

# **TRIPURA UNIVERSITY**

**MASTER OF ARTS (M.A.)**

**IN**

**ECONOMICS**



**CURRICULUM STRUCTURE**

**(With Effect from Academic Session 2020-21)**

**FIRST & THIRD SEMESTER: JULY-DEC**

**SECOND & FOURTH SEMESTER: JAN-JUNE**

**Tripura University (A Central University)**

**Suryamaninagar, Agartala, Tripura West-799022**

### **Program Educational Objectives (PEO's):**

The Department of Economics established in 1978 (as part of the Post Graduate Centre of Calcutta University), offers undergraduate, postgraduate and doctoral programmes. The teaching activities of the Department have acquired a wider perspective with the introduction of Integrated Master Degree (Major in Economics) from the academic year 2010-11. At the post graduate level, the Department offers the special papers: Economics of Rural Development and Planning, Environmental Economics, Health Economics, Econometrics and Statistics. The syllabus also incorporates the regional and local issues related to economic development of North East Region and the State. The first batch of students under the semester system, have completed their course in June 2010. After the introduction of Research Eligibility Test (RET) in 2008 and Course Work-based Ph. D programme a good number of scholars have successfully obtained their Ph. D Degree with requisite credits as per UGC Ph. D Regulations 2014 & 2016. The Department received financial assistance under UGC-SAP-DRS-I in 2011 and is upgraded to DRS-II in 2018. Various evaluation, monitoring and consultancy for both Central and State Government projects are also undertaken by the faculty members of the department. Tripura University was the Monitoring Agency for SSA and is also the institutional monitor for CAPART. The activities in this regard are performed by the faculty members of the department. The main Program Educational Objectives (PEO's) for Master of Arts (M.A.) in Economics of the Department are listed below:

1. To provide elaborate knowledge regarding principles of Economics and their applications in day-to-day life
2. To sensitize the students with the prevailing domestic and international economic issues
3. To develop analytical thinking skills to study and evaluate the various socio-economic issues and public policies and their gender implications
4. To equip students with quantitative skills and analyse problems with empirical evidences

5. To expose students to the theories and functioning's of the monetary and financial sectors of the economy
6. To equip the students with policy formulation and economic administration
7. To enable the students to examine the impact of national and international trade policies
8. To enable the students to identify the research issues in Economics with an interdisciplinary perspective along with gender dimension
9. To provide employability skills through skill-oriented and application-oriented courses on computer, institutional visits, field survey and internship
10. To instil in students socially responsible values through innovative teaching and outreach programmes

**Jobs Prospects:** Graduate students have multiple opportunities in academics (as teachers in university, college and schools, as researchers in research foundation), administration (civil and corporates). Students are currently working as various fields of Central and State Government.

**Program Specific Outcomes (PSO's):**

The M.A. in Economics program emphasizes practical applications of economic theories and principles in their workplace towards social development. It is organized to provide students with analytical tools by which they can solve many economic problems existing in the real world.

After successful completion of the program, the students will be able to apply:

**1. Critical thinking**

- a. Apply economic analysis to evaluate everyday problems
- b. Apply economic analysis to evaluate specific policy proposals

**2. Quantitative reasoning skills**

- a. Understand how to use empirical evidence to evaluate an economic argument

- b. Obtain or collect relevant data using specific research methods
- c. Interpret statistical results
- d. Perform appropriate statistical analysis of data using social science packages
- e. Develop deeper quantitative thinking skills

**3. Problem-solving skills**

- a. Analyse problems that have clear solutions
- b. Propose solutions for problems that do not have clear answers

**4. Communication skills**

- a. Communicate effectively in written or spoken form about specific economic issues
- b. Develop a well-organized written argument that states hypothesis
- c. Present an economic argument orally.

**5. Leadership Skills:**

- a. Graduates will be able to have leadership skills with high regard for ethical values and social responsibility through the effective use of flexible CBCS based courses.

**6. Modern Tools usage:**

- a. Graduates will be able to handle new techniques, advanced tools and statistical packages

**7. Evaluation Scheme for Courses:**

<b>Internal Exam</b>	<b>End Semester Exam</b>	<b>Total</b>
30 marks	70 Marks	100 Marks

**8. Course Requirements**

- a. Students have to obtain at least 80 Credits of which 64 credits should be from Core courses and 4 credits from the compulsory foundation;
- b. At least 04 credits to be obtained from other departments

**Programme Structure**

	Paper Code	Paper Name	Credits			Marks
			<u>L</u>	<u>P</u>	<u>T</u>	
S E M E S T E R 1	ECON 701C	Microeconomic Analysis I	4	0	4	100
	ECON 702C	Macroeconomic Analysis- I	4	0	4	100
	ECON 703C	Development Economics	4	0	4	100
	ECON 704C	Indian Economics	4	0	4	100
	ECON 705C	Elementary Quantitative Economics	4	0	4	100
S E M E S T E R II	ECON 801C	Microeconomic Analysis-II	4	0	4	100
	ECON 802C	Macroeconomic Analysis-II	4	0	4	100
	ECON 803C	Basic Statistics and Econometrics	4	0	4	100
	ECON 804C	Economics of Social Sector	4	0	4	100
	ECON 805E	Quantitative Techniques in Economics	4	0	4	100
	ECON 806E	Research Methods in Social Science	4	0	4	100
S E M E S T E R III	ECON 901C	Public Economics	4	0	4	100
	ECON 902C	International Trade and Development	4	0	4	100
	ECON 903C (Any of the four)	i) Agricultural Economics- I	4	0	4	100
		ii) Mathematical Economics- I	4	0	4	100
		iii) Econometrics-1	4	0	4	100
		iv) Health Economics-I	4	0	4	100
	ECON 904C	Institutional/Field Visit & Report	0	4	4	100
	ECON 905F	Computer Applications in Economics	2	2	4	100
ECON 906E	Environment & Resource Economics	4	0	4	100	

Programme Structure (Continued)

	Paper Code	Paper Name	Credits			Marks
			L	P	T	
S E M E S T E R  1V	ECON 1001C	Economics of Northeast region of India	4	0	4	100
	ECON 1002C	Dissertation/ Projects/ Field Study Report [with comprehensive seminar viva-voce]	0	4	4	100
	ECON 1003C [Same special paper to be retained]	i) Agricultural Economics- I	4	0	4	100
		ii) Mathematical Economics- I	4	0	4	100
		iii) Econometrics-1	4	0	4	100
		iv) Health Economics-I	4	0	4	100
	ECON 1004E	History of Economic Thought	4	0	4	100
	ECON 1005E	Internship	0	4	4	100

*Note: (i) L – Lecture; P – Project /Practical /Lab /All other non-classroom activities; T- Total; C- Core Papers; E- Elective Papers; F – Foundation Papers (Compulsory)*

**Credit Structure**

Credits	Core	Elective	Foundation	Total	Remarks
<b>Semester 1</b>	20	0	0	20	Free to choose <b>04 credits</b> from any other programmes
<b>Semester 2</b>	16	8	0	24	
<b>Semester 3</b>	16	4	4	24	
<b>Semester 4</b>	12	8	0	20	
<b>Total</b>	<b>64</b>	<b>20</b>	<b>4</b>	<b>88</b>	<b>At least 80 credits to be obtained for PG Degree</b>

## **COURSE STRUCTURES**

### **MA 1st Semester**

ECON 701C	Microeconomic Analysis -I 4 Credits (Lecture/Theory)
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**Course Objectives:** This paper aims at analyzing the Economic behaviour of the consumers, firms and markets. It is mainly concerned with the objective of equipping the students in a comprehensive manner with various aspects of consumer behaviour and demand analysis, production theory and cost, equilibrium of firm under various forms of market.

**Course Outcomes:** The students will be able to:

**CO1:** Know the basic principles of consumer behavior and consumer decision making;

**CO2:** Understand the production process, analyse the costs of a firm under different market structures

**CO3:** Understand the organization and functioning of modern firms;

**CO4:** Understand the decision-making under uncertain and risky situations;

**Course Contents:**

**Theory of Choice and Individual Demand:** Axioms of Consumer Preference, Consumer Equilibrium: Indifference Curves approach, Income effect and Substitution effect (Slutsky and Hicks) - compensated demand curves and Revealed Preference Approach. Duality of Utility maximization (Indirect Utility Function, Roy's Identity-Marshallian Demand) and Expenditure Minimisation (: Expenditure Function-Shepperd's Lemma, Hicksian Demand)

**Production, Costs and Theory of Firms:** Production Function for single product and multi product firms, homogeneous production functions, Cobb-Douglas and C.E.S. production function. Cost of production: Short- run and Long-run costs, types of cost curves. Isoquants, profit maximization, cost minimization and derivation of cost function from production function. Equilibrium of a firm under perfect competition (short run and long run), monopoly, price discrimination, monopolistic competition, bilateral monopoly and oligopoly.

**Alternative Theories of Firm:** The marginalist controversy. The average cost pricing theory. Bain's limit pricing theory and its recent developments- Sylos-Labini and Modigliani's model. Baumal's theory of sales revenue maximization: Static and Dynamic model. Williamson's model of managerial discretion, Morris model of managerial enterprise. Full cost pricing rule, Behavioural model of the firm.

**Decision Making Under Uncertainty:** Uncertainty and Risk - Choice under Uncertainty and Risk, Von Neumann Morgenstern Expected utility function-consumers equilibrium under uncertainty-individual's attitude toward risk-risk aversion. Insurance and Gambling.

**Reading list:**

1. Koutsoyannis, A. Modern Microeconomics, ELBS, Macmillan Press, London.
2. Sen, A. (1999): Microeconomics: Theory and Applications, OUP, ND.
3. Varian, Hall R. Intermediate Microeconomics, W.W. Norton & Company, New York, London.
4. Mas-Colell, Andreu, Michael D. Whinston and Jerry R. Green, Microeconomic Theory, Oup, New York.
5. Layard, P.R.G. and A.A. Walters Microeconomic Theory, McGraw Hill, NY.
6. Maddala, G.S. and E. Miller, Micro Economics- Theory and Applications, McGraw, New Delhi.
7. Silberberg E., The Structure of Economics: A Mathematical Analysis, McGraw-Hill.
8. Baumol, W.J. Economic Theory and Operations Analysis, Prentice Hall, ND.
9. Salvatore, D. Managerial Economics in a Global Economy with Economic Applications (5e), CENGAGE Learning/South Western.
10. Dobbs, I. (2000): Managerial Economics, OUP, ND.
11. Cyert, R.M. and R. March: A Behavioral Theory of the Firm, Prentice Hall.

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ECON 702C	Macroeconomic Analysis -I 4 Credits (Lecture/Theory)
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**Course Objectives:** Macroeconomics deals with the movement, fluctuations and growth in economic aggregates like income, employment interest rates and the price level. It attempts to explain the past behaviour of such variables, predicts the likely future events, and helps policy makers to formulate the appropriate policies for improving the economic welfare of a country. The basic objective of this course is to help the learners in proper understanding of the economic aggregates.

**Course Outcomes:** The student will be able to:

**CO1:** Understand the basic concepts and various approaches to macroeconomics;

**CO2:** Know the systematic facts and latest theoretical developments for empirical analysis;

**CO3:** Acquire a logical and consistent framework for understanding the contemporary macroeconomic facts and events;

**CO4:** Understand the impact of economic policies in an open economy framework

**Course Contents:**

**Schools of Macroeconomic Thoughts:** Classical, Keynesian, Neo Classical,



Monetarism, New Keynesian and New Classical Macroeconomics and other schools of Thought – features, determination of output and employment.

**New Classical Economics:** Rational expectations hypothesis: Barro – Lucas model, anticipated and unanticipated monetary shocks and equilibrium business cycles, issue of time inconsistency Real Business Cycle – Inter temporal substitution of labour, Propagation mechanism, policy issues.

**New Keynesian Economics:** Sticky price and Efficiency wage models, Models of staggered wages and prices, Strategic complementarity and coordination failure, Adverse selection in credit market and equilibrium credit rationing.

**Open Economy Macroeconomics:** Foreign Exchange Market and Income Determination, Capital flow and effective demand: Mundell – Fleming model and policy effectiveness under alternative exchange rate regimes. Inflation and Monetary Policy: Inflation, Money growth and Interest rates, Monetary Policy and the term structure of interest rates, The dynamic inconsistency of low-inflation monetary policy.

**Suggested Readings:**

1. Snowdon, B. and H. R. Vane, Modern Macroeconomics: Its Origins, Development and Current State
2. Attfield, C. L. F., Demery, D. and Duck, N. W, Rational Expectations in Macroeconomics: An Introduction to Theory and Evidence
3. Dornbusch, Fischer and Startz, Macroeconomics
4. Mankiw and Romer (ed.), New Keynesian Economics
5. Gali, J, Monetary Policy, Inflation, and the Business Cycle
6. Froyen, Richard T, Macroeconomics, Pearson Education.

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ECON 703C	Development Economics 4 Credits (Lecture/Theory)
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**Course Objectives:** This paper aims to enable the students to know about theories of growth and development, sectoral aspects of development, importance of economic policies and techniques of planning and its recent adaptations in the light of market dominated strategy.

**Course Outcomes:** By studying this paper, the students will learn:

**CO1:** The concept and meaning of growth and development along with its measurement;

**CO2:** The importance of sustainable development;

**CO3:** HDI and other sources of quality of life and role of institution in economic development;

**CO4:** Various models of growth and development;

**CO5:** Importance of economic policies in development planning along with the

techniques of planning.

### **Course Contents:**

**Growth and Development:** Concept of Economic Growth, Economic Development and Sustainable Development; Role of Natural and Human Resources in Economic Development. Theories of Economic Development: Classical, Marx and Schumpeterian Theories of Economic development, Lewis Model of Unlimited supply of labour and Theories of Balanced and Unbalanced Growth.

**Strategies of Economic Development:** Stages of Economic Growth: Rostow and Marx, Structural, Institutional Transformation and Modes of Production. Underdevelopment and Theories of Dualism: Vishny's approach to vicious circle of poverty, Theories of Dualism, Low Level Equilibrium Trap, Problems of Capital Accumulation – Adam Smith to Marx. Leibenstein's Critical Minimum Effort Thesis, the Big Push, Choice of Technique and Investment Criteria; the Informal Sector, Rural-urban migration of labour – Harris-Todaro model.

**Trade, Environment and Development:** Dependency Theories of Development: Colin Clark and Simon Kuznet, Paul Baran, Frank, Amin and Emmanuel. Economic Growth and Changing Comparative Advantage, Terms of Trade and Economic Development, Vent for surplus, Prebisch doctrine, Prebisch-Singer Thesis, Dual Gap Analysis. Environment and Development: Common Property Rights, Tragedy of Commons, Environmental Accounting, Poverty and Environment, Policies for Environmental Regulation.

**Human Beings at Centre-Stage:** Poverty and Human Deprivations: Relative and Absolute deprivations, Poverty Line, Head-count Ratio, Poverty gap ratio, Human Poverty Index, Human Development Index, Multidimensional Poverty Index; MDGs and SDGs. Concept and measures of inequality- Lorenz Curve, Range, Coefficient of variation, Gini Coefficient Social Exclusion and Inclusive Policy: Social Dimensions of Poverty – rural poverty, women, ethno-religious minorities and indigenous population; Tackling Poverty – the World Bank approach.

### **Suggested Readings:**

1. Kaushik Basu. Analytical Development Economics: The Less Developed Economy Revisited. Oxford University Press
2. Debraj Ray. Development Economics. Oxford University Press.
3. M. P. Todaro and S. C. Smith. Economic Development. Pearson Education
4. G.M. Meier and J. E. Rausch. Leading issues in Economic Development. Oxford University Press •
- 5.P. Thirlwall. Growth and Development. Palgrave McMillan.
6. Y. Hayami and Y. Godo. Development Economics: From the Poverty to the Wealth of Nations. Oxford University Press
7. S. Fukuda-Parr and A. K. Shiva Kumar. Readings in Human Development. OUP

8. Lipsey and Chrystal. Economics. Oxford University Press
9. Behrman, S. and T. N. Srinivasan. Handbook of Development Economics (Vol. 3). Elsevier •
10. Barro, R. and X. Sala-i-Martin. Economic Growth. McGraw Hill
11. N. Gregory Mankiw. Macro-Economics (4th Edition or latest). McMillan
12. S. Subramanian, S. Measures of Inequality and Poverty. Oxford University Press
13. Council for Social Development. India: Social Development Report (Various Issues). Oxford University Press
14. UNDP. Human Development Report [Technical Notes] (Various Issues)

ECON 704C	Indian Economics 4 Credits (Lecture/Theory)
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**Course Objectives:** The objective of the paper at the Master's level would be to sharpen the analytical faculty of the students, by highlighting an integrated approach to the functioning aspects of the Indian economy, keeping in view the scope for alternative approaches. Such an analysis is essential because the Indian economy is a unique amalgam of alternative competing and often conflicting theories and a proper understanding of its working is imperative if the student is to comprehend the ramifications that underlie most of the observed phenomena in the Indian economic set-up. The emphasis of the paper is on overall social, political and economic environment influencing policy decisions. To develop all these themes, the course is divided into specific modules.

**Course Outcome:** The students will be able to;

**CO1:** Understand the Indian Economic Problems;

**CO2:** Analyses the Regional variations and policy implication;

**CO3:** Understand the overall agricultural and economic development;

**CO4:** Emphasis the overall social, political and economic environment influencing policy decisions.

**Course Contents:**

**Demography, Unemployment and Poverty:** Demographic features and trends- National population policies-2000, Unemployment and underemployment issues - Jobless growth and rising unemployment; Poverty in India-perspectives and measures, Trend of Poverty -Pre and post reforms; Poverty alleviation programmes.

**Agriculture:** Indian agriculture- an overview of performance and issues -the need and scope for land reforms, objectives of land reforms, A critical analysis of land reform measures introduced in India, The success and drawbacks of Green Revolution and the way ahead. Agricultural price policy, Indian Agriculture and WTO

**Industry:** New Industrial Policy, 1991 & Industrial Policy, 2017 (Paper discussion); Disinvestment Policy, Micro, Small and Medium Enterprises (MSME) Development Act, 2006; National Manufacturing Policy, 2011, Recent Trends in India's Industrial Growth, Public sector – Role and Performance

**India in Global Context:** Service Sector in India-Implications for International Trade, India and the World Economy- The Uruguay Round of Trade Negotiations (TRIPS & TRIMS) and WTO; Trade and Investment-Structure and direction of foreign trade, international trade policies and liberalization; Capital Account Convertibility and FDI; Role of MNCs in the Indian Economy - Merits and Demerits.

**Reading List:**

1. Bhawati Jagadish and Arvind Panagariya (2013): Why Growth Matters: How economic Growth in India Reduced Poverty and 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. Datt and Sundaram (latest edition): Indian Economy, S Chand and Company, New Delhi.
7. Dreze J. And A.k. Sen (2013), Uncertainty Glory: India and Its Contradiction by Prince ton University Press.
8. Dantwala M.L. (ed.) (1991), Indian Agricultural Development since Independence, Second Revised Edition, Oxford & IBH Publishing Co. (General Reference).
9. Indian Economic Survey- latest issue
10. K.L. Krishna, Kristy Tsun-tzu Hsu (Eds.) (2009): Readings in Indian Agriculture and Industry, Academic Foundation
11. Kapila, Umma (Ed) (2014): Indian Economy since Independence. 25th edition, Academic Foundation, Delhi.
12. Kapila, Umma (2015): Indian Economy: Performance and Policies: 2015-16, Academic Foundation.
13. Mookherjee Dilip, (1998), (Ed.) Indian Industry-Policies and Performance, Oxford University Press, Delhi.
14. Nagaraj R (Ed) (2012): Growth Inequality and Social Development in India. Is Inclusive Growth Possible? London, Palgrave Macmillian.
15. Raj Kapila and Uma Kapila (2007). Economic Developments in India, Academic Foundation, New Delhi.
16. Sandesara, J.C. (1992): Industrial Policy and Planning, 1947-91: Tendencies,

Interpretation and issues. Sage, ND.

17. Tendulkar, S.D and T.A. Bhavani (2007): Understanding reforms –Post 1991 India, OUP.
18. Vaidhanathan, A. (1995), The Indian Economy: Crisis, Response and Prospects, Orient Longmans, New Delhi

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ECON 705C	Elementary Quantitative Economics 4 Credits (Lecture/Theory)
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**Course Objectives:** This paper aims to enable the students to know about preliminary mathematical concepts as well as statistical concepts related to Algebra, Calculus, Measures of Central Tendency, Measures of Dispersion and Index Numbers etc.

**Course outcomes:** The students will be able to

**CO1:** Development of knowledge about preliminary mathematical concepts specially related to real valued, concave, quasi concave and continuous functions;

**CO2:** Development about the concept of matrices and determinants with its application

**CO3:** Development of basic concepts of set theories especially convex, hyper planes, half spaces, separating and supporting hyper planes;

**CO4:** Development of knowledge about Differential and Integral Calculus and application in economics.

**CO5:** Understanding the knowledge of Central Tendency and Measures of Dispersion and its use to analyze the data, Construction of different indices using socio-economic data.

**Course Contents:**

**Preview to Algebra:** Linear Algebra (Polynomial equations), Matrix Algebra – Abstract Algebra (Set theory)

**Differential Calculus & Integral Calculus:** Functions, Limits, First order and second order Differential Calculus (Single derivative and partial derivative), Indefinite Integral and Definite Integral

**Measures of Central Tendency & Measures of Dispersion:** Mean-Median-Mode, Measures of Dispersion (Absolute and Relative), Moments

**Index Number & Vital Statistics:** Methods of construction of Index Numbers-Cost of Living Index-Paasche' Index, Laspeyers Index, Fisher Index, Concept of Vital statistics.

**Suggested Readings:**

1. Allen, R.G.D (1976): Mathematical Economics, Macmillan, London.
2. Arrow, K.J. and M. Intrilligator (Ed.) (1982): Handbook of Mathematical Economics, Vol.- I, II, and III, North Holland, Amsterdam.

3. Chiang, A.C. (1986): Fundamental Methods of Mathematical Economics, McGrawHill, New York.
  4. Gun A.M, Gupta, M.K and Dasgupta, B (2016): An Outline of Statistical Theory, World Press.
  5. Das, N.G.: Statistical Methods, M. Das & Co.
  6. Hall and Knight: Higher Algebra, Arihant Publishers, New Delhi.
  7. Apostol, Tom, M (2017): Calculus: Multivariable Calculus and Linear Algebra with Applications to Differential Equation, Vol.2, Willey & Sons.
  8. Rowcroft, J.E. (2005): Mathematical Economics: An Integrated Approach, Prentice Hall.
  9. Silberberg, E. (1998): The Structure of Economics: A Mathematical Analysis, McGraw-Hill, International Edition.
  10. R.V. Hogg and A.T. Craig: An Introduction to Mathematical Statistics, Amerind, New York.
  11. Gupta S.C. & Kapoor V.K: Fundamentals of Mathematical Statistics, Sultan Chand & Sons.
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## MA 2nd Semester

ECON 801C	Microeconomic Analysis -II 4 Credits (Lecture/Theory)
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**Course Objectives:** This paper of microeconomics aims to provide knowledge to the students regarding various market forms, Equilibrium of firms and industry in different markets, especially in oligopoly. This paper also deals with factor pricing, General equilibrium and welfare economics.

**Course outcome:** By studying this course students will learn

**CO1:** Use of game theoretic approach to analyse strategic interaction between agents

**CO2:** Its analyse interdependence and simultaneous interaction between different economic units in a general equilibrium framework

**CO3:** About the theoretical concepts and measures of welfare and to evaluate economic policies in terms of their welfare implications

**CO4:** How informational asymmetry leads to sub-optimal market solutions

### Course Contents:

**Strategic Interaction: Game Theoretic Approach with Applications:** Concept of a Game -two person zero-sum and non-zero-sum games. maximin and minimax strategies, dominant strategies - Nash Equilibrium Prisoners dilemma; Dynamic games –sub games-sub game perfect Nash Equilibrium. Duopoly: Competition in Quantity (Cournot), Price (Bertrand), Market Leadership (Stackleberg), Market Entry.

**General Equilibrium:** The Exchange Economy: Walrasian General Equilibrium Model, Excess demand approach- existence, uniqueness and stability (static and dynamic) Introductions to the Contributions of Arrow and Debreu. Leontief Input output Model of Production.

**Welfare Economics and Market Failure:** Pareto Optimality: The Fundamental Theorems of Welfare Economics. Compensation Principles, Social Choice, Social Welfare Function, Arrow’s Impossibility Theorem, Contributions of Sen. Market Failure: Causes and instances, externality and public good, Welfare Effects of Non-price Allocations and Price Control.

**Information Economics:** Asymmetric and Imperfect Information Models: Adverse Selection, Moral Hazard, Signaling, Separating and Pooling Equilibria. Incentive Design in the Context of asymmetric information. The Economics of Search: Different models, the efficient market hypothesis, stochastic models of inventory demand.

### Reading list:

- 1.Koutsoyannis, A. Modern Microeconomics, ELBS, Macmillan Press, London.
2. Sen, A. (1999): Microeconomics: Theory and Applications, OUP, ND.
3. Varian, Hall R. Intermediate Microeconomics, W.W. Norton & Company, New York, London.

4. Mas-Colell, Andreu, Michael D. Whinston and Jerry R. Green, Microeconomic Theory, Oup, New York.
5. Quirk J.P., & Saposnik, R. (1968), Introduction to General Equilibrium Theory and Welfare Economics.

ECON 802C	Macroeconomic Analysis -II 4 Credits (Lecture/Theory)
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**Course Objectives:** This course aims to help students in developing advanced analytical and theoretical skills. It covers a number of standard topics in macroeconomics for developing students' capacity for strategic reasoning. The module introduces the main theoretical contributions within each set of topics and critically assesses their strength and limitations in the light of the empirical evidence.

**Course outcomes:** The student will be able to:

**CO1:** Analyse the behavior of growth models over the years

**CO2:** Understand the behavior of endogenous models in an economy.

**CO3:** Develop the business cycle models and their impact on economy

**CO4:** Understand the macro economic behavior of developing countries

**Course Contents:**

**Growth Models:** The Solow Growth models Behind the Solow model: The Ramsey-Cass-Koopmans Infinite Horizon Model and The Diamond Overlapping Generations Model.

**Endogenous Growth Models:** Research and Development Models, Human Capital Models

**Business Cycles:** The Theory of Real Business Cycles, New Keynesian Economics, A Baseline Real Business Cycle Model, Household Behaviour, Empirical Applications. Suggested Readings • Mankiw, N Gregory, Macroeconomics • Romer, David, Advanced Macroeconomics • Schiller, Bradley and Karen Gebhardt, The Macro economy Today.

**Macroeconomics for Developing countries:** Nature and scope of development macroeconomics – a general accounting framework - economic structure of developing countries with emphasis on production structure, labour market and financial sector The World Bank – IMF view of developing country macroeconomics – issue of stabilization – a prototype WB- IMF model of developing country with a critical appraisal.

**Suggested Readings:**

1. Romer, David, Advanced Macroeconomics
2. Agenor, P-R & Peter.J., Montiel, Development Macroeconomics
3. Haque, N. U., Kajal Lahiri & Peter.J., Montiel, A Macroeconometric Model for Developing Countries, IMF Staff Papers, Vol.37, No.3 (Sept. 1990)



4. Montiel Peter.J., Macroeconomics in Emerging Markets
5. Taylor.L. Varieties of Stabilization Experience, (1988)

ECON 803C	Basic Statistics and Econometrics 4 Credits (Lecture/Theory)
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**Objectives:** Applications of economic theory need a reasonable understanding of economic relationship and relevant statistical and econometric methods. These methods thus emerge as a very powerful tool for understanding applied economic relationships in order to generate meaningful research in economics. This paper accordingly is devoted to equip the students with theory of statistics and econometrics. Many of the methods introduced in this course are also used in business, finance and many other disciplines

**Course Outcomes:** At the end of the course, the students shall be able to:-

**CO1:** Understand various quantitative techniques to empirically examine the economic theories

**CO2:** Use Statistical tools to evaluate consequences and find remedies for economic problem and issues

**CO3:** Understand the use of econometric techniques in case of quantitative and qualitative data

**CO4:** Learn to apply models such as simultaneous equations, (2SLS), (3SLS) models to economic data.

**Course Contents:**

**Probability and probability distribution:** Basic concepts – theorem of probabilities: addition theorem of probability – conditional probability – multiplication theorem of probability – independent events –multiplication theorem of probability for independent events – pairwise independent events. Bayes's theorem. Random variables and its probability distribution – mathematical expectations – probability distribution of discrete random variables: Binomial distribution, Poisson distribution – probability distribution of continuous random variables: Normal distribution. Four Fundamental distributions derived from normal distribution (i) standard normal distribution, (ii) chi-square distribution, (iii) t distribution and (iv) F distribution.

**Sampling and Testing of Hypothesis:** Definition and types of sampling – probability, non-probability and mixed sampling: various methods of sampling– sampling distribution - expectation and standard error of sample mean, sample proportion. Classical Inferential statistics: (i) Theory of estimation – point and interval estimation and (ii) hypothesis testing – z-test, chi-square, t and F test.

**Classical Linear Regression Model – Two variables and k variables:** Regression Analysis: Simple (Two variable) classical linear regression model – problem of estimation: the ordinary least square (OLS) methods and Inferences in regression model. Multiple (say, k-variable) classical linear regression model – problem of estimation and

inferences in regression analysis: the ordinary least square (OLS) and generalized least square (GLS) methods. Inference in regression analysis. Testing hypotheses about a linear combination of the parameters. Testing multiple linear restrictions: the F test.

**Extension of CLRM:** Heteroscedasticity: causes, consequences and detection. Autocorrelation: causes, consequences and testing autocorrelation. The problem of endogeneity – the concept of instrumental variable estimation. The problem of Multicollinearity – measures of multicollinearity.

### Readings

1. A. M. Goon, M. K. Gupta and B Dasgupta, *Fundamentals of Statistics*, Vol. 2, Ninth Edition, World Press
2. Hogg, Tanis and Rao, *Probability and Statistical Inference*, seventh edition, Pearson Education
3. R. G. Hogg and A.T. Craig : *Introduction to Mathematical Statistics* , Prentice Hall; 6<sup>th</sup> edition (June 27, 2004)
4. Wooldridge, *Introductory Econometrics, A Modern Approach*, third edition, South-Western Cengage Learning
5. G. S. Maddala, *Introduction to Econometrics*, 4<sup>th</sup> edition, John Wiley and Sons Ltd
6. Jack Johnston and John Dinardo, *Econometric Methods*, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> edition, McGraw-Hill International Edition
7. D. N. Gujrati, (2009): *Basic Econometrics*, Mc. Graw Hill, New Delhi
8. R. Ramanathan, (2008): *Introductory Econometrics with applications* (5th Ed.), Cengage Learning India Pvt. Ltd., New Delhi
9. A. Koutsoyannis: *Basic Econometrics*

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ECON 804C	Economics of Social Sector 4 Credits (Lecture/Theory)
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**Course objectives:** The prime objective of the course is to expose the students to the issues and concerns of various social sectors of the economy. Also, to enable the students to understand the social and economic activities carried out for the purpose of benefiting the society, the role of state and non-state actors in creating human capability and long-run sustainable development of the economy.

**Course Outcomes:** After completion of the course students will be able to

**CO1:** Acquaint and familiarize with the concept and issues of sustainable development

**CO2:** Identify the various social and economic activities leading to social welfare maximization;

**CO3:** Analyse the importance of investment in human capital (health and education) and its role in development;

**CO4:** Assess the public policies as well as pattern of funding in social sector;

**CO5:** Evaluate the performance of social sectors and the related government welfare schemes

Course Contents:

**Conceptual Issues:** Concept and Significance of Social Sector, Economic Development and Social Sector Development: The Equity and Efficiency Debate; Market Failure, Property Rights, Open Access Resources- Collective Action. Human Capital Vs. Physical Capital, Components of Human Capital; Interaction between Human and Physical Infrastructure, Economic Development-Social Deprivation and the role of Local Self Governance

**Education as Human Capital:** Education Human Capital and Economic Development, Determination of Demand for Education, Supply of Education, Costs of Education - Private Costs and Social Costs, Benefits of Education – Direct, Indirect and Social Benefits. Educational Financing, Education and Labor Market, Economics of Education Planning in Developing Countries with special emphasis on India; Indian Education Policies.

**Demography and Development:** Health Dimensions of Development, Demand for and Supply of Healthcare, Measuring Health Status – Mortality and Morbidity, Disability Adjusted Life Years (DALYs), Analysis of Disease Burden and Epidemiological Transition. Healthcare Financing, Inequalities in Health – Class and Gender Perspectives, Valuing Human Life – Benefit Cost and Cost Effectiveness approaches, National Health Policies and the Healthcare Sector in India, Health Insurance Schemes in India - RSBY, ESIS, AABY, JBY, Ayushman Bharat.

**Evaluation of Social Sectors' Performance:** Cost Benefit Analysis and Project Appraisal – Setting the Priorities, Allocation of Social Expenditure, Social Priority Ratio, Human Expenditure Ratio. The Appraisal of the Policies and Programmes Relating to Water Supply and Sanitation in India.

Reading List:

1. Mark Blaug. An Introduction to Economics of Education. Penguin: NewYork
2. C. L. Dinniwidy and F. J. Teal. Principles of Cost-Benefit Analysis for Developing Countries, CUP
3. Sabina Alkire. Valuing Freedoms: Sen's Capability Approach and Poverty Reduction. Oxford University Press
4. N. Homedes. The Disability Adjusted Life Years (DALYs): Definition, Measurement and Potential Use. Human Capital Development Working Papers: 16128 (1996)
5. Michael Hurd Arie Kapteyn. Health, Wealth and Role of Institutions. The Journal of Human Resources: 38(2) [2003]
6. T. Paul Schultz. Education Investment and Returns in H. Chenery and T.N. Srinivasan (edtd)
7. W. W. McMahan. Education and Growth in East Asia. Economics of Education Review: 17(2) [1998]
8. Handbook of Development Economics, Vol. – I, Elsevier Science Publications

- (1998)
9. P. Bardhan and C. Udry. Population Chapter (Section IV), Development Microeconomics, Oxford University Press
  10. Nancy Birdsall. Economic Approaches to Population Growth in H. Chenery and T.N. Srinivasan (edtd)
  11. Handbook of Development Economics, Vol. – I, Elsevier Science Publications (1998)
  12. S. Fukuda-Parr and A. K. Shiva Kumar. Readings in Human Development. OUP
  13. Barro, R. and X. Sala-i-Martin. Economic Growth. McGraw Hill
  14. Council for Social Development. India: Social Development Report (Various Issues). OUP India
  15. Infrastructure Report. Oxford University Press
  16. UNDP. Human Development Report [Technical Notes] (Various Issues)
  17. UNIDO. Guidelines for Project Evaluation. United Nations, 1972 Websites of the WB, ILO, UNDP, WHO, FAO

ECON 805E	Elementary Quantitative Techniques 4 Credits (Lecture/Theory)
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**Course objectives:** This paper aims to enable the students to know about preliminary mathematical concepts as well as statistical concepts related to Algebra, calculus, Measures of Central Tendency, Measures of Dispersion and index numbers

**Course outcomes:** The students will be able to

**CO1:** Development of knowledge about Classical Algebra, Modern Algebra and Abstract Algebra

**CO2:** Development of knowledge about Differential Calculus and Integral Calculus and use of calculus in economic theory.

**CO3:** Learning of differential equation and use in the model of dynamic stability

**CO4:** Understanding the knowledge of both unconstrained and constrained optimization and its application in economics.

**CO5:** Understanding of the axiomatic approach to explain micro economic theories, or how micro economic theories can be portrayed in to set theoretic approach

**Course Contents:**

**Mathematical Foundation:** Linear Algebra (Polynomial equations), Matrix Algebra – Abstract Algebra (Set theory)

**Differential calculus and Integral Calculus** – Applications in Economics: Function, Limit, First order and Second order derivative, Integration both indefinite and definite, Integration by Parts. Differential equation and its applications, Application of Growth models and simple properties of time path of continuous variables. Applications of

difference equations in trade cycle models, Growth models and lagged market equilibrium models.

**Optimization and Applications:** Condition for maximum and minimum -Concavity and convexity, criteria for checking Concavity and Convexity function, concept of local and global extremum, Unconstrained maxima and minima with multi-variable(s), solution methods. Applications to cost minimization, utility, revenue, tax, profit maximization and equilibrium of the firm, Price discrimination, multiproduct equilibrium, multi-plant monopolist, equilibrium of firm with advertisement cost and subsidy.

**Constrained Optimization and Applications:** Optimization with a single constraint-Bordered Hessian, Lagrange multiplier method, Lagrangian function, economic implication of Lagrangian multiplier, application to consumer's equilibrium in commodity market and producer's equilibrium in factor market

**Readings:**

1. A.C. Chiang, Fundamental methods of Mathematical Economics, McGraw Hill, 1988
2. R.G.D. Allen, Mathematical Analysis for Economists, Macmillan, 1976.
3. Taro Yamane, Mathematics for Economists: An Elementary Survey, 2nd Edition, Prentice Hall of India, New Delhi, 1985.
4. W. Novshek, Mathematics for Economists, Academic Press, New York, 1993.
5. M. Intriligator, Mathematical Optimization and Economic Theory, Englewood Cliffs, N.J. Prentice Hall, 1971.
6. B. Mukherji and V. Pandit, Mathematical Methods for Economic Analysis, 2nd Edition, Allied Publishers, 1989.
7. C. P. Simon and L. Blume, Mathematics for Economists, Norton and Company, 1994.
8. M. Hoy, et. al., Mathematics for Economics, Addison-Wesley, 1996.
9. Dixit, Optimization in Economic Theory, 2nd Edition, Oxford University Press, 1990.
10. D. Wade Hands, Introductory Mathematical Economics, D.C. Heath, 1991
11. S. Baruah, "Basic Mathematics and its Economics Applications", MacMillan

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ECON 806E	Research Methods in Social Science 4 Credits (Lecture/Theory)
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**Course objectives:** The objective of this paper is to enable the students know the major considerations, concepts and in research methodology along with knowledge on statistical application. The students at the post-graduate level are expected to know research methods and data analysis so that they can be employed in any business and industrial undertakings as research / economic analyst. This also helps those students who progress towards further research such as M.Phil. and Ph.D as they are aware of basic concepts and design of research.

**Course Outcomes:** On successful completion of the course students will be able to:

**CO1:** Understand the ethical dimensions of conducting research.

**CO2:** Develop understanding on various kinds of research, objectives of doing research, research process, research designs and sampling.

**CO3:** Search for and prepare literature review based on research questions and objectives.

**CO4:** Choose methods appropriate to research objectives and data collection.

**CO5:** Conduct data collection surveys

### **Course Contents**

#### **Research: Contextualisation**

Meaning of research: Objectives & Motivation of research; Types of Research; Research approaches Research Designs: Need; Features of good design; types of research designs Literature Search/Survey: Why literature review; How to carry out literature reviews.; Categories of literature review; Idea generating Processes- identifying research topics; identifying gaps from publications and literatures review Identify relevant theories.

#### **Methodology in social sciences**

Formulation of hypotheses, methodology to establish the hypothesis- theory versus empirics, tools for validation of the hypotheses- qualitative versus quantitative. Determining research variables and their relationship; Research Variables: Dependent; Independent; Intervening; Background variables

#### **Data- Collection, Handling and Measurement**

Census & Sample Survey; Sample design- types; Population Sampling techniques: Probability Sampling & Non- probability sampling;. Data- Types; Data Collection: Methods- Schedules/ Questionnaires; Interviews, group discussions; conducting field surveys; Data handling and its interpretation- Data entry, edit/error check, Measures of Central tendency, dispersion, asymmetry, relationship; drawing inferences

#### **Basic Computer Applications In Research:**

Use of of internet- for research, for data collection; Data processing- spreadsheet analysis Basics of Report writing and presentation through computer.

#### **Selected References:**

1. Kanire, Dr. George (2012), *Social Science Research Methodology: Concepts, Methods and Computer Applications* , Munich, GRIN Verlag.
2. Panneerselvam, R (2005), *Research Methodology*, Prentice-Hall India.
3. Kothari, C R & Garg, Gaurav (2019), *Research Methodology: Methods and Techniques*, New Age International (P) Limited, Publisher. ISBN: 978-93-86649-22-5.
4. Acharyya, Rajat & Bhattacharya, Nandan (2019), *Research Methodology for Social Sciences*, Routledge India. ISBN: 9780367409845.

## MA 3rd Semester

ECON 901C	Public Economics 4 Credits (Lecture/Theory)
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**Course Objectives:** The objective of the course is to enable students develop an understanding of the nuances of public economics and appreciate the roles of government and market from a theoretical perspective. Aspects of Public Finance, public enterprises, public projects, public services as well as public choices are important component of the economy and the course aims to capacitate the students in these issues. Understanding the ways of government functioning makes the student more capable in future career progression.

**Course Outcomes:** This course shall make students aware about-

**CO1:** The functioning of public sector and government activities with special reference to fiscal functions of allocation, distribution and stabilisation.

**CO2:** The structure and pattern of government budget and the aspects of federal governments.

**CO3:** The types and evolution of taxes and the issues of tax burden

**CO4:** The meaning and importance of public expenditure, sources of debt and its impact on the economy

**Course Contents:**

**Introduction Public Finance:** Emergence of State, Public Authority. Scope of Public Finance and Role of government in Capitalistic, Socialistic and Mixed Economy Market Failure, Imperfect Competition, Externalities, Uncertainties and Non-Existence of Future Market, Theory of Second Best, Government Intervention-Allocation, Distribution and Stabilisation by the Government, Principles of Social Advantages. Theory of Public goods; Merit and Social Goods: Public Choices.

**Public Expenditure, Revenue and Taxation:** Public Expenditure: Wagner's law, Wiseman Peacock Hypothesis, Pure theory of Public Expenditure, Criteria for Public Investment, Social Cost-Benefit Analysis; Public Expenditure and Economic growth; Public Expenditure in Developing Economies. Public Revenue: Sources - Tax and Non-tax. Taxation- Types, Canons, Effects on Production, Consumption and Distribution, Savings and Investment; Theory of Incidence- alternative concepts; Theory of Optimal Taxation- Ramsey Model and contribution of Mirrlees; Excess Burden, Trade-off between Equity and Efficiency; The problem of double taxation.

**Budgetary Policy & Public Debt:** Public Debt: Importance and Types. Burden; Issue of Intergenerational Shifting of the burden of Public Debt; Sustainability of Public Debt; Impact of Public Debt on the Economy; Debt Management Budget: Importance and Classification; Budget Multiplier-Balanced and Unbalanced; Zero-based Budgeting. Budgetary Deficits; Fiscal Policy: Instruments, Importance and Objectives. Classical vis-à-vis Keynesian Theory. Effectiveness of Fiscal Policy to achieve internal and external

balance. Compensatory Finance and Role of Fiscal Policy for the Developing Economies.

**Federal Finance with special reference to India:** Fiscal Federalism- Principles of Multi-Unit finance, Assignment of functions and sources of revenue, Vertical and Horizontal Imbalances, Inter governmental resource transfer- Finance Commission & Devolution; Theory of Grants. Indian Public Finance- Tax System, Types of Tax at Union, State & Local levels, GST, Non-Tax Revenue, Analysis of Budgets, Trends in Public Expenditure, Public Revenue and Public Debt. Trend and pattern of the Debt in India; Deficit Financing in India.

**Reading List:**

1. Auerbach, A.J. and M. Feldstern (Eds.) (1985), Handbook of Public Economics, Vol. I, North Holland, Amsterdam
2. Atkinson A.B. and J.E. Stiglitz (1980): Lectures on Public Economics, McGraw-Hill, New York
3. Buchanan, J.M. (1970), The Public Finances, Richard D. Irwin, Homewood. • Chelliah, R.J. (Ed.) (1997), Towards Sustainable Growth, Oxford University Press, New Delhi.
4. Datt, R. (Ed.) (2001), Second Generation Economic Reforms in India, Deep & Deep Publications, New Delhi.
5. Ghosh, A & C Ghosh (2014), Public Finance, PHI Learning Private Limited, Delhi • Gruber, J (2009), Public Finance and Public Policy, Worth Publishers, New York
6. Harber, B.P. (1986): Modern Public Finance, Rich & Dlrwin, Homewood. • Jha, R. (1988) Modern Public Economics, Routledge, London
7. Kumar, A. (1999), The Black Economy in India, Penguin, Harmondsworth.
8. Menutt, P. (1996), The Economics of Public Choice, Edward Elgar, U.K.
9. Musgrave, R.A. (1959), The Theory of Public Finance, McGraw Hill, Kogakusha, Tokyo.
10. Musgrave, R.A. and P.B. Musgrave (1976), Public Finance in Theory and Practice, McGraw Hill, Kogakusha, Tokyo.
11. Peacock, A. and G.K. Shaw (1976), The Economic Theory of Fiscal Policy, George Allen and Unwin, London
12. Stiglitz, J.E. (1986), Economics of Public Sector, Norton, New York.
13. Srivastava, D.K. (Ed.) (2000), Fiscal Federalism in India, Har-Anand Publications Ltd., New Delhi. Reports of various Finance Commissions
14. Srivastava D.K and U Shankar (2012), Development and Public Finance, Essays in Honour of Raja J Chelliah, Sage India, New Delhi



ECON 902C	International Trade & Development 4 Credits (Lecture/Theory)
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**Course Objectives:** This course introduces students to the principal issues of international trade. The course begins with a brief comparison of the economic status and performance among major trading nations. The course then examines alternative trade theories, protectionism, trade restrictions. Trade policies, trade liberalization, free trade agreements, and labor and capital migration. The course examines international finance, including exchange rates, interest.

**Course Outcomes:** The students will be able to:

**CO1:** acquaint with the principles related to international trade;

**CO2:** know the paradoxes in international trade theories;

**CO3:** acquaint with the policy measures needed to correct unfavorable situations in BoP;

**CO4:** familiarize with the formation of various trade blocks;

**CO5:** capture the distinction between the Static and Dynamic effects of a Customs Union and free trade areas.

**Course Contents:**

**Theories of International Trade:** Classical Trade theories- Smith and Ricardo; Gains from Trade (specialization and exchange), Factor Endowment and Pattern of Trade (Heckscher-Ohlin Theorem) - Factor Price Equalization, Stolper- Samuelson Theorem and Rybczinsky Theorem; Revealed Comparative Advantage – Balassa Index. International Trade with Increasing Returns to Scale under Perfect Competition (Snowball Effect) and Monopolistic Competition (Intra- Industry Trade); Leontief Paradox. Vent for Surplus Theory. Theory of Immiserising Growth, Gravity Model.

**Balance of Payment and Foreign Exchange:** Mechanism Balance of Payment Accounts: Balance of Payments 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 Mechanism Exchange Rates: Flexible Exchange Rates: Case for and against. Fixed Exchange Rates: Case for and against; Foreign Exchange Market: Demand and Supply of Foreign Exchange, Spot Rate and Forward Rate (i) Interest Arbitrage, (ii) Hedging, (iii) Speculation, (iv) Swap Operation, [Bretton Wood systems: Proposal for reforming present exchange rate adjustment, operation of Euro-Currency market]- may be dropped also.

**Trade Policies, Impact and Interventions:** Trade and National Income: The Import Function, Equilibrium Level of National Income and Trade-multipliers: with and without foreign repercussions; Trade and Technical progress: Neutral, capital saving and labour saving; Tariffs and protection; deadweight loss from tariff, terms of trade, optimal tariff, Metzler's paradox, effective rate of protection; Tariff vs Quota, The Political economy of protection, Lerner Symmetry theorem.

**International Trade Scenario:** Policy and Institutions Custom union: trade creation and diversion, production and consumption effects, general equilibrium analysis of a custom

union: the Lipsey model, the Vinek model. Trade policy and Developing countries, the political economy of Trade policy; Dumping and Reciprocal Dumping MNCs, FDI & FII, WTO, IMF, World Bank: Recent issues and directions.

**Reading List**

1. Acahryya, Rajat, International Economics, Oxford
2. Bhagwati, J. (ed) (1981): “International Trade: Selected Readings” Cambridge University, Massachusetts
3. Cherunilam F– Interantional Economics, Tata McGraw-Hill
4. Chocholiades, M. (1990): “The Pure Theory of International Trade”, McGraw-Hill, Kogakusha, Japan
5. Dunn, R.M and J.H.Mutti (2004): “International Economics”, Routledge, New York.
6. Kenen, Peter. (1989): “The International Economy”, Prentice Hall of India Pvt.Ltd. New Delhi. • Kindleberger C- International Economics
7. Krugman, Paul R. and Maurice Obstfeld. (2004): “International Economics: Theory and Policy”, Pearson.
8. Lindert, Peter H. (2004) “International Economics” Richard. D. Irwin.Inc. • Mannur, H.G, International Economics, Vikas Publications
9. Salvator D. – International Economic Welfare
10. Sawyer W Charles, Sprinkle, Richard L. (2003): “International Economics”, Prentice Hall of India Pvt. Ltd. New Delhi.
11. Södersten, BO. (1990): “International Economics”, Macmillan.

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ECON 903C (i)	Agricultural Economics -I 4 Credits (Lecture/Theory)
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**Course Objectives:** The objective of this course is to provide a detailed treatment of issues in agriculture economics to those intending to specialize in this area. Starting with the explanation of theoretical questions, the course tries to enhance the student’s awareness of issues that are relevant to agriculture economics and contemporary debates in the literature and enable them to analyze these issues with basic microeconomics concepts.

**Course Outcome:**

- CO1:** Gain knowledge of the agricultural production and productivity
- CO2:** Review the various institutional changes in agricultural sector
- CO3:** Identify the sources and problems of agricultural credit
- CO4:** To evaluate sustainable agricultural development.

**CO5:** To understand the agricultural market structure and agricultural Price Policy;

**Course Contents:**

**Agriculture and Economic Development:** Definition, nature and scope of agricultural economics and Role in economic development; Interface between Agriculture and Industry; Model of agriculture development; Schultz's prescription of transforming traditional agriculture; Mellor's model; Boserup's theory.

**Agricultural Infrastructure:** Farming System: Peasant farming and Capitalist farming; Land Reforms: meaning and aspects of land reforms, Women and land reforms; Farm Management- Meaning and concepts, farm Planning and budgeting; Small farms versus large farms, problems and prospect of small farmers.

**Agricultural Production, Productivity and Diversification:** Concept of Production function; Resource use and efficiency; production relationships, farm size and productivity; Farm mechanization and agricultural development; Risk and Uncertainty in Agriculture- types of uncertainty in agriculture and measures for meeting risk and uncertainty in agriculture.

**Agricultural Labour and Unit Market:** Agricultural workers- Categories and nature of employment; problems of agricultural workers and remedial measures; Interlocking of factor markets; Marginalisation of rural labour; Agricultural Unit and Rural Co-operatives; Kisan Credit Cards; Agricultural price policy, Food Security and Public Distribution System.

**Reading List:**

1. A.N. Sadhu & Amarjit Singh (2008), Fundamentals of Agricultural Economics, Himalaya Publishing House, Delhi.
2. Acharya, S.S. and Agarwal, N.L. (2012). Agricultural Marketing in India. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Bansil, P.C. (2017). Economic Problems of Indian Agriculture. Daya Publishing House, New Delhi.
4. Bhalla, G. S. and Gurmail S. (2001). Indian Agriculture: Four Decades of Development. New Delhi: Sage Publications.
5. Chand, R. (2012). Development Policies and Agricultural Markets. Economic and Political Weekly, 47 (52): 53-63.
6. Chand, R., S S Raju, S. Garg and L.M. Pandey (2011). Instability and Regional variation in Indian Agriculture, NCAP, New Delhi.
7. Dev, S. M. and Rao, N.C. (2010). Agricultural Price Policy, Farm Profitability and Food Security. Economic and Political Weekly, 45 (26 & 27): 174-182.

ECON 903Cii	Mathematical Economics- I 4 Credits (Lecture/Theory)
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**Course Objectives:** The aim of this course is to introduce students with the Mathematical concepts and methods used to analyse consumer behaviours, producer behaviours and determination of price in various markets. The primary goal is to strengthen student's critical thinking and reasoning skills at planning economic research and to enable them to communicate results effectively.

**Course Outcomes:** After Successful Completion of this course the students will be able to:

**CO1:** Understand the Behavioural Economic Theories concerning to consumer's behaviour and producer's behaviour.

**CO2:** Calculate optimal solutions of consumer and producer problems using mathematical skills and theoretical insight.

**CO3:** Understand the different types of Market Structures and equilibrium in a market.

**CO4:** Analyse the impact of taxes and price controls on market equilibrium.

**CO5:** Develop skills to understand the economic concepts and theories which use mathematical tools and techniques in the depth study of economics.

**Course Contents:**

**Consumer Behaviour:** Theory of Consumer Behaviour: Structure of the Utility Function, Separable and Additive Utility Function, Homogeneous and Homothetic Utility Function, Cobb-Douglas(C-D), Constant Elasticity of Substitution (CES), Translog Utility Function. Consumer's equilibrium, Slutsky Equation, Compensated Demand Function, Concepts of Elasticity, Indirect Utility Function, Roy's Identity and Duality in Consumption. Linear Expenditure System, Theory of Revealed Preference, Consumer's Behaviour under Risk and Uncertainty -Von Neumann-Morgenstern Expected Utility.

**Production:** Theory of Producer's Behaviour: Structure of Production Function- Homogeneous and Nonhomogeneous. Properties of C-D, CES and Translog Production Function, Laws of Return and Return to Scale. Derivation of Cost Functions and Modern Approach to the Theory of Cost. Producer's Equilibrium, Input Demand Functions and Adding up Theorem.

**Profit Maximization and Efficiency:** Profit Maximisation, Joint profit maximization, multi-product firm. Production Possibility Curve, empirical uses of production function analysis. Technical Progress and production Frontiers. Production efficiency, the cost function and production function approach to the problem of efficiency.

**Markets:** Market: Single Market Equilibrium (Static and Dynamic), Marshallian and Walrasian equilibrium condition. Lagged market equilibrium. Multi-market equilibrium, General Equilibrium and Conditions for Stability in General Equilibrium. Price and Output Determination: Perfect Competition, Monopoly, Oligopoly, Discriminating Monopoly and Bilateral Monopoly.

**Readings List:**

1. Allen, R.G.D (1976): Mathematical Economics, Macmillan, London.
2. Arrow, K.J. and M. Intrilligator (Ed.) (1982): Handbook of Mathematical Economics, Vol- I,II, and III, North Holland, Amsterdam.
3. Chiang,A.C.(1986): Fundamental Methods of Mathematical Economics, McGraw-Hill, New York.
4. Chiang,A.C.(1999): Elements of Dynamic Optimisation(Third Edition) McGraw-Hill,New York.
5. Henderson, J.M. and R.E. Quandt (1980): Microeconomic Theory: A Mathematical Approach, McGraw-Hill, London.
6. Jha,R(1991): Contemporary Macroeconomic Theory and Policy, Wiley Eastern Ltd,New Delhi.
7. Varian,H.(1993): Advanced Microeconomic Theory, McGraw-Hill, New York. Advanced Reading:
8. Gandolfo,G.(2006): Economic Dynamics, Springer.
9. Rowcroft, J.E. (2005): Mathematical Economics: An Integrated Approach, Prentice Hall.
10. Silberberg,E.(1998): The Structure of Economics: A Mathematical Analysis, MacGraw- Hill, International Edition.

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ECON 903C iii	Econometrics-I 4 Credits (Lecture/Theory)
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**Course objectives:** Applications of economic theory need a reasonable understanding of economic relationship and relevant statistical methods. The econometric methods thus become a very powerful tool for understanding of applied economic relationships and for meaningful research in economics. This paper accordingly is devoted to equip the students with theory of econometrics. We will learn how to construct econometric models, estimate the parameters of these models and interpret the parameters estimates. Many of the methods introduced in this course are also used in business, finance and many other disciplines.

**Course Outcomes:** At the end of this course the students shall be able to:

**CO1:** Understand various quantitative techniques to empirically examine the economic theories

**CO2:** Evaluate consequences and find remedial measures if CLRM assumptions are violated.

**CO3:** Understand the use of econometric techniques in case of qualitative data.

**CO4:** Learn to apply models such as simultaneous equations, (2SLS), (3SLS) models to

economic data.

### **Course Contents:**

#### **Generalized Least Squares (GLS), Maximum Likelihood (ML) and Instrumental Variable Estimators**

Generalized least Squares method of estimation. ML estimators – properties of ML Estimators – ML Estimation of the linear model – Likelihood Ratio Tests – Wald Test and Lagrange Multiplier (LM) Test. Instrumental Variable (IV) Estimators – Two-Stage Least Squares (2SLS) – Choice of Instruments.

#### **Regression with dummy variables and Limited dependent variables model**

Concept of dummy variables – comparison of two regressions: (a) Chow test and dummy variable approach. Models with dummy variables: the linear probability model – Logit and Probit Models. Censored regression: The Tobit Model – The Poisson regression Model, and Truncated Regression Model.

#### **Distributive Lagged Variable Analysis.**

Regression with time series data – concept of static and dynamic model – transformation of lagged variables – models with lagged explanatory variables – models with lagged dependent variable – (i) the partial adjustment model, (ii) the error correction model, (iii) the adaptive expectation model, (iv) more general auto regressive model etc.

#### **Simultaneous Equation systems**

A. Problems of identification (i) Identification of single equation (ii) Identification of structural equation – rank and order conditions.

B. Problems of estimation: (i) Estimation of a single equation in the model – ordinary least square (the recursive model), Indirect least square method; 2SLS method, instrumental variable method, limited information maximum likelihood method; k-class estimators, (ii) Estimation of system equation – Three stage least square (3SLS), Full information maximum likelihood method.

#### **Reading List**

1. Maddala, G.S. (2008): Introduction to Econometrics, John Willey & Sons, New York.
2. Johnston, J and J. Dinardo (1998): Econometric Methods (4th Ed.), Mc Graw Hill, New York.
3. Gujrati, D. N. (2009): Basic Econometrics, Mc. Graw Hill, New Delhi.
4. Greene, W.H. (2008) Econometric Analysis (5th Ed.), Pearson India, New Delhi.
5. Ramanathan, R. (2008): Introductory Econometrics with applications (5th Ed.), Cengage Learning India Pvt. Ltd., New Delhi.
6. Wolridge, J. (2006): Introductory Econometrics – A Modern Approach (3rd Ed.), Thomson South Western, New Delhi.

ECON 903C iv	Health Economics-I 4 Credits (Lecture/Theory)
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**Course objectives:** This course deals with the important components and issues of human resources governing long-run development. Health economics as a distinct branch of economics critically considers the dominant economic and political issues involved with health and healthcare markets in every country of the world. The objective is to enable the learners how resources are allocated to and within the health economy, and to demonstrate the magnitude and importance of the health sector for economic development.

**Course Outcomes:** After completion of the course, the learners will be able to

**CO1:** Understand the basic concepts and issues of human resource development;

**CO2:** Assess the interlinkages between health and education towards human development;

**CO3:** Measure the health status of a society, the incidence of disease burden etc.;

**CO4:** Evaluate the risk and uncertainty in healthcare market and the role of third party;

**CO5:** Analyse the government policies and financing of healthcare.

**Course Contents:**

**Introduction to Health Economics:** Definition and scope of economics of health, the concept of health and health care, the role of health in economic development, health as human capital, economic dimensions of health care, demand for and supply of health care – supplier-induced demand and unnecessary care. Poverty, malnutrition and health status, determinants of health status, the health-poverty trap; the linkages between health and education.

**Measuring Health Status and Utility:** Mortality and Morbidity, Disability Adjusted Life Years (DALYs), Analysis of Disease Burden and Epidemiological Transition, Lifestyle and Health Epidemiology, Measurement of Health Improvements - Randomized Controlled Trials (RCTs), QALYs. Interactions between Patients and Doctors, the Patient's Utility Function, the Doctor's Utility Function, Doctor-Patient Utility Functions and the Remuneration System, Doctor's Pricing Models – Monopoly Equilibrium, Monopolistic Demand Shift, Excess Demand Disequilibrium etc.

**Agency Theory and Health Care Management:** Standard Agency Theory, the Origins of Agency Problems – Outcome Uncertainty, Moral Hazards, Adverse Selection; Agency in Health Care, Perfect Agency Relationship and Reasonable Payment System, Distinguishing Features of Health Care. Motivation and Performance-related Pay – Basic Concepts, Motivation Theories – Instrumentality, Needs, Expectancy, Equity and Social Learning; Financial Incentives, Motivation and Performance, Methods of Performance-related Pay and their Uses in Health Sector.

**Health Care Financing:** Healthcare Financing, Inequalities in Health – Class and Gender Perspectives, Valuing Human Life – Benefit Cost and Cost Effectiveness approaches, Out of Pocket Expenditure in Health Care Services. The Indian Experiences

in Health Care Financing, the Demand for Health Insurance- the Risk Averse Decision Maker- Choosing the Insurance Policy, National Health Policies and the Healthcare Sector in India, Health Insurance Schemes in India - RSBY, ESIS, AABY, JBY, Ayushman Bharat.

**Readings List**

1. Cuyler A. and J. Newhouse. Handbook of Health Economics. Elsevier
2. Das Gupta M., Lincon C. and Srinivasan T. Health, Poverty and Development in India. Oxford University Press
3. Santerre R. and Nuen S. Health Economics: Theories, Insights and Industry Studies. Thompson
4. Mark Blaug. An Introduction to Economics of Education. Penguin: New York
5. S. Preker, X. Liu, E. V. Velenyi and E. Baris. Public Ends, Private Means: Strategic Purchasing of Health Services. The World Bank
6. L. Dinniwidy and F. J. Teal. Principles of Cost-Benefit Analysis for Developing Countries. CUP
7. Klarman H.E. The Economics of Health. Columbia University Press
8. Michael Hurd Arie Kapteyn. Health, Wealth and Role of Institutions. The Journal of Human Resources: 38(2) [2003]
9. Weisbroad B. A. Economics of Public Health. University of Pennsylvania Press • Zweifel P., Breyer F. and Kifmann M. Health Economics. Springer
10. Weisman J. Cost Benefit Analysis and Health Service Policy, Scottish Journal of Political Economy, Vol. 20, No. 1, February 1962
11. World Health Organization. Report of Commission on Macroeconomics and health. 2000 • World Health Organization. Socioeconomic Determinants of Health. 2010.
12. UNIDO. Guidelines for Project Evaluation. United Nations, 1972 • Websites of the UNDP, WHO, NFHS etc.

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ECON 904C	Institutional Visit & Report 4 Credits (Practical)
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**Course Objectives:** To enable Students learn about the functioning of the real economy, particularly the institutions that act as the bridge between the micro- individual and the collective aggregate, often synonymous to the country/state. The course aims to expose the students to nuances of market as well as state functioning and how the various policies, rules, regulations work. Also, the students may observe the nature of involvement of the stakeholders of the unit/ institutions.

**Course Outcomes:** The Students will be able to

**CO1:** Understand the nature of operation of an institution/ firm/farm. Learn the process



of production of a good or services including the role of the factor inputs.

**CO2:** Learn the process of data collection/ information

**CO3:** Analyse the aspects of market linkage

**CO4:** Understand the implications of policy decisions.

**Course Contents:** Field Visits, Interacting with Stakeholders, Surveys, Writing Reports

**Reading Materials:** *As required based on time and space*

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ECON 905F	Computer Applications in Economics 4 Credits (2 credits Lecture/Theory + 2 Credits Practical)
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**Course Objectives:** Enable the students use computer for economic analysis and applications in order to fulfill their work assignments and requirements.

**Course Outcomes:** The students will be able to;

**CO1:** Understand the basics of computers and its functioning along with text processing.

**CO2:** Know the fundamentals of data analysis, interpretations and presentations

**CO3:** Undertake statistical exploration of data and also draw inferences from the data

**CO4:** Analyse the empirical works

**CO5:** Develop skills for report writing and presentations

**Course Contents:**

**Introduction to Basic Computing:** Basic components of computer- CPU, input-output devices, keyboard, mouse and scanner, video display, printers and plotters, data storage and retrieval, hard disk, floppy disk and CDROM. Types of computers and their applications, computer networking and resource sharing, hardware, software and firmware. Internet Browsing- Getting started, search engines, literature search and research information online, downloading materials online. Interaction; news and multimedia; Email- opening and operation; other features of Internet research

**Basic Spreadsheet Analysis:** Getting started, Workbook and work sheets, Features of Software packages- Data entry, File operation, opening and saving a file, printing the contents of a worksheet, row and column functions, cell operations Using Formulae/ Functions in Statistical software packages; mathematical and statistical functions; Data analysis tool pack, Descriptive Statistics, basic graphical tools.

**Application of Statistical packages:** Simple correlation and regression; multiple regression; numerical examples Different Econometric techniques; trend line fitting Analysis of variance; interpolation; Index number; Application of graphical tools in economics.

**Report Writing and Presentation:** Getting started, key board functions, text writing, opening and saving of file, Creating and Saving documents, editing documents, formatting text, creating table, printing basics. Presentations – preparing slides, designing slides, animating slides. Features and characteristics of a good presentation; linking files for presentation.

**Readings List**

1. Bhattacharjee Dibyojyoti, ‘Practical Statistics using Microsoft Excel’,2010, Asian Books Pvt Ltd, New Delhi.
2. Bhaumik, Sankar Kumar (2015), Principles of Econometrics:A Modern Approach Using Eviews, First Edition, Oxford University Press
3. Landau, Sabine and Brian S. Everitt (2004), A Handbook of Statistical Analysis Using SPSS, First Edition, Chapman & Hall/CRC.
4. Murray, (2011): Microsoft Word 2010 Plain and Simple, PHI
5. O’Dochartaigh Niall, ‘Internet research skill’ 2007, Sage publications, New Delhi.
6. Ogunc, Asli K. and R. Carter Hill (2008), Using Excel for Principles of Econometrics, 3rd Edition, John Wiley & Sons’, INC.
7. Rajaraman, V ‘Fundamentals of Computer, 1996, Prentice Hall of India, New Delhi
8. Sinha, P.K, ’Computer Fundamentals, 1992, BPB Publications, New Delhi.
9. Sue Valerie M and Lois A Ritter, ‘Conducting online survey’, 2007, Sage Publications, New Delhi

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ECON 906E	Environment & Resource Economics 4 Credits (Lecture/Theory)
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**Course Objectives:** The aim of the course is to offer an insight in environmental and natural resource economics along with an in-depth analysis of environmental policy instruments. The concept of both renewable (such as forests and fisheries) and non-renewable (such as oil and minerals) resources have been discussed deeply. The theoretical models have been applied on different kinds of environmental and resource extraction related issues. Besides, the basic concepts of economic valuation of natural resources and issues of sustainable developments have also been mentioned. The course also introduces various basic dynamic optimization methods to determine the value of non-market priced resources. It also covers the fundamental concepts of sustainable development.

**Course Outcomes:** By completing this course, students should be able to -

**CO1:** Apply basic theories within the field of environmental and resource economics

**CO2:** Describe and illustrate how environmental policy instruments work and discuss

pros and cons with different policy instruments.

**CO3:** Explain the fundamental methods of economic valuation of renewable natural resources.

**CO4:** Apply basic knowledge of empirical models on relevant data with the area of environmental policy.

**Course Contents:**

**Introduction to Environmental Economics:** History of Environmental Economics - Environment Economy Inter-linkage, Social Change and Environmental Protection, Market Efficiency - A Brief History of Natural Resource Economics, Dynamic Optimization and Maximum Principle, Natural Resource and Capital Theory – Basics of Optimal Control Theory

**Market Failure & Policy:** Externalities and Public Good, Pigouvian Policy, Coase Theorem, International Agreements, Uncertainty, Discounting, Heterogeneity and Tradable Permits

**Renewable and Non-Renewable Resources:** Population Dynamics Models, Bio economics of the Fishery and the Problem of Open Access, Forest Economics and Rational Harvesting, Optimal Extraction & Hotelling's Rule, Backstop Technology and Production with Depletable Resources, Exploration

**Non-Market Valuation & Sustainable Development:** Concept of Total Economic Value, Objective Standard-based Valuation & Subjective

Preference -based Valuation; Indirect Methods & Direct Methods of Valuation; Concepts & Indicators of Sustainable Development; Sustainable Accounting

**Reading list:**

1. Dasgupta and Heal. Economic Theory and Exhaustible Resources, Cambridge University Press, 1980
2. Farzin, YH. "The Time Path of Scarcity Rent in the Theory of Exhaustible Resources", The Economic Journal, 1992, 102.
3. Pindyck, RS. "The Optimal Exploration and Production of Non-renewable Resources", Journal of Political Economy, 1978, 86.
4. Pindyck, RS. "Uncertainty and Natural Resource Markets", Journal of Political Economy, 1980, 88.
5. Gordon, HS. "The Economic Theory of Common Property Resources: The Fishery", Journal of Political Economy, 1954, 62.
6. Smith, VL. "On Models of Commercial Fishing", Journal of Political Economy, 1969, 77.
7. Homans and Wilen. "A Model of Regulated Open Access Resource Use", Journal of Environmental Economics and Management, 1997, 32.
8. Smith, MD. "Bioeconometrics: Empirical Modelling of Bioeconomic Systems", Marine Resource Economics, 2008, 23.

9. Reed, WJ. "Optimal Escapement levels in Stochastic and Deterministic Harvesting Models", *Journal of Environmental Economics and Management*, 1979, 6.
  10. Hartman, R. "The Harvesting Decision When a Standing Forest Has Value", *Economic Inquiry*, 1976, 14.
  11. Sethi, Costello, Fisher, Hanemann and Karp. "Fishery Management Under Multiple Uncertainty", 2005, 50.
  12. Samuelson, P. "Economics of Forestry in an Evolving society", *Journal of Environmental Economics and Management Economic Inquiry*, 1976, 14.
  13. Tahvonen and Salo. "Optimal Forest Rotation with in situ Preferences", *Journal of Environmental Economics and Management*, 1999, 37.
  14. Charles Kolstad. *Environmental Economics*, Oxford University Press (1st Edition), 2000 (Chapter 3 and 4; 5, 6, 7, 9, 10, 13 and 14; 15, 16, 17, and 18) Coase. "The Problem of the Social Cost", *Journal of Law and Economics*.
  15. David Pearce. *An Intellectual History of Environmental Economics*. Environmental Economics. Rabindra Nath Bhattacharyya, 1st Edition, Oxford University Press
  16. Fullerton and Stavins. "How do Economists really think about the Environment?", *Nature* (1998) 395: 6701
  17. Hahn and Dudley. "How Well does the US Government Do Benefit-Cost Analysis?" *Review of Environmental Economics and Policy*, 1(2).
  18. Hanilton. Testing for Environmental Racism: Prejudice, Profits and Political Power? *Journal of Policy Analysis and Management*; 14 (1) "Is there any role for benefit cost analysis in Environmental, health and safety regulation?". *Science* (1996), 272
  19. Porter and van der Linde. "Towards a New Conception of the Environment Competitiveness Relationship". *Journal of Economic Perspectives*, 9 (4), 1995.
  20. Rassier and Earnhart. "The Effect of Clean Water Regulation on Profitability: Testing the Porter Hypothesis". *Land Economics*, 86(2).
  21. RFF Reader, *An Economic Perspective on Environmental Policy and Resources Management: An Introduction*
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## MA 4th Semester

ECON 1001C	Economics of North-Eastern Region of India 4 Credits (Lecture/Theory)
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**Course Objectives:** This course is aimed at developing an understanding of North East of India on a range of issues. This course will introduce students to selected topics to understand economy, society and politics of North East India.

**Course Outcomes:** Students will be able to

**CO1:** Understand the human resource of the North east economy.

**CO2:** Familiarize with the major trends social and economic developments in the North East India

**CO3:** Impart knowledge on the infrastructure and related issues relating to in North East India

**CO4:** Analyse the recent emerging issues with respect to growth and development of North east India.

### Course Contents:

**Regional Economy & Human Resources Development:** Features of the North-east Economy- Demographic and socio-economic features; Human development: Status and trend in different states of the region; Employment and unemployment status, trends and composition; implications for the development; Major Constraints to Development

**Natural Resources & Agriculture:** Land distribution and land use pattern-its implication for development; Methods of cultivation- Issues in agricultural productivity; Forests, water and other mineral resources in the region implication for development

**Infrastructure & Industry:** Economic Infrastructure: power, road, communication and banking; infrastructure deficiency and regional economic development; Status and structure of industries- SSIs, Handlooms & Handicrafts; Industrial Policy-North East Industrial and Investment Promotion Policy (NEIIPP)

**Emerging Issues:** Planning for development- objectives, allocation and thrust areas; achievements and failures; role and achievement of NEC/DONER in economic development of NER; Governance and development-government failure and its correction; local self-government and development; Major Fiscal initiatives undertaken in recent years; Participatory development; New development initiatives in NER, Vision Document 2020; Look East Policy and the N.E. Region.

### Reading List:

1. Brunner Hans- Peter (2010) (ed): North East India- Local Economic Developments and Global Markets, Sage India, New Delhi

□□□ Bhattacharjee PR (2003): An Introduction to Regional Economics; Srijan Graphics & Publishing House, Silchar

3. Gangly, JB (2006); An Economic History of North East India, 1826-1947; Aakansha Publishing House, New Delhi.

4. Human Development Reports of various states.

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ECON 1002 C	Dissertation/Projects/Field Study Report 4 Credits (Practical)
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**Course Objectives:** The dissertation presents a major piece of guided independent research on a topic agreed between the student and their supervisor. It aims to apply the theoretical knowledge of Economics on available data. The students can develop deeper knowledge, understanding and capabilities by delving into existing body of literature on a particular problem of choice as well as develop a clear philosophical and methodological framework to analyse an economic issue. The course also allows the student present and discuss the findings alongwith economic arguments.

**Course Outcomes:** Upon successful completion, students will have the knowledge and skills to

**CO1:** Critically, independently and creatively identify and problematise a real life economic issue

**CO2:** Develop in depth and critical understanding of existing literature on a chosen topic by systematically integrating knowledge.

**CO3:** Undertake Surveys for data collection and data analysis using statistical packages.

**CO4:** Chose and apply appropriate analytical tools and produce a logically structured report which synthesises the existing knowledge from a critical viewpoint and follows the standard structure in English

**CO5:** Contribute to original research in future

**Course Contents:**

Each Student provided with a supervisor and a topic.

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ECON 1003C i	Agricultural Economics- II 4 Credits (Lecture/Theory)
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**Course Objectives:** The objective of this course is to provide a detailed treatment of issues in agriculture economics to those intending to specialize in this area. Starting with the explanation of theoretical questions, the course tries to enhance the students' awareness of issues that are relevant to agriculture economics and contemporary debates in the literature and enable them to analyses these issues with basic microeconomics concepts.

**Course Outcomes:**

**CO1:** Gain knowledge of the agricultural production and productivity

**CO2:** Review the various institutional changes in agricultural sector

**CO3:** Identify the sources and problems of agricultural credit

**CO4:** To evaluate sustainable agricultural development.

**CO5:** To understand the agricultural market structure and agricultural Price Policy;

**Course Contents:**

**Theories of Peasant Economy:** Features of peasant Societies; Elements of Peasant Political Economy; The Theories of Optimizing Peasant-profit maximizing peasant, risk averse peasant, drudgery averse peasant, and sharecropping peasant; Women in peasant household.

**Agricultural Marketing:** Market and Marketing, Marketing functions, Channels of Distributions, Defects of agricultural marketing, Marketable surplus - Marketable surplus and marketed surplus, Marketable surplus and economic development, factors affecting Marketable surplus

**Agricultural Credit and Capital Formation:** Role of capital and rural credit; Organized and unorganized capital market; Rural savings and capital formation; Characteristics and sources of rural credit- Institutional and non- institutional; Reorganization of rural credit-cooperatives, commercial banks, regional rural banks; Role of NABARD.

**Agricultural Growth in India:** Recent trends in agricultural growth in India; Inter regional variations in growth of output and productivity; Cropping pattern shifts; Supply of inputs- Irrigation, power, seed and fertilizers; Pricing of inputs and role of subsidies; Distribution of gains from technological change; Role of Public investment and capital formation in Indian agriculture; Strategy of agricultural development and technological progress; Sustainable agriculture- indigenous practices; Biotechnological practices and growth potential.

**Reading List:**

□□□A.N. Sadhu & Amarjit Singh (2008), Fundamentals of Agricultural Economics, Himalaya Publishing House, Delhi.

□□□Bilgrami, S.A.R. (1996), Agricultural Economics, Himalaya Publishing House, Delhi.

□□□Dantwala, M.L. et. al (1991), Indian Agricultural Development Since Independence, Oxford & IBH, New Delhi.

□□□Gulati, A. and T. Kelly (1999), Trade Liberalization and Indian Agriculture, Oxford University Press, New Delhi.

□□□Joshi, P.C. (1975), Land Reforms in India: Trends and Prospects, Allied Publishers, Bombay.

□□□□Rudra, A. (1982), Indian Agricultural Economics: Myths and Reality, Allied Publishers, New Delhi.

ECON 1003C ii	Mathematical Economics -II 4 Credits (Lecture/Theory)
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**Course Objectives:** The aim of this course is to introduce students with the Mathematical concepts and methods used to analyses consumer behaviors, producer behaviors and determination of price in various markets. The primary goal is to strengthen student's critical thinking and reasoning skills at planning economic research and to enable them to communicate result effectively

**Course Outcomes:**

**CO1:** Understand the applied macro-economic models.

**CO2:** Develop the knowledge of LPP and its application in economics.

**CO3:** Develop the knowledge of Input-Output model and use of it in economics.

**CO4:** Develop the knowledge of different games and different strategies

**CO5:** Develop the skill of application in micro-economic theory.

**Course Contents:**

**Macro-economic Models:** Dynamic Macroeconomics: Classical vis-à-vis Keynes, Static and Dynamic Multiplier, Multiplier-Accelerator model. Trade Cycles Models, Adaptive Expectations and Rational Expectations.

**Linear Programming and Optimization Techniques:** Linear programming, simplex method, Big-M method, Degeneracy, two-phase simplex method, Duality. Transportation and storage problems and other applications of linear programming in economics. Non-linear programming: Lagrangian method, Kuhn-Tucker method, Necessary and sufficient Conditions. Linear activity analysis model

**Leontief's Input-output Analysis:** Open system, Hawkins-Simon conditions, prices in the Leontief system. The closed system – its characteristics and relation to the Walrasian general economic equilibrium. Dynamic system, Testing consistency of planning models.

**Game Theory and applications:** Games with Perfect Information under pure strategy Nash Equilibrium, best response functions, Dominated actions, Games with Perfect Information under mixed strategy – Nash Equilibrium and best response functions, dominated actions – economic applications, sequential games, extensive form games – backwards induction, sub-game perfect equilibrium – applications. Introduction to games with imperfect information – Bayesian Games – General definitions, Cournot's duopoly game with imperfect information, providing public goods, auctions, extensive form games under imperfect information, signalling games, finitely and infinitely repeated games and Nash equilibrium, bargaining – examples.

**Reading List:**

□□□□□Barro, R. and X. Sala-i-Martin (1998), Economic Growth 2nd edn., McGraw Hill, NY



2. M. Intriligator (1971), *Mathematical Optimization and Economic Theory*, Englewood Cliffs, N.J. Prentice Hall.

□□□□Avinash Dixit (1990), *Optimization in Economic Theory*, 2nd Edition, Oxford University Press.

4. Arrow, K.J & M. Intriligator (Eds) (1982), *Handbook of Mathematical Economics*, Volumes I, II and III, North Holland, Amsterdam.

□□□Dorfman, R.P.A. Samuelson & R. Solow (1950); *Linear Programming and Economic*

Analysis; McGraw Hill Book Company, New York.

□□□Hadley, G (1962): *Linear Programming*; Addison Wesley Publishing Co. Massachusetts.

□□□Leontief, W.E. (1976); *Input-output Economics*; Oxford University Press, New York.

□□□Nash, J.F. (1996); *Essays on Game Theory*; Cheltenham, U. K.

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ECON 1003C iii	Econometrics-II 4 Credits (Lecture/Theory)
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**Course Objectives:** Applications of economic theory need a reasonable understanding of economic relationship and relevant statistical methods. The econometric methods thus become a very powerful tool for understanding of applied economic relationships and for meaningful research in economics. This paper accordingly is devoted to equip the students with theory of econometrics. We will learn how to construct econometric models, estimate the parameters of these models and interpret the parameters estimates. Many of the methods introduced in this course are also used in business, finance and many other disciplines.

**Course Outcomes:** At the end of this course the students shall be able to:

**CO1:** Understand various quantitative techniques to empirically examine the economic theories

**CO2:** Evaluate consequences and find remedial measures if CLRM assumptions are violated.

**CO3:** Understand the use of econometric techniques in case of qualitative data.

**CO4:** Learn to apply models such as simultaneous equations, (2SLS), (3SLS) models to economic data.

**Course Contents:**

**Time series Econometrics – I**

Univariate Time series analysis – Properties of AR, MA, ARMA processes – testing for stationarity: unit root test. ARIMA models: identification, estimation and testing of its. Estimation and testing of autoregressive distributive lag relations – exogeneity test. The Wu-Hausman test.

### **Time series Econometrics – II**

Vector Autoregressions (VARs): Description – estimations of VARs – Testing of the orders – Vectors error correction model (VECM): Testing for cointegration Rank – estimation of cointegrating vectors – estimation VECM.

### **Econometrics of Panel data – I**

A. Concept of panel Data set – Definition of various panels – definition of various models: OLS model, Pooled regression, Fixed effects, Random effects, random parameter models etc. One way error component regression: Fixed effects model (FEM): methods of estimation and testing for it and Random Effects Model (REM): methods of estimation and testing for it. Pooled Regression vs. Panel Regression: The Lagrange Multiplier (LM) Test. Fixedvs Random: The Hausman Test. Two way error component regression Fixed effects model (FEM): methods of estimation and testing for it and Random Effects Model (REM): methods of estimation and testing for it.

### **Econometrics of Panel data – II**

A. Simultaneous Equation system and panel regression – method of estimation – Instrumental variable estimation; B. Dynamic panel data model – method of estimation – the generalized moment method of estimation; C. Autocorrelation in panel data models; D. Heteroscedasticity in the panel data models

### **Reading List:**

- Johnston, J and J. Dinardo (1998): Econometric Methods (4th Ed.), Mc Graw Hill, New York.
- Maddala, G.S. (2008): Introduction to Econometrics, John Willey & Sons, New York.
- Gujrati, D. N. (2009): Basic Econometrics, Mc. Graw Hill, New Delhi.
- Greene, W.H. (2008) Econometric Analysis (5th Ed.), Pearson India, New Delhi.
- 5. Ramanathan, R. (2008): Introductory Econometrics with applications (5th Ed.), Cengage Learning India Pvt. Ltd., New Delhi.
- 6. Wolridge, J. (2006): Introductory Econometrics – A Modern Approach (3rd Ed.), Thomson South Western, New Delhi.

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ECON 1003C iv	Health Economics -II 4 Credits (Lecture/Theory)
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**Course objectives:** This course deals with the important components and issues of human resources governing long-run development. Health economics as a distinct branch of economics critically considers the dominant economic and political issues involved with health and healthcare markets in every country of the world. The objective is to enable the learners how resources are allocated to and within the health economy, and to demonstrate the magnitude and importance of the health sector for economic development.

**Course Outcomes:** After completion of the course, the learners will be able to

**CO1:** Understand the basic issues involved in the public healthcare system;

**CO2:** Assess the economics of hospital behaviour;

**CO3:** Measure the health care efficiency with regards to private and social counts;

**CO4:** Evaluate the aspects of equity and efficiency for publicly funded healthcare services.

**Course Contents:**

**Health Care Utilisation:** Preventive and Curative Health Care, Public Health and Political Economy, the Public Policy Levers, Governance and Internal Incentives, Market Imperfections in Service Delivery, Key Policy Design Issues. Role and Rationale for Institutions in Health Care Delivery and Utilisation, Cross Country Comparisons of Health Care Services and their Utilisation, Health Care Costs

**Economics of Hospital Behaviour:** Hospital Types, Hospital Objectives, Economic Models of Hospital Behaviour – Profit Maximisation, Quantity Maximisation, Revenue Maximisation, Executive Benefit Maximisation, Utility Maximisation etc. The Application of Hospital Behaviour Models – Objective Capacity, Measurability, Trade-off Testability, Utility Estimation and Effect Predictability.

**Publicly Funded Health Care Services:** Purchasing Medical Care and Coordinating Services, the Control and Cash-Flow Rights, Authority over Coordination and Medical Functions, Contracting with Non-Governmental Organizations, PPP Model in Health Care Service Provisions. Types of Health Care Funding Mechanisms, Contracting and Asymmetric Information, Public Incentives under Moral Hazards and Adverse Selection, the Relative Performance Schemes, Competition and Regulation.

**Measuring Health Care Efficiency:** General Concept of Efficiency, Efficiency in Output Measures, Organizational and Social Efficiency – Unidimensional Ratio, Multidimensional Weighted Ratio, Production Function Analysis. Measurement of Hospital Efficiency – Basic Concept, Cost Function Analysis, DEA Approach; Cost-Benefit Analysis - Private Benefits and Private Costs of Providing Health Services, the Market Failure, Public Provisions of Health Services, Benefits and Costs (both Private and Social) of Training Professionals such as Physicians, Pharmacists and Nurses.

**Reading List:**

□□□Cuyler A. and J. Newhouse. Handbook of Health Economics. Elsevier

□□□Das Gupta M., Lincon C. and Srinivasan T. Health, Poverty and Development in India.

Oxford University Press

□□□Santerre R. and Nuen S. Health Economics: Theories, Insights and Industry Studies.

Thompson

□□□S. Preker, X. Liu, E. V. Velenyi and E. Baris. Public Ends, Private Means: Strategic Purchasing of Health Services. The World Bank

□□□□Klarman H.E. The Economics of Health. Columbia University Press

□□□Michael Hurd Arie Kapteyn. Health, Wealth and Role of Institutions. The Journal of Human Resources: 38(2) [2003]

□□□□Panchamukhi P.E. Economics of Health: A Trend Report. A Survey of Research in

Economics, Vol. VI, Infrastructure, Allied Publishers, Delhi

□□□□Weisbroad B. A. Economics of Public Health. University of Pennsylvania Press

□□□Zweifel P., Breyer F. and Kifmann M. Health Economics. Springer

□□□□□World Health Organization. Report of Commission on Macroeconomics and health. 2000

□□□□□UNIDO. Guidelines for Project Evaluation. United Nations, 1972

□□□□Websites of the UNDP, WHO, NFHS etc.

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ECON 1004E	History of Economic Thought 4 Credits (Lecture/Theory)
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**Course Objectives:** This course will introduce the students to economic thought by tracing its history. It will introduce them to the various concepts & theories of early thinkers and classical economists. It will also offer insights on the essential features of marginalism, neo classical economics, Keynesian economics and welfare economics. The Ideas of Indian thinkers on Economics will also be discussed

**Course Outcomes:** After completion of this course student will be able to:

**CO1:** comprehend the development of the theory of economics in historical perspective.

**CO2:** make critical comparison of contributions of main schools of economics.

**CO3:** analyze the process of evolution of economic ideas in the historical context

**CO4:** consider appropriate economic responses and behavior to the realities of the modern world and comprehend the emerging policy directives in the country and the world.

**Course Contents:**

**Tracing the Development process:** History of Economic Thought Class; Mercantilism; Physiocracy; Precursors to Smith Classical Theories of Value- Smith, Ricardo, Classical

Monetary Theory; Classical Public Finance Critique of Classical Political Economy-  
Marx

**Marginalist and Neo-Classical Economics:** Marginalist and Walrasian General  
Equilibrium Analyses; Marshall on Money and Credit Wicksell and Fisher on Interest  
Rates Schumpeter, Fisher, & Kalecki on Business Cycles

**Keynesian Thoughts and Developments:** Keynes- Investment; Money and  
Speculation; Business Cycle the Hicks-Hansen-Samuelson IS-LM Transformation;  
Monetarist Propositions; Critiques of Monetarism Minsky- Financial Instability  
Hypothesis.

**Indian Economic Thought and Thinkers:** Economic Ideas from the Past Emergence of  
modern Indian economic thought; Dadabhai Naroji's Drain theory; Gandhian economic  
thoughts, relevance in 21st century; Economic ideas of Amartya Sen—the materials of  
justice—lives, freedoms, happiness, wellbeing and capabilities; Equality and Liberty—  
Gist.

**Reading List:**

- H. Minsky, Financial Instability Hypothesis, 1992;
- L. Randall. Wray and Eric Tymoigne, Macroeconomics Meets Hyman Minsky:  
The  
Financial Theory of Investment, The Levy Institute, Working Paper 543,
- J. Hicks- Mr. Keynes and the Classics: A Suggested Interpretation,
- R.G. Lipsey, The Relation Between Unemployment and the Rate of Change of  
Money  
Wage Rates in the United Kingdom, 1861-1957:
- P. Samuelson and R. Solow, Analytical Aspects of Anti-Inflation Policy
- 6.□J. Tobin: Inflation and Unemployment American Economic Review
- M. Kalecki: A Theory of the Business Cycle
- Medema & Samuels- Economic Thought
- Snowdon & Vane- Economic Thought
- Keynes- General Theory
- Ajit Dasgupta- A History of Indian Economic Thought
- Amiya Dasgupta- Epochs of Economics
- Alessandro Roncaglia- The Wealth of Ideas.

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ECON 1005 E	Internship 4 Credits (Practical)
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**Course Objectives:** Provide the students a learning experience about work. Exposing  
them as interns will inculcate the work ethics and culture. A practical working experience  
during student life will instill confidence and enable them to sharpen their skills and

knowledge

**Course Outcomes:** The students are expected to be -

**CO1:** Able to take up responsibility and work diligently in future

**CO2:** Able to improve their inter-personal skills and hone their attitude towards team work.

**CO3:** Better coordinators in completion of assignments successfully

**CO4:** More equipped to employ their learning and knowledge of economics in future career

**Course Contents:** *In Practice:*

Placed at different types of institutions for practical learning of the assigned duties.

**Reading Materials:** As and when required for the specific job areas

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