menon, S. (Ed.) (2007): *India's North East Economy-Problems and Prospects*, ICFAI Univ. Press, Hyd.
7. Mishra, B. (2006): *Fiscal Policy in North-East India*, Akansha Publishing House, ND.
8. Nayak. P. (Ed.) (2010): *Growth and Human Development in North- East India*, Oxford University Press.
9. RBI (2006): *Report of the Committee on Financial Sector Plan for North Eastern Region*, RBI.
10. World Bank (2007):Development and Growth in Northeast India The Natural Resources, Water, and Environment Nexus
11. Vision Document 2020, NEC, Shillong. <www.necouncil.nic.in>

Additional Reading List

1. Bhattarcharjee, G. (2014): The Reality of Special Category States, *Economic and Political Weekly*, 29 (40)

2. De, UK. (2016): Look East Policy and North-East India: Achievements and Constraints, Concept Pub. Company, New Delhi

3. Gopalakrishnan, R. (1995): *The North-East India: Land, Economy and People*, Har Anand Publications, Delhi.

4. *Manpower Journal* (2006): Special Issue on North East, Vol.41, No. 2, April-June.

5. Maharatna, Arup and Sinha, A (2011): Long-Term Demographic Trends in North-East India and their Wider Significance, 1901-2001, Institute of Development Studies, Kolkata

6. North East Data Bank, NEDFI, Guwahati.

7. Panda, B. (2012): *Growth, Composition and Determinants of Rural Non-Farm Employment in North East India,* V.V. Giri National Labour Institute, NOIDA

8. Panda, B. (2010): "Economic Growth, Exclusion and Human Development in North Eastern Region of India" in P. Nayak (ed.) *Growth and Human Development in North East India*, Oxford University Press, New Delhi.

9. Rajeev M and A, Akhtar, (2015): Intra and Interstate Inequality in North East Region with special reference to Assam, in R. Battarcharya (ed) *Regional Development and Public Policy Challenges in India*, Springer

10. Sarma, Atul (2006): The North East as a Gateway to South East Asia-Big Dream and Home Truths, *Man & Development*, Vol.28, No. 2 , July.

11. Srivastav, N. (2000): *Survey of Research in Economics on North-East India 1970-1990*, ICSSR, NERC, Regency Publications, Delhi.

12. Srivastav, N. (2006): Industrial Development in the Northeastern States of India: The Case of Service Industries, *Journal of Industrial Economics*, Vol.3, No.4, pp.60-69.

13. Thomas, E.D. (2007): Poverty and Inequality among the North-Eastern States during 1980s and 1990s in Dubey, Kharpuri and Thomas (eds.) *Globalisation and North-East India*, Standard Publishers, ND.

14. Umdor, S. (2006): "Overview of Rural Unit Markets in the Northeastern Region of India", *Journal of Rural Development*, NIRD, Hyderabad, Vol. 25, No.3, pp.425-444.

15. Umdor, S. and B. Panda (2007): Economic Infrastructure in North East India- An Analysis, *Man and Development*, Vol.29, No.1, pp.113-130.

16. Umdor, S (2015): State of Finance of Autonomous Councils in Northeast India: A study of Khasi Hill Autonomous District Council, *Review of Development and Change*, 29(2).

ECO(O)–305C: EXPERIMENTAL ECONOMICS

Unit-I: Preliminaries of Experimental Economics   (12)

Nature and scope of Experimental Economics; Early history of experimental economics; Three paradoxes in Utility theory: The history of consumer choice theory. Anomalies in main-stream economics: Endowment effect, Loss aversion, Status quo bias; Ultimatums, Dictators and Manners, Winner's curse, Prisoner's dilemma; Philosophy of experimental economics; Micro-economic system as an experimental science.

Unit-II: Major Contributors to Experimental Economics   (12)

Early contributors: Daniel and Nicholas Bernoullis (18th century), LL Thurstone (1931), Edward Chamberline (1933, 1948), Stephen Rousseas and Albert Hart (1951), F. Mosteller, F. and P. Nogee, P (1951), J von Neumann and Oscar Morgenstern (1944, 1954), H Sauermann (1959, 1960), D Davidson and J Marschak (1959), S. Siegel and LE Fouraker (1960), Joseph Bower (1965), Contini Bruno (1968) Modern times Contribtors: Vernon Smith, Daniel Kahneman, Alvin Roth, Richard Thaler, Colin Camerer, Reinhaer Selten, Amos Tversky, Charles Holt.

Unit-III: Principles of Experiments and Experimental Design   (12)

Principles of economic experiments: Realism and models; Controlled economic environments; Induced value theory; Parallelism; Practical applications and von Hayek hypothesis. Experimental design: Direct experimental control: Constant and treatments. Indirect control: Randomization; The within-subjects design as an example of blocking and randomization; other efficient designs. Introduction to the major Laboratories of experimental economics: ICES (George Mason), XS-FS (Florida), XLAB (UC Berkeley), Camerer's Group (Caltech), EEPS (Caltech), SSEL (Caltech), PEEL (Pittsburgh).

Unit-IV: Major Areas of Experimental Economics   (12)

Individual decision making; Multi-criteria decision-making; Intransitiveness of preferences; Prospect theory: Decision under risk; Experimental research in Public Goods theory; Experiments in coordination problems; Bargaining experiments and auctions; Experiments in industrial organization; Experimental asset markets

Basic Reading List:

1. Friedman, D. and S. Sunder (1994): *Experimental Methods: A Primer for Economists*, CUP.
2. Kagel, J.H. and A.E. Roth (eds.) (1997): *The Handbook of Experimental Economics*, Princeton Univ. Press.

Additional Reading List

1. An Introduction to Experimental Economics (http://www.webng.com/economics)
2. Anomalies: The Winner's Curse (Richard H. Thaler).
3. Anomalies: Ultimatums, Dictators and Manners (Colin Camerer; Richard H. Thaler).
4. Colin Camerer' site at California Institute of Technology, California, US (Camerer's many papers are downloadable).
5. Economics in the Laboratory (Vernon L Smith)
6. Economics, Psychology, and the History of Consumer Choice Theory (DW Hands) Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias (Daniel Kahneman; Jack L. Knetsch; Richard H.Thaler).
7. Emotions and Rationality: A Critical Review and Interpretation (MT Pham)
8. Experimental Economics: Contributions, Recent Developments, and New Challenges

9. Experimental Economics? (M Ploner)
10. Experimental Methods in Economics (Vernon L Smith)
11. History of Experimental Economics (The New Palgrave Dictionary of Economics)
12. How Basic Are Behavioral Biases? Evidence from Capuchin Monkey Trading Behavior, (M. Keith Chen Venkat Lakshminarayanan and Laurie R. Santos).
13. In Honor of Matthew Rabin: Winner of the John Bates Clark Medal (Colin Camerer; Richard H. Thaler).
14. JessX: software for experiments in economics.
15. Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades (Sushil Bikhchandani; David Hirshleifer; Ivo Welch).
16. Microeconomic System as an Experimental Science (Vernon L Smith).
17. On the Early History of Experimental Economics (A.E. Roth).
18. Prospect Theory: An Analysis of Decision under Risk (Kahneman and Tversky).
19. Some of the Ancient History of Experimental Economics and Social Psychology (Murnighan & Roth).
20. The Philosophy of Experimental Economics: A Bibliography Early Development of Experimental Economics at the Interdisciplinary Crossroads (Lee).
21. The Pittsburgh Experimental Economics Laboratory.
22. Three Paradoxes in Utility Theory (http://www.webng.com/economics).
23. Why Hawks win - (D Kahneman).
24. Working Papers at XLAB UC Berkeley

Many more papers (including those listed above) and links are available at <http://www.webng.com/economics>

ECO(O)–305D: INSTITUTIONAL ECONOMICS-II

Unit-I: Theory of Contracts (12)

The definition of a contract; Legal and economic approach to contracts; Freedom of contract; Bounded rationality and contractual incompleteness; Asymmetric information (hidden characteristics, hidden information/ hidden action, hidden intentions) and opportunistic behavior; Adverse selection and the closing of markets; Signalling, screening and self-selection; Asset plasticity and moral hazard; Principal-agent problem and agency costs; A simple principle-agent experiment in the classroom. Controlling and preventing moral hazard (controlling the agent, incentive contracts, bonding, do-it-yourself method); Attributes of transactions and the choice of a contract; Asset specificity, types of specific assets; Synergy effects, quasi-rents appropriation and hold-up problem; Classification of contracts (classical, neoclassical and relational contracting). Discrete alternative governance structures: market, hybrids and hierarchy; Self-enforcing agreements (Telser) and hostages (Williamson); Hybrids: specific assets and their safeguards. Institutional environment and its role in the choice of contract; The role of trust; Economic approach to trust. Kreps: the trust game; Types of trust (contractual trust, competence trust and good will trust); Explaining the internal structure of formal organizations: transaction costs approach.

Unit-II: The New Institutional Theory of the Firm (12)

Neoclassical theory of the firm; Explanations of the firm in the new institutional theory (F. Knight, R. Coase, A. Alchian and H. Demsetz, O. Williamson, O. Hart); The market and the firm; Comparative analyses of the alternative coordination forms; Internal market and influence costs; The boundaries of the firm; Ownership structure of the firm. A theory of the owner-monitor (Alchian and Demsetz, 1972); Competing forms of economic organization, relative advantages of alternative structures (proprietorships, partnerships, open corporation, regulated firms, public enterprises, nonprofit organizations, labor-managed firms); Separation of ownership and control in the open corporation; Opportunistic behavior of the managers and corporate control. Outsider and insider corporate governance; Privatization (Liberalization and Globalization) in India (and other transition economies): how to control the managers.

Unit-III: The Theory of Institutional Change (12)

Stability of institutions and institutional change; The concept of institutional equilibrium; The main sources of institutional change; Centralized and spontaneous institutional change; The role of the state in the process of institutional change; The problem of compensation of the disadvantaged groups; Theories of selection of efficient institutions in the process of competition (Alchian, Friedman); Institutional change and path dependence; Forms of path-dependence (weak form, semi-strong and strong forms); Institutional changes in contemporary India.

Unit-IV: The New Institutional Theory of the State (12)

Social mechanisms for constraining open access; Contractual theories of the state (Locke, Rousseau), Hobbes predatory theory of the state; North's model of the state; The regulatory role of the state in the Indian economy. The legal system in the institutional framework; Philosophy of jurisprudence before utilitarinism; Formalism and legal realism; Legal Pragmatism; Utilitarian basis of justice and jurisprudence; Analytic jurisprudence; Legal positivism; normative theories; Feminist jurisprudence; Law and the economy; Posner's Moral relativism. Corruption and its economics: the principal-agent framework; incentive structures; the threat system and the authority; collusion, preemptive collusion and ex-post collusion; Rent-seeking behavior and free-riding; Rent-seeking in teams; Rent-seeking in hierarchical systems; Basil model of corruption and

its analysis; Classification of Corruption models; Game-theoretical approaches towards corruption study; Corruption in hierarchical structures; Dynamic corruption models; Welfare implications of corruption.

Basic Reading List

1. Akerlof, G.A. (1984): "The Markets for Lemons: Quality Uncertainty and the Market Mechanism" *Quarterly Journal of Economics*, Vol.84, pp.488-500.
2. Alchian, A. and H. Demsetz (1972): "Production, Information Costs and Economics", *The American Economic Review*, Vol.52, pp.777-795.
3. Coase R. (1937): "The Nature of the Firm", *Economica*, Vol.4, pp.386-405.
4. Eggertson, Thr. (……….): *Institutions and Economic Behavior*, Ch.6, pp. 170-175.
5. Eggertson, Thr. (…….): *Institutions and Economic Behavior,* Ch.6, pp.157-190.
6. Eggertson, Thr. *Institutions and Economic Behavior*. Ch.9-10, pp.281-358.
7. Hart, O. (1989): "An Economist's Perspective on the Theory of the Firm", *Columbia Law Review*, Vol.89, p.1757.
8. Joskow, P. (1987): Contract Duration and Relationship-Specific Investments: Empirical Evidence from Coal Markets", *American Economic Review*, Vol.77, pp.168-173.
9. Milgrom, P. and J. Roberts (……..): *Economics, Organisation and Management*, Ch.5, pp.126-166, Ch.6, pp.166-205, Ch.8, pp.269-279, Ch.9, pp.307-313, Ch.16, pp.538-584.
10. Milgrom, P. and J. Roberts (…….): *Economics, Organization and Management*. Ch.9, pp.313-325, Ch.15, pp.482-527.
11. North, D. (1990): *Institutions, Institutional Change and Economic Performance*, CUP, Ch. 9-14.
12. Rose-Ackerman, S. (2006): *Handbook on the Economics of Corruption*, Edward Elgar Publishing Inc, Northampton, MA.
13. Venjanovski, C. (2006): *The Economics of Law* (2e), The Institute of Economic Affairs and Profile Books Ltd, London. <http://www.iea.org.uk/files/upld-book391pdf?.pdf>

Additional Reading List

1. Andrew, S. (2005): *Essays on the Economics of Corruption*, Ph.D. dissertation, Boston College. <http://proquest.umi.com/pqdlink?Ver=1&Exp=03-11-2013&FMT=7&DID=920928101&RQT=309& attempt =1&cfc=1>
2. Alchian, A. (1987): "Woodward S. Reflections on the Theory of the Firm", *Journal of Institutional and Theoretical Economics*, Vol.143, pp.110-136.
3. Bebchuk, L. and M. Roe (2000): "A Theory of Path Dependence in Corporate Ownership and Governance", *Stanford Law Review*, Vol.52, pp.127-70.
4. Brinig, M. (1990): "Rings and Promises", *Journal of Law, Economics and Organization*, Vol.6, pp.129-141.
5. Bromley, D. (1989): "Institutional Change and Economic Efficiency", *Journal of Economic Issues*, Vol.23, No.3, September.
6. Cheung, S. (1983): "The Contractual Nature of the Firm", *Journal of Law and Economics*, Vol.26, pp.1-21.
7. David, P. (1985): "Clio and the Economics of QWERTY", *American Economic Review*, Vol.75, Papers and Proceedings pp.332-337.
8. Demsetz, H. (1992): *The Emerging Theory of the Firm*, Uppsala.
9. Fama, E. and M. Jensen (1983): "Agency Problems and Residual Claims", *Journal of Law and Economics*, Vol.26, pp.327-349.
10. Greif, A. (2005): "Commitment, Coercion and Markets: The Nature and Dynamics of Institutions Supporting Exchange" in Menard and Shirley (eds.), *Handbook of New Institutional Economics,* Springer, <http://ksghome.harvard.edu/~.drodrik.academic.ksg/papers.html   http://www-econ.stanford.edu/faculty/ Greif_Papers/Commitment_Coercion_Markets.pdf>
11. Hart, O. (2001): "Norms and the Theory of the Firm", *University of Pennsylvania Law Review*, Vol.149, pp.1701-1715.

12. Jensen, M. and W. Meckling (1976): "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure", *Journal of Financial Economics*, Vol.3, pp.305-360.

13. Klein, B. (2000): "Fisher-General Motors and the Nature of the Firm", *Journal of Law and Economics*, Vol.43, pp.103-141.

14. Klein, B., R. Crawford and A. Alchian (1978): "Vertical Integration, Appropriable Rents and the Competitive Contracting Process", *Journal of Law and Economics*, Vol.21, pp.297-326.

15. Knack, S. and P. Keefer (1997): "Why Don't Poor Countries Catch Up? A Cross National Test of An Institutional Explanation", *Economic Inquiry*, Vol.35.

16. Kreps, D. (1990): "Corporate Culture and Economic Theory" in *Perspectives on Positive Political Economy,* CUP, Cambridge.

17. Manne, H. (1965): "Mergers and the Market for Corporate Control", *Journal of Political Economy*, Vol.73, p.110.

18. Margolis, S. and S. Liebowitz (…......): "Path Dependence" in P. Newman *The New Palgrave Dictionary of Economics and the Law,* Vol.3, pp.17-22.

19. McGuire, M., M.J. Olson (1996): The Economics of Autocracy and Majority Rule: The Invisible Hand and the Rule of Force", *Journal of Economic Literature*, Vol.34, March, pp.72-96.

20. Menard, C. (……..): "Inside The Black Box: The Variety of Hierarchical Forms". In Groenewegen J.L. (Ed.) *Transaction Cost Economics and Beyond*, Kluwer Academic Publishers, pp.149-170.

21. Menard, C. (1996): "On Clusters, Hybrids and Other Strange Forms: The Case of French Poultry Industry", *Journal of Institutional and Theoretical Economics*, Vol.152, pp.154 -183.

22. North, D. (1981): *Structure and Change in Economic Theory,* Norton, Ch.3., N.Y. and London:

23. Ortmann, A. and D. Colander (1997): "Teaching Tools. A Simple Principal-Agent Experiment for the Classroom", *Economic Inquiry*, Vol.35, April, No.2, pp.443-450.

24. Robert Hall and Charles I. Jones (1999): "Why Do Some Countries Produce So Much More Output per Worker than Others?" *The Quarterly Journal of Economics*, Vol.114, No.1, pp.83-116, February. <http://papers.nber.org/papers/W6564.pdf>

25. Rodrik, D. (2000): "Institutions for High-Quality Growth: What they are and How to acquire them". <http://papers.nber.org/papers/W7540.pdf>

26. Rodrik, Dani, A. Subramanian and F. Trebbi (2002): "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development" August.

27. Roe, M. (1996): "Chaos and Evolution in Law and Economics", *Harvard Law Review*, Vol.109, pp.641-658.

28. Schleifer and Vishny (1997): "A Survey of Corporate Governance", *Journal of Finance*, Vol.52, p.737.

29. Shelanski, H. and P. Klein (1995): "Empirical Research in Transaction Cost Economics: A Review and Assessment", *Journal of Law, Economics and Organization*, Vol.11, No.2, pp.335-361.

30. Williamson, O. (1996): "Comparative Economic Organization: The Analyses of Discrete Structural Alternatives", in *Mechanisms of Governance*, OUP.

31. Williamson, O. (1985): *The Economic Institutions of Capitalism*. The Free Press, N.Y., Ch.1-3, pp.15-85.

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ECO (O)-305E: MATHEMATICAL ECONOMICS

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Unit-I: Preliminaries of Mathematical Economics   (12)

An introduction to competitive market economy; individualism; the institution of private property, freedom to produce, own, consume, allocate and dispose of; freedom to profession; pecuniary standards, social approval of profit-earning; Market as an institution; the concept and emergence of competition; forces of demand and supply; price formation; price as a signal to individual agents; price mechanism and resource allocation. Mathematical economics as an axiomatic system: axiomatization of agents' behavior (consumers and producers); consistency of axioms to the formal market mechanism; Market mechanism as an interaction of forces; different concepts and kinds of equilibrium. Basic issues of the competitive market economy: the issues regarding existence, uniqueness and stability of competitive equilibrium; the issue of expansion (growth) of a competitive market economy; smooth vs. oscillatory and jerky expansion; the issue of justice to all agents; the issue of optimality of the competitive market economy.

Unit-II: Existence of Competitive Market Equilibrium   (12)

Necessity of well-behaved laws of demand and supply for existence of a competitive market equilibrium- motivation to development of the theory of agents' behavior; the consumption set and its compactness, quasi-ordering and preference ordering, utility function, concepts of strong and weak convexity, convexity of preference ordering. The demand function: the theory of consumer's behavior; maximization of a utility function under budget constraints; Hicks-Slutsky equations; the axioms of revealed preference; various concepts of semi-continuity, the maximum theorem of Berge; Derivation of the law of demand; optimality of budget allocation. The supply function: the production function, convexity of production function, maximization of production function under resource constraints, duality of cost function and its minimization; activity analysis and optimum allocation of resources; derivation of supply and cost functions. The concept of general competitive equilibrium: the Walras-Wald-Cassel-Schlesinger system; Brower and Kakutani's fixed point theorems, The Gale-Nikaido existence theorem on competitive equilibrium; McKenzie's axiomatization and proof of competitive equilibrium.

Unit- =III. Uniqueness and Stability of Competitive Equilibrium   (12)

Definition of uniqueness of equilibrium, Wald's axioms and proof; Nikaido's lemmas and proof of uniqueness of competitive equilibrium; Concepts of stability of equilibrium, Marshallian vs. Walrasian stability, local and global stability, quasi-stability; A dynamic economy as a system of homogeneous differential equations; system of linear differential equations; the Eigen-system, Routh-Hurwitz necessary and sufficient conditions of stability; nonlinear differential equations and its linear approximation system (LAS), stability of LAS. The tatonnement and the non-tatonnement processes; the gross substitutability and homogeneity assumptions, barter process and its stability (Negishi); the Edgeworth process ant proof of its stability by Uzawa, Hahn and Morishima; the Hahn-Negishi process and its stability.

Unit-IV: Optimality, Justness and Expansion of the Competitive Economy   (12)

The concept of Pareto improvement and optimality, Arrow-Debreu axioms and proof of Pareto-optimality of competitive equilibrium; reallocation of resources; proof of every Pareto optimum being supported by reallocation-permitting competitive equilibrium; a critical view of the basic axioms; The concept of justice; the law of reciprocal demand of resources, marginal productivity, the adding up problem and Euler's theorem, Duality and opportunity cost; the concept of compensation. The theory of core; Edgeworth-Bowley diagram, existence of solution, proof by Debreu and Scarf; re-contracting; concept of coalition formation, blocking of coalition, dominance, existence of core, Debreu-Scarf's proof of every competitive equilibrium being in core; Empty core and market failure, demonstration by Shapley and Shubik; The neoclassical

aggregate growth model (fundamental equation), Solow's theorem of feasible growth path, the golden rule path, feasible Euler path, attainable path, optimal growth path. Ramsey-Koopmans-Cass theorem, modified golden rule path, Optimality of competitive path of growth, proof by Gale; Von Neumann growth path, Sensitivity analysis and Brock's theorem.

Basic Reading List

1. Aliprantis, C.D., D.J. Brown and O. Burkinshaw (1990): *Existence and Optimality of Competitive Equilibria*, Springer Verlag, Berlin/New York.
2. Allen, R.G.D. (1976): *Mathematical Economics*, Macmillan, London.
3. Arrow, K.J. and M.D. Intriligator (1982): *Handbook of Mathematical Economics*, Vols. I, II, and III, North Holland, Amsterdam.
4. Aubin, J.P. (1998): *Optima and Equilibria*, Springer Verlag, Berlin.
5. Clower, R.W. (1995): "Axiomatics in Economics", *Southern Economic Journal*, 62(2):307-319. <http://www.thefreelibrary.com/Axiomatics+in+economics.-a017478990>
6. Cowles Foundation Papers (1943-2004): <http://www.freewebs.com/nehu_economics>
7. Evstigneev, I.V. and K.R. Schenk-Hoppé (2006): The von Neumann-Gale Growth Model and its Stochastic Generalization. <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=887409>
8. Fishburn, P.C. (1970): *Utility Theory for Decision Making*, J. Wiley, New York
9. Gale, D. (1956): "A Closed Linear Model of Production" in H.W. Kuhn and A.W. Tucker (eds.) *Linear Inequalities and Related Systems*, Princeton Univ. Press, Princeton.
10. Gale, D. (1960): *The Theory of Linear Economic Models*, McGraw-Hill.
11. Gale, D. (1968): "A Mathematical Theory of Optimal Economic Development", *Bulletin of the American Mathematical Society*, 74: 207-223.
12. Neumann, P. (1968): *Readings in Mathematical Economics*, John Hopkins Press, Baltimore.
13. Roser, J.B. and K.L. Cramer (2002): "Weintraub on the Evolution of Mathematical Economics: A Review Essay". <http://cob.jmu.edu/rosserjb/Weintraub.Mathecon..doc>
14. Takayama, A. (1985): *Mathematical Economics*, The Dryden Press, Illinois.
15. Weintraub, E.R. (2002): *How Economics Became a Mathematical Science*, Duke Univ. Press, Durham.