

**Department of Economic Studies and Policy (DESP)  
School of Social Sciences and Policy**

**Syllabus for M.A. Programme in Economics  
(Approved in the BoS Meeting on 13.07.2018)**

*Under  
Choice Based Credit System (CBCS)*



**Central University of South Bihar**  
(Established by Central Universities Act, 2009 of Parliament)  
SH-7, Gaya-Panchanpur Road, Village-Karhara, Post-Fatehpur  
P.S.-Tekari, District-Gaya (Bihar) PIN-824236

## **About the Programme**

*The two-year (four-semester) post-graduate programme is designed to train the students on the ever-expanding knowledge base in economics – both theoretical and applied. The students are not only exposed to alternative theoretical paradigms in economics but also trained to improve their analytical and quantitative skills for evaluating the policies emanating from the theories. The students undergoing such trainings would be equipped to undertake studies at a higher (doctoral) level, and join academic profession or to adopt professional career in the corporate/ government sectors.*

**DEPARTMENT OF ECONOMIC STUDIES AND POLICY**  
**Course Structure for M.A. in Economics Programme (under CBCS)**

Semester	Course Type	Course Code	Name of the Course	Credit
<b>FIRST SEMESTER</b>	<b>Core Courses (Compulsory)</b>	MAECO1001C04	Microeconomics I	4
		MAECO1002C04	Macroeconomics I	4
		MAECO1003C04	Mathematical Methods in Economics I	4
		MAECO1004C04	Statistical Methods and Applications	4
		MAECO1005C04	Development Economics I	4
	<b>Elective Courses</b>  (Any one from here or from Courses of other Departments)	MAECO1001E04	Money and Banking	4
		MAECO1002E04	History of Economic Ideas	4
		MAECO1003E04	Tourism, Planning and Sustainable Development ( <b>Available at UGC-MOOCs</b> ) [ <a href="http://ugcmoocs.inflibnet.ac.in/courses.php">http://ugcmoocs.inflibnet.ac.in/courses.php</a> ]	4
	<b>Skill-Based Courses (Optional)</b>	MAECO1001S00	Developing Soft Skills and Personality ( <b>Available at SWAYAM</b> ) [Link: <a href="http://swayam.gov.in/courses/4773-july-2018-developing-soft-skills-and-personality">http://swayam.gov.in/courses/4773-july-2018-developing-soft-skills-and-personality</a> ]	0 (Non-credit)
		MAECO1002S00	Computer Fundamentals ( <b>Available at SWAYAM</b> ) [Link: <a href="https://swayam.gov.in/courses/4067-computer-fundamentals">https://swayam.gov.in/courses/4067-computer-fundamentals</a> ]	0 (Non-credit)
<b>SECOND SEMESTER</b>	<b>Core Courses (Compulsory)</b>	MAECO2001C04	Microeconomics II	4
		MAECO2002C04	Macroeconomics II	4
		MAECO2003C04	Mathematical Methods in Economics II	4
		MAECO2004C04	Introductory Econometrics	4
		MAECO2005C04	Development Economics II	4
	<b>Elective Courses</b>  (Any one from here or from Courses of other Departments)	MAECO2001E04	Financial Economics I	4
		MAECO2002E04	Economics of Education and Health	4
	<b>Skill-Based Courses (Optional)</b>	MAECO2001S00	Mind Education ( <b>Available at SWAYAM</b> ) [Link: <a href="http://swayam.gov.in/courses/4617-mind-education">http://swayam.gov.in/courses/4617-mind-education</a> ]	0 (Non-credit)
		MAECO2002S00	Probability and Stochastics for Finance ( <b>Available at SWAYAM</b> ) [Link: <a href="http://swayam.gov.in/courses/1349-probability-and-stochastics-for-finance">http://swayam.gov.in/courses/1349-probability-and-stochastics-for-finance</a> ]	0 (Non-credit)

Semester	Course Type	Course Code	Name of the Course	Credit
<b>THIRD SEMESTER</b>	<b>Core Courses (Compulsory)</b>	MAECO3001C04	International Economics	4
		MAECO3002C04	Indian Economic Development	4
	<b>Elective Courses</b>  (Any four from here or from Courses of other Departments)	MAECO3001E04	Econometric Methods	4
		MAECO3002E04	Software Applications of Econometrics	4
		MAECO3003E04	Law and Economics	4
		MAECO3004E04	Agricultural Economics I	4
		MAECO3005E04	Financial Economics II	4
		MAECO3006E04	Industrial Economics I	4
		MAECO3007E04	Research Methodology (Available at UGC-MOOCs) [ <a href="http://ugcmoocs.inflibnet.ac.in/courses.php">http://ugcmoocs.inflibnet.ac.in/courses.php</a> ]	4
<b>FOURTH SEMESTER</b>	<b>Core Courses (Compulsory)</b>	MAECO4001C04	Public Finance	4
		MAECO4002C04	Field Survey and Report Writing	4
	<b>Elective Courses</b>  (Any four from here or from Courses of other Departments)	MAECO4001E04	Financial Economics III	4
		MAECO4002E04	Financial Econometrics	4
		MAECO4003E04	Advanced Topics in Applied Econometrics	4
		MAECO4004E04	Game Theory with Application to Economics	4
		MAECO4005E04	Agricultural Economics II	4
		MAECO4006E04	Environmental Economics	4
MAECO4007E04	Industrial Economics II	4		
<b>NOTES:</b>	<p>1. Elective courses would be offered depending upon the availability of specialised faculties. Courses to be offered as elective papers in a particular semester would be announced before its commencement.</p> <p>2. Each student would obtain at least 08 credits from courses offered by other departments / UGC-MOOCs courses in lieu of the elective courses of the parent department.</p>			

# *Detailed Syllabus of Core Courses*

## Semester I

<b>Course Title: Microeconomics I</b>			
<b>Course Code:</b>	MAECO1001C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quiz, and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course Objectives

- To familiarize the students with the theoretical understanding about the behaviour of an individual at the micro level, either as a consumer or producer in a market economy.
- To understand the theories of price determination and market analysis.

### Learning Outcomes

After completion of the course the learners will be able to:

- Think intuitively about economic problems
- Make decisions using marginal analysis and opportunity costs to make optimal choices and identify whether the choices are “efficient” or “equitable”.
- Describe the incomes earned by the factors of production (land, labour, capital and entrepreneurship) as wages, interest, rents and profit.

### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>Consumer Behaviour:</b> Consumer preferences, Indirect utility, The money metric utility functions, Revealed preference, The Slutsky equation, Choice under uncertainty, Neumann-Morgenstern utility functions, Risk aversion and measures of risk aversion.	1-10 [L]
2	<b>Theory of Firm:</b> Cost minimisation, Profit maximisation, Market equilibrium, Imperfect markets - Monopoly - Price Discrimination, Oligopoly - Cournot, Bertrand, Stackelberg.	11-25 [L]
3	<b>Elements of Game Theory:</b> Concept of a game, Prisoner’s dilemma, Iterated elimination of dominant strategies, Nash equilibrium, dynamic game, backward induction, sub-game perfect Nash equilibrium, Repeated games, Elements of co-operative game theory.	26-35 [L]

4	<b>Theory of Distribution:</b> Neo-classical approach - marginal productivity theory, elasticity of technical substitution and factor shares, product exhaustion theorem, theories of pricing of factors in imperfect markets, determination of rent, wages, interest and profit.	36-45 [L]
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Hal R. Varian, *Intermediate Microeconomics: A Modern Approach*, W.W. Norton and Company, USA, 8<sup>th</sup> edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
- (2) Hal R. Varian, *Microeconomic Analysis*, W.W. Norton and Company, USA, 1992.

**Additional References:**

- (1) Da Costa, G.C., *Production, Prices and Distribution*, Tata McGraw Hill, New Delhi, 1982.
- (2) Bronfenbrenner, M., *Income Distribution Theory*, Macmillan, London, 1971.

<b>Course Title: Macroeconomics I</b>			
<b>Course Code</b>	MAECO1002C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-term university examination		

### Course Objectives:

- To provide the students with an introduction to the basic macroeconomic principles.
- To enable them to appreciate the workings of real and money markets and the nature of equilibrium in each market
- To emphasize the role of macroeconomic policies that affect internal and external deficits, inflation and growth of per capita income.
- Throughout the course a focus will be on ‘critical thinking’ to analyse macroeconomic problems.

### Learning Outcomes:

After successful accomplishment of this course, a student should be able to:

- define and analyse the determinants of macro-economic fluctuations, economic growth, unemployment, inflation.
- understand the earlier and contemporary macroeconomic events.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Measurement of Macroeconomic Variables:</b> Measurement of national income, Index of industrial production, Measurement of inflation: GDP Deflator, Consumers’ price index, Wholesale price index, Producer’s price index, unemployment and Inflation.	1-8 [L]
2	<b>Theories of Output and Employment:</b> Classical economics, Quantity theory of money, The Keynesian system, Aggregate supply and demand.	9-16 [L]
3	<b>Money and the Role of Monetary Policy:</b> Money in the Keynesian system, Friedman’s monetarist theory, Monetarists versus Keynesians, Phillips curve.	17-24 [L]
4	<b>IS-LM and Complete Keynesian Framework:</b> Effectiveness of Fiscal and Monetary policy.	25-37[L]
5	<b>New Classical Economics:</b> Rational expectations, The Keynesian counter critique, Lucas critique, and supply-side macroeconomics.	38-45 [L]
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Dornbusch, R, S Fischer and R Startz, *Macroeconomics*, McGraw Hill, New York, 11<sup>th</sup> edition, 2010.
- (2) Froyen, Richard T., *Macroeconomics: Theories and Policies*, Pearson, New York, 8<sup>th</sup> edition, 2012.
- (3) Mankiw, N. Gregory, *Macroeconomics*, Worth Publishers, New York 7<sup>th</sup> edition, 2010.

**Additional References:**

- Basu K. (2011). "Understanding Inflation and Controlling It" Vol. 46, Issue No. 41.
- Friedman, M. (1948). "A monetary and fiscal framework for economic stability." *American Economic Review* 38: 245-264.
- Friedman, M. (1968). "The role of monetary policy." *American Economic Review* 58 (1): 1 -17.
- Muth, J. F. (1961). Rational expectations and the theory of price movements. *Econometrica: Journal of the Econometric Society*, 315-335.
- Phillips, A. W. (1958). The relation between unemployment and the rate of change of money wage rates in the United Kingdom, 1861–1957. *Economica*, 25(100), 283-299.
- Taylor, J. B. (1993, December). Discretion versus policy rules in practice. In *Carnegie-Rochester conference series on public policy* (Vol. 39, pp. 195-214). North-Holland.
- Tobin, J. (1972). "Inflation and Unemployment." *American Economic Review* 62 (1/2): 1-18.
- Data, Reports, Working Papers available at The Reserve Bank of India Website: <https://www.rbi.org.in/> and Central Statistics Office (CSO), Government of India Website: <http://www.mospi.gov.in/central-statistics-office-cso-0>



<b>Course Title: Mathematical Methods in Economics I</b>			
<b>Course Code</b>	MAECO1003C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, self-study, group and individual assignments.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

### Course Objectives:

- To introduce the students to the basic mathematical tools required to study economic theory, statistics and econometrics at the Masters Level.
- To make the students learn the application of mathematical tools in economics.

### Learning Outcomes:

After completing this course the students will be able to:

- solve a range of problems relating to basic mathematical tools.
- acquire the essential mathematical skills used in economic analysis
- make use of the mathematical approach in formulating and analysing problems in economics, and recognise its limitations
- comprehend the articles in leading economics journals that are essential for keeping up with advances in economic science.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Content</b>	<b>Teaching hours</b>
1.	<b>Preliminaries:</b> Set, Relation and Functions; theory of graphs and limit of a function at a point.	1-4 [L]
2.	<b>Matrix Algebra:</b> Types of matrices, matrix operations, matrix inversion, solution of simultaneous equations using matrix algebra, vectors, partitioned matrix, rank of a matrix, inverse and trace of a matrix, evaluation and properties of determinants, input-output models.	5-11 [L]
3.	<b>Differentiation:</b> Basic rules of differentiation, function of one variable, rules of differentiation involving more than one function of the same variable, rules of differentiation involving functions of different variables, higher order derivatives, rules of partial and total differentiations, derivative of implicit functions, applications in economics.	12-21 [L]
4.	<b>Integration:</b> Rules of integration, simple and definite Integrals, Taylor series formula, Application to consumer and producer's surplus, growth rates and simple properties of time path of continuous variables.	22-27 [L]
5.	<b>Differential Equations:</b> First Order Differential Equations: first order linear differential equations with constant coefficient and constant	28-37 [L]

	term, dynamics of market price, variable coefficient and variable term – homogeneous and non-homogeneous case, exact differential equations, non-linear differential equations of the first order and first degree, economic applications – Solow growth model. Higher Order Differential Equations - linear second order differential equations with constant coefficients and constant terms, the dynamic stability of equilibrium.	
6.	<b>Difference Equations:</b> First-order difference equations, complementary function, particular integral and solution, difference equations in economics, dynamic stability of equilibrium, convergence of equilibrium, Linear second order difference equations with constant coefficients. Economic Applications: cobweb model, multiplier-acceleration interaction model.	38-45 [L]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Chiang, A. C. and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Mc Graw Hill, 4<sup>th</sup> edition, 2005
- (2) Simon, Carl P. and Lawrence Blume. *Mathematics for Economists*, W. W. Norton and Company, 1994.

### Additional References:

- (1) Allen, R. G. D, *Mathematical Economics*, Second edition, Macmillan, UK, 1959
- (2) Sydsaeter, Knut, Peter Hammond, and Arne Strom, *Essential Mathematics for Economic Analysis*, 4<sup>th</sup> edition, Pearson Education, 2012
- (3) Yamane, Taro, *Mathematics for Economists: An Elementary Survey*, Prentice-Hall, 1968

<b>Course Title: Statistical Methods and Applications</b>			
<b>Course Code</b>	MAECO1004C04	<b>Credits</b>	4
<b>L + T + P</b>		<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	30(L) + 15(P) + 15(T) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, tutorials, and practical works using Excel software.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-semester university examination		

### Course Objectives:

- To familiarise the students with basic tools of statistics that are used to analyse socio-economic data.
- To introduce the concepts of probability theory and statistical inference that have applications in econometric analysis.
- To expose the students to practical applications of various statistical tools using the Excel software.

### Learning Outcomes:

- Taking this course would help the students to acquire data analysis skills using the tools of statistics.
- It will also help to learn the methods of interpretation and presentation of statistical results.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Basic Tools of Statistics:</b> Definition of statistics; Types of variables; Classification, tabulation and graphical presentation of data; Study of frequency of data; Measures of central tendency, dispersion, skewness, moments and kurtosis.	1-6 [L]
2	<b>Correlation and Regression:</b> Simple, multiple and partial correlations; rank correlation; linear regression analysis; estimation of non-linear equations – parabolic, exponential, geometric, Gompertz and logistic.	7-12 [L]

3	<b>Theories of Probability and Distributions:</b> Basic probability concepts and rules; Conditional probability; Random variables and probability distributions: Discrete and continuous probability distributions; probability mass and density functions expectation of a random variable and rules of expectation. Measures of location, dispersion, skewness and kurtosis for a probability distribution; properties of binomial, normal, poisson, and multinomial distributions.	13-24 [L]
4	<b>Sampling and Sampling Distributions:</b> Types of sampling methods; Simple random sample with and without replacements; Sampling distributions.	25-30[L]
5	<b>Statistical Inference:</b> Population and Sample; Parameter and Statistic; Estimation theory: Point Estimation, Small sample properties, asymptotic properties, Interval Estimation, Testing of hypotheses: Null vs Alternative hypothesis, Simple and Composite hypotheses, Procedure for testing of hypotheses; Type I and Type II errors; power of a test; level of significance, Confidence Interval, confidence limits, Degrees of freedom; Test for the mean, equality of two means, variance and equality of two variances (large and small samples), large sample tests for proportions, test for correlation coefficient.	31-40 [L]
6	<b>Applications of Statistical Tools Using Excel Software</b>	41-50 [P]
<b>Tutorials</b>		10 [T]

#### Recommended Texts:

- (1) Newbold, Paul et al., *Statistics for Business and Economics*, 8<sup>th</sup> edition, Pearson, England, 2013.
- (2) Lee, Cheng-Few et al., *Statistics for Business and Financial Economics*, Springer, USA, 2013.
- (3) Quirk, Thomas J, *Excel for Business Statistics*, Springer, USA, 2013
- (4) Winston, Wayne L, *Microsoft Excel 2016 Data Analysis and Business Modeling*, Microsoft Press, USA, 2016.

#### Additional References:

- (1) Levine, D M et al., *Business Statistics: A First Course*, 5<sup>th</sup> edition, Pearson, Delhi, 2011.
- (2) Murthy, M N, *Sampling Theory and Methods*, Statistical Publishing Society, Kolkata, 1967.
- (3) Spiegel, Murray R & Stephens, Larry J, *Schaum's Outline of Statistics*, 6<sup>th</sup> edition, McGraw-Hill, New York, 2018.

<b>Course Title: Development Economics I</b>			
<b>Course Code</b>	MAECO1005C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-term university examination		

#### **Course Objectives:**

- To familiarize the students with the theoretical underpinnings of development discourses, and
- To introduce the measurement issues relating to various development indicators.

#### **Learning Outcomes:**

After successful accomplishment of this course, a student should be able to:

- demonstrate multidimensional knowledge and understanding of the characteristics and economic problems of less-developed countries
- develop critical thinking to those problems and to formulate and evaluate possible policy responses.

#### **Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Content</b>	<b>Teaching hours</b>
1	<b>Economic Growth, Development, and Measurement:</b> Significance of growth; Convergence/divergence; Concept of inclusive growth; Capabilities approach; Purchasing power parity measurement of income; Human development index; Contributions of Clark, Kuznets and Chenery.	1-8 [L]
2	<b>Micro-Development Theories:</b> Land, labour and credit market linkages; Informal-formal dualism - Lewis, Harris-Todaro, Fei-Ranis models; Rural and urban informal Markets; Government intervention vs. independence of market.	9-16 [L]
3	<b>Institutions and Development:</b> Role of Institutions in Economic development: North, Acemoglu; Issue of Governance: Oliver Williamson's theory of Transaction cost, Corporate Governance-Best practices in Indian context; Issue of Property Rights: Coase, De Soto; Corruption in Governance; Entrepreneurship and Development: Schumpeter, Knight, Baumol.	17-24 [L]
4	<b>Finance and Economic Development:</b> Rural credit markets; Theories of informal credit markets - Lender's risk hypothesis, default and collateral, informational asymmetries and credit market; Microfinance.	25-37[L]

5	<b>Equality and Justice – Alternative Theories:</b> A brief description of the literature on theories of justice, Rawls’ theory of justice in a nutshell, Rawlsian justice versus the capability approach, what do we need for a capability theory of justice, gender justice and justice for marginalized groups, from theories of justice to just practices and policies.	38-45 [L]
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Mukherjee, Aparajita and Saumya Chakrabarti, *Development Economics: A Critical Perspective*, Prentice Hall India, New Delhi, 2016.
- (2) Ray, Debraj, *Development Economics*, Oxford University Press, New Delhi, 1998.
- (3) Basu, Kaushik, *Analytical Development Economics: The Less Developed Economy Revisited*, Oxford University Press, New Delhi, 1995.
- (4) Deneulin, Severine and Lila Shahani (eds.), *An Introduction to the Human Development and Capability Approach: Freedom and Agency*, Earthscan, London, 2009.
- (5) Fukuda-Parr, S. and A. K. Shiva Kumar, *Handbook of Human Development*, Oxford University Press, New Delhi, 2009.

**Additional References:**

- (1) Acemoglu, Daron Simon Johnson and James A. Robinson, “Institutions as a fundamental cause of long-run growth,” in Philippe Aghion and Steven N. Durlauf, *Handbook of Economic Growth*. Volume /A, ed. (Amsterdam: Elsevier 2005), 389.
- (2) Agenor, Pierre-Richard, *Economics of Adjustment and Growth*, Harvard University Press, Cambridge, 2004.
- (3) Bardhan, Pranab and Christopher Udry, *Development Microeconomics*, Oxford University Press, New Delhi, 1999.

## Semester II

<b>Course Title: Microeconomics II</b>			
<b>Course Code:</b>	MAECO2001C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quiz and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course Objectives:

- To familiarize the students with the growing debates on the development implications of welfare issues, externalities as development cost, and problems of social choice.
- While theoretical debates on these issues constitute the central focus of this course, emphasis is given on the part of the students to form their value judgement on development issues.

### Learning Outcomes:

After completion of the course the learners will be able to:

- Understand the applications of the general equilibrium model (Pareto optimality) and its nature and consequences.
- Explain how competitive markets organize the allocation of scarce resources and distribution of goods and services.
- Understand the basic elements of welfare economics
- Distinguish between the various forms of market failure and explain why the governments might have to intervene.
- Understand the basic role of uncertainty and asymmetric information in analyzing economic incentives.

### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>General Equilibrium Analysis</b> - The Edgeworth Box, Pareto Efficient Allocations, Market Trade, The Algebra of Equilibrium, Walras' Law, Relative Prices, Equilibrium and Efficiency, Edgeworth Box Efficiency and Equilibrium in Monopoly, Existence of competitive equilibria, Uniqueness and Stability of Competitive equilibrium, Competitive equilibrium as Core allocation, Factor Price Equalization Theorem, Welfare Properties of Competitive Equilibria - First and Second Fundamental Theorems of Welfare Economics.	1-15 [L]
2	<b>Market Failures</b> - Property Rights - Coase Theorem, Market Failure,	16-25 [L]

	Sources of Market Failure and their Implications – Externalities, Public Goods - Free Rider Problem, Voting.	
3	<b>Economics of Information</b> - The Market for Lemons, Quality Choice, Choosing the Quality, Adverse Selection, Moral Hazard, Signalling, Example: The Sheepskin Effect Incentives.	26-35 [L]
4	<b>Welfare Economics</b> - Welfare Criteria - Pareto Criterion, Kaldor Criterion, Scitovsky Criterion, Samuelson Criterion, Cost-Benefit Analysis, Arrow's Impossibility Theorem.	36-45 [L]
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Varian, Hal R, *Intermediate Microeconomics: A Modern Approach*, W.W. Norton and Company, 8<sup>th</sup> edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
- (2) Varian, Hal R, *Microeconomic Analysis*, VIVA Books, 2010.



<b>Course Title: Macroeconomics II</b>			
<b>Course Code</b>	MAECO2002C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, self-study, seminar, assignments and presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

### Course Objectives:

- To provide a detailed introduction to modern theories of economic growth and business cycles.
- To relate the theoretical analysis to macroeconomic policy and growth of different economies.

### Learning Outcomes:

After completing this course the students will be able to:

- know the main debates and approaches in the literature on economic growth and business cycle
- explain growth theory
- analyze the determinants of growth
- analyse the responses of policy makers to macroeconomic issues relating to growth and fluctuation.
- design a theoretical framework or empirical model for their own research in future.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Content</b>	<b>Teaching hours</b>
1.	<b>Keynesian and Neo-classical Growth Models:</b> Harrod-Domar model, Solow-Swan model, Infinite horizon (Ramsey-Cass-Koopmans) model, Basics of overlapping-generations (Diamond) model.	1-15 [L]
2.	<b>Models with Endogenous Growth:</b> One sector growth models - The AK model, learning by doing and knowledge leak out, two-sector model of Ujawa-Lucas, Romer's model of technological change.	16-27 [L]
3.	<b>Post Keynesian Growth Theories:</b> Pasinetti, Kaldor, Kalecki and Robinson's Approaches.	28-35 [L]
4.	<b>Business Cycle Theories:</b> Aggregate demand theories of business cycle, Real business cycle theory, New-Keynesian theories of business cycles	36-45 [L]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Barro, Robert J. and Sala-i-Martin, Xavier. *Economic Growth*, Prentice Hall of India Private Limited, 2<sup>nd</sup> edition, 2007.
- (2) Romer, David, *Advanced Macroeconomics*, McGraw-Hill, 3<sup>rd</sup> edition, 2006.
- (3) Aghion, Philippe and Peter Howitt, *The Economics of Growth*, MIT Press, 2008

### **Additional References:**

- (1) Acemoglu, Daron, *Introduction to Modern Economic Growth*, Princeton University Press, 2009.
- (2) Foley, D. and Michl, T, *Growth and Distribution*, Harvard University Press, 2001.
- (3) Jones, C. I., *Introduction to Economic Growth*, W. W. Norton & Co, 2013
- (4) Lavoie, Marc, *Foundations of Post-Keynesian Economic Analysis*, Edward Elgar, 1992.
- (5) Olsson, Ola, *Essentials of Advanced Macroeconomic Theory*, 1<sup>st</sup> edition, Routledge, 2012
- (6) Sen, A. K., *Growth Economics: Selected Readings*, Penguin Education, 1970
- (7) Sorensen, Peter B. and Hans J. Whitta-Jacobsen (2010): *Introducing Advanced Macroeconomics: Growth & Business Cycles*, 2nd edition, McGraw-Hill
- (8) Weil, David N, *Economic Growth*, International Edition (3rd edition), Routledge, 2012

<b>Course Title: Mathematical Methods in Economics II</b>			
<b>Course Code</b>	MAECO2003C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, self-study, group and individual assignments.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

**Course Objectives:**

- To impart the knowledge of mathematical optimisation techniques applied in economic analyses.
- To discuss the major applications of optimisation techniques in economic theory and practice.

**Learning Outcomes:**

After completing this course the students will be able to:

- acquire knowledge on optimisation techniques used in economics and understand how several aspects of optimisation are interrelated, and how suitable they are.
- solve optimisation problems relating to economics.
- answer the questions like how a consumer should behave, how firms should compete in a market or how government should decide on its monetary policy

**Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Content</b>	<b>Teaching hours</b>
1.	<b>Classical Optimisation:</b> Unconstrained Optimization, Global and local extrema of real-valued functions, Unconstrained maxima and minima with more than one explanatory variable, Optimization subject to equality constraints: The Lagrange, Multiplier method; Necessary and sufficient conditions for a solution to the optimization problem with equality constraints. Properties of convex and concave functions. Interpretation of the Lagrangian Multiplier. Applications in Economics.	1-12 [L]
2.	<b>Linear Programming:</b> (a) Formulation of the Linear Programming Problem – Definitions of feasible solutions, and basic feasible solutions – The simple method of solving linear programming problems; (b) The dual of a linear programming problem – duality theorems – interpretation of the dual variables; and (c) Simplex algorithm, Big M method and 2-phase method, duality simplex method, complimentary slackness theorem, post optimality analysis	13-24 [L]
3.	<b>Non-linear Programming:</b> Kuhn - Tucker conditions and interpretation of the Lagrangian multiplier. Multi-variable optimization with equality and inequality constraints, Comparative static problems, concave programming.	25-36 [L]

4.	<b>Dynamic Optimization:</b> Dynamic Optimization: Optimal Control Theory and Hamiltonian, Dynamic Programming.	37-45 [L]
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Chiang, A. C. and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, McGraw Hill, 4<sup>th</sup> edition, 2005.
- (2) Chiang A. C., *Dynamic Optimization*, McGraw Hill Inc, 1992.
- (3) Intriligator, M.D., *Mathematical Optimization and Economic Theory*, Prentice Hall, 1971.
- (4) Taha, H.A., *Operations Research: An Introduction*. Macmillan Pub Co, 1976

**Additional References:**

- (1) Dixit, A, *Optimisation in Economic Theory*, OUP, 1990.
- (2) Dorfman R., Samuelson P.A and Solow R. M., *Linear Programming and Economic Analysis*, Dover Publications, 1988.
- (3) Hadley, G. *Linear Programming*, Addison-Wesley Pub. Co., Massachusetts, 1962.
- (4) Gass, S. I, *Linear Programming: Methods and Applications*, McGraw-Hill, 1969.
- (5) Gopal, M. *Modern Control System Theory*, Wiley Eastern, 1993.
- (6) Franklin, Joel N., *Methods of Mathematical Economics: Linear and Nonlinear Programming, Fixed-Point Theorems*. Delhi: PHI Learning Private Limited, 2003.
- (7) Sydsaeter, Knut, Peter J. Hammond, AtleSeierstad and Arne Strom, *Further Mathematics for Economic Analysis 2<sup>nd</sup> Edition*. Prentice Hall, 2008.

<b>Course Title: Introductory Econometrics</b>			
<b>Course Code</b>	MAECO2004C04	<b>Credits</b>	4
<b>L + T + P</b>	3+ 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45(L) + 15(T) + 0(P) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, tutorials, and group discussions.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-term university examination		

### Course Objectives:

- To familiarise the students with basic tools and concepts of econometrics that are necessary for analysis of data.
- To develop conceptual understanding of the basic tools and theories of econometrics.
- To develop necessary perspectives for empirical research using the tools of econometrics.

### Learning Outcomes:

- Taking this course would help the students to learn the basic tools of econometrics that are used to analyse various types of data.
- It will help them in future to undertake data analysis works using the tools of econometrics.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Simple Linear Regression Model (SLRM):</b> Definition, specification, and assumptions; OLS estimation; BLUE properties; Inference in SLRM; Goodness of fit measure; Regression without intercept term; Reverse regression.	1-10 [L]
2	<b>Multiple Linear Regression Model (MLRM):</b> Definition, specification, and assumptions; OLS estimation; BLUE properties; Various problems of inference in MLRM; Measuring goodness of fit; Testing overall significance of regression.	11-20 [L]
3	<b>Some Econometric Problems:</b> Heteroskedasticity, Autocorrelation, and Multicollinearity (definition, causes, consequences, detection, and remedial measures).	21-32 [L]
4	<b>Dummy Variables:</b> Definition; Regression models with dummy variables; Interaction dummy; Comparing two regression models using dummy variables.	33-38[L]
5	<b>Simultaneous Equations System:</b> Definition, structural and reduced-	39-45[L]

	form equations; identification problem; estimation methods.	
<b>Tutorials</b>		15 [T]

**Recommended Text:**

- (1) Bhaumik, Sankar Kumar, *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, New Delhi, 2015.

**Additional References:**

- (2) Chatterjee, Samprit and Ali S Hadi, *Regression Analysis by Example*, 5<sup>th</sup> edition, John Wiley and Sons, New York, 2012.
- (3) Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 6<sup>th</sup> edition, South-Western Cengage Learning, United States, 2016.
- (4) Baltagi, B H, *Econometrics*, 5<sup>th</sup> edition, Springer, New York, 2011.
- (5) Koop, Gary, *Introduction to Econometrics*, John Wiley & Sons, New York, 2008.
- (6) Gujarati, D. N. and D C Porter, *Basic Econometrics*, 5<sup>th</sup> edition, McGraw Hill, New York, 2009.

<b>Course Title: Development Economics II</b>			
<b>Course Code</b>	MAECO2005C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45 (L) + 15 (T) = 60 Hours
<b>Methods of Content Interaction</b>	Class Lectures, Tutorials, self-study, group and individual assignments and presentations.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course Objectives:

- To familiarize the students with the theoretical underpinnings of development discourses both national and international.
- To introduce the measurement issues relating to various development indicators.
- To emphasize discussion on migration issues as a tool for economic development.
- To orient the students regarding the measurement of inequality.
- To develop skills and competencies of the students in analyzing various development indicators.

### Learning Outcomes:

After completion of the course the learners will be able to:

- Describe the significant measurement of economic growth and development through readings and lectures.
- Understand the concepts and contributions of various scholars to the development models.
- Equip knowledge on emerging issue of development to help them to carry out their research work.
- Critically analyse various recent trends of development indicators, evaluate and find out the potential solutions through research articles, review and readings, lectures, etc.
- Choose appropriate tools and techniques to analyse and interpret the data related to development issues.

### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>Linkages of Population on Development System:</b> Relationship between population and development: (i) Classical views: Malthus and Marx, concept of optimum population theory (ii) population growth as obstacle to development Coale and Hoover study, tragedy of commons, limits to growth study, Enke's investment model (iii) population growth as conducive to development – views of Colin Clark, Ester Boserup and Julian Simon (iv) views of revisionists and need to study linkages between population change and development. Effect of development on demographic variables; Demographic transition theory, demographic dividends and population ageing.	1-13 [L]

2	<b>Social Sector and Development:</b> Provisioning of public goods; Education, productivity and employment; Rates of return and their measurement; Concepts of under-nutrition and malnutrition; Characterization and measurement of under-nutrition - linkages with morbidity and mortality, and implications for human capital formation.	14-23 [L]
3	<b>Migration and Development:</b> Migration as a tool for Development; Dynamics of the Internal and international migration flows; Rural-Urban migration; Push-Pull theories of migration; Cost and Benefit of Migration; Migration as a livelihood strategy; Domestic and international migrants remittances; migration on economic growth.	24-36 [L]
4	<b>Economic Inequality and Poverty:</b> Economic inequality; Measurement of inequality - Anonymity principle, Population principle, Relative income principle, The Dalton principle; Lorenz curve, Coefficient of variation, Gini coefficient, Kuznet's inverted-U hypothesis; Effect of inequality on savings and growth; Poverty and Multidimensional poverty measurement-poverty Head-count ratio (HCR), Poverty gap ratio (PGR), Income gap ratio (IGR), Weak transfer principle, Foster-Greer-Thorbecke (FGT) measure; Linkages of poverty with social sector development, health, and human capital formation.	37-45 [L]
<b>Tutorials</b>		15 [T]

#### Recommended Texts:

- (1) Coale, A.J. and E.M. Hoover, *Population Growth and Economic Development in Low Income Countries: A Case Study of India's Prospects*, Princeton University Press, Princeton, 1958.
- (2) Ray, Debraj, *Development Economics*, Oxford University Press, New Delhi, 1998.
- (3) Michael P. Todaro and Stephen C. Smith, *Economic Development*, 12th Edition, Pearson.

#### Additional References:

- (1) Bogue, D.J., *Principles of Demography*, John Wiley, New York, 1971.
- (2) Pathak, K.B., and F.Ram, *Techniques of Demographic Analysis*, Himalaya Publishing House, New Delhi. 1992.
- (3) Chenery, H. and .N. Srinivasan (eds.), *Handbook of Development Economics*, Vol. I & II, Elsevier, Amsterdam. 1989.
- (4) Dreze, Jean and Amartya Sen, *Economic Development and Social Opportunity*, OUP, UK, 1995.
- (5) Dreze, Jean and Amartya Sen, *Development and Participation*, Oxford University Press, UK, 2002.
- (6) Fakuda-Parr, S. and A. K. Shiva Kumar, *Readings in Human Development*, Oxford University Press, UK, 2003.
- (7) Ranis, Gustav, 'Human Development and Economic Growth', in David Clark (eds.), *The Elgar Companion to Development Studies*, Edward Elgar Publishing Limited, UK, 2006,
- (8) Stewart, F, G. Ranis and E. Samman, 'Human Development: Alternative Country Choices' in K.Basu and R.Kanbur (eds.), *Welfare, Development, Philosophy and Social Science: Essays for Amartya Sen's 75th Birthday*, Oxford University Press, Oxford, 2007.
- (9) Sen, Amartya, *Inequality Reexamined*, Oxford University Press, UK, 1992.
- (10) Nussbaum, M. C. and A. K. Sen, *The Quality of Life*, Oxford University Press, New York, 1993.  
*Selected articles from various journals will be referred in the class.*



## Semester III

<b>Course Title: International Economics</b>			
<b>Course Code</b>	MAECO3001C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quiz and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course objectives:

- To introduces the students to the fundamentals of international trade and payment.
- It seeks to build understanding about the historical evolution of international trade theories and developments following establishment of the WTO.
- A deeper understanding is provided to the students on terms of trade, balance of payments, international capital movement and their implications for change and development in the domestic economy.
- Addressing the issues such as currency crisis, international policy coordination, and the choice of an exchange rate regime.

### Learning Outcomes:

After completion of the course the learners will be able to:

- Understand the various reasons why nations engage in international trade, including the direction and volume of trade between nations.
- Use models of trade to demonstrate the gains from trade as well as the effects on income distribution within countries due to trade with foreign nations.
- Analyse the current issues and policies using the concepts of international trade theory.
- Understand the important role of key international institutions in affecting trade, exchange rates and the flow on international assets.

### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>Introduction of International Trade:</b> The Law of Comparative Advantage –Absolute Advantage, Comparative Advantage, Opportunity Costs and Gains from Trade, The Standard Theory of International Trade, Demand and Supply, Offer Curve and Terms of Trade.	1-10 [L]
2	<b>Resource Endowment and Hecksher-Ohlin Theory:</b> Economies of Scale, Imperfect Competition and International Trade, Economic Growth	11-20 [L]

	and International Trade-Factors of Production, Technical Progress, Growth and Trade.	
3	<b>International Trade Policy:</b> Tariff and Non-Tariff Barriers, Protectionism and Trade Policies in WTO Regime.	21-30 [L]
4	<b>Balance of Payments Accounting:</b> Meaning, Structure of Balance of Payments Accounts, Credits and Debits, Double-Entry Bookkeeping.	31`-35 [L]
5	<b>Module 6: Balance of Payments Adjustment Models:</b> Price Adjustments- Marshall-Lerner Models, The Absorption Approach and Monetary Approach to Balance of Payment, Mundell-Fleming Model-Perfect Capital Mobility; Fixed and Flexible Exchange rates and Impossible Trinity.	36-45[L]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10<sup>th</sup> edition, New York, 2011.
- (2) Caves, Richard E, Jeffery A. Frankel, Ronald W. Jones, *World Trade & Payments: An Introduction*, Prentice Hall, New York, 10<sup>th</sup> Edition. 2006.

### Additional References:

- (1) Krugman, Paul, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), 9<sup>th</sup> edition, New Delhi, 2012.
- (2) Bhagwati, J, ed. *International Trade. Selected Readings*, Penguin Books, England, 1969.
- (3) Cooper, Richard (ed.), *International Finance*, Penguin Books, Baltimore, 1969.

<b>Course Title: Indian Economic Development</b>			
<b>Course Code</b>	MAECO3002C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Even	<b>Contact Hours</b>	45(L) + 15(T) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, group discussions, students' presentations, and tutorials.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes and class test)		
	70% - End-semester university examination		

**Course Objectives:**

- This course seeks to acquaint the students with the macroeconomic and social sector issues in the context of economic development in India in the post-liberalisation era.
- It seeks to expose the students to the current debates and discussions in the context of the Indian economic development.

**Learning Outcomes:**

- The course would help the students to gather an up-to-date knowledge about the developments in the Indian economy.
- The students will be able to identify a set of topical issues that may be taken up for research investigation after completion of the current programme.

**Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Growth and Sectoral Performance:</b> Aggregate GDP growth, structural change and productivity; Agricultural growth and distribution; Manufacturing growth and issues relating to productivity, market structure, and economies of scale; Issues relating to services-led growth; Inclusive growth in recent plans.	1-10 [L]
2	<b>Financial Sector Reforms in India:</b> Issues relating to reforms in banking, insurance, pensions, exchange rate and capital market.	11-18 [L]
3	<b>Trade and Payments Reforms in India:</b> Contours of trade and payments reforms in India; including WTO related reforms in market access; Merchandise trade performance and determinants; Balance of Payments and issues related to accumulation of Foreign Exchange Reserves, Capital Account Convertibility.	19-26 [L]
4	<b>Employment, Poverty and Social Sector Development in India:</b> Measurement issues; Regional and sectoral dimensions in employment, poverty and inequality; Recent debates on poverty and employment during reforms; Issues relating to rural and urban employment, livelihood	27-38 [L]

	security, National Urban Livelihood Mission and MGNREGA.	
5	<b>Food Insecurity in India:</b> Rural and urban food insecurity; The Public Distribution System.	39-45 [L]
<b>Tutorials</b>		15 [T]

### References:

- (1) Acharya, Sankar and Rakesh Mohan (eds.), *India's Economy: Performance and Challenges*, OUP, New Delhi, 2010.
- (2) Ashima Goyal, *Handbook of the Indian Economy in the 21st Century: Understanding the Inherent Dynamism*, Oxford University Press, New Delhi, 2014.
- (3) Bhagwati, Jagdish and Arvind Panagariya, *India's Tryst with Destiny: Debunking Myths that Undermine Progress and Addressing New Challenges*, Collins Business, Noida, Uttar Pradesh, 2012.
- (4) Mahendra Dev, S (ed.), *India Development Report 2012-13*, OUP, New Delhi, 2013.
- (5) Mahendra Dev, S, *Inclusive Growth in India*, OUP, New Delhi, 2008.
- (6) Balakrishnan, P, *Economic Growth in India*, OUP, New Delhi, 2010.
- (7) Basu, K (ed.), *India's Emerging Economy*, OUP, New Delhi, 2005.
- (8) Bhaumik, S K (ed.), *Reforming Indian Agriculture: Towards Employment Generation and Poverty Reduction*, Sage Publications, New Delhi, 2008.
- (9) Sikdar, S, *Contemporary Issues in Globalization: An Introduction to Theory and Policy in India*, OUP, New Delhi, 2nd edition, 2012.
- (10) Tendulkar, S and T A Bhavani, *Understanding Reforms*, OUP, New Delhi, 2007.
- (11) Chakravarty, R, *The Financial Sector in India*, OUP, New Delhi, 2006.
- (12) Panagariya, A, *India: The Emerging Giant*, OUP, New Delhi, 2008.
- (13) Rakshit, M, *Macroeconomics of Post-Reforms India*, OUP, New Delhi, 2008.
- (14) Rakshit, M, *Money and Finance in the Indian Economy*, OUP, New Delhi, 2008.
- (15) Reddy, Y V, *Lectures on Economic and Financial Sector Reforms in India*, OUP, New Delhi, 2004.
- (16) Dreze, Jean and Amartya Sen, *An Uncertain Glory: India and Its Contradictions*, Allen Lane, New Delhi, 2013.
- (17) Dreze, Jean, *Sense and Solidarity - Jholawala Economics for Everyone*, Permanent Black, New Delhi, 2017.
- (18) Chetan Ghate (ed.), *The Oxford Handbook of the Indian Economy*, Oxford University Press, New Delhi, 2016.
- (19) *Economic Survey*, Government of India, recent years.
- (20) *Selected articles from various journals* (to be referred in the class).

## Semester IV

<b>Course Title: Public Finance</b>			
<b>Course Code:</b>	MAECO4001C04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Even	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quizzes and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course Objectives:

- To provide an introduction to the theory and practice of government finances both from the positive and normative points of view.
- To accomplish this, the course reviews briefly the rationale of government intervention to market.
- Provide a thorough grounding in the principles underlying tax and non-tax design, the provision of goods in the public sector, and tax enforcement; analyses the effects of public sector spending and taxes on the aggregate economy.
- Emphasises on the issues related to government finance in India.

### Learning Outcomes:

After completion of the course the learners will be able to:

- Analyse the functioning of modern public finance and identify the types of public needs and the mechanisms of their financing.
- Analyse the efficiency and equity implications of government intervention in the economy and their shortcomings.
- Argue the theoretical basis of public expenditures and to analyse their types and economic effect
- Classify public revenues and integrate them into the fiscal and tax system
- Classify public revenues and expenditures through the budget and to analyse the instruments and objectives of budgetary policy.

### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>The Bases of Public Finance:</b> Role of public finance, Fiscal functions of Government –The allocation function, the distribution function and the stabilization function, and coordination of budget functions.	1-5 [L]
2	<b>Public Goods and Externalities:</b> Introduction, private and public goods,	6-10 [L]

	Efficiency and Public goods, Private preferences for Public goods, Social goods and Market Failure, Provision for Social goods, Mixed goods, Merit goods, Positive and Negative Externalities.	
3	<b>Public Expenditure:</b> Introduction, Growth of Public Expenditure, Theories of Public Expenditure, Causes and Effects of Public Expenditure in India.	11-15 [L]
4	<b>Taxation:</b> Introduction, Economic effects of Taxation; and Theories of Taxation-Ability to pay theory and taxable capacity; dead weight loss and distortion, efficiency and equity considerations, tax incidence, optimal taxation; Indian Tax System: structure and reforms; GST.	16-20 [L]
5	<b>Public Debt:</b> Introduction, Sources of Public borrowing, Classical Theory of Public Debt, Effects of Public Debt and Burden of Public Debt; Method of Repayment of Public Debt.	21-25[L]
6	<b>Budget:</b> Introduction, Performance Budgeting, Planning and Programme Budgeting systems, Zero-Base budgeting (ZBB) and Deficits and Deficit Financing; Fiscal responsibility and budgetary management.	26-30 [L]
7	<b>Fiscal Policy:</b> Introduction and objectives of Fiscal Policy, Instruments of Fiscal Policy, Role of Multiplier in determination of Fiscal Policy, Economic stability, Effectiveness and Limitation of Fiscal Policy.	31-40 [L]
8	<b>Module 8: Fiscal Federalism in India:</b> Concept of fiscal federalism, Resources allocation between Centre and State under the Constitution of India, Finance Commission-Report of the latest FC.	41-45 [L]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Musgrave, R.A. and P.B. Musgrave, *Public Finance in Theory & Practice*, McGraw Hill Publications, 5<sup>th</sup> edition, New York, 1989.
- (2) Musgrave, Richard A., *The Theory of Public Finance*, Tata McGraw Hill, New York, 1959.
- (3) Ghosh, Ambar and Chandana Ghosh, *Public Finance*, Prentice Hall India Learning Pvt. Ltd., 2<sup>nd</sup> edition, New Delhi, 2014.

### Additional References:

- (1) Stiglitz, Joseph E, *Economics of the Public Sector*, W.W. Norton & Company, 3rd edition, New York, 2000.
- (2) Bagchi, Amaresh (ed.), *Readings in Public Finance*, Oxford University Press, New Delhi, 2005.
- (3) *Economic Survey*, Government of India (latest).
- (4) Report of the 14<sup>th</sup> Finance Commission, 2015-20.
- (4) *State Finances: A Study of Budgets*, Reserve Bank of India (latest).
- (5) Hick. U.. *Public Finance*.

<b>Course Title: Field Survey and Report Writing</b>			
<b>Course Code</b>	MAECO4002C04	<b>Credits</b>	4
<b>L + T + P</b>		<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	10(L) + 50 (Field Survey and Preparation of Report)
<b>Methods of Content Interaction</b>	<ul style="list-style-type: none"> <li>• Class lectures on field survey methodology</li> <li>• Collection of field data by the students</li> <li>• Data analysis using statistical packages by the students under the guidance of the advisers</li> <li>• Submission of field report in bound form by the students</li> </ul>		
<b>Assessment and Evaluation</b>	30% weight (to be evaluated by a team of internal faculties) before the start of actual field work: <ul style="list-style-type: none"> <li>• Selection of topic for field investigation, preparation of review of literature on the topic, and seminar on survey topic and field methodology before going to the field.</li> </ul>		
	70% weight on project report and seminar on the final output, to be distributed as follows: <ul style="list-style-type: none"> <li>• Marks to be assigned by the field adviser (chosen by the departmental committee) on final report – 20% weight</li> <li>• Marks to be assigned by an internal faculty other than internal field adviser (chosen by the departmental committee) – 20% weight</li> <li>• Final seminar – 30% weight – to be evaluated by the team of internal faculties</li> </ul>		

**Course Objectives:**

- To expose the students to the ground realities to relate their theoretical understandings of the subject to the practical situations.
- To develop necessary perspectives to evaluate the alternative theoretical paradigms in economics in the light of real-life experiences.
- To encourage the students to think of alternative theories that may be developed in the light of their field experiences.

**Learning Outcomes:**

- This course would enhance the students' skills for undertaking studies for evaluation of various developmental policies.
- It would train the students to analyse various socio-economic issues using empirical data obtained from the field.
- The students would be able to frame policies for economic development of the people in the light of their field experiences.

**Conduct of the Course:**

- The field work and report writing may be undertaken by an individual student as well as by a group of students having common interest in the topic for field investigation.
- Each student/group will be assigned an adviser from among the faculties by the departmental committee who would guide and extend all kinds of supervisory advice.

# *Detailed Syllabus of Elective Courses*

## **Semester I**

<b>Course Title: Money and Banking</b>			
<b>Course Code</b>	MAECO1001E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	45 (L) + 15 (T) = 60 Hours
<b>Methods of Content Interaction</b>	Class Lectures, Tutorials, self-study, group and individual assignments and presentations.		
<b>Assessment and Evaluation</b>	30% – Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% – End Term External Examination (University Examination)		

### **Course Objectives:**

- To provide exposure to the students to the theory and functions of money and the role of banking sector in the economy.
- To emphasize discussion on interest rates, monetary management and instruments of monetary control.
- To orient the students in relation to financial and banking sector reforms and monetary policy with reference to India.
- To develop skills and competencies of the students in analyzing financial data related to the banking sector.
- To make the students understand how performances of various banks are measured, evaluated, and interpreted.

### **Learning Outcomes:**

After completion of the course the learners will be able to:

- Understand the concepts and functions of money and its transactions as explained by the classical, neoclassical and monetarist theorists.
- Comprehend the role and functions of the Reserve Bank of India as an apex financial institution.
- Examine the sources and flow of credits through the financial system and its multiplier effects.
- Pick the banking data from the RBI as per requirements and objectives of their research work and analyse those.
- Identify the problems faced by the banking sectors and think of how Fintech can help banking sectors improve their financial transaction and adequacy.
- Critically analyse various recent trends of data in the field of banking and financial services.



### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>Money and the Payments System:</b> The Payment System, Overview of Development of Monetary Theory, Measures of Money Supply (M1, M2, M3, M4)- Money multiplier-model of Money Supply Determination-Money Supply in India. The Demand for Money: Inside and outside money- Saving-Money and near money; Nominal versus Real Cash Balances; Neoclassical Theory; Transaction Demand for Money; Fishers Quantity Theory of money-Cambridge equation-Keynesian theory of demand for money-post Keynesian developments-Baumol and Tobin-Quantity Theory of money a restatement-Milton Friedman.	1-13 [L]
2	<b>The Reserve Bank of India:</b> Organisation and Management; Roles and Functions of RBI; Autonomy of the RBI; Control of Money Supply by the Central Bank; Regulator of Money and Credit; Monetary Policy of the RBI-Demonetisation and its impact; Techniques of Monetary Control; Liquidity Management; NBFC.	14-24 [L]
3	<b>Commercial Banks:</b> Commercial Banks; Regional Rural Banks-Microfinance-SHG-MUDRA Yojna; Liabilities and Assets of Banks; Cash Credit System and a New Simplified Loan System; Sectoral Allocation of Commercial Bank Credit and some further Development; Banking Sector Reforms: Recent Developments in Banking Sector reforms in India; Profitability, NPAs, Banking Innovation; BASEL Norms I, II, & III on Credit Risk. Monetary Transmission Mechanism; Channels of Transmission Mechanism - Money and Credit Transmission Mechanism, FinTech; Financial Inclusion.	25-37 [L]
4	<b>Co-operative Banking in India:</b> The Structure of Co-operative Banks, State Co-operative Banks (SCBs), Central Co-operative Banks (CCBs), Primary Agricultural Credit Societies (PACs), and Co-operative Banking Reforms.	38-45 [L]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Gupta, S. B., *Monetary Economics: Institutions, Theory and Policy*, S. Chand, 1<sup>st</sup> edition, 1982.
- (2) Bhole, L. M. and J. Mahukud, *Financial Institutions and Markets*, Tata McGraw Hill, 5th edition, 2011.
- (3) Baye. M. R. and D. W. Jansen, *Money, Banking and Financial Markets*, AITBS, 1996.

### Additional References:

- (1) Fabozzi, F. J., F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3<sup>rd</sup> edition, 2009.
- (2) Mishkin, F. S. and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6<sup>th</sup> edition, 2009.
- (3) Khan, M. Y., *Indian Financial System*, Tata McGraw Hill, 7<sup>th</sup> edition, 2011.
- (4) R.B.I. Bulletin, Annual Report and Report on Currency and Finance (various years).
- (5) Mohan, Rakesh, *Growth with Financial Stability- Central Banking in an Emerging Market*, Oxford University Press, Delhi, 2011.
- (6) Froyen, Richard T, *Macroeconomics*, Addison Welsey, Delhi, 1999.
- (7) Bain, K. & P.G.A. Howells, *Monetary Economics: Policy and its Theoretical basis*, Palgrave Macmillan, London, 2003.
- (8) Baye, Michel. R and Dennis W. Jansen, *Money Banking and Financial Markets: An Economic Approach*, Houghton Mifflin, USA, 1996.
- (9) Bofinzer , P. *Monetary Policy*, Oxford University Press, Oxford, 2001.

- (10) Gupta, Suraj B, *Monetary Planning for India*, Oxford University Press, New Delhi, 1997.
- (11) Handa, J. *Monetary Economics*, Routledge, London, 2000.
- (12) Harris, Laurence, *Monetary Theory*, McGraw Hill, New York, 1985.
- (13) Lewis, M and Paul Misen, *Monetary Economics*, Oxford University Press, Oxford, 2000.
- (14) Patnaik, Prabhat, *The Value of Money*, Tulika Publishers, New Delhi, 2008.
- (15) Snowdon Brain and H. R. Vane, *Macroeconomic Reader*, Routledge, New York, 1997.
- (16) Walsh Carl. E., *Monetary Theory and Policy*, MIT Press, Cambridge, 1998.

<b>Course Title: History of Economic Ideas</b>			
<b>Course Code</b>	MAECO1002E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	First	<b>Contact Hours</b>	45(L) + 15(P) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures; Tutorials; Group discussion; and Paper presentation by students		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-term university examination		

### Course Objectives:

1. To expose the students to the history of development of economic ideas.
2. To trace the paths of development of the subject of economics.
3. To acquire the knowledge of the interplay between ideas and events in economics and other areas of social life.
4. To categorize and classify thoughts and ideas of past scholars on the subject of economics.

### Learning Outcomes:

After completion of the course the students will be able to:

1. Understand the development of ideas in the field of economics.
2. Explain and analyse the developments of economics as a discipline in various ancient cultures.
3. Compare and contrast as well as discuss classical economic theories.
4. Synthesize the elements of neoclassical and Keynesian approaches in the modern era.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>The Birth of Political Economy:</b> Mercantilism; Some early contributors of classical political economy (Petty, Locke, North, Cantillon, etc.)	1-9[L]
2	<b>The Rise of Classical Economics:</b> Contributions of Smith, Ricardo, Malthus, and Mill.	10 - 22 [L]
3	<b>The Economics of Marx:</b> Value and surplus value; The process of accumulation; Crises in capitalist economy; Imperialism.	23-33 [L]
4	<b>The Marginalist Revolution and Evolution of Neoclassical Orthodoxy:</b> Jevons, Walras, Menger, and Marshall.	34-40 [L]
5	<b>Sraffaian Economics:</b> An Introduction.	41-45 [L]
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Screpanti, E and S Zamagni, *An Outline of the History of Economic Thought*, Oxford University Press, Oxford, 2005.
- (1) Hunt, E K and Mark Lautzenheiser, *History of Economic Thought: A Critical Perspective*, 3<sup>rd</sup> edition, M E Sharpe, Inc., London, 2011.
- (2) Sweezy, Paul M, *The Theory of Capitalist Development*, Dennis Dobson Ltd., London, 1946.

**Additional References:**

- (1) Samuels, W J et al., *A Companion to the History of Economic Thought*, Blackwell Publishing, Oxford, 2003.
- (2) Vaggi, G and P Groenewegen, *A Concise History of Economic Thought*, Palgrave Macmillan, New York, 2003.
- (3) Medema, S G and W J Samuels, *The History of Economic Thought: A Reader*, Routledge, London, 2003.
- (4) Schumpeter, Joseph A, *History of Economic Analysis*, Taylor & Francis, USA, 1986.
- (5) Elster, Jon, *An Introduction to Karl Marx*, Cambridge University Press, Cambridge, 1986.
- (6) Heinrich, Michael, *An Introduction to the Three Volumes of Karl Marx's Capital*, Monthly Review Press, New York, 2004.
- (7) "New Perspectives on the Work of Piero Sraffa", *Cambridge Journal of Economics*, Vol. 36, No. 6, November, 2012.

## Semester II

<b>Course Title: Financial Economics I</b>			
<b>Course Code</b>	MAECO2001E04	<b>Credits</b>	04
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, self-study, group and individual assignments and presentations.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

### Course Objectives:

This is the first of an elective three-course sequence. The objective of this sequence is

- To transmit the fundamentals of the financial markets, and the dynamic nature of the markets' characteristics.
- To provide the students with a deeper understanding of how the firms finance, invest and manage themselves in the 'real world'.

**Learning Outcomes:** After completing this course the students will be able to:

- describe how financial markets work and understand the features of different financial assets.
- calculate and interpret key concepts related to financial markets and assets.
- use some basic models to price financial assets.
- 

### Course Contents and Teaching Plan:

Unit	Content	Teaching hours
1.	<b>Basic concepts:</b> Real assets versus financial assets, Role of financial assets in an economy Basic concepts of cash flow and maturity, interest rate, investment and market, bank and other financial institutions; Characteristics of financial market instruments – main types of financial instruments – definitional introduction - fixed deposits, stocks, derivatives, bonds, coupons and options	1-6 [L]
2.	<b>Introduction to financial markets:</b> Capital market, consumption and investment with and without capital market; Market place and transaction costs; Fisher separation theorem; the agency problem, The problems of moral hazard and adverse selection.	7-13 [L]
3.	<b>Deterministic Cash Flow Stream:</b> The basic theory of interest - Compounding, Present value and discounting, Internal rate of return, Evaluation criteria; Fixed Income Securities – Annuities, Perpetuities, Yield, Duration, Immunisation, Convexity; The term structure of interest rates – Yield curve, Term structure and its theories (Expectation theory,	11-23 [L]

	Liquidity preference theory, Market segmentation theory, Preferred Habitat theory), Forward rates, Running present value, duration (Fisher-Weil formula) and immunization.	
4.	<b>Choice under Uncertainty:</b> Utility theory given uncertainty, basic idea of risk measurement and its graphical representation (risk averse, risk neutral and risk lover), Risk Aversion, Certainty equivalence.	24-29 [L]
5.	<b>Mean variance portfolio theory (single period random cash flow):</b> Asset return, random return, portfolio mean and variance; Feasible set and Markowitz model; One fund and Two fund theorem	30-37 [L]
6.	<b>CAPM (Capital asset pricing model):</b> Market equilibrium; Capital market line and security market line and estimation of beta and Jensen's and Sharpe index; CAPM as a pricing formula and its derivation (Numerical problems); Modified CAPM: The Arbitrage Pricing Theory (APT).	38-45 [L]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Bodie, Zvi, Alex Kane, Alan J. Marcus and Pitabas Mohanty, *Investments*, Tenth edition, McGraw Hill Education, 2017.
- (2) Copeland, T. E., J. F. Weston and K Shastri, *Financial Theory and Corporate Policy*, Pearson, 2005.
- (3) Frederic S. Mishkin and Stanley Eakins, *Financial Markets and Institutions*, 8<sup>th</sup> edition, Pearson, 2014
- (4) Luenberger, David, *Investment Science*, Oxford University Press, 2009.

### Additional References:

- (1) Bebczuk, R. N., *Asymmetric Information in Financial Markets: Introduction and Applications*, Cambridge University Press, 2003
- (2) Bhole, L.M. and Jitendra Mahakud, *Financial Institutions And Markets: Structure, Growth And Innovations*, Tata McGraw Hill, 2004
- (3) Houthakker, H.S. and P.J. Williamson, *Economics of Financial Markets*, Oxford University Press, 1996
- (4) Iton E. J, M. J. Gruber, S. J. Brown, and W.N. Goetzmann, *Modern Portfolio Theory and Investment Analysis*, 9<sup>th</sup> edition, Wiely, 2014
- (5) ZviBodie, Robert C. Merton, David c. Cleeton, *Financial Economics*, Pearson Education, 2012

<b>Course Title: Economics of Education and Health</b>			
<b>Course Code</b>	MAECO2002E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Second	<b>Contact Hours</b>	45(L) + 15(T) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures; Tutorials; Group discussion; and Paper presentation by students		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-term university examination		

#### **Course Objectives:**

- To presents basic economic theory with its application to education and health.
- To understand the economics of education and health both from theoretical and empirical perspectives.
- To expose the students to the critical policy issues.

#### **Learning Outcomes:**

After completing this course the students will

- Get familiarised to important concepts in the fields of economic of health and education.
- Understand as to how the policy makers set priorities in health care and education sectors, and how evaluations are done in these areas.

#### **Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Economics of Education:</b> Definition and Role; Scope of Economics of Education, Human capital vs. physical capital, Components of human capital, Education and economic growth, Knowledge revolution and knowledge society, Expenditure on education; Cost of Education – Private and Social Costs; Direct and indirect, private and social benefits of Education.	1-10 [L]
2	<b>Educational Planning and Financing:</b> Cost-Benefit Analysis; Manpower requirement approach; Educational Financing; Resource mobilization and utilization; Pricing, subsidies and socio-economic effects.	11-19 [L]

3	<b>Education and Economic Development in India:</b> A Review of Educational Development in India, Educational Policy in India, Educational Planning and the problem of educated unemployment and brain drain; Steps initiated by government.	20-26 [L]
4	<b>Economics of Health:</b> Concept and components of health, The role of health in economic development; Comparison of Education and Health; Health as human capital.	27-35[L]
5	<b>Financing and Institutional Issues in Health Care:</b> Resource Mobilisation and Utilisation of health care in India; Equity and Efficiency Effects of health care financing; Health Care and Resource Constraints; Inequalities in Health and health care in India; Institutional Issues in Health Care Delivery, The new health policy-Health Programmes under recent plans.	36-45 [L]
<b>Tutorials</b>		15 [T]

#### Recommended Texts:

- (1) Blaug, Mark, *Introduction to Economics of Education*, Penguin, London, 1972.
- (2) Klarman, H.E., *The Economics of Health*, Columbia University Press, New York, 1965.

#### Additional References:

- (1) Psacharopoulos, G. (ed.), *Economics of Education: Research and Studies*, Pergamon Press, London, 1987.
- (2) Mc Mohan, W.W, *Education and Development: Measuring the Social Benefits*, OUP, Oxford. 1999.
- (3) Tilak, J.B.G, *Education for Development in Asia*, Sage, ND. 1994.
- (4) Tilak. J.E.G, *Economics of Inequality in Education*, Sage, New Delhi. .1989.
- (5) Panchamukhi, P.R, *Economics of Health: A Trend Report*, ICSSR Survey, Allied, New Delhi, 1980.
- (6) Cohen, E. and T. Gaske, *Economics of Education*, Pergamon Press, London, 1989.
- (7) World Bank, *The World Development Report 1993: Investing in Health*, OUP, New York, 1994.
- (8) Dasgupta, Monica et al., *Women's Health in India: Risk and Vulnerability*, OUP, Delhi, 1995.
- (9) Folland, Sherman, Allen Goodman and Miron Stano, *Economics of Health and Health Care*, Pearson Education, New York, 2009.
- (10) Phelps, Charles, *Health Economics*, Pearson Education, New York, 2009.
- (11) Baru, R V, *Private Health Care in India: Social Characteristics and Trends*, Sage Publications, New Delhi, 1998.



## Semester III

<b>Course Title: Econometric Methods</b>			
<b>Course Code</b>	MAECO3001E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	45(L) + 15(T) + 0(P) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, tutorials, and group discussions.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-semester university examination		

### Course Objective:

- To familiarise the students with the modern tools of econometrics that are used frequently for the purpose of analysing different types of data.

### Learning Outcome:

- Taking this course would help the students to enhance the foundation of modern econometric tools and theories.
- It will help to develop necessary perspectives for empirical research using the tools of econometrics.

### Course Contents and Teaching Plan:

Unit	Contents	Teaching Hours
1	<b>The General Linear Model:</b> Specification, assumptions, and estimation; Properties of estimators; Inference; Goodness of fit measures; Overall significance of regression.	1-4 [L]
2	<b>Regression Diagnostics:</b> Multicollinearity, heteroskedasticity, autocorrelation, normality test, and model specification errors (concept, consequence, tests, and remedial measures).	5-12 [L]
3	<b>Binary Choice Models:</b> LPM, logit, probit – estimation, inference and goodness of fit measures.	13-20 [L]
4	<b>Distributed Lag Models:</b> Definition and specification; Koyck's Geometric lag model; Adaptive expectations model; Partial adjustment model; Polynomial lag models.	21-26 [L]
5	<b>Panel Data Regression:</b> Constant coefficients model; fixed-effects model; random effects model; tests for choosing an appropriate panel	27-32 [L]

	regression model.	
6	<b>Time Series Econometrics:</b> Stationary and non-stationary time series; trend stationary and difference stationary series; tests for stationarity; cointegration and error-correction mechanism; ARIMA forecasting; vector autoregressive (VAR) model; forecasting using VAR; causality tests; ARCH/GARCH for modelling volatility.	33-45 [P]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Bhaumik, Sankar Kumar, *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, New Delhi, 2015.
- (2) Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 6<sup>th</sup> edition, South-Western Cengage Learning, United States, 2016.

### Additional References:

- (1) Koop, Gary, *Analysis of Economic Data*, John Wiley & Sons, New York, 2013.
- (2) Badi H Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons, United Kingdom, 2008.
- (3) Enders, Walter, *Applied Econometric Time Series*, 4<sup>th</sup> edition, John Wiley & Sons, USA, 2015.
- (4) Brooks, Chris, *Introductory Econometrics for Finance*, 3<sup>rd</sup> edition, Cambridge University Press, United Kingdom, 2014.
- (5) Fabozzi, F J et al., *The Basics of Financial Econometrics*, Wiley, New Jersey, 2014.
- (6) Gujarati, D, *Econometrics by Example*, 2<sup>nd</sup> edition, Palgrave Macmillan, USA, 2016.

<b>Course Title: Software Applications of Econometrics</b>			
<b>Course Code</b>	MAECO3002E04	<b>Credits</b>	4
<b>L + T + P</b>	1 + 2 + 1	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	15(L) + 15(T) + 30(P) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, tutorials, and practical works using econometric software packages like EViews and Stata.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-semester university examination		

### Course Objectives:

- To learn applications of various econometric tools for data analysis using econometric software packages like EViews and Stata.
- To provide hands-on training to the students for applications of econometric software packages for the purpose of data analysis.
- To know the methods of interpretation and presentation of results of econometric exercises.

### Learning Outcomes:

- This course would enhance the students' skills for econometric analysis of data.
- It would train the students to analyse various socio-economic issues using empirical data, and by applying the tools of econometrics.
- The students with data analysis skills would be able to compete for jobs in the corporate sectors.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Introduction to Econometric Software Packages:</b> Basic commands of EViews and Stata	1 [L]
2	<b>Application of EViews/Stata for Regression Analysis:</b> Model estimation, goodness of fit measure, inference, and diagnostic tests (multicollinearity, heteroskedasticity, autocorrelation, normality test, and model specification errors); interpretation and presentation of regression results.	3 [L] + 8 [P]
3	<b>Application of EViews/Stata in Limited Dependent Variable Models:</b> Estimation of LPM, logit and probit models; inference issues; goodness of fit measures; diagnostic tests; interpretation of results.	2 [L] + 4 [P]
4	<b>Application of EViews/Stata in Distributed Lag Models:</b> Estimation of Koyck's model, adaptive expectations model and partial adjustment	1 [L] + 4 [P]

	model; interpretation of results.	
5	<b>Application of EViews/Stata for Analysis of Panel Data:</b> Estimation of alternative panel regression models; tests to choose an appropriate panel regression model (including Hausman test); Interpretation of results of panel regression.	2 [L] + 4 [P]
6	<b>Application of EViews/Stata for Analysis of Time Series Data:</b> Correlogram analysis; stationarity tests; test of cointegration and estimation of ECM; forecasting; estimation of VAR model; test of causality; estimation of ARCH/GARCH models for testing volatility; Interpretation and presentation of results.	5 [L] + 8 [P]
7	<b>Application of EViews/Stata in Simultaneous Equations Systems:</b> Estimation of SES; Interpretation of results.	1 [L] + 2[P]
<b>Tutorials</b>		15 [T]

### Recommended Texts:

- (1) Baum, Christopher F, *An Introduction to Stata Programming*, 2<sup>nd</sup> edition, Stata Press, USA, 2016.
- (2) Hamilton, Lawrence C, *Statistics with Stata*, Cengage Learning, USA, 2013.
- (3) Adkins, Lee C & R Carter Hill, *Using Stata for Principles of Econometrics*, John Wiley & Sons, New York, 2011.
- (4) Griffiths, William E et al., *Using EViews for Principles of Econometrics*, John Wiley & Sons, New York, 2012.
- (5) Bhaumik, Sankar Kumar, *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, New Delhi, 2015.
- (6) Cameron, A Colin & P K Trivedi, *Microeconometrics Using Stata*, Stata Press, USA, 2009.

<b>Course Title: Law and Economics</b>			
<b>Course Code</b>	MAECO3003E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion.		
	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
<b>Assessment and Evaluation</b>	70% - End-term university examination		

### Course Objectives:

- To introduce the students to the economics of law and debates on efficiency of laws.
- To develop understanding of basic theories of law and economics under the ambit of legal property rights, contract, tort and established legal processes.

### Learning Outcomes:

After successful accomplishment of this course, a student should be able to:

- understand economic theory or logic to analyse laws or legal provisions.
- to analyse how households' and firms' market interaction and social efficiency get affected by legal rules.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>An Introduction to Law and Legal Principles:</b> The Civil Law and Common Law Traditions; The History of Indian Legal Tradition; Indian Judicial System.	1-4 [L]
2	<b>Property Rights:</b> The Legal Concept of Property; An Economic Theory of Property; Public and Private Property; The Public use of Private Property; Taking and Regulation Applications.	5-12 [L]
3	<b>Contracts:</b> Bargaining Theory: An Introduction to Contracts; An Economic Theory of Contracts; Legal Remedies Applications.	13-18 [L]
4	<b>An Economic Theory of Tort Law:</b> Definition of Tort; Different concepts of Liabilities – Vicarious, Strict and Absolute.	19-24 [L]
5	<b>Economics of Legal Process:</b> Trial; Appeal; Judiciary; Lawyer's Profession.	25-30 [L]
6	<b>Crime and Punishment:</b> An Economic Theory of Crime and Punishment; Does Punishment Deter Crime; Efficient Punishment; The Death Penalty.	31-36 [L]
7	<b>Case Study of Indian Laws:</b> Land Acquisition; Contract; Patent	37-45 [L]

	Protection; Delays in Indian Legal System; Weak Enforcement in India; Citizens action and Judicial Activism.	
	<b>Tutorials</b>	15 [T]

**Recommended Texts:**

- (1) Cooter, R. and T. Ulen, *Law and Economics*, Pearson Addison Wesley, Boston, 2004.
- (2) Jain, Satish K (ed.), *Law and Economics*, OUP, New Delhi, 2010.
- (3) Economic Analysis of Law in India: Theory and Applications', Edited by Babu, P.G., Eger, T., Raja, A., Schaefer, H.B., and Somashekhar, T., 2010, Oxford University Press.

**Additional References:**

- (1) Barzel, Yoran, *The Economics of Property Rights*, Cambridge University Press, 1988.
- (2) Ronald H. Coase, The Problem of Social Cost, 3 J. L. & ECON. 1 (1960)
- (3) Steven Shavell, *An Economic Analysis of Accident Law*, Harvard University Press, Cambridge (MA), 1987.
- (4) Cooter, Robert D. and Ulen, Thomas S, *Law and Economics*, 3<sup>rd</sup> edition, Addison-Wesley, New York, 1999.
- (5) Friedman, David D, *Law's Order*, Princeton University Press, New Jersey, 2000.
- (6) Hart, H.L.A., *The Concept of Law*, Clarendon Press, Oxford, 1961.
- (7) Holmes, Oliver Wendell, *The Common Law*, Harvard University Press, Cambridge (MA), 1963.

<b>Course Title: Agricultural Economics I</b>			
<b>Course Code</b>	MAECO4003E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	45(L) + 15(T) + 0(P) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, group discussions, students' presentations, and tutorials.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes and class test)		
	70% - End-semester university examination		

### Course Objectives:

- To acquaint the students with the theoretical works in the field of agricultural economics from the perspective of development.
- To identify the core issues in the recent debates and discussions on the features of backward agrarian economies that may require further research investigations.

### Learning Outcomes:

- The students will have clear understanding of the issues in current debates on backward agrarian economies.
- It will help to develop the perspectives for undertaking theoretical works in the field of agrarian development.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Theories of Peasant Economy:</b> Features of Peasant Societies; Elements of Peasant Political Economy; The Theories of Optimizing Peasant (profit-maximising peasant, risk averse peasant, drudgery averse peasant, and sharecropping peasant); Women in Peasant Household.	1-20 [L]
2	<b>Institutions and Markets in Backward Agrarian Economies:</b> Land Institutions and Land Markets: Efficiency and Equity Issues; Labour Contracts and Organisations; Credit Contracts and Markets; Agricultural Output Markets.	21-45 [L]
<b>Tutorials</b>		15 [T]

### References for Unit 1:

- (1) Shanin, T (ed.) (1987), *Peasants and Peasant Societies*, 2<sup>nd</sup> Edition, Blackwell.
- (2) Ellis, Frank, *Peasant Economics*, Chs. 1, 3, and 4 to 9, CUP, 2<sup>nd</sup> Edition, 1993.
- (3) Singh, Inderjit et al. (ed.), *Agricultural Household Models: Extensions, Applications, and Policy*, The Johns Hopkins University Press, Baltimore, USA, 1986.
- (4) Akram-Lodhi, A. Haroon, and Cristobal Kay (eds.) (2009), *Peasants and Globalization: Political Economy, Rural Transformation and the Agrarian Question*, Routledge.
- (5) Barkin, David (2004), 'Who Are The Peasants?' *Latin American Research Review*, Vol. 39 Issue 3, pp. 270–281.
- (6) Scott, James C (2008), *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia*, Yale University Press.

### References for Unit 2:

- (1) B L Gardner and G C Rausser (eds.), *Handbook of Agricultural Economics*, Vol. 1A, Ch. 6, Elsevier, Amsterdam, 2001.
- (2) R Evenson and Prabhu Pingali (eds.), *Handbook of Agricultural Economics*, Vol. 3, Chs. 51, 52, 55, 56, Elsevier, Amsterdam, 2007.
- (3) Karla Hoff, Avishay Braverman and Joseph E Stiglitz (eds.), *The Economics of Rural Organization*, The World Bank - OUP, 1993.
- (4) Amit Bhaduri, *The Economic Structure of Backward Agriculture*, Macmillan, 1983.
- (5) Debraj Ray, *Development Economics*, Chs. 11 to 14, OUP, 1998.
- (6) Pranab Bardhan, *Land, Labour and Rural Poverty*, OUP, 1983.
- (7) Pranab Bardhan, *The Economic Theory of Agrarian Institutions*, OUP, 1989.
- (8) Pranab Bardhan and Christopher Udry (eds.), *Development Microeconomics*, OUP, 1999.



<b>Course Title: Financial Economics II</b>			
<b>Course Code</b>	MAECO3005E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, self-study, group and individual assignments and presentations.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

### Course Objectives:

This is the first of an elective three-course sequence. The objective of this sequence is

- To transmit the fundamentals of the financial markets, and the dynamic nature of the markets' characteristics.
- To provide the students with a deeper understanding of how the firms finance, invest and manage themselves in the 'real world'.

### Learning Outcomes:

After completing this course the students will be able to:

- learn methods to evaluate financial alternatives and create financial plans in order to get the optimal capital structure.
- understand the fundamental concepts of derivative products.
- develop the necessary skills used in valuing derivative contracts
- connect real life applications to theories relating to hedging with derivatives.

### Course Contents and Teaching Plan:

Unit	Content	Teaching hours
1.	<b>Patterns of Financing:</b> Internal Funds – Common Stock – Debt – Financial Markets/Institutions – Issue of securities – Venture Capital – Initial Public Offering – Security Sales and Auctions – Private Placements and Public Issue Junk Bonds.	1-8 [L]
2.	<b>Capital Budgeting and Cost of Capital:</b> Investment Criteria, Estimation of project Cash Flows, Capital Budgeting, Capital Budgeting Under Constraints; Computation of Cost of Capital – Cost of debt, preferred stock and equity, weighted average cost of capital.	9-18 [L]
3.	<b>Capital Structure Choice:</b> The value of firm with tax, Modigliani-Miller irrelevance hypothesis, choices in financing-debt and equity, the financing mix: trade-offs and theory; signalling hypothesis; effect of agency cost on capital structure, cost of capital, empirical determinants of capital structure choice.	19-30 [L]
4.	<b>Derivative Securities:</b> Basic concept of spot and forward prices and yield to maturity; Forward contracts and forward prices and its value; Basic concept	31-45 [L]

	of Swap; Basic notion of future contracts and future prices; Hedging (minimum variance type). Option and Option pricing: Concepts and nature of options values; Option combination and Put-Call parity; Single period option theory; Basic concepts of Multi-period options; Binomial option pricing model; Black-Scholes Option pricing model.	
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Brealey, R., S. Myers and F. Allen, *Principles of Corporate Finance*, Tenth edition, McGraw Hill, 2011.
- (2) Copeland, T. E., J. F. Weston and K Shastri, *Financial Theory and Corporate Policy*, Pearson, 2005.
- (3) Hull, John C and Sankarshan Basu, *Options Futures & Other Derivatives*, 9<sup>th</sup> edition, Pearson Education India, 2016

**Additional References:**

- (1) Berk, Jonathan, and DeMarzo, Peter, *Corporate Finance*, Pearson International, 2007.
- (2) Chandra, Prasanna, *Financial Management*, 9<sup>th</sup> edition, Tata McGraw Hill, 2012
- (3) Ross, Stephen A, Randolph W Westerfield and Bradford D Jordan, *Fundamentals of Corporate Finance*, 11th Ed., McGraw-Hill Companies, 2015.
- (4) Ross, Stephen A, Randolph W Westerfield and Jaffrey Jaffe, *Corporate Finance*, 6th Ed., McGraw-Hill Companies, 2002.
- (5) Relevant research papers to be supplements from journals such as, *Journal of Corporate Finance*, *Journal of Finance*, *Journal of Financial Economics*, *Journal of Applied Corporate Finance*, *Journal of Banking and Finance* and *Emerging Markets Review*.

<b>Course Title: Industrial Economics-I</b>			
<b>Course Code:</b>	MAECO3006E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Third	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quizzes and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course Objectives

- Provide a detailed understanding about the economics of industry in a cogent and analytical manner, with reference to India.
- Provides students with the analytical skills required for understanding business problems in industrial economics.
- To provide an understanding of the behaviour of firms and the nature of competition in Indian Industry

### Learning Outcomes

After completion of the course the learners will be able to:

- Analyze the main issues and debates in the field of industrial economics
- Explain the economic behaviour of different industries, firms and markets in relation to their output and pricing decisions.
- Describe and explain the pricing behavior by firms with market power and its welfare implications.
- Evaluate different policy approaches to industry

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Introduction:</b> Nature and scope of industrial economics- concepts of firm, industry and market; Ownership control and objectives of a firm - Passive and active behaviour of firm- Size, Growth, Profitability, Productivity, Efficiency and Capacity Utilization - Concept and measurement.	1-10 [L]
2	<b>Market Structure:</b> Sellers' concentration, product differentiation, conditions of entry and economics of scale, market structure and profitability, Market Conduct: -Market and product pricing, pricing theories and strategies, Investment expenditure; Market Performance: - Growth and profitability of the firms, its constraints, Theories of growth of Firm, (Downie's Theory, Penrose's Theory and Morris Theory), the technological strategy of the firm.	11-25 [L]
3	<b>Industrial and Productivity and Efficiency</b> : Concept of Industrial Productivity, Measurement of Total and Single factor Productivity – Determinants of Productivity, Importance of Productivity – Efficiency Concept – Determinants of Economic Efficiency – Measurement of	26-35 [L]

	Efficiency levels.	
4	<b>Indian Industry:</b> Aspects of Indian Industrial development- Role of Public and Private Sectors in growth of industries, Role of MNC, FDI, Joint ventures, and transfer of technology- performance of MSME; Government policies and Regulation of Industry- current issues in competition policy; industrial policy towards R&D.	36-45 [L]
<b>Tutorials</b>		15 [T]

**References:**

- (1) Hay, D. A., and D.J. Morris., *Industrial Economics and Organization: Theory and Evidence*, Oxford University Press, 1991
- (2) Tirole, J. *The Theory of Industrial Organization*, MIT Press, Cambridge, 1985.
- (3) Ahluwalia, I. J., *Industrial Growth in India: Stagnation since Mid-sixties*, Oxford University Press, New Delhi, 1985.
- (4) Ahluwalia, I. J., *Productivity and Growth in Indian Manufacturing*, Oxford University Press, New Delhi, 1991.
- (5) Ferguson, Paul R. and Glenys J. Ferguson, *Industrial Economics: Issues and Perspectives*, Macmillan, London, 1994.
- (6) Barthwal, R.R, *Industrial Economics*, Wiley Eastern Ltd, New Delhi, 1985.
- (7) Mookherjee, Dilip (ed.), *Indian Industry: Policies and Performance*, Oxford University Press, Delhi, 1998.
- (8) Pushpangadan, K and N Shanta, *The Dynamics of Competition: Understanding India's Manufacturing Sector*, Oxford University Press, New Delhi, 2009.

## Semester IV

<b>Course Title: Financial Economics III</b>			
<b>Course Code</b>	MAECO4001E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, self-study, group and individual assignments and presentations.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

### Course Objectives:

This is the first of an elective three-course sequence. The objective of this sequence is

- To transmit the fundamentals of the financial markets, and the dynamic nature of the markets' characteristics.
- To provide the students with a deeper understanding of how the firms finance, invest and manage themselves in the 'real world'.

**Learning Outcomes:** After completing this course the students will be able to:

- understand the theory relating to dividend policy.
- comment on dividend policies of companies.
- assess information efficiency of capital market.
- compute the value at risk of an investment.
- Understand the process of mergers and takeovers.
- explain main justifications for, and dangers of, mergers and takeovers.

### Course Contents and Teaching Plan:

Unit	Content	Teaching hours
1.	<b>Dividend Policy:</b> Irrelevance of dividend policy without tax; valuation, growth and dividend policy, dividend policy with taxes; theory of optimal dividend policy; Stock dividends and share re-purchase empirical determinants of optimal dividend policy.	1-12 [L]
2.	<b>Market Microstructure:</b> Defining capital market efficiency, relationship between the value of information and efficient capital markets, rational expectations and market efficiency, market efficiency with costly information, efficient capital market theory and empirical models.	11-22 [L]
3.	<b>Value at Risk:</b> Theory of VaR and estimation techniques	23-30 [L]
4.	<b>The Market for Corporate Control: Mergers &amp; Takeovers:</b> Types of mergers and takeovers. The principles of valuation of mergers and takeovers. Stand - alone value of the target and of the buyer. Efficiency theories of M&A activities: differential efficiency, inefficient management,	31-45 [L]

	synergy effects theory. The sources and types of synergy. Agency theories of M&A. Signalling theories of M&A. Hostile takeovers and free - rider problem. Management defences. Valuing synergy on the basis of DCF.	
<b>Tutorials</b>		15 [T]

**Recommended Texts:**

- (1) Brealey, R., S. Myers and F. Allen, *Principles of Corporate Finance*, Tenth edition, McGraw Hill, 2011.
- (2) Copeland, T. E., J. F. Weston and K Shastri, *Financial Theory and Corporate Policy*, Pearson, 2005.

**Additional References:**

- (1) Berk, Jonathan, and DeMarzo, Peter, *Corporate Finance*, Pearson International, 2007.
- (2) Chandra, Prasanna, *Financial Management*, 9<sup>th</sup> edition, Tata McGraw Hill, 2012
- (3) Ross, Stephen A, Randolph W Westerfield and Bradford D Jordan, *Fundamentals of Corporate Finance*, 11th Ed., McGraw-Hill Companies, 2015.
- (4) Ross, Stephen A, Randolph W Westerfield and Jaffrey Jaffe, *Corporate Finance*, 6th Ed., McGraw-Hill Companies, 2002.
- (5) Relevant research papers to be supplements from journals such as, *Journal of Corporate Finance*, *Journal of Finance*, *Journal of Financial Economics*, *Journal of Applied Corporate Finance*, *Journal of Banking and Finance* and *Emerging Markets Review*.

<b>Course Title: Financial Econometrics</b>			
<b>Course Code</b>	MAECO4001E04	<b>Credits</b>	4
<b>L + T + P</b>	Fourth	<b>Course Duration</b>	One Semester
<b>Semester</b>	Even	<b>Contact Hours</b>	40 (L) + 10 (T) + 10 (P) = 60 Hours
<b>Methods of Content Interaction</b>	Lectures, Tutorials, practical, self-study, group and individual assignments and presentations.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term University Examination.		

**Course Objectives:**

- To acquaint the students with the financial data, models and methods of analysis of financial time series.
- To train the students on the appropriate use of econometric methods in finance.

**Learning Outcomes:**

After completing this course the students will be able to:

- get familiar with financial data
- conduct empirical applications of financial theory based on real financial data using econometric techniques.
- feel confident to evaluate existing empirical work on finance and carry out their own empirical work.

**Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Content</b>	<b>Teaching hours</b>
1.	<b>Introduction:</b> Basic nature of financial market data, importance of quantitative analysis of high frequency data, issues relating to specification, estimation and interpretation of financial market models.	1-4 [L]
2.	<b>Testing return predictability:</b> Technical trading rules, measures of return predictability, review of test of forecasting power and bootstrap.	5-9 [L]
3.	<b>Event-study methodology:</b> Abnormal returns, tests on abnormal returns, cross-sectional approach.	10-14 [L]
4.	<b>Empirical Analysis of Static Equilibrium Models:</b> Statistical framework for estimation and testing of capital asset pricing model (CAPM), minimum-variance portfolio (MVP), the measure of beta. Estimation and testing of arbitrage pricing model (APM), portfolio as factors with/without a risk free asset, macroeconomic variables as factors, estimation of risk premia and expected returns, selection of factors: statistical approaches (– factor analysis and principal component analysis).	15-24 L
5.	<b>Volatility Models:</b> Discrete time volatility models of returns, Formulation and estimation/testing/prediction of various volatility of asset returns at long horizons, time varying expected returns, systematic and idiosyncratic	25-32 [L]

	risks; implied volatility, ARCH and GARCH volatility models, Asymmetric GARCH effects. Various applications in finance.	
6.	<b>Testing Market Interdependence:</b> VAR/VECM models, Granger causality, multivariate GARCH models.	33-40 [L]
<b>Application of tools using econometric software packages</b>		10 [P]
<b>Tutorials</b>		10 [T]

**Recommended Texts:**

- (1) Campbell, J.Y., A W Lo A C MacKinlay, *The Econometrics of Financial Markets*, Princeton University Press. 1997
- (2) Ruey S. Tsay, *Analysis of Financial Time Series*, Third Edition, Wiley, 2010

**Additional References:**

- (1) Brooks, Chris, *Introductory Econometrics for Finance*, 3<sup>rd</sup> edition, Cambridge University Press, 2015.
- (2) Tsay, Ruey S., *An Introduction to Analysis of Financial Data with R*, Wiley, 2013
- (3) Tsay, Ruey S., *Multivariate Time Series Analysis: with R and Financial Applications*, Wiley, 2014.
- (4) Francq, Christian and Jean-Michel Zakoian, *GARCH Models: Structure, Statistical Inference and Financial Applications*, 1<sup>st</sup> edition, Wiley, 2010.
- (5) *More research papers to be supplemented (while delivering the lectures) from journals like Journal of Financial Econometrics, Journal of Time Series Econometrics, Journal of Time Series Analysis and Journal of Econometrics.*



<b>Course Title: Advanced Topics in Applied Econometrics</b>			
<b>Course Code</b>	MAECO4003E04	<b>Credits</b>	4
<b>L + T + P</b>		<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	40(L) + 10(P) + 10(T) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, tutorials, and practical works using statistical/econometric software packages.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments, and class test)		
	70% - End-semester university examination		

### Course Objectives:

- To expose the students to some advanced tools of econometrics that are frequently used in socio-economic research.
- To familiarise with some important techniques of multivariate data analysis.
- To train the students to use statistical/econometric software packages to analyse the socio-economic data.

### Learning Outcomes:

- Taking this course would enhance the students' data analysis skills using the modern tools of econometrics.
- It will also help to learn the methods of preparation of reports based on econometric analysis of data.
- The students would be well-equipped to compete for emerging jobs in the corporate sector.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Advanced Econometric Methods:</b> Maximum likelihood (ML); Generalized method of moments (GMM).	1-4 [L]
2	<b>Analysis of Cross-Section Data:</b> Censoring, truncation and selection bias (Tobit, Heckman correction); Multinomial regression models.	5-10 [L]
3	<b>Stochastic Regressors and Instrumental Variables Method:</b> Endogeneity problem; Instrumental variable estimation.	11-16 [L]
4	<b>Alternatives to OLS Regression:</b> Quantile regression; Multivariate regression; Seemingly unrelated regression.	17-22[L]
5	<b>Advanced Panels Data Models:</b> Dynamic heterogeneous panels; Non-stationary panels; Panel unit root and cointegration tests.	23-30 [L]
6	<b>Multivariate Analysis:</b> Factor analysis; Principal component analysis; Discriminant analysis; Cluster analysis.	31-40 [L]

7	<b>Computer Applications:</b> Analysis of cross-section and panel data using a suitable econometric software package; Applications of multivariate techniques using a suitable statistical package.	41-50 [P]
<b>Tutorials</b>		10 [T]

**References:**

- (1) Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 5<sup>th</sup> edition, South-Western Cengage Learning, United States, 2013.
- (2) Wooldridge, J M, *Econometric Analysis of Cross-section and Panel Data*, 2<sup>nd</sup> edition, The MIT Press, Cambridge, 2010.
- (3) Badi H Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons, United Kingdom, 2008.
- (4) Green, W H, *Econometric Analysis*, 7<sup>th</sup> edition, Pearson Education, USA, 2012.
- (5) Asteriou, D and S G Hall, *Applied Econometrics*, 2<sup>nd</sup> edition, Palgrave Macmillan, London, 2011.
- (6) Rencher, A C, *Methods of Multivariate Analysis*, 2<sup>nd</sup> edition, John Wiley & Sons, United Kingdom, 2002.
- (7) Tacq, J J A, *Multivariate Analysis Techniques in Social Science Research: From Problem to Analysis*, Sage International, United Kingdom, 1997.
- (8) Spencer, N H, *Essentials of Multivariate Data Analysis*, CRC Press, New York, 2014.
- (9) Adkins, Lee C & R Carter Hill, *Using Stata for Principles of Econometrics*, John Wiley & Sons, New York, 2011.
- (10) Griffiths, William E et al., *Using EViews for Principles of Econometrics*, John Wiley & Sons, New York, 2012.
- (11) Cameron, A Colin & P K Trivedi, *Microeconometrics Using Stata*, Stata Press, USA, 2009.

<b>Course Title: Game Theory with Application to Economics</b>			
<b>Course Code</b>	MAECO4004E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes, take-home assignments and class test)		
	70% - End-term university examination		

**Course Objectives:**

- To provide an introduction to game theory and strategic thinking
- To draw examples from economics, politics, and elsewhere, and discuss those in the context of game theory.

**Learning Outcomes:**

After successful accomplishment of this course, a student should be able to

- understand and analyse different types of games and their applicability in strategic decision making.
- understand the role of probabilities in explaining human decisions.

**Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Content</b>	<b>Teaching hours</b>
1	<b>Introduction:</b> What is game theory? The theory of rational choice. Games with Perfect information: Nash equilibrium, Mixed Strategy equilibrium, Extensive games with perfect information, Subgame perfect Nash Equilibrium, Ultimatum game, Coalition games.	1-14 [L]
2	<b>Games with Imperfect Information:</b> Bayesian games, beliefs and sequential games, Signalling games- education as a signal of ability.	15-24 [L]
3	<b>Evolutionary Equilibrium:</b> Monomorphic pure strategy equilibrium, Mixed strategy and Polymorphic equilibrium.	25-32 [L]
4	<b>Repeated Games:</b> The Prisoner's dilemma, finitely and infinitely repeated games	33-38 [L]
5	<b>Bargaining:</b> Bargaining as an extensive game, Nash's axiomatic model, relation between strategic and axiomatic models.	39-45 [L]
<b>Tutorial</b>		15

**Recommended Texts:**

- Gibbons, R. (1992) A Primer in Game Theory. Harvester/Wheatsheaf, New York. First Edition.
- Osborne Martin J.(2006). An Introduction to Game Theory, Oxford University Press, First Indian edition, 2006.

**Additional References:**

- Avinash K. Dixit and Barry J. Nalebuff (1991). Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life.W.W. Norton.
- Fudenberg, Drew and Tirole, Jean (1991), Game Theory. MIT Press, Cambridge, MA.Business, Politics, and Everyday Life. Norton, New York.
- Mas-Colell, A., M. Whinston and J. Green, Microeconomic Theory, Oxford University Press, New York and Oxford 1995

<b>Course Title: Agricultural Economics II</b>			
<b>Course Code</b>	MAECO4005E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	45(L) + 15(T) + 0(P) = 60 hours
<b>Methods of Content Interaction</b>	Class lectures, group discussions, students' presentations, and tutorials.		
<b>Assessment and Evaluation</b>	30% - Continuous internal assessment (in the form of quizzes and class test)		
	70% - End-semester university examination		

### Course Objectives:

- To acquaint the students with the theoretical and empirical debates in the context of Indian agricultural development.
- To build an understanding of Indian agriculture from a policy perspective.

### Learning Outcomes:

- The students will have clear understanding of the issues emerging out of the recent debates on Indian agricultural development.
- It will help to develop the perspectives for undertaking empirical works in the field of Indian agricultural development.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Economic Transformation and the Rural Non-farm Sector:</b> Theoretical perspectives; Empirical findings.	1-8 [L]
2	<b>Farm-Nonfarm Linkages:</b> Types of linkages; Measurement of linkages; Empirical findings.	9-13 [L]
3	<b>Agricultural Diversification:</b> Meaning of agricultural diversification, extent and determinants of agricultural diversification; Empirical findings.	14-17 [L]
4	<b>Globalisation of Indian Agriculture: Emerging Issues:</b> India's signing of Agreement on Agriculture (AoA); WTO negotiations; Trade liberalization; Trade in agricultural commodities.	18-29 [L]
5	<b>Performance of Indian Agriculture in the Era of Globalisation:</b> Growth and regional disparity; Capital formation; Subsidy; Technology adoption; Returns from agriculture; Indebtedness; Farmers' distress; Agrarian reforms; Agrarian crisis.	30-45 [L]
<b>Tutorials</b>		15 [T]

### References for Units 1-3:

- (1) Stephen Hymer & Stephen Resnick (1969), "A Model of an Agrarian Economy with Nonagricultural Activities", *American Economic Review*, Vol. 59, pp. 493-506.
- (2) Gustav Ranis & Frances Stewart (1993), "Rural Nonagricultural Activities in Development: Theory and Applications", *Journal of Development Economics*, Vol. 40, No. 1.
- (3) Nurul Islam (1997), *The Nonfarm Sector and Rural Development*, Food, Agriculture and the Environment Discussion Paper # 22, IFPRI, Washington, D.C.
- (4) Peter Lanjouw & Gershon Feder (2001), *Rural Non-Farm Activities and Rural Development: From Experience Towards Strategy*, Rural Development Strategy Background Paper # 4, The World Bank, Washington, D.C. [Available at [www.worldbank.org](http://www.worldbank.org)].
- (5) Frank Ellis (2000), *Rural Livelihoods and Diversity in Developing Countries*, CUP, Cambridge.
- (6) S Haggblade, P Hazell and T Reardon (eds.) (2007), *Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World*, OUP, New Delhi.
- (7) Steven Haggblade et al (1989), "Farm-Nonfarm Linkages in Rural Sub-Saharan Africa", *World Development*, Vol. 17, No. 8.
- (8) Peter Hazell & Steven Haggblade et al (1993), "Farm-Nonfarm Growth and Welfare of the Poor", in Michael Lipton & Jacques van Der Gaag (eds.), *Including the Poor*, The World Bank, Washington, D.C.
- (9) Sunil Ray (1994), "Farm-Nonfarm Interaction in a Labour Surplus Economy", *Economic & Political Weekly*, December 31.
- (10) Haggblade, Steven, Jeffrey Hammer and Peter Hazell (1991), "Modeling Agricultural Growth Multipliers", *American Journal of Agricultural Economics*, Vol. 73, No. 2, May.
- (11) John Harriss (1991), "Agriculture/Non-agriculture Linkages and the Diversification of Rural Economic Activity: A South Indian Case Study", in Jan Breman & Sudipto Mundle (eds.), *Rural Transformation in Asia*, Oxford University Press, New Delhi.
- (12) Daniel Start (2001), "The Rise and fall of the Rural Non-farm Economy: Poverty Impacts and Policy Options", *Development Policy Review*, Vol. 19, No. 4.
- (13) Benjamin Devis et al. (2002), *Promoting Farm/Non-farm Linkages for Rural Development*, Food & Agriculture Organisation, Rome, Chapters 1 and 2.
- (14) Shawki Barghouti et al. (2004), *Agricultural Diversification for the Poor: Guidelines for the Practitioners*, Agriculture & Rural Development Discussion Paper # 1, The World Bank, Washington D.C. [Available at [www.worldbank.org](http://www.worldbank.org)].
- (15) P Parthasarathy Rao et al. (2004), *Agricultural Diversification In India and Role of Urbanization*, MTID Discussion Paper # 77, IFPRI, Washington, D.C. [Available at [www.ifpri.org](http://www.ifpri.org)].
- (16) P K Joshi et al. (2004), "Agriculture Diversification in South Asia: Patterns, Determinants and Policy Implication", *Economic & Political Weekly*, June 12.
- (17) V S Vyas (1996), "Diversification of Agriculture: Concept, Rationale and Approaches", *Indian Journal of Agricultural Economics*, Vol. 51, No. 4.

### References for Units 4 and 5:

- (1) Montek S Ahluwalia (1996), 'Agricultural Liberalisation and Development Strategy in the Ninth Plan', *Indian Journal of Agricultural Economics*, Vol. 51, No. 3.
- (2) Ashok Gulati and Tim Kelly (1999), *Trade Liberalisation and Indian Agriculture*, Oxford University Press, New Delhi, Ch. 5.
- (3) Ashok Gulati and Sudha Narayan (2003), *The Subsidy Syndrome in Indian Agriculture*, Oxford University Press, New Delhi.

- (4) Anwarul Hoda and Ashok Gulati (2008), *WTO Negotiations on Agriculture and Developing Countries*, Oxford University Press, New Delhi.
- (5) Biswajit Dhar (2007), 'Prospects of Agricultural Trade Liberalisation' in Suparna Karmakar, Rajiv Kumar and Bibek Debroy (eds.), *India's Liberalisation Experience: Hostage to the WTO?*, Sage Publications, New Delhi.
- (6) Debashis Chakraborty and Amir Ullah Khan (2008), *The WTO Deadlocked: Understanding the Dynamics of International Trade*, Sage Publications, New Delhi, Chs. 1, 2 and 11.
- (7) Goswami, Binoy et al., (2018), *Indian Agriculture after the Green Revolution*, Routledge, London.
- (8) Bhalla, G S (2006), "Agricultural Growth and Regional Variations" in R Radhakrishna et al. (eds.), *India in a Globalising World: Some Aspects of Macroeconomy, Agriculture and Poverty*, Academic Foundation, New Delhi, Ch. 11.
- (9) Bhalla, G S and Gurmail Singh (2012), *Economic Liberalisation and Indian Agriculture*, Sage Publications, New Delhi.
- (10) Bhaumik, S. K. (ed.) (2008), *Reforming Indian Agriculture: Towards Employment Generation and Poverty Reduction*, Sage Publications, New Delhi, Introduction and Chapters 1-3.
- (11) Bhaumik, S K & Abdul Rashid (2013), "Production Performance in Indian Agriculture in the Era of Economic Reforms", in S Banerjee & A Chakraborty (eds.), *Development and Sustainability*, Springer, New Delhi.
- (12) Chand, Ramesh (2009), "Farm Incomes in India" in G K Kadekodi and B Viswanathan (eds.), *Agricultural Development, Rural Institutions and Economic Policy*, Oxford University Press, New Delhi, Ch. 4.
- (13) Gulati, Ashok (2010), "Accelerating Agricultural Growth: Moving from farming to Value Chains", in Shankar Acharya and Rakesh Mohan (eds.), *Indian Economy: Performance and Challenges*, Oxford University Press, New Delhi, Ch. 7.
- (14) Mahendra Dev, S (2008), *Inclusive Growth in India*, Oxford University Press, New Delhi, Chs. 2 & 3.
- (15) Mahendra Dev, S (2009), "How to Revive Indian Agriculture?" in S Singh and V R Reddy (eds.), *Changing Contours of Asian Agriculture*, Academic Foundation, New Delhi, Ch. 6.
- (16) Rao, V M and K C Hiranath (2010), "Agricultural Policy Reviews: A Synthesis", in *Agriculture, Food Security, and Rural Development*, Asian Development Bank, Oxford University Press, New Delhi.

<b>Course Title: Environmental Economics</b>			
<b>Course Code:</b>	MAECO4006E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quizzes and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades)		
	70% - End Term External Examination (University Examination)		

### Course Objectives

- To develop the understanding of concepts of environmental economics and to apply the tools of environmental economics in resolving environmental problems.
- To learn how the markets allocate goods and why they sometimes fail to allocate environmental goods optimally. Students will learn to design regulation which corrects market failures.
- To learn how to regulate pollutants that travel across country boundaries and how environmental regulations affect trade flows.

### Learning Outcomes

After completion of the course the learners will be able to:

- Recognise the role of economic activity in environmental damage
- Understand the nature and scope of contemporary environmental debates.
- Recognise the local and global economic response to environmental damage, including from governments, industry, individuals and non-government organisations.
- Assist in the identification of needs and the design, planning, resourcing and development of projects in environmental and social sustainability.

### Course Contents and Teaching Plan:

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	Environment, Ecology and Economy.	1-5 [L]
2	Economics of Natural Resources (Renewable and Non – renewable).	6-10 [L]
3	Environment and Sustainable Development.	11-15 [L]
4	Common Property Resources and Sustainable Development	16-20 [L]
5	Political Economy and Environmental Change.	21-22[L]
6	International Trade and Environment.	23-25[1]
7	Externalities, Market Failure and Environment.	26-30[L]



8	Climate Change and Development.	31-35 [L]
9	Valuation of Ecosystem Services.	36-40[I]
10	Institutions, Environmental Regulations and Policies.	41-45
<b>Tutorials</b>		15 [T]

### References:

- (1) Field, B C and M K Field, *Environmental Economics: An Introduction*, McGraw Hill Education (New York), 7<sup>th</sup> edition, 2016.
- (2) Kolstad, C Charles, *Environmental Economics*, OUP, 2000.
- (3) Bhattacharya, Rabindra N (ed.), *Environmental Economics An Indian Perspective*, OUP, 2001.
- (4) Sankar, Ulaganathan, *Environmental Economics: Readers in Economics*, OUP, 2001.
- (5) Sengupta, Ramprasad, *Ecology & Economics: An Approach to Sustainable Development*, OUP, 200
- (6) Dasgupta, Partha, *Human Wellbeing and the Natural Environment*, OUP, 2001.
- (7) Shiva, Vandana, *Ecological, Economic and Political Costs of the Green Revolution*, INTACH (Delhi), 1996.
- (8) Pearce, W David and Kerry R Turner, *Economics of Natural Resources and the Environment*, 1990.
- (9) Conrad, M J and W Colin Clark, *Natural Resource Economics Notes and Problems*, CUP, 1987.
- (10) Conrad M J, *Resource Economics*, CUP, 1999.

<b>Course Title: Industrial Economics-II</b>			
<b>Course Code:</b>	MAECO4007E04	<b>Credits</b>	4
<b>L + T + P</b>	3 + 1 + 0	<b>Course Duration</b>	One Semester
<b>Semester</b>	Fourth	<b>Contact Hours</b>	45 (L) + 15 (T) Hours
<b>Methods of Content Interaction</b>	Lecture, Tutorials, Group discussion; self-study, assignments, quizzes and seminar, presentations by students.		
<b>Assessment and Evaluation</b>	30% - Continuous Internal Assessment (Formative in nature but also contributing to the final grades) 70% - End Term External Examination (University Examination)		

#### **Course Objectives:**

- To know various theories and practices for industrial location and development.
- To know locational factors, regional factors, industrial finance and problems of industrial management.
- Provides an opportunity to analyse competition and regulatory policies across different market structures.

#### **Learning Outcomes:**

After completion of the course the learners will be able to:

- Understand the advanced models of the behaviour of firms and industrial organization and how they can be applied to policy issues
- Analytically solve problems relating to industrial economics.

#### **Course Contents and Teaching Plan:**

<b>Unit</b>	<b>Contents</b>	<b>Teaching Hours</b>
1	<b>Theories of Firms and Industrial Location:</b> Theories of growth of firm—Downie's theory and Penrose theory; Profitability—concept and its measurement; Industrial location, Factors affecting industrial location, Recent Theories of Industrial location - Webers and Sergent theories, Movement of industries in developed and developing countries.	1-12 [L]
2	<b>Technical Change and Market Structure:</b> The Economics of patents - Adoption and diffusion of innovations - Innovations and rivalry: Kamien and Schwartz - Measures of concentration - Concentration ratio - Hirschman - Herfindahl index - Entropy measure - Structure conduct performance paradigm - Contestable markets.	13-25 [L]
3	<b>Indian Industrial Development:</b> Strategy of industrial development, Industrial policy reform, Privatisation, Liberalization and Globalisation,	26-35 [L]

	Recent trends in industrial growth, Role of FDI and private sector MNC's in industrial development, disinvestment and Regional distribution of industry, Trends and pattern of Indian industry abroad- M&A- Export and import component of Indian industrial sector.	
4	<b>Industrial Finance:</b> Role, Nature and types of industrial finance, sources of institutional finance, Different institutions of finance -IDBI, IFCI, ICICI, SFCs, NIDC, SIDCS, UTI, LIC, General Insurance Corporations and Commercial Banks - Financial Statement Analysis.	36-45 [L]
<b>Tutorials</b>		15 [T]

#### References:

- (1) R.R Barthwal, (2000); Industrial Economics, New Age International. New Delhi.
- (2) Hay. D.D and D.I. Morries (1979); Industrial Economics theory and Evidence, Oxford Press.
- (3) Hay, D. A., and D.J. Morris. 1991, Industrial Economics and Organization: theory and evidence. Oxford University Press.
- (4) Ahluwalia, I. J. (1985), Industrial Growth in India – Stagnation since Mid-sixties, Oxford University Press, New Delhi.
- (5) Ahluwalia, I. J. (1991), Productivity and Growth in Indian Manufacturing, Oxford University Press, New Delhi.
- (6) Ferguson, Paul R. and Glenys J. Ferguson, (1994), Industrial Economics - Issues and Perspectives, Macmillan, London.
- (7) Shepher, William G. (1985), The Economics of industrial Organisation, Prentice - Hall, Inc, Englewood Cliffs, N. J.
- (8) Tirole, J. (1996), The Theory of Industrial Organization, Prentice - Hall.
- (9) Divine A.J and Others (1976), An Introduction to Industrial Economics.
- (10) Francis Cherunilam (1994) Industrial Economics, Himalaya, New Delhi.