

**SIES College of Arts, Science &
Commerce(Autonomous)Sion (W), Mumbai –
400022**

Faculty: Arts

Programme: BA

Subject: Economics

Academic Year:

2018-19 (Onwards)

T.Y.B.A

**Credit based Semester and Grading System syllabi
approved by the Board of Studies in Economics to be
brought into effect from June 2018**

Name of the subject: Economics Paper I

Title of the paper: History of Economic Thought

Paper Code: SIUAECO51

Number of Credits: 3.5

Total No. of Lectures: 45

Objective – This course provides basic understanding about the celebrated economists and their contributions starting from the classical period. It throws light on the contributions of Nobel Laureates of recent period too.

Module 1 - Classical Period

(13 lectures)

Adam Smith - division of labour, theory of values, capital accumulation, distribution, David Ricardo- Value, theory of rent, distribution. Karl Marx - dynamics of social changes, theory of values, surplus value, profit and crisis of capitalism and Contemporary Relevance.

Module 2 - Marginality: Marshall to Schumpeter

(12 lectures)

Role of time in price determination , economics methods, ideas of consumer's surplus, representative firm, external and internal economies, quasi-rent, nature of profit; Pigou : welfare economics: Schumpeter: role of entrepreneur and innovation.

Module 3 - Keynesian Ideas

(10 lectures)

Liquidity Preference Theory and Liquidity trap, Consumption Function, MPG, Multiplier & Accelerator principles and their interaction, wage rigidities, underemployment equilibrium, role of fiscal policy: deficit spending and public works, multiplier principles, cyclical behaviour of the economy.

Hayek — Supply side economics: Arthur Laffer- Monetarism: Milton Friedman's Don
Patinkin — An overview of the new classical economics: Robert Lucas. Nobel Prize Winners
in Economics: A. K. Sen (1998), Joseph Stiglitz (2001), Paul Krugman (2008), Jean Tirole
(2014), Angus Deaton (2015), Richard Thaler (2017).

References:

1. Dasgupta A. K (1985). *Epochs of Economic Theory* Oxford University Press. New Delhi
2. Ghosh and Ghosh (2015). *Concise History of Economic Thought*, Himalaya Publications House.
3. Gide, O and G. Rist (1956). *A History of Economic Doctrine*, George Harrop Co. London.
4. Puttasswamaiah K. (1995). *Nobel Economist -Lives and Contributions*, Indus Public Co. New Delhi.
5. Roll, E, (1973). *A History of Economic Thought*, Faber Landon.
6. Schumpeter, J.A (1951). *Ten Great Economist*, Oxford University Press, New York.

Semester V

T.Y.B.A

Name of the subject: Economics Paper II

Title of the paper: Economics of Development

Paper Code: SIUAECO52

Number of Credits: 4

Total No. of Lectures: 60

Objective - The aim of the paper is to make the students aware about the contemporary development issues faced by economies. The paper aims to provide the students a strong theoretical base to understand various development issues.

Module 1 - Concepts of Economic Growth and Development (15 Lectures)

Meaning of Growth and Development, Distinction between growth & development, Concept of human development, HDI, GDI, Sustainable development, Green GDP, Three core values of development, Capability Approach

Module 2 - Structural Issues in Development Process (15 Lectures)

Overview of growth theories, dual economy models of growth, Low Income Equilibrium Trap model, Solow's growth model, Balanced vs unbalanced growth theory

Module 3 - Inequality, Poverty and Development (15 Lectures)

Measures of poverty and inequality — Kuznet's Inverted U-hypothesis — Policy options for poverty alleviation Inclusive growth — Self Help Groups and Micro Finance.

Role of Infrastructure in economic development —Role of technology in economic development, Types of technical progress —Schumacher's Concept of Intermediate/ Appropriate technology, Green technology.

References:

1. Baldwin, (1957). *Economic Development: Theory, History and Policy*, Willy Publications
2. Mamoria, Joshi (1979). *Principles and practice of marketing in India*, Kitab Mahal, India
3. Meier, Gerald M. and James E. Rauch (2006). *Leading Issues in Economic Development*, Oxford Univ. Press, Delhi.
4. Sinha Francis (2009). *Microfinance Self Help Groups in India: Living up to Their Promises*, Practical Action Publishing, England
5. Thirlwall, A.P. (2005). *Growth and Development*, Eighth edition, Palgrave MacMillan New York.
6. Todaro, Michael P. and Stephen C. Smith (2003). *Economic Development*, Eighth edition, Pearson Education, Delhi, India.

Semester V

T.Y.B.A

Name of the subject: Economics Paper III

Title of the paper: Micro Economics III

Paper Code: SIUAECO53

Number of Credits: 4

Total No. of Lectures: 60

Objective - The course is designed to provide sound training in microeconomic theory. Since students have already studied the perfect competition, the focus of this course is on the study of imperfect completion and general equilibrium and welfare economics.

Module 1 - Monopoly

(15 Lectures)

Sources of monopoly - Profit maximising monopoly — Calculation of price, output and profit for monopoly- Price discrimination: First, Second and Third degree- Public policy towards monopoly.

Module 2 - Basics of Game theory

(1 Lectures)

Basics of Game theory– Prisoner’s dilemma–dominant strategy equilibrium–Battle of sexes game – Nash equilibrium – Extensive form games – game tree - Solving finite extensive form game.

Module 3 - Oligopoly

(15 Lectures)

Oligopoly–the Cournot model–the Bertrand model - the Edgeworth model–the Chamberlin model – the kinked demand curve model – Collusion and Cartels – Price Leadership.

General Equilibrium and Welfare Economics–Interdependence in the Economy–General Equilibrium and its Existence -The Pareto Optimality Condition of Social Welfare, Marginal Conditions for Pareto Optimal Resource Allocation, Perfect Competition and Pareto Optimality - Kaldor- Hicks Compensation Criterion - Arrow’s Impossibility Theorem.

References:

1. Daniel Rubinfeld, Robert Pindyck. (2017). *Microeconomics*. New Delhi: Pearson.
2. Gibbons, R. (1992). *A Primer in Game Theory*. New Delhi: Harvester Wheatsheaf.
3. Koutsoyannis. (1975). *Modern Microeconomics*. London: Macmillan Press Ltd.
4. Mankiw, Gregory. (2015). *Principles of Microeconomics*. New Delhi: Cengage learning.
5. Salvatore, Dominick. (2006). *Microeconomics: Theory and Applications*. New Delhi: Oxford University Press.
6. Sen, Anindhya. (2007). *Microeconomics: Theory and Applications*. New Delhi : Oxford University Press

Semester V

T.Y.B.A

Name of the subject: Economics Paper IV

Title of the paper: Mathematical and Statistical Techniques for Economic Analysis

Paper Code: SIUAECO54

Number of Credits: 4

Total No. of Lectures: 60

Objective - A plethora of data has emerged at an exponential rate and it is the description, interpretation and understanding of these data and drawing of accurate conclusions that is imperative for a student of Economics. The aim of this paper is to provide students with the mathematical and statistical skills and understanding needed for 'knowing why' and 'when' to apply these techniques.

Module 1 - Equations, Graphs and Derivatives (15 lectures)

Microeconomic applications equations and graphs Linear and non-linear-relationships in economic analysis-Market demand and supply models, taxes, elasticity, Derivatives and their applications in various areas of economic analysis-Higher order derivatives- Increasing and decreasing functions; Necessary and conditions for maxima and minima- Optimization of economic functions

Module 2 - Linear Algebra (15 lectures)

Matrices and basic operations on matrices- Rank of a matrix- Inverse of a matrix- Cramer's rule (input-Output Analysis and policy implications- Linear program Problem: Formulation and graphical solution)

Module 3 - Descriptive Statistics and graphing techniques for presenting data (15 lectures)

Concept of primary and secondary data along with tabulation and measures of Central tendency (only mean, Median and Mode) absolute and relative dispersion (range, quartile deviation, mean

deviation and standard deviation) with simple applications — Measures of skewness and kurtosis — Lorenz Curve.

Module 4 - Elementary Probability Theory

(15 lectures)

Sample space and events— mutually exclusive, exhaustive and complimentary events— Conditional probability— Binomial probability distribution— Nature and Properties of the Normal Probability Distribution; Standard Scores and the Normal Curve; The Standard Normal Curve: Finding Areas when the Score is Known, Finding Scores when the area is known.

References:

1. Chiang A. C. (1984). *Fundamental Methods of Mathematical Economics*, Third edition, McGraw-Hill
2. Dowling Edward T. (1993). *Theory and Problems of Mathematical Methods for Business and Economics*, Tata McGraw-Hill, New Delhi.
3. Dowling Edward T. (2004). *Introduction to Mathematical Economics*, Schaum Outline Series in Economics, Tata McGraw-Hill, New Delhi.
4. Gupta S.P. (2014) .*Statistical Methods*, S. Chand, New Delhi,
5. Lerner Joel J and P. Zima (1986) *Theory and Problems of Business Mathematics*, McGraw-Hill, New York.
6. Sancheti D.C. and V. K. Kapoor (2014), *Statistics-Theory, Methods and Applications*, S. Chand, New Delhi.

Semester V

T.Y.B.A

Name of the subject: Economics Paper V A

Title of the paper: Indian Financial System

Paper Code: SIUAECO65A

Number of Credits: 3.5

Total No. of Lectures: 45

Objective- The basic purpose of this paper is to acquaint students with various components of the Indian financial system, its working and the trends and turns that have taken place over the years especially since financial sector reforms.

Module 1 - Indian Financial System: Structure, Trends and Turns (12 lectures)

Meaning and components of the Financial System - Financial System and Economic Development - Indicators of Financial Development: FR, FIR, NIR and IR — Overview of financial sector reforms since 1990s — Trends and turns in Indian financial sector: 1950-2017.

Module 2 - Banking in India since 1990s (10 lectures)

Developments in Commercial banking sector since 1990s — Management of Non-Performing Assets (NPAs); Capital Adequacy Norms - Basel Accord III - Monetary policy of the RBI — Changes in RBI monetary policy since 1990s - Monetary Policy Committee (MPC), Payment Banks, Mudra Bank- Transmission Channels of Monetary policy.

Module 3 - Money and Capital Markets in India (13 lectures)

Money Market: Components of organized money market — Reforms in the money market - Features of Indian Money Market. Capital Market: Structure of the Indian Capital Market — Recent Developments in the Capital Market — Role of SEBI - Interlink between Money Market and Capital Market - Overview of Debt Market in India— Islamic Banking, Merchant Banking and Investment Banking.

Module 4 - Non-Banking sector of the Financial System

(10 lectures)

Non-Bank Finance Companies (NBFCs) in India and their progress - Developments in India's Insurance sector — Progress of Mutual Funds industry in India - Credit Rating Agencies in India.

References:

1. Bhole, L. M (2008). *Financial Institutions and Markets, Growth and Innovation*, Tata McGraw-Hill, New Delhi.
2. Dutta, Abhijit (2012). *Indian Financial System*, Excel Books, Delhi
3. Khan, M. Y. (2007). *Financial Services*, Tata McGraw Hill, New Delhi.
4. Pathak, Bharati (2008). *The Indian Financial System-Markets, Institutions, and Services*, Pearson Education, New Delhi.
5. Rakesh Mohan & Partha Ray (2017). Indian Financial Sector: Structure, Trends & Turns; IMF Working Paper (WP/17/7). [https://www.imf.org/Issues > 2017/01/20](https://www.imf.org/Issues/2017/01/20)
6. Reserve Bank of India (various issues) Report on Currency and Finance, RBI, Mumbai.

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Semester V

T.Y.B.A

Name of the subject: Economics Paper VB

Title of the paper: Economics of Agriculture and Cooperation

Paper Code: SIUAECO55B

Number of Credits: 3.5

Total No. of Lectures: 45

Objective – The aim of the paper is to introduce the students to the issues and problems related to Indian agriculture. Issues related to agricultural credit, marketing and pricing are introduced to the students to these aspects.

Module 1 - Agricultural Productivity (12 lectures)

Role of agriculture in economic development - Cropping Pattern Agricultural Productivity, Causes of Low Productivity in Agriculture - Measures taken to improve the Agricultural Productivity in India - Water Management and agricultural development -Agricultural labour: Problems and suggestions.

Module 2 - Agricultural Credit (10 lectures)

Institutional and Non-Institutional Sources of Credit - Co-operative Credit and Agriculture, Rural Indebtedness - Commercial Banks and Regional Rural Banks, microfinance - NABARD - Role and Performance.

Module 3 - Agricultural Marketing (13 lectures)

Types of Marketing - Corporate, Commodity and Global Problems and Measures of Agricultural Marketing - WTO and Indian Agriculture. Problems of Agricultural Marketing and its measures- National Agricultural Market.

New Agricultural Policy — 2007 - Food Security in India - Price Policy of CACP Evaluation, Agricultural Crisis and Farmers' Suicide. Agro-Tourism and its policy

References:

1. Datt, Sundaram (2012). *Indian Economy*, S. Chand Company, New Delhi.
2. Memoria, C. B. (1979). *Agricultural Problems of India*, Kitab Mahal Allahabad.
3. Mishra, &Puri (2012). *Indian Economy*, Himalaya Publishing House, New Delhi.
4. Raj, K. N. (1988). *Essays in Commercialization of Indian Agriculture*, Oxford University Press, New Delhi.
5. Thamarajalaxmi, R. (1994). *Intersectoral Relationship in Developing Economy*, Academic Foundation, Delhi.

Semester V

T.Y.B.A

Name of the subject: Economics Paper VI A

Title of the paper: Introduction to Econometrics

Paper Code: SIUAECO56A

Number of Credits: 4

Total No. of Lectures: 60

Objective - This course aims to impart a basic understanding of econometrics. The student will be able to appreciate the theoretical basis of the subject. At the same time, it will enhance the student's ability to apply the theoretical techniques to the problems of the real world. Topics like forecasting have been introduced to impart this practical orientation.

Module 1 - Idea of a Random Variable (10 lectures)

Concept of a random variable: Discrete and continuous-Expected values of a random variable- Variance of a random variable-Discrete random variables: Bernoulli, Binomial, Poisson- Continuous random variables: The normal distribution.

Module 2 - Jointly distributed Random variables (10 lectures)

Joint and marginal distributions for bivariate random variables - Conditional probability- Conditional mean and variance-Covariance - Correlation and Partial correlation - Central limit theorem (without proof).

Module 3 - Statistical Inference (12 lectures)

Point and interval estimation - The Z distribution - The Null and Alternate hypotheses and significance testing for mean using Z distribution when population variance is known- The chi-square distribution and testing for sample variance with known population variance- The F distribution and comparing sample variances - The t distribution and hypothesis tests when population variance is unknown.

Two variable regression model - The concept of the PRF - Classical assumptions of regression
- Derivation of the OLS estimators and their variance - Properties of OLS estimators under classical assumptions, Gauss-Markov Theorem (without proof) - Tests of Hypothesis, confidence intervals for OLS estimators - Measures of goodness of fit: R square and its limitations, adjusted R square and its Limitations.

References:

1. Gujarati, Damodar, N. (2003). *Basic Econometrics*, McGraw-Hill, Delhi.
2. Kapoor, V. K. (2011). *Operations Research Problems & Solutions*, Sultan Chand & sons.
3. Makridakis, Spyros and Steven C Wheelright (2008). *Forecasting Methods and Applications*, Willey Publications.
4. Spiegel, Murray (1989). *Theory and Problems of Statistics*, Schaum Outline Series.
5. Stock James H. and Mark W. Watson (2015). *Introduction to Econometrics*, Updated Third Edition, Global Edition, Pearson Education Limited.
6. Wooldridge, Jeffery M. (2016). *Introduction to Econometrics: A Modern Approach*. Sixth Edition, Cengage Learning, USA.

Semester V

T.Y.B.A

Name of the subject: Economics Paper VI B

Title of the paper: Environmental Economics

Paper Code: SIUAECO56B

Number of Credits: 4

Total No. of Lectures: 60

Objective–This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management. Economic implications of environmental policy are addressed as well as valuation of environmental improvements.

Module 1 - Introduction to Environmental Economics (10 lectures)

Introduction to environmental development and environmental economics, Rio Declaration on environmental development, Agenda 21 program of action for sustainable development, Social and economic dimensions, Conservation and management of resources for development.

Module 2 - The design and implementation of Environmental Policy (13 lectures)

Overview - Criteria for evaluating environmental policies; Standards, Pigovian taxes and effluent fees, tradable permits, choice between taxes and quotas, implementation of environmental policy.

Module 3 - Measuring benefits of environmental improvements (12 lectures)

Economic value of Environment- Use and Non-use values-Measurement method:-market based and non-market based methods, contingent valuation, travel cost method, hedonic price method, risk assessment and perceptions.

The global environment- Trans-boundary environmental problems, economics of climate change, International environmental Agreements sustainable development: Concepts and measures.

References-

1. Fields, Barry, C. (1997). *Environmental Economics: An Introduction*, McGraw Hill International Edition.
2. Hanley, Nick, Shogren Jason and White Ben (2001). *Introduction to Environmental Economics*, Oxford University Press.
3. Kaltschmitt, Martin, Streicher, Wolfgang, Wiese, Andreas (2007). *Renewable Energy: Technology, Economics and Environment*, Springer, Germany.
4. Kolstad, Charles (2000). *Environmental Economics*, Oxford University Press, New York.
5. Smith, Stephen (2011). *Environmental Economics: A very Short Introduction*, 1st Edition, Oxford University Press, New York, 2011.
6. United Nations Sustainable Development, UN Conference on Environment & Development, Rio de Janeiro, Brazil, Agenda 21, retrieved on 16th July 2018 from <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>, 1992.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper I

Title of the paper: International Trade, Policy and Practice

Paper Code: SIUAECO61

Number of Credits: 3.5

Total No. of Lectures: 45

Objective - The basic purpose of this paper is to acquaint students with various components of the Indian financial system, its working and the trends that have taken place over the years especially since financial sector reforms.

Module 1 - Introduction

(12 lectures)

Inter-regional and international trade, Role of Dynamic factors i.e. change in Tastes, Technology and Role of Factor Accumulation. Foreign Exchange Rate: Concepts - Short and Forward rates - Foreign Exchange rate determination — Fixed and flexible exchange rate — Interrelationship between exchange rates and Interest rates. Exchange Rate system in India, managed floating, current and Capital Account Convertibility and their impact, FEMA.

Module 2 - Emerging new International Economic Order

(10 lectures)

GATT, Uruguay Round, WTO, WTO Agreement, Dispute settlement Mechanism, Impact of WTO on Emerging Economies and India, Doha Round and implications of its failure- Emergence of Regional Free Trade agreements (FTA), Bilateral Investment Treaty (BIT), Double Taxation Avoidance Agreement (DTAA).

Module 3 - International Financial Institutions and International Debt Problem

(13 lectures)

IMF, World Bank, Asian Development Bank (ADB) New Development Bank (NDB), Asia Infrastructure Investment Bank (AIIB) and their role with special reference to India. South East Asian Crisis and Lessons for India, Global Economic Crisis, Global Financial Crisis of 2008, International Debt Problem — Emerging Global Financial Architecture.

Module 4 - Role of Foreign Capital Flow

(10 lectures)

Factors determining Foreign Investment, Foreign Institutional Investment (FII), Qualified Foreign Investment (QFI), Foreign Portfolio Investment (FPI), Role of FDI in Economic Development- Factors influencing FDI inflows- Green Field and Brown field FDI in India, Foreign Investment and Role of MNCs in India.

References:

1. Appleyard, Dennis R, Alfred J Field (2013). *International Economics*, McGraw- Hill, USA.
2. Bo, Sodersten and Geoffrey Reed (1994). *International Economics*, Third Edition, Palgrave Macmillan
3. Carbaugh, Robert J (2003). *International Economics* (With Xtra! and Info Trac), South Western College Pub.
4. Carbaugh, Robert J (2017). *International Economics*, South-Western Cengage Learning, USA.
5. Kindleberger, Charles P. (1963). *International Economics*, Third Edition, R. D. Irwin, Homewood, IL.
6. Krugman, Paul, R Maurice Obstfeld and Melitz Mark (2015). *International Economics: Theory and Policy*, Princeton University, USA.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper II

Title of the paper: International Economics

Paper Code: SIUAECO62

Number of Credits: 4

Total No. of Lectures: 60

Objective -This course develops a systematic exposition of models which explain the composition, direction, and consequences of international trade, and the determinants and effects of trade policy. It then builds on the models of open economy macroeconomics focusing on national policies as well as international monetary systems. It concludes with an analytical account of the causes and consequences of the rapid expansion of international financial flows in recent years.

Module 1 - Introduction

(15 lectures)

Importance of the study of International Economics - An overview of world trade-Distinction between domestic & international Trade-Concepts of Cost Difference, Adam Smith's Theory of International Trade, The Ricardian Theory.

Module 2 - Modern Theories of International Trade

(15 lectures)

Heckshcher- Ohlin Theory of International Trade, Factor Abundance: Two Criteria, Leontief Paradox, Haberler's theory of Opportunity Cost, Law of reciprocal demand and offer curves, Role of Factor Accumulation, Stolper-Samuelson theorem.

Module 3 - Importance of Trade and Recent trends

(15 lectures)

Monopolistic competition and trade - firm heterogeneity, FDI: The concept and role, FDI Inflows- FDI Outflows, and the global supply chain, Business Process Outsourcing.

Instruments of trade policy; why countries cooperate? - GATT, GATS, Regional Trade Agreements - controversies in trade policy (labour standards, IPR and environment) -ASEAN, SAARC, SAFTA, Protectionism.

References:

1. Bo, Sodersten and Geoffrey Reed (1994). *International Economics*, Palgrave Macmillan
2. Gordon, Hanson (2012). The rise of middle Kingdoms: Emerging economies in global trade, *Journal of Economic Perspectives*, Spring.
3. Kindleberger Charles P (1978). *International Economics*, Homewood, USA.
4. Melitz, M. and Trefler D. (2012). Gains from trade when firms matter, *Journal of Economic Perspectives*, Spring.
5. Paul, Krugman, Maurice Obstfeld, and Marc Melitz (2012). *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), Ninth Edition.
6. Salvatore, Dominick (2011). *International Economics: Trade and Finance*, John Wiley International Student Edition, Tenth Edition.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper III

Title of the paper: Macro Economics III

Paper Code: SIUAECO63

Number of Credits: 4

Total No. of Lectures: 60

Objective- This course introduces the students to formal modeling of a macroeconomic theory with analytical tools. It discusses goods market with fixed exchange rate, the money market, uncovered interest rate parity and the benefits and costs of fixed and flexible exchange rate

Module 1 - The Goods Market in the Open Economy (15 lectures)

Trade Balance and its implications for GDP calculations — Export and Import Functions — The Real Exchange Rate and why it matters — Why equilibrium GDP is consistent with a trade imbalance? — Fiscal and Exchange Rate Policy with a Fixed Exchange Rate.

Module 2 - Money/Financial Markets and Mundell-Fleming Model (15 lectures)

The LM equation for the open economy — Uncovered Interest Parity and its implications for exchange rate determination — the combined IS/LM/UIP model. Fiscal and Monetary Policy under Fixed and Flexible Exchange Rates — The Mundell-Fleming trilemma.

Module 3 - Exchange Rate Regimes & Exchange Rate Crises (15 lectures)

The choice of regime — Fixed or Flexible — (The spectrum of arrangements from Hard Peg end to Fully Floating at the other) Why the Balance of Payments must always balance under Floating Exchange Rates but need not balance under a Fixed or Managed Exchange Rate

regime. Exchange Rate crises — the relation between Exchange Rate crises and other crises

Module 4 - International Monetary History, 1900-present

(15 lectures)

The Gold Standard — The Inter-War Period and the Great Depression — 1944, Bretton Woods System and its collapse; Fixing in Europe via ERM, and the Dollar Standard elsewhere. The Maastricht Treaty and preparations for the Euro; The Global Financial Crisis and its consequences for the Euro; The Euro Crisis, Asia Infrastructure Investment Bank (AIIB), New Development Bank (NDB), BRICS Bank.

References:

1. Blanchard, Oliver (2008). *Macroeconomics*, Pearson education, New Delhi, India.
2. Dornbusch R S, Fischer and R Startz (2004). *Macroeconomics*, Eighth Edition, Tata Mc Grow Hill, New Delhi, India.
3. Froyen, R. T. (2001). *Macroeconomics: Theory and Policy*, Pearson Education Asia, Delhi.
4. Mankiw, Gregory (2003). *Macroeconomics*, Sixth Edition, Worth Publishers, New York.
5. Feenstra, Robert C & Alan M Taylor (2014). *International Trade*, Worth Publishers,
6. Salvatore, D. (1997). *International Economics*, Prentice Hall, New York.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper IV

Title of the paper: Mathematical and Statistical Techniques for Economic Analysis

Paper Code: SIUAECO64

Number of Credits: 4

Total No. of Lectures: 60

Objective - This paper proposes to equip the students with analyzing skills with sound footing of relevant mathematical and statistical techniques. Economic analysis and interpretation of data cannot be carried out in the absence of knowledge of these techniques narrated here.

Module 1 - Techniques and applications of partial derivatives (15 lectures)

Functions of several variables and partial derivatives - Second order partial derivatives - Optimisation of multivariable functions - Constrained optimisation with Lagrange multiplier and its economic interpretation - Marginal productivity, Income and price elasticity of demand - Homogeneous production functions and returns to scale - Cobb-Douglas production function

Module 2 - Integral Calculus (15 lectures)

Integration and Definite integral; area under the curve - Economic applications - Present value of cash flows (present value of a sum to be received in future and present value of a stream of future income) - Consumer's and Producer's Surplus- Learning curve.

Module 3 - Correlation and Regression (15 lectures)

The meaning and significance of Correlation; Scatter plot of Bivariate Distributions; Correlation and Causation - Karl Pearson's coefficient of correlation: Spearman's rank correlation coefficient - Simple regression analysis- Method of Least Squares and Regression

Lines, Regression Coefficients, Relationship between correlation coefficients and regression coefficients.

Module 4 - Index Numbers and Time Series

(15 lectures)

Simple and composite index numbers- Construction, uses and problems of index numbers- Laspeyre's, Paasche's and Fisher's Index numbers- Cost of living index numbers-real income — wholesale price index number- Splicing of Components of time series, Estimation and forecasting of trend by the Least Squares Method.

References:

1. Chiang A. C (1984). *Fundamental Methods of Mathematical Economics*, Third Edition, McGraw-Hill, 1984
2. Dowling Edward T (1993). *Theory and Problems of Mathematical methods for Business and Economics*, McGraw-Hill.
3. Dowling Edward T (2004). *Introduction to Mathematical Economics*, Schaum's Outline Series in Economics, Tata McGraw Hill, New Delhi.
4. Gupta S.P. (2016) *Statistical Methods*, S. Chand, New Delhi.
5. Lerner Joel J and P. Zima (1986). *Theory and Problems of Business Mathematics*, McGraw Hill, New York.
6. Sancheti D.C. and V.K. Kapoor (2014). *Statistics-Theory, Methods and Applications*, S. Chand, New Delhi.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper VA

Title of the paper: Financial Economics

Paper Code: SIUAECO65A

Number of Credits: 3.5

Total No. of Lectures: 45

Objective - The course introduces students to the economics of Finance. It aims at imparting knowledge about the basic models of investment and portfolio analysis, including the CAPM. The valuation of assets, derivatives & options is to be studied in addition to patterns of corporate financing.

Module 1 - Investment & Portfolio Analysis (12 lectures)

Basic theory of interest, discounting & present value; internal rate of return, evaluation criteria, fixed income securities; bonds prices & yields. Structure of interest rate, yield curves, spot & forward rates. Portfolio of assets, random asset returns, Mean variance portfolio analysis, The Markowitz Model & two fund theorem.

Module 2 - CAPM (10 lectures)

The capital market line, the CAPM Model, the beta of an asset & of a portfolio, security market line, CAPM model in investment & pricing formula.

Module 3 - Options & Derivatives (13 lectures)

Meaning, functions & types of derivatives - forward contracts, futures - forward & future prices, stock index futures, interest rate futures, future for hedging. Options & Swaps and their types - Option market: call & put options, option trading strategies - spreads, straddles, strips & straps, strangles, the principle of arbitrage. Participants of derivatives market- hedgers, speculators, arbitrageurs.

Patterns of corporate financing: stock, debt, preferences, convertibles. Capital structure & the cost of capital, corporate debt & dividend policy, the Modigliani —Miller theorem.

References:

1. Brealey, Richard and Stewart Myers (2002). *Principles of Corporate Finance*, McGraw Hill.
2. Copeland, Thomas, J. Fred Weston and Kuldeep Shastri (2003). *Financial Theory and Corporate Policy*, Prentice Hall
3. Hull, John C. (2005). *Options, Futures and other derivatives*, Pearson Education,.
4. Luenberger, David (1997). *Investment Science*, Oxford University Press, Delhi.
5. Ross, Stephen and Bradford Jordan (2005). *Fundamentals of Corporate Finance*, McGraw Hill.
6. Sharpe, William, Gordon Alexander and J. Bailey (2003). *Investment*, Prentice Hall of India.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper V B

Title of the paper: Economics of Agriculture and Cooperation

Paper Code: SIUAECO65B

Number of Credits: 3.5

Total No. of Lectures: 45

Objective- The paper is designed to provide various aspects related to the principles of cooperation and cooperative organizations in the globalized economy. The essentials of cooperative finance are dealt in with reference to the latest trends.

Module 1 - Co-operation (12 lectures)

Meaning and features of Co-operation - Principles of Co-operation (Manchester-1995) —Role of Co-operation in Economic development - Globalization and Co-operation-Importance and Benefits of Co-operation - Use of Big data Artificial Intelligence (AI) in Indian Agriculture

Module 2 - Co-operative Finance in India (13 lectures)

Co-operative Finance: Need, Structure, Progress and Problems - National Co-operative Development Corporation (N.C.D.C.), Aadhar as KYC Norm for Agricultural Finance - Farmers service societies and urban Co-operative banks.

Module 3 - Agricultural Co-operatives (10 lectures)

Role and Types of Agro-Industries - Problems and Measures of Agro-Industries — Sugar and Dairy Co-operatives - Food and Fruits Processing Industry - Co-Operative Farming.

Module 4 - Co-operative Organizations in India

(10 lectures)

Consumer Co-operatives - Co-Operative Marketing - Housing Co-operative societies - Labour Co-operative societies - Agricultural Marketing societies-Leadership in Cooperative development. •

References:

1. Bedi, R. D. (1983). *Theory, History and Practice of Co-Operation*, International Publishing House, Meerut (U.P.).
2. Hajela T. N. (2000). *Principles, Problem and Practice of Co-operation*, Agarwal publication, New Delhi.
3. John Matthai (1925). *Agricultural Co-Operation in India*, Reliance Publishing House, New Delhi.
4. Krishnaswami (1985). *Fundamentals of Co-Operation*, S. Chand and Company Ltd, New Delhi.
5. Mathur B. S (2000). *Co-Operation in India*, Sahitya Bhavan, Agra, India.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper VI A

Title of the paper: Theory and Practice of Econometrics

Paper Code: SIUAECO66A

Number of Credits: 4

Total No. of Lectures: 60

Objective - The paper is aims to help students understand the art of model building. It focuses on building the appropriate model and testing it statistically and to apply it to the practical problems in forecasting and analysis.

Module 1 - Econometric Model Specification (15 lectures)

Identification: Structural and reduced form - Omitted Variables Bias- Errors in measurement- Endogeneity and Bias.

Module 2 - Failure of Classical Assumptions (15 lectures)

Multi-collinearity and its implications - Auto-correlation: Consequences and Durbin-Watson test- Heteroskedasticity: Consequences and the Goldfeld -Quandt test.

Module 3 - Forecasting (15 lectures)

Forecasting with a) moving averages b) linear trend c) exponential trend- CAGR Forecasting with linear regression- Classical time series decomposition- Measures of forecast performance: Mean Square Error and Root Mean Square Error - Limitations of econometric forecasts.

Linear programming - Dual of a linear programming problem - Simplex method
Transportation.

References:

1. Damodar N. Gujarati (2003). *Basic Econometrics*, McGraw-Hill, Delhi.
2. Kapoor, V. K. (2011). *Operations Research Problems & Solutions*, Sultan Chand & sons.
3. Makridakis Spyros and Steven C Wheelright (2008). *Forecasting Methods and Applications*, Willey Publications.
4. Spiegel Murray (1989). *Theory and Problems of Statistics*, Schaum Outline Series.
5. Stock James H. and Watson Mark W. (2015). *Introduction to Econometrics*, Updated Third Edition, Global Edition, Pearson Education Limited.
6. Wooldridge Jeffery M. (2016). *Introduction to Econometrics: A Modern Approach*. Sixth Edition, Cengage Learning, USA.

Semester VI

T.Y.B.A

Name of the subject: Economics Paper VI B

Title of the paper: Development Theory and Experience

Paper Code: SIUAECO66B

Number of Credits: 4

Total No. of Lectures:60

Objective – This is the second paper of economic development sequence. The course begins with demographic concepts and their evolution during the process of development. Then it focuses on the theory of migration and discusses the link between migration and development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The course ends with the issues related to environment and development

Module 1- Demography and Development

(15 lectures)

Demographic concepts; birth and death rates, age structure, fertility and mortality; demographic transitions during the process of development; gender bias in preferences and outcomes and evidence on unequal treatment within households; connections between income, mortality, fertility choices and human capital accumulation.

Module 2 - Structural Transformation

(15 lectures)

The Lewis model —Clark-Fisher model of structural change , Urbanization: Trends and Projections with reference to India, Urbanization and Development, Causes of urbanization, Urban informal sector, Policies for the urban informal sector, Migration and development, Economic theory of rural-urban migration: Harris-Todaro migration model

Module 3 - Land, Labor and Credit Markets

(5lectures)

Role of Agriculture in Economic Development, Market Failure and Agriculture, The distribution of land ownership; Land reform and its effects on productivity; contractual relationships between tenants and landlords;. Land Acquisition; Nutrition and Labour Productivity; Rural Credit Market; Microfinance; Inter-linkages between Rural Factor Markets.

Module 4 - The Environment and Development

(15 lectures)

The core of environmental problems- Rural poverty and environmental destruction- industrialization and environmental pollution - Economic models of environmental issues: privately owned resources, common property resources, public goods: regional environmental degradation and the free rider problem, limitations of public goods framework.

References:

1. Banerjee, Abhijit Roland Benabou and Dilip Mookerjee (2006). *Understanding Poverty*, Oxford University Press.
2. Daron, Acemoglu and James Robinson (2006). *Economic Origins of Dictatorship and Democracy*, Cambridge University Press.
3. Debraj, Ray (2009). *Development Economics*, Oxford University Press, India. Edition, Pearson.
4. Partha, Dasgupta, Economics (2007). *A Very Short Introduction*, Oxford University Press.
5. Sen, Amartya (2000). *Development as Freedom*, Oxford University Press.
6. Todaro, Michael and Stephen Smith (2012). *Economic Development*, Eleventh

SCHEME OF EXAMINATION

Examination will consist of internal and semester end divided as 40 marks for internal and 60 marks for Semester end.

Internal Assessment

Internal assessment of 40 marks will be divided as 20 marks for class test, 20 marks for assignment.

Semester End Examination

The pattern for Semester end paper of 60 marks will be as follows:

- Duration – 2 hours for each paper.
- There shall be four questions each of 15 marks. All questions shall be compulsory.
- Questions may be subdivided into sub-questions a, b, c and students are expected to answer two out of three.

Questions	Modules	Marks
Q N 1	Module 1	15
Q N 2	Module 2	15
Q N 3	Module 3	15
Q N 4	Module 4	15

