

SEMESTER-I											
Code	Subject	L	T	P	C	C W S	PR S	MT E	E T E	PR E	
EO 6101	Microeconomics I	3	1	0	4	20	-	40	40	-	
EO 6102	Macroeconomics I	3	1	0	4	20	-	40	40	-	
EO 6103	Fundamentals of Mathematics & Statistics	3	1	0	4	20	-	40	40	-	
EO 6104	Indian Economy	3	1	0	4	20	-	40	40	-	
EO 6105	Application of Data Science in Economics	0	0	4	2	-	60	-	-	40	
	Total	12	4	4	18						
SEMESTER-II											
EO 6201	Microeconomics II	3	1	0	4	20	-	40	40	-	
EO 6202	Macroeconomics II	3	1	0	4	20	-	40	40	-	
EO 6203	Mathematical Economics	3	1	0	4	20	-	40	40	-	
EO 6204	Intermediate Econometrics	3	1	0	4	20	-	40	40	-	
*****	Open Elective*	0	0	0	3*	20	-	40	40	-	
	Total	12	4	0	16						
SEMESTER-III											
EO 7101	Public Economics and Policy	3	1	0	4	20	-	40	40	-	
EO 7102	Environmental Economics	3	1	0	4	20	-	40	40	-	
EO 7103	Development Economics	3	1	0	4	20	-	40	40	-	
EO 7104	Dissertation	0	4	0	4	20	60	-	-	40	
EO7170	Summer Internship/field work*	0	2	0	2						
	Program Elective: (Any Two)										
EO 7140	Health Economics	2	1	0	3	20	-	40	40	-	
EO 7141	Regional Economics	2	1	0	3	20	-	40	40	-	
EO 7142	Rural Economics	2	1	0	3	20	-	40	40	-	
EO 7143	History of Economic Thought	2	1	0	3	20	-	40	40	-	
EO 7144	Agricultural Economics	2	1	0	3	20	-	40	40	-	
EO 7145	Game Theory	2	1	0	3	20	-	40	40	-	
	Total	13	11	0	24						
SEMESTER-IV											
EO 7201	International Economics	3	1	0	4	20	-	40	40	-	
EO 7202	Monetary Economics	3	1	0	4	20	-	40	40	-	
EO 7203	Operation Research in Economics	3	1	0	4	20	-	40	40	-	
	Program Elective: (Any Two)										
EO 7240	International Financial System	2	1	0	3	20	-	40	40	-	
EO 7241	Economics of Innovation and Entrepreneurship	2	1	0	3	20	-	40	40	-	
EO 7242	Labor Economics	2	1	0	3	20	-	40	40	-	
EO 7243	Neuroeconomics	2	1	0	3	20	-	40	40	-	
EO 7244	Comprehensive Economics	2	1	0	3	20	-	40	40	-	
	Total	13	5	0	18						
Total Credits for all Semesters						76+3*(MLC)					

Learning Objective (s):

1. To familiarise the students with the fundamental concepts, theories, and approaches to understand the behaviour of microeconomic principles in the market economy.
2. To familiarise the students with the working of microeconomic concepts in real life.

Learning Outcomes:

At the end of the course students will be able to:

1. Students will develop understanding of fundamental concepts, theories, and approaches to understand the behaviour of microeconomic aggregates and policies.
2. Students will develop understanding with the working of microeconomic concepts and principles in real life.

Pedagogy:

Main delivery methods which are used across module and its stages:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work
5. Assignment

Course Content:

Concepts and Methods of Micro-economic Analysis, Scarcity and Choice, Optimization and Equilibrium, Comparative Statics; Theory of Consumer: Preference relations and their properties, Consumption Decision, Comparative statics of the consumer's decision, Slutsky Equation, Derivation of Demand Curves, Demand elasticities, Welfare evaluation of economic change (prices), Consumer's surplus; Theory of Production and Costs: The Production function- Assumptions, Variation in Scale, Variation in input proportions, The multi-product firm and production possibility set, Minimization of costs in the long and the short run, Derivation of cost functions from production functions; derived demand for factors of production, Profit maximization in the short and the long run, The multi-product case, Comparative statics- The firm's Supply function, Technical progress. Cobb-Douglas, CES, and Trans-log production functions and their properties; Theory of Market: Price and Output Determination under alternative markets perfect competition — short run and long run equilibrium of the firm and industry, supply curve; Monopoly — short run and long run equilibrium, price discrimination, welfare aspects, monopoly control and regulation, Monopolistic competition — general and Chamberlin approaches to equilibrium, equilibrium of the firm and the group with product differentiation and selling costs, excess capacity under monopolistic and imperfect competition, criticism of monopolistic competition, Oligopoly — Non-collusive (Cournot, Bertrand, Edgeworth, Chamberlin, kinked demand curve and Stackelberg's solution) and collusive (Cartels and mergers, price leadership and basing point price system) models, Price and output determination under monopsony and bilateral monopoly, Workable competition — Structure, conduct and performance norms.

References,

- Ahuja H.L (2016). Modern Economics, An Analytical Study, S. Chand & Company Ltd. New Delhi, 20th Edition.
- P. Samuelson and Nordhaus. (2009). Economics, 10th Edition, Tata McGraw-Hill Publishing Company Limited. New Delhi.
- C. E. Case and C. Ray. (2007). Principles of Economics. Pearson Education. Inc., 8th edition.
- J. E. Stiglitz and C. E. Walsh. (2007). Economics, W.W. Norton & Company Inc., New York. International Student Edition. 4th edition.
- N, Gregory Mankiw. (2014). Economics, Principles and Applications. Indian edition. Cengage Learning. 7th Edition.
- Salvatore Dominick. (2012). Micro Economics, Oxford.
- Dhingra I.C , Garg V.K. (2012), Principles of Micro Economics, Sultan Chand and Sons.
- Lipsey & Chrystal. (2011). Economics, Oxford University Press.
- Anna Koutsoyiannis. (2008). Modern Microeconomics, Macmillan.

EO 6102

Macroeconomics-I

[3104]

Learning Objective (s):

1. To familiarise the students with the fundamental concepts, theories, and approaches to understand the behaviour of macroeconomic aggregates and policies.
2. To familiarise the students with the working of macroeconomic aggregates and policies in real life.

Learning Outcomes:

At the end of the course students will be able to:

1. Students will develop understanding of fundamental concepts, theories, and approaches to understand the behaviour of macroeconomic aggregates and policies.
2. Students will develop understanding with the working of macroeconomic aggregates and policies in real life.

Pedagogy:

Main delivery methods which are used across module and its stages:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work
5. Assignment

Course Outline

Keynesian Models: Simple Keynesian Model, assumptions, concepts of involuntary unemployment, liquidity preference, investment function, IS-LM model, two sector model, goods and money market equilibrium, multiplier, liquidity trap, three sector model, role of government in terms of monetary and fiscal policy; Keynesian Models versus Classical Models: Say's Law, quantity theory of money, price flexibility and full employment, Patinkin's money demand functions, equilibrium concept in classical model, synthesis between classical models and Keynesian models, interpretation and policy analysis; Expectations and Macroeconomic Adjustments: Adaptive and rational expectations hypothesis, partial adjustment model, Lucas critique, Phillips curve, time consistency, inflation targeting, interest rate rules, effects of spending and taxes in models with flexible and sticky prices, perverse effects of fiscal

expansion; Macroeconomics: Open Economy Aspects: Market for foreign exchange, devaluation and depreciation, real and nominal exchange rate, Mundell-Fleming model, fixed versus floating exchange rate, price adjustment, role of fiscal and monetary policies under alternative exchange rate regimes, purchasing power parity concept.

References:

- Acemoglu, D. (2016), Macroeconomics, New Delhi, Pearson education India.
- Barro, R.J. (1997). Macroeconomics, Fifth edition, MIT Press.
- Blanchard, O. (2012), Macroeconomics. (4th edition), New Delhi, Pearson Education.
- Branson, W. H. (2014), Macroeconomics: Theory and policy, (3rd edition), New Delhi, East-West press Pvt. Ltd.
- Dornbusch, R.; Fisher, S. and Startz, R. (2015), Macroeconomics, (11th edition), New Delhi, Tata McGraw hill education India Pvt. Ltd.
- Froyen, R. T. (2012), Macroeconomics: theories and policies. (8th edition), New Delhi, Pearson Education.
- Fuller, Neil (2008), Principles of macroeconomics, Delhi, Overseas Press
- Gordon, R. J. (2015), Macroeconomics, (12th edition), New Delhi Pearson education India Pvt. Ltd
- Hall, E. and Taylor, J. B. (1986). Macroeconomics. W. W. Norton and Company.
- Mankiw, N. G. (2011), Macroeconomics, 6th edition, New York, Worth publishers
- Scarth, W. (2007). Macroeconomics: An Introduction to Advanced Methods, third edition, Thomson.

EO 6103

Fundamentals of Mathematics and Statistics

[3104]

Learning Objective (s):

1. To evaluate problems and make decisions using Mathematical & Statistical analysis of data.
2. To makes students to comprehend and analyze enormous amount of Mathematical & Statistical which they encounter everyday outside of work.
3. To focus on concepts development and its application for problem solving and decision making by effectively using both Descriptive and Inferential Statistics.

Learning Outcomes:

At the end of the course students will be able to:

1. Students will develop understanding of mathematics & measurement scales and distributional assumptions and how these influence choice of statistical methods.
2. To develop an understanding of statistical concepts and assumptions about methods and their validity. This would include the concept of the Regression criterion and its application.
3. To be able to take an appropriate decision while interpreting the statistical output. This would enable the students to become competent in interpreting the statistical output and use it effectively in their professional career.

Pedagogy:

Main delivery methods which are used across module and its stages:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work

5. Assignment

Course contents:

Calculus: Differential & Integration calculus-Rules of differentiation, integration-simple and definite, Partial and total differentiation; Matrix & Determinants: addition, multiplication and Inversion of matrix, Cramer's Rule; Input-output analysis: Hawkins-Simon conditions for viability, computation of Gross output, Linear programming Problems: Profit Maximization, cost minimization; Fundamentals of Statistics: Measures of Central Tendency, Measures of Dispersion, Skewness, Moment & Kurtosis; simple correlation; Simple linear Regression; Time- Series analysis; Probability & Distribution: simple probability, conditional probability, Discrete Probability Distribution- Binomial and Poisson, Continuous Probability Distribution-normal; Hypothesis Testing: meaning, formulation of hypothesis, type I and type II errors, testing of hypothesis of mean and the variance of a normal population; Variance ratio test: F-test, Analysis of Variance (ANOVA) -one way, Chi-square test.

References:

- Alpha C Chiang and Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, McGraw-Hill, 4th Edition.
- B.C. Mehta and G.M.K. Madnani (2008) Mathematics for Economists, S Chand and Sons..
- J.M. Henderson and R.E. Quandt (2000), Microeconomic Theory: A Mathematical Approach (Economic Handbook Series), McGraw-Hill College, 3rd Edition.
- Peter J Hammond (2002), Mathematics for Economic Analysis, Pearson Educational Asia.
- Srinath Barauh (2012), Basic Mathematics and its Application in Economics, Trinity Press Pvt Ltd.
- Levin, Stephan, Krehbiel, Berenson (2012), Statistics for Managers Using Microsoft Excel, PHI Learning, New Delhi
- S.P Gupta (2014), Statistical Methods, Sultan Chand & Company, New Delhi
- Aczel Amir D. (2010), Complete Business Statistics, Tata McGraw Hill Publishing Company Limited, New Delhi.
- D.C Sancheti & V.K Kapoor (2010), Statistics: Theory, Methods and Applications, Sultan Chand & Company, New Delhi
- Ken Black (2012), Business Statistics for Contemporary Decision Making, Wiley Publications, New Delhi.
- Naval Bajpai (2013), Business Statistics, Pearson Education, New Delhi.
- Richard I Levin and David S. Rubin (2013), Statistics for Management, Pearson Education, New Delhi.

EO 6104

Indian Economy

[3104]

Learning Objectives:

1. To enable students to understand the various dynamics of Indian economy
2. To review major trends in economic indicators and policy debates in India with particular emphasis on paradigm shifts
3. To strengthen fundamental knowledge and understanding of Indian economy
4. To access Indian economy on the backdrop of Globalization

Learning outcomes:

1. Understand global perspective in Indian economy

2. Understand the performance of the economy
3. Compare development of Indian economy with world scenario
4. Apply the appropriate approach to understand dynamics of economic development for Indian economy
5. Analyze various issues pertaining to India's economic development

Pedagogy:

Class room teaching, active discussions, article review etc.

Method of Instruction:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work / Assignment

Course Outline:

Indian Economy in global context: India as a developing economy, meaning, characteristics, growth of India in world economy; Global economic issues and Indian Economy: National income, demography and human resource development, occupational structure, comparison with global economy; Indian Agriculture and trend analysis in global context: Development, role and issues, agriculture marketing, agriculture export, direction and volume, infrastructure needs, agriculture and rural credit, agriculture and WTO; Indian Industrial Sector and trend analysis : MSME, large scale industries, industrial exports, direction and volume, role of information technology in industrial development, corporate social responsibility, make in India; Increasing role of service sector : Trends and performance of service sector in Indian economy, types of services, growth and contribution of service sector in India; IT and ITES: IT and knowledge economy, IT in India in global context, major issues, future prospect, National Knowledge Commission, skill development in India ; Foreign Trade and foreign capital : India's foreign trade policy, globalization and Indian economy, foreign capital and aid, MNCs, WTO, FDI; Black economy in India: Causes, consequences, government measures, demonetization.

References:

- Misra S.K. & Puri V.K (2018). Advanced Microeconomic Theory, Himalaya Publishing House, New Delhi, 36th edition
- Fernando A.C (2016). Indian Economy, Pearson India Education Services Pvt. Ltd., New Delhi, 7th edition
- Ghosh C & Ghosh A (2016). Indian Economy- A Macro Theoretic Analysis, PHI Learning Pvt. Ltd., New Delhi, 2nd edition
- Datta R & Sundaram K. P. M (2018). Indian Economy, S. Chand & Co. New Delhi, 72nd edition
- Dhingra I. C (2010). Indian Economy, Sultan Chand & Sons, New Delhi, 28th edition

[6105]

Application of Data Science in Economics

[3104]

Learning Objective (s):

1. Students should understand a general definition of research design and to identify the overall process of designing a research study from its inception to its report.
2. To evaluate problems and make decisions using Statistical analysis of data.

3. To focus on concepts development and its application for problem solving and decision making by effectively using both Descriptive and Inferential Statistics.

Learning Outcomes:

At the end of the course students will be able to:

1. Distinguish a purpose statement, a research question or hypothesis, and a research objective
2. Develop an understanding of statistical concepts and assumptions about methods and their validity.
3. Take an appropriate decision while interpreting the statistical output. This would enable the students to become competent in interpreting the statistical output and use it effectively in their professional career.

Pedagogy and Methods of Instruction

Main delivery methods which are used across module and its stages:

1. Lectures
2. Project work
3. Assignment

Course Outline:

Introduction to the power of data and data analytics; leading software and data sources in data analysis, data mining and data base management; Collecting, Organizing, Analyzing, and visualizing data: categorical data, meta data, numerical data-frequency distribution, relative frequency distribution, numerical variable, cumulative distribution, techniques of data visualization, misuses and common errors in visualizing data; numerical descriptive measures: measures of central tendency, variation and shapes, correlation, covariance, descriptive measures for a population; Simple Parametric and Non-parametric tests: t-test procedures, F-test, Mann Whitney procedures – Principal Components, Factor and Cluster Analysis; Multiple Regression: Multiple Regression including dummy variable, Growth rate calculation, Trend Analysis, Functional Forms, Testing for Multicollinearity, Heteroscedasticity, and Autocorrelation and remedial measures; Handling of Data: cross-sectional data, time series data, longitudinal or panel data, survey data. Two Variable Regression Model, Specification error, Simultaneous Equation Model, Qualitative Response Model.

Reference:

- Aczel Amir D. (2010), Complete Business Statistics, Tata McGraw Hill Publishing Company Limited, New Delhi.
- AH - Lee C. Adkins and R. Carter Hill (2007) Using Stata for Principles of Econometrics, 3rd Edition, December; (ISBN: 978-0-470-18546-9) John Wiley & Sons Inc.
- D.C Sancheti & V.K Kapoor (2010), Statistics: Theory, Methods and Applications, Sultan Chand & Company, New Delhi.
- GHL - William E. Griffiths, R. Carter Hill and Guay C. Lim (2008) Using EViews for Principles of Econometrics, 3rd Edition, February; (ISBN: 978-0-471-78711-2) John Wiley & Sons Inc.
- GM - Darren Georgeand Paul Mallery (2010) SPSS for Windows Step by Step: A Simple Study Guide and Reference, 17.0 Update, 10th Edition; (ISBN: 9788131762257) Pearson Education.
- HGL - R. Carter Hill, William E. Griffiths and Guay C. Lim (2007) Principles of Econometrics, 3rd Edition, November; (ISBN 978-0-471-72360-8) John Wiley & Sons Inc.

- Ken Black (2012), Business Statistics for Contemporary Decision Making, Wiley Publications, New Delhi.
- Levin, Stephan, Krehbiel, Berenson (2012), Statistics for Managers Using Microsoft Excel, PHI Learning, New Delhi.
- Naval Bajpai (2013), Business Statistics, Pearson Education, New Delhi.
- Richard I Levin and David S. Rubin (2013), Statistics for Management, Pearson Education, New Delhi.
- S.P Gupta (2014), Statistical Methods, Sultan Chand & Company, New Delhi.

Semester-II

EO6201

Micro Economics II

[3104]

Learning Objective (s):

1. To familiarise the students with the fundamental concepts, theories, and approaches to understand the behaviour of microeconomic principles in the market economy.
2. To familiarise the students with the working of microeconomic concepts in real life.

Learning Outcomes:

At the end of the course students will be able to:

1. Students will develop understanding of fundamental concepts, theories, and approaches to understand the behaviour of microeconomic aggregates and policies.
2. Students will develop understanding with the working of microeconomic concepts and principles in real life.

Pedagogy:

Main delivery methods which are used across module and its stages:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work
5. Assignment

Course Content:

Theory of Distribution: Neo-classical approach — Marginal productivity theory, Product exhaustion theorem, Elasticity of technical substitution, technical progress and factor shares,

Theory of distribution in imperfect product and factor markets; Marginalist Controversy and Average Cost Pricing: Marginalist Controversy and Average Cost Pricing, Hall and Hitch Report and Full-Cost Pricing, Recent developments in Limit Pricing Theory; General Equilibrium: Partial and general equilibrium, Walrasian excess demand and input-output approaches to general equilibrium, existence, stability and uniqueness of equilibrium and general equilibrium, coalitions and monopolies, Production without consumption — one sector model, homogeneous functions, income distribution; Theory of Games: Theory of Games and collusive oligopoly, Two-person Zero-Sum Game, Certainty and Uncertainty Model, Non Zero-Sum Game, The prisoner's Dilemma, Nash- Equilibrium; Welfare Economics: Pigouvian welfare economics, Pareto optimal conditions, Value judgment, Social welfare function, Compensation principle, Inability to obtain optimum welfare — Imperfections, market failure, decreasing costs, uncertainty and non-existent and incomplete markets, Theory of Second Best — Arrow's impossibility theorem, Rawl's theory of justice, equity-efficiency trade off; Market failure and the Second best: Causes of Market Failure, Instances of Market failure, the theory of Second Best, Government action and Government Failure.

References,

- Walter Nicholson, Christopher M. Snyder, Intermediate Microeconomics and Its Application, 2009.
- Theodore C. Bergstrom, Hal R. Varian, Intermediate Microeconomics, A Modern Approach, W.W. Norton, 2010.
- H.L. Ahuja, Advanced Economic Theory, S. Chand and Co., 2007.
- Damodaran, Suma, Managerial economics, Oxford, 2012.
- Dwivedi, D.N., Managerial economics, Pearson, 2012.
- Mehta, P.L., Managerial Economics, S. Chand, 2013.
- W. Cris Lewis, Sudhir K. Jain, H. Craig Petersen, Managerial Economics, Pearson, 2005

EO 6202

Macroeconomics-II

[3104]

Learning Objective (s):

1. To familiarise the students with the advanced concepts, theories, and approaches to understand the behaviour of macroeconomic aggregates and policies.
2. To familiarise the students with the working of macroeconomic aggregates and policies in real life.

Learning Outcomes: At the end of the course students will be able to:

1. Students will develop understanding of advanced concepts, theories, and approaches to understand the behaviour of macroeconomic aggregates and policies.
2. Students will develop understanding with the working of macroeconomic aggregates and policies in real life.

Pedagogy: Main delivery methods which are used across module and its stages:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work
5. Assignment

Course Outline

Macroeconomics in the Short Run: Fluctuations of Macroeconomic variables, The Stylized facts, WagePrice rigidities, and Keynesian Cycles, Open Economy Issues, Open economy IS-LM-MP, The Mundell-Fleming Model, Stabilisation, Macroeconomic Policy and Exchange Rate Regimes. Asset Price Volatility, Interest rate and Exchange rates, Crisis models and Strategic interactions; Micro-foundations of Real and Nominal Rigidities: Non-Walrasian model and Economic Fluctuations, Imperfect Information, Imperfect Competition and Asymmetric Information, Solving for Rational Expectation Equilibrium, Coordination Failure; Macroeconomics in the Medium Run: Ricardian Equivalence, The Open economy Consumption Smoothing, and foreign capital, The firm; Tobin's 'q' theory of investment, Research and Development, Human Capital and Externalities Empirical Issues, Real Business Cycle Dynamics; Macro Policy: Coordination of Fiscal and Monetary Policy, Rules versus Discretion, Credibility, Commitment devices, Monetary Transmission Mechanism and Targeting.

References:

- Acemoglu, Doron (2016), Macroeconomics, New Delhi, Pearson education India.
- Barro, R.J. (1997). Macroeconomics, Fifth edition, MIT Press.
- Blanchard and Fischer (1989). Lectures on Macroeconomics, MIT Press.
- Branson, William H. (2014), Macroeconomics: Theory and policy, (3rd edition), New Delhi, East-West press Pvt. Ltd.
- Carlin, Wendy; & Soskice, David (2013), Macroeconomics: Imperfections, institutions & policies, New Delhi, Oxford University press.
- Gordon, Robert. J. (2015), Macroeconomics, (12th edition), New Delhi Pearson education India Pvt. Ltd.
- Pandit, V.N. and K. Krishnamurty (2005). Macroeconometric Models for India, Oxford University Press.
- Romer, David (2012), Advanced Macroeconomics (4th edition), New York, Tata McGraw Hill companies.
- Sargent, T. (1987). Macroeconomic Theory, Academic Press.

Learning Objective:

The main objectives of the paper are;

1. To train the students to grasp the use of mathematical techniques and operations to analyse economic problems and to initiate students into various economic concepts which are amenable to mathematical treatment.

Learning Outcome

1. Exhibiting a sound understanding of mathematical techniques discussed.
2. Formulating economic problems in mathematical terms.
3. Applying the relevant tools for analyzing economic problems.

Pedagogy:

Main delivery methods which are used across module and its stages:

1. Lectures
2. Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work
5. Assignment

Course Contents:

Theory of consumer Behaviour- Concavity of a Utility Function; Convexity of an indifference curve; Maximization of utility; Derivation of demand functions — Ordinary and Compensated demand function; Income and Leisure — Derivation of labour supply function; Slutsky Equation- 2 commodity case elasticity form and important results; Type of Utility functions- separable and additive, homogeneous and homothetic, direct and indirect; Roy's Identity; Linear Expenditure System; Theory of firm: Homogeneous production function; Optimization behaviour of a firm- profit maximization, constrained cost minimization and constrained output maximization. Elasticity of substitution (s) derivation of its expression and calculation of value of for CDPF and CESPF; Deviation of Cost and input demand function; Perfect Competition: Market demand and supply function; Determination of price and output of a firm; Effects of specific and advalorem taxes; Monopoly: Profit Maximization and sales revenue maximization; Multi plant Monopolist, price discrimination, effect of various taxes (Lump sum tax, profit tax, specific tax and Ad-Valorem tax) on output and price of a monopoly firm; Lagged adjustment — Cobweb Model; Macro Economic Models: Keynesian theory of income determination, concept of Multiplier, derivation of IS and LM functions; MultiplierAccelerator interaction; Trade Cycle models of Samuelson and Hicks; Growth model: HarrodDomar, and Solow.

Reference books:

- B.C. Mehta and G.M.K. Madnani (2008), Mathematics for Economists, S Chand & Sons, New Delhi
- J.M. Henderson and R.E. Quandt (2015), Microeconomic Theory: A Mathematical Approach (Economic Handbook Series), McGraw Hill, 7th Edition,
- A.C. Chang (2005), Fundamental Methods of Mathematical Economics, McGraw Hill, 3rd Edition.

- Peter J Hammond (2002), Mathematics for Economic Analysis, Pearson Educational Asia.

EO 6204

Intermediate Econometrics

[3104]

Learning Objectives:

1. To illustrate concepts, principles and models of econometrics using statistical and mathematical techniques
2. To enable students to discover and comprehend problems in the key areas using appropriate tools and hence increase employability
3. To relate the specific facts of economics with the practical world problems to make them employable

Learning outcomes:

1. Define and understand basic econometric terms
2. Learn the various concepts of econometrics evolved through time
3. Apply the tools of analysis to predict the economic consequences of various events

Pedagogy:

Class room teaching, active discussions, article review etc.

Method of Instruction:

1. Lectures
2. Seminar/ Tutorials
3. Discussion (Case studies/Research Papers)
4. Project work / Assignment

Course Outline:

Introduction: Nature, scope and methodology of econometrics, specification of an econometric model, nature of data used in estimation; Single Equation Estimation: Method of Ordinary Least Squares (OLS) for simple and multiple regression models, properties of the least squares estimators, the Gauss-Markov Theorem, tests of significance of OLS estimates and confidence intervals, R^2 and Adjusted R^2 ; Dummy Variable Regression Models: Nature, application and uses of dummy variables (both as dependent and independent), ANOVA models (single & two qualitative variables), ANCOVA models ; Problems with OLS Estimation: Specification errors, Multicollinearity, Heteroscedasticity, Autocorrelation; Simultaneous Equation Models: Description, identification problem, rank and order conditions, single equation methods of estimation, Indirect Least Squares (ILS), Two Stage Least Squares (2 SLS) ; System Methods of Estimation: Three Stage Least Squares (3 SLS); Time Series Analysis: Stationarity, unit roots, co-integration, spurious regression, Dickey-Fuller test, Engle-Granger test, random walk models, forecasting with AR, MA and ARMA models, Box-Jenkins Methodology ; Panel Data Techniques: Fixed effects models, random effect model, Hausman test

References:

- Koutsoyiannis A (2001). Theory of Econometrics, Palgrave Macmillan, 2nd edition
- Gujarati D.N. and Sangeetha (2012). Basic Econometrics, Tata McGraw-Hill Publishing Company limited, New Delhi, 5th Edition
- Gujarati D.N (2011). Econometrics by Examples, Palgrave Macmillan, 2nd Edition

- Maddala G.S (2010). An introduction of Econometrics, Wiley, 3rd Edition
- Wooldridge J.M (2013). Introductory Econometrics: A modern approach, Cengage, 5th Edition
- Kennedy P (2004). A Guide to Econometrics, Blackwell Publishers, 5th Edition
- Gupta S.C (2012). Fundamental of Statistics, Himalaya Publishing House, New Delhi, 7th Revised Edition

Semester-III

EO7101

Public Economics and Policy

[3104]

Course Objectives:

The course aims to clarify the basic concepts of the subject matter of Public economies and illustrate concepts of Government policy from the point of view of economic efficiency and equity. It deals with the nature of government intervention, its implications for allocation, distribution, and stabilization. The course emphasizes issues concerning inequality and the problem of allocation of resources in policy making.

Learning Outcomes

- To understand the nature of public goods
- To explore the distribution of resources in an economy
- To analyze the effect of public policies on resource allocation

Course Outline:

Introduction: The nature, scope and significance of public economics; **Public Goods and Public Sector:** Concept and characteristics of public goods, determination of provision of public good, externality, market failure, imperfections, public provision, pricing of public goods, vertical summation, impossibility of decentralized provision of public goods, asymmetric information; **Revenue Resources:** Principles of taxation, Ability to Pay principle, Benefit Approach (Actual Examples) ;**Distribution and Stabilization:** Sources and importance of public borrowing, effects of public debt, tax vs. debt, burden of public debt, shifting of debt burden, crowding out of private investment, methods of debt redemption; **Public Finance and Public Choice:** The role of state, effects of public expenditure on production, distribution and economic activities; **Issues in Debt Management in India:** Trends and pattern of public expenditure and pattern of public debt in India, effects of public debt on money supply, economic growth and economic stability, tax structure in India and recent reforms - GST. **Centre state finance relation-** Federalism and federal finance, transfer and allocation of resources, problems of federal finance, suggestions, and improvement.

Text/ References:

- Musgrave and Musgrave. (2017): Public Finance in Theory and Practice, McGraw Hill, 5th edition.
- H.L. Bhatia. Public Finance. (2018). Vikas publishing house, 29th edition
- Amaresh Bagchi. (2007). Readings in Public Finance. Oxford University Press.
- Misra and Puri. (2018). Indian Economy, Himalaya publications, 36th edition
- 3. Choudhary, R. K. (2014). Public Finance and Fiscal Policy, Kalyani Publishers, New Delhi

EO 7102

ENVIRONMENTAL ECONOMICS

[3104]

The course will give students an opportunity to develop a critical understanding of the different ways in which economic decisions, market forces, and government policies can affect environment.

Course Outline:

Introduction to the key concepts from environmental economics: markets; market failures; government regulation; Cost Benefit Analysis; the environment as a social asset; **Strategic interactions:** Coase Theorem; Tragedy of the Commons; Transactions costs and institutions; **Valuing the environment:** Welfare economics; efficiency and optimality in allocation; approaches to environmental evaluation; environmental ethics; sustainable development; **Environmental policy instruments and implementation:** common and control policies in different areas water; policy design and implementation; biodiversity; trade; **Applications:** deforestation; tropical deforestation and poverty; preservation and conservation; climate change; carbon trading; international co-operation; Kyoto Protocol.

References/ text books:

- Ahmed Hussen “Principles of Environmental Economics, Routledge Taylor & Francis group, New York.
- Kolstad C.D., Environmental Economics, Oxford University Press, latest edition.
- Johansson Per-Olov: The Economic Theory and Measurement of Environmental Benefits, Cambridge University Press, Cambridge, 1987.
- Bhattacharya R.N. (ed.), Environmental Economics: An Indian Perspective, Oxford University Press, 2001.
- M.N. Murthy Environment, Sustainable Development, and Well-being Valuation, Taxes, and Incentives, OUP May 2009
- Oates W.E. (ed.), The Economics of the Environment, An Elgar Critical Writings Reader, Edward Elgar, 1994.
- Kadekodi, Gopal K., Environmental Economics in Practice, Oxford University Press, 2004.
- Kanchan Chopra and Vikram Dayal (Ed). Hand book of Environmental Economics in India. Oxford University Press 2009.

EO 7103

Development Economics

[3104]

Perspectives on Development: Dependency theories of development - structural change, surplus labour and dual economy models - Kaleckian model of a dual economy - alternative concepts of economic development: income-based approach and capability-based approach – development experience of less developed countries in the recent past.

Unemployment and surplus labour: surplus labour and efficiency wage - efficiency wage theory as explanation for wage rigidity and involuntary unemployment - collusive theory of unemployment - disguised unemployment: characterization and policy implications (Sen’s

Model) - economics of child labour: empirical context - Basu-Van model of multiple equilibria with altruism - distinction between skilled and unskilled labour and wage inequality.

Rural Credit Markets Lender's risk hypothesis; monopolistic markets; implicit interest charges; credit as insurance; micro-finance. Interlinkage in Rural Markets Potential risk; models of interlinked markets; implications for theory and policy; moral hazard and interlinkage

Poverty and income distribution: inequality and vulnerability , the role of fertility, health and education in explaining poverty outcomes - poverty and assets - poverty, credit and insurance poverty and the household - poverty and labour markets - the complex interconnection of growth, inequality and poverty - assessment of policies geared towards poverty reduction - theoretical links between trade liberalization and income distribution - Functionings and capabilities: limitations of utilitarianism - poverty as capability failure – multidimensional measures of well-being; issues in composite indices – problems of aggregation.

Reading List:

- A.P.Thirlwall: Growth and Development, ELBS
- D Ray: Development Economics, OUP.
- S Ghatak: Introduction to Development Economics, Rutledge.
- Y Hayami and Y Godo: Development Economics, From the Poverty to the Wealth of Nations (3rd Edition), OUP
- Sen Amartya: Employment, Technology and Development, OUP
- Sen Amartya : Development as Freedom, OUP
- Sen Amartya: Poverty and Famine, Essay on Entitlement, OUP.
- T Addison, D Hulme and R Kanbur (ed): Poverty Dynamics, Interdisciplinary Perspective, OUP
- A Banerjee, R Benabou and D Mookherjee (ed): Understanding Poverty, OUP
- Kaushik Basu: Analytical Development Economics, The Less Developed Economy Revisited, OUP
- Meier and Rauch: Leading Issues in Economic Development (8th Editions), OUP

EO7140

HEALTH ECONOMICS

[2103]

This course introduces students to the economic framework of health care system. The course is intended to provide an in-depth understanding of the methodology of health economics and its applications in decision making.

Course content:

Introduction: Key concepts of Health Economics, Positive versus normative Analysis, Why Good Health – Utility analysis, Determinants of health among children, elderly, non-elderly; **Demand for Health Capital:** Grossman model of demand for health, Cost and Evaluation Methods- Cost-benefit analysis, discounting the value of life, cost-effectiveness analysis, Different types of Health Care System; **Demand for Medical Care:** Demand for medical care & law of demand, utility-maximizing rule, other economic factors, the relationship between medical care and need for health insurance, the moral hazard, **Medical care production and costs:** short-run & long-run production and costs of a representative medical firm, Integrated delivery systems, Non-economic factors of medical care, Role of Government, Economic reasons for Govt. Interventions; Performance and Market analysis in Health Care System: Structure, Conduct, Health care Regulation; Universal health care system.

The behavioural economics of health; unhealthy behaviour-evidence and policy issues. Health valuation: mortality risk valuation? static model, life cycle model, empirical models (hedonic wages, stated preference); valuing changes in morbidity-model of health production, revealed preference and stated preference approaches, quality adjusted life years.

Text/ References books:

1. Cuyler A and J Newhouse (ed) (2000), Handbook of Health Economics. Elsevier.
2. Das Gupta Monica, Lincon Chen and T Srinivasan (1996), Health, Poverty and Development in India. OUP
3. Santerre R and S Neun (2007), Health Economics: Theories, Insights and Industry Studies. Thompson.
4. World Health Organisation (2000), Report of Commission on Macroeconomics and Health'
5. World Health Organization (2010), Socioeconomic Determinants of Health.
6. Zweifel P (1997), Health Economics.

EO 7141

Regional Economics

[2103]

Regional Economics: Scope and discipline, regions and their types, economic behaviour related to space.

Economics of location: Economic factor analysis of location, economics of agglomeration in space, Thunen's theory of location of agricultural activities, weber's theory of industrial location, Christaller's central place theory in a hierarchy of settlements, Losch on central place theory of Losch , Sargant Florence, Edgar Hoover, Polander, Greenhut, and Isard on industrial location Richardson on location constants locational preferences, General Equilibrium Theory of Industrial Location, Hotelling Principle, location quotient, mix and share analysis;

Regional Flows: Commodity and Service Flows Versus Monetary and Capital Flows, Markov's Chain Model, Migration Typology, Interface, Causes, Ramifications, Models, Measurement Methods.

Special theories of regional growth: Cumulative causation theory, stages theory of regions, divergence versus convergence and balanced vs. unbalanced growth; **Regional planning:** Regional planning and multi-level planning, applied economics of regional planning, specific analysis, economics of project planning.

References:

1. O.S Shrivastava, *Regional Economics and Regional Planning*, New Delhi, 2009
2. Robert J. Stimson, Roger R. Stough, Brian H. Roberts, *Regional Economic Development: Analysis and Planning Strategy*, Springer, New York, 2006
3. Peter Nijkamp, Edwin S. Mills, *Handbook of Regional and Urban Economics: Regional economics*, Oxford, UK, 2007
4. Peter Nijkamp, Edwin S. Mills, *Regional Integration, Economic Development and Global Governance*, EEP publication, UK, 2011
5. H. Craig Davis, *Regional Economic Impact Analysis and Project Evaluation*, UBC press, 2001

Introduction: meaning and features of rural economy, rural vs urban economy, Rural Development in India pre-independence, Post-Independence, Changing Contribution of Rural Areas in Indian Economy.

Rural marketing: Traditional marketing, regulated markets, co-operative marketing and contract farming, Agricultural prices: Price behaviour; public distribution system, agriculture price policy.

Demographic and Economic Trends in Rural Area: Population Growth- Changes in rural population, Employment Growth: Structural and Sector-wise changes in Output and Employment in Rural India, Changes in Rural Employment.

Rural Industrialisation: Concept and scope, Government policy, KVIC, Mini-industrial estates, Industrial cooperatives.

Rural poverty: Poverty in Indian Scenario, Concept of poverty; Strategies of rural development in plans, Poverty alleviation programmes.

Rural Development: National Programs of Rural Development, Community Development Programs, Employment Guarantee Schemes, Issues in Rural Development.

References:

1. Carver, T. N. (2016). The Principles of Rural Economics. Palala Press USA, Hardcover Edition.
2. Narang Ashok. (2006). "Indian Rural Problems". Murari Lal and Sons Publications. New Delhi.
3. Desai, V. (2010). Rural Development in India. Himalaya Publishing House New Delhi, 2nd Edition
4. Meenu Agrawal. (2010). "Regional Rural Banks and Upliftment of Rural Society". Deep & Deep publications Pvt. Ltd.
5. Rangarajan, C, Seema and E M Vibeesh. (2013). "Developments in the Workforce between 2009-10 and 2011-12,". Economic & Political Weekly. Vol 49. No 23. pp 117-121.
6. Vasant Desai, Rural Development in India, Himalaya Publishing House Mumbai, 2018

Learning Objectives:

1. The focus of this course is to enable the student to understand the history of their field of study, economics.
2. It gives the student another chance to learn about economics, to see how economic theories have been developing and how they are improved upon and sometimes are not.

Pedagogy:

The course relies on lectures, solving problems, and discussing academic articles or real-life situations. The teacher will assign topics for assignments on contemporary themes and issues from the syllabi—special tutorials/contact hours for one-to-one student-teacher interactions.

Learning Outcomes

1. To comprehend the development of the theory of economics from a historical perspective.
2. To debate similarities and differences among different economy schools.

Introduction: History of economic thought and economic history; Plato’s Economics; Aristotle’s Economic Writings, Use and Exchange Value, Aristotle’s views on Private Property, Money, Commerce and Justice, and acquisition of Wealth; **Indian Economic Thought:** Chanakya’s Arthshastra; Kautilya’s theory of wealth, division, consumption, production, agriculture, and trade; Dadabhai Naoroji thoughts; Gandhian thoughts; **Mercantilism:** Main ideas, Political Economy Emerges; Wage Theory, Monetary Theories, Significance, decline or criticism of Mercantilism; **Physiocracy:** Rise of physiocrats, Quesnay’s tableau economique, Leontief’s input-output Model, economic growth and policy; **Classical School:** introduction, thoughts by Adam Smith, J B Say, David Ricardo, Thomas Robert Malthus, and John Stuart Mill; **Karl Marx theory:** Labor theory, theory of surplus-value; **Socialist Critics:** Saint-Simon, Sismondi; **Neo-Classical School:** Classical vs Neo-classical, Jevons, Walras, Menger; Marshall’s Main Ideas; **Keynesian and Post Keynesian Development.**

References:

- Paul. R.R (2011). History of Economic Thought. Kalyani Publisher. 13th edition.
- Hunt, E. K., & Lautzenheiser, M. (2011). History of economic thought: A critical perspective. Armonk, N.Y: M.E. Sharpe.
- Roncaglia. A. (2017). A Brief History of Economic Thought. Cambridge University Press.

EO7144

Agricultural Economics

[2103]

Learning Objectives:

3. The focus of this course is to introduce students to the importance of the agricultural sector and the issues associated with agriculture; to transform agricultural production.
4. The objective is to equip students to analyze and critically assess issues, policies, and programmers in these areas, emphasizing Indian agriculture.

Pedagogy:

The course relies on lectures, solving problems, and discussing academic articles or real-life situations. The teacher will assign topics for assignments on contemporary themes and issues from the syllabi—special tutorials/contact hours for one-to-one student-teacher interactions.

Learning Outcomes

3. To understand the importance of the agriculture sector in an economy.
4. To understand the changing role of agriculture and its contribution to economic development.

Syllabus:

Agriculture and Economic Development: Meaning and scope of agricultural economics, traditional agriculture and its modernization, technical changes in agriculture, sustainable agriculture and organic farming, interdependence between agriculture and industry, Inter-sector Linkages of Agriculture [Backward and Forward Linkages]; Role of Agriculture in Economic Development: Contribution of Agriculture to Economic Development; Declining Role of Agriculture and Dilemmas of Development.

Agricultural production and productivity: trends in agriculture production and productivity, low-level productivity causes & measures to increase production and productivity,

Nature and scope of agricultural production economics & farm management in developed and developing countries. The characteristics of agricultural products and production factors affect the demand for and supply of farm products.

Agricultural Transformation: Schultz Theory of Transformation of Traditional Agriculture Mellor's Model of Agricultural Development; Hayami- Ruttan Induced Innovation Model of Agricultural Development. Agricultural Transformation: Indian Experience; **Role and Agricultural Finance & marketing:** Financial Institutions and credit flow to rural/priority sector. Agricultural lending - Direct and Indirect Financing - Financing through Co-operatives, NABARD, Commercial Banks, and RRBs. District Credit Plan and lending to agriculture; its classification and sources of capital in agriculture. Principles of finance 3 RS. and 3Cs of credit. Capital rationing, Concepts and definition of Agricultural Marketing and its problems, government measures to improve the agricultural marketing system. Market intermediaries and their role - Need for regulation in the present context. **Agricultural policy:** National agricultural policy, agriculture price policy and its evaluation, WTO, and Indian agriculture: challenges and priorities in global economy; agriculture growth concern.

References:

- Misra and Puri. (2018). Indian Economy, Himalaya publications, 36th edition.
- Reddy. S. S. (2008). Agriculture Economics Oxford Publication second edition.
- Aggarwal. N.L. and Acharya. S. S. (2020). Agricultural marketing in India. CBS publishers, 7th edition.
- Rao. V.S. and Raju. V. T. (2017). Economic of farm production and management. Oxford & IBH Publishing Co Pvt. Ltd. 1st edition.

Game Theory

Introduction to Game Theory: Theory of rational choice, interacting decision makers, normal form and extensive form games, different types of games; **Static Games of Complete Information:** Strategic form or normal form games, Iterated deletion of strictly and weakly dominated strategies, Best Response Functions and Nash equilibrium, mixed and pure strategies, Maxmin Strategies; **Dynamic Games of Complete Information:** Extensive forms, backward induction, Sequential Bargaining, Finitely and infinitely repeated games, Trigger Strategies, Dynamic games of complete but imperfect information, Subgame Perfect Nash Equilibrium; Bargaining with complete information, ultimatum game, and hold up game; **Static Games of Incomplete Information:** Incomplete Information, Notion of type and strategy, Static Bayesian Games and Bayesian-Nash equilibrium, Auctions; **Dynamic Games of Incomplete Information:** Perfect Bayesian Equilibrium, Conditional belief about types, Sequential Rationality, Pooling and Separating Equilibria, Saddle point, The basic Signalling game; **Cooperative Games:** Elements of cooperative games, coalition, transferable utility, super additivity theorem, Shapley-Value.

References:

- Andreu Mas-Colell, Michael Whinston and Jerry Green Microeconomic Theory, Oxford University Press.
- Fudenberg, D and J. Tirole (1991) Game Theory, MIT Press.
- Gibbons, R. (1992), A Primer in Game Theory, Harvester-Wheatsheaf.
- Osborne, M. J. (2003), An Introduction to Game Theory, Oxford University Press.
- Osborne, M. J. and A. Rubinstein (1994), A Course in Game Theory, MIT Press.

Semester IV

EO7201

International Economics

[3104]

This course will provide the insights about the cause of trade, sources of the gains from trade and the domestic and international distribution of those gains and examine the instruments and consequences of trade policy measures—including tariffs and quantitative restrictions. At the end of the course, students will acquire the analytical methods needed and understanding of how and when to apply different models and approaches to events in the world economy and develop critical thinking about the nature of global events shaping up international economic scenario all across the world.

Course Outline

Theory of International Trade: Classical theory, comparative advantages, constant costs, complete specialization, neo- classical trade, Opportunity cost, incomplete specialization. general equilibrium in two-country, two goods open economy model, gains from trade; **The Standard theory of International Trade:** Heckscher Ohlin model, factor price equalization theorem, Stolper - Samuelson theorem, Leontief paradox, factor intensity reversals; **Terms of trade:** Growth and terms of trade effects, Rybczynski theorem, Immiserizing growth, growth and factor mobility – immigration and capital mobility; **Offer curves; International Trade policy:** trade policy and theory of trade interventions; **Trade Restrictions:** Tariff, general equilibrium effects of tariffs on welfare, offer curves and tariffs; **Nontariff Trade Barriers:** Quotas, comparison of tariffs and quotas, export subsidies, effective rate of protection; **International Trade and Economic Integration;** Theory of customs union –trade creation and trade diversion, stages of integration, regional trade major group; **Foreign Exchange Market:** Determination of foreign exchange rate; **Balance of Payment-**Meaning and components of balance of payments; Equilibrium and disequilibrium in the balance of payments, expenditure reducing and expenditure switching policies; **India and the World Economy:** Patterns (Structure) of India's Foreign Trade, Export Performance and Export Competitiveness; India's Trade Policy: Review of Pre- and Post-Liberalization; **India and WTO:** Uruguay Round; **Effects of Trade:** on Poverty, Inequality, Environment, Gender, Labour Standards, Technological Transfers Etc.

Reference:

- Dominick Salvatore (2008), International Economics, John Wiley & Sons Inc,
- Pugel, T.A (2008), International Economics, 13th Edition, Tata McGraw Hill publishing Co.
- J N Bhagwati, A. Panagariya and T.N.Srinivasan (1998), Lectures on International Trade, Oxford University Press.
- Krugman, P.A. and M Obstfeld (2003), International Economics: Theory and Policy, 6th Edition.

EO7202

Monetary Economics

[3104]

Introduction to Money and Institutions- meaning, history and features of Money, Financial system of India- Financial Markets, RBI, Commercial Banks: Classification of Commercial Banks-Private and Public, Regional Rural banks, Liabilities and assets of banks, Cooperative Banks, Development Banks, Non-Bank Financial Intermediaries, Global Financial Institutions,

Unregulated Credit Markets. **Demand for Money**- Demand for money theories: Transactions approach to demand for money, Cambridge cash balance approach, Keynes's theory of demand, Post Keynesian theory of demand for money, Money and Prices: Fishers' Transaction Approaches to Quantity Theory of Money (QTM), Cambridge Cash Balance Approach, Quantity of Money as a Theory of Money Income, Quantity of Money as a Theory of prices, Modern Quantity of Theory of Money, Money, Interest and Income: Keynes's Monetary Theory, Keynes' Theory of Rate of interest, Inflation and types of inflation, Phillips Curve. **Supply of Money**- Theory of Money Supply: High Power (H) money, Money Multiplier Process, Determinants of the Money Multiplier, Factors affecting H, Adjusted H, H an autonomous Policy Determined Variable, Reserve Bank Analysis of Money; Supply of Credit and its Allocation: Theory banks Credits and Bank Deposits, Allocation of institutional Credits as an Institutional Process, Financial Factors in allocation Intuition Credits, Non-financial Factors in allocation of Institutional Credit; Interest Rates: Loanable Fund Theory. **Monetary Policy and Central Banking**- Goals, Targets and Indicators, Instruments of monetary policy, Monetary Credit Policy of RBI, Recent Developments on Financial Inclusion.

References

- Gupta, Suraj B. (2016): Monetary Economics: Institutions, Theory and Policy, S. Chand and Company Private Limited, New Delhi.
- Jagdish Handa, (2009): Monetary Economics, 2nd Edition, Routledge, London.
- Walsh, Carl E (2010): Monetary Theory and Policy, Third Edition, The MIT Press Cambridge Massachusetts.
- Nachene, Dilip and Bhalchandra Mungekar (2003): Indian Economy in the New Millennium, Himalaya Publication, Mumbai. Journal of Monetary Economics.

EO7203

OPERATION RESEARCH IN ECONOMICS

[3104]

This course introduces students to the theoretical framework of operations research models. The course is intended to provide an in-depth understanding of the methodology of OR and its applications in diverse fields in making effective decision making.

Course content:

Introduction to Operations Research: Linear Programming: Fundamentals of L P models - Graphic solutions of LP models – feasible solutions- infeasible solutions- unbounded solutions- Maximization of Objective Functions - Minimization of Objective Functions - Simplex Method with two variables- Simplex Method with more than two variables; **Transportation Problems:** Transportation algorithm- Basic feasible solution of TP- North West Corner Rule- Least Cost method- Vogel's Approximation Method – Optimality test- Stepping Stone method – Modi method; **Assignment Model:** Assignment problem structure and solution- maximization in assignment problem crew assignment problem; **Net Work Models:** PERT/ CPM Determination of Earliest Expected and Latest Allowable Times - Determination of Critical path – PERT Cost- Scheduling of a project- Application of PERT- Critical Path Method- Problems; Decision Tree; **Inventory Management Models:** Basic Features of inventory decisions- EOQ- Quantity discounts- EPQ models- ABC Analysis; **Forecasting: time series models of forecasting**

Text/ References books:

- N.D Vohra, Quantitative Techniques, Mc-Graw Hill, New Delhi.
- C. R. Kothari, Quantitative Techniques, Vikas Publications, New Delhi.
- W.J. Baumol, Economic Theory and Operation Analysis, Englewood Cliff, Prentice Hall, NJ.
- Ackoff R L and Saienni M W, Fundamentals of Operation Research, Wiley, New York
- Srivastava U.K, Shenoy G. V, and Sharma S C, Quantitative Techniques for Management Decisions, Wiley Eastern, New Delhi.
- Hira D.S (2019), Problems in Operation research, S Chand Publishing, New Delhi
- Gupta P.K and Hira D.S (2019), Operation research, S Chand Publishing, New Delhi

EO7240 International Financial System [2103]

Introduction: Growing importance of international finance, costs of international investment, crisis & contagion. Balance of Payments-current account, capital account, official reserve account, the J curve, forex reserves-costs and benefits. BOP trends in major countries, persistent current account deficits & surpluses among nations (Global Imbalances) & their repercussions. Shifting global dominance of the U.S.A., growing importance of a unified Europe and emerging Asia. **International Monetary System:** Evolution of the international monetary system, bimetallism, Gresham's Law, classical gold standard, its strengths and weaknesses, inter war period, Bretton woods system, Triffin's Paradox, special drawing rights, flexible exchange rate regime, present arrangements including dollarization. The European Monetary Union & its costs & benefits. Fixed versus floating exchange rate systems.

Exchange Rate Determination & Forecasting: Measuring exchange rate movements & volatility, factors influencing exchange rates, Government intervention-direct & indirect intervention and sterilized & non-sterilized intervention. Interest Rate Parity, covered and uncovered interest arbitrage, Purchasing Power Parity-absolute & relative, Fisher Effect & International Fisher Effect. Forecasting Exchange Rates- Technical Approach, Fundamental Approach & Efficient Market Approach. **International Financial Markets:** Forex Markets; spot market, direct & indirect exchange quotations, bid ask spread, cross exchange rates, forwards, futures & options market. International money markets, international credit markets, international bond markets & international stock markets. Regulatory asymmetry & its implications. **International Banking:** Offshore banking & offshore currency trading, factors contributing to the growth of international banking & Eurocurrency trading, regulatory asymmetry, shadow banks. Bank failure & safety nets, the problem of moral hazard & systematically important financial institutions. Problems in regulating international banking, regulatory arbitrage. BIS & Basel Committee-issues & challenges.

References:

- Levi D, Maurice, International Finance, Routledge.
- Krugman, Paul R., Obstfeld, Maurice and Melitz, Marc, International Economics, Pearson Education.
- Madura, Jeff, International Corporate Finance, South-Western/Cengage learning.
- Eun, Cheol S. and Resnick, Bruce G., International Financial Management, Tata McGraw- Hill.

Entrepreneurial Development : Entrepreneurship Development Programme: Objectives and Phases of EDPs, Problems and constraints of EDPs, Role of Govt. in organising EDPs –Make in India - Start Up Mission and Students Start up Mission - Technology Business Incubators in India - Institutional support to entrepreneurs–Venture Capital, Angel Fund investors - preparation of project report – project appraisal ; Challenges of Entrepreneurship : Problems of Small, Medium and Large Enterprise- Role of Small Enterprises in Economic Development – challenges of Women Entrepreneurship in India –Growth and Problems of Women Entrepreneurship - Globalization and Entrepreneurship ; Incentives and management of innovation – Intellectual property rights – Sequential and complementary innovation – Network effect and standards ; Patents and R&D: – Patents and litigation – Patent pool – R&D tournaments, race and R&D organisation; Technology transfer and licensing ; Innovation and public policy

References:

- Scotchmer, S.: Innovation and Incentives, MIT Press (2004)
- Swann, G.: The Economics of Innovation: An Introduction, Edward Elgar (2014)
- Hall, B. and Rosenberg, N.: Handbook of the Economics of Innovation, Vols 1 & 2, Elsevier (2010)
- Chakravarthi, Bidyut. ‘Corporate Social Responsibility in India’, Routledge, 2011
- E. Gordon & K. Natarajan, Entrepreneurship Development Himalaya 2008
- Fernando, A.C. ‘Business Ethics’, Pearson Education, New Delhi. 2009
- G.Barani, Performance of Women Entrepreneurs, Serials Publications New Delhi
- Gupta and Srinivasan, ‘Entrepreneurial Development’, S Chand & Sons, New Delhi.
- Hisrich R D and Peters M P, “Entrepreneurship” 5th Edition Tata McGraw-Hill, 2002.
- Roy Rajeev, Entrepreneurship, Oxford Latest Edition

Introduction: facts about employment and earnings; the supply and demand framework

Labor Supply: The labour force participation decision, households and participation decisions, effect of changes in non-labour income , Effect of changes in market earnings, the individual's work-leisure Choice, Indifference curves- the budget constraint, utility maximisation, the individual's labour supply Curve, income and substitution effects, the backward-bending labour supply curve; Some applications of the model **Home production and the decision to work; the economics of the family:** Introduction, Empirical methods: instrumental variables, Application: children and their parents' labor supply

The demand for labor: The individual firm's demand for labour in the short run and long run, Industry demand for labour, elasticity of derived demand: Marshall's rules

Wage and employment determination: Wages and employment determination at the level of the firm: the perfectly competitive labour market, Monopsony, and imperfect labour markets; The imposition of a minimum wage, discriminating monopsony, disequilibrium models of the labour market, gender discrimination, alternative policy implications

Human capital, education, and training: The market for educated labour, estimating formally the profitability of education: earning functions, econometric problem of earning functions, Theoretical criticism of the human capital theory, social policy on education and manpower planning in India

Trade Unions and collective bargaining: Trade union objectives & structure, the determinants of trade union growth, economic or political institutions, Wage determination under trade unionism: the bilateral monopoly model, the wage preference path and the wage bargain interminacy and the bargaining process, monopoly-union and inefficient-bargain models, basic theories of collective bargaining process

- **Reading List**

- O.Ashenfelter and R. Layard. *The Handbook of Labor Economics. Vol. 1.* North-Holland, 1987.
- P. Cahuch, Stéphane Carcillo, and André Zylberberg. *Labor Economics, Second Edition.* MIT Press, 2014.
- J. Angrist and Jörn-Steffen Pischke. *Mastering 'Metrics: The Path from Cause to Effect.* Princeton University, 2014.
- David Sapsford and Zafiris Tzannatos. *The Economics of the Labour Market.* Macmillan Education, 1993.

EO7243

Neuroeconomics

[2103]

Course Content

Scope of Neuroeconomics: Historical overview of the field, Major assumptions of Neuroeconomics, Brain anatomy and functions, hormones and economic decisions; **measuring brain activity:** Brain imaging methods (EEG, MEG, fMRI), transcranial brain stimulation (TMS), cell recording, data visualization, interpretation of the results; **Brain models of decision making and choice:** Drift-diffusion model of perceptual decision, Stages of decision-making, Utility maximization rule, Neuroeconomics theorem; **Affective mechanisms of decision making:** Emotions as heuristics, Affective (limbic) brain structures, The somatic marker hypothesis, Dual-system theory, Self-regulation & valuation brain signals, The role of the dorsolateral prefrontal cortex (DLPFC) in self-control and in fairness-related decision-making, Decision making under risk, Different forms of reward-related uncertainty, Anticipatory affect model, Risk aversion / Risk attitude, Prospect Theory; **Applied Neuroeconomics:** A neural basis for social cooperation, Empathy for pain & Neuroeconomics, Ontogenetic origin of cooperation, Cooperation in great ape societies, Biological market theory, Consumer Neuroscience and Neuromarketing.

References:

- Glimcher, P. W., & Fehr, E. (Eds.). (2013). *Neuroeconomics: Decision making and the brain.* Academic Press.

- Kosslyn S. M. (2013). The Oxford Handbook of Cognitive Neuroscience, Volume 2: The Cutting Edges. Oxford University Press.
- Ochsner K., Kosslyn S. M., Kosslyn S. M. (ed.). (2013) The Oxford Handbook of Cognitive Neuroscience, Volume 1: Core Topics. Oxford University Press.
- Reuter, M., & Montag, C. (Eds.). (2016). *Neuroeconomics*. Springer Berlin Heidelberg.

EO 7244

COMPREHENSIVE ECONOMICS

[2103]

- All syllabus covered in all semesters.
- Current Indian economy issues
- Current affairs