**Five Year Integrated MSc Economics**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Semester | S.No. | Course Code | Course Title  | L  | T | P | C |
| I | C | ECO101 | Principles of Microeconomics | 3 | 1 | 0 | **4** |
| II | C | ECO111 | Principles of Macroeconomics | 3 | 1 | 0 | **4** |
| III | C | ECO201 | Fundamentals of Finance | 3 | 1 | 0 | **4** |
| IV | C | ECO211 | History of Economic Thought | 3 | 1 | 0 | **4** |
| It is expected that Student will do the Fitness course and Community Services courses of 2 credits each within the first 4 semesters. |  |  |  | **4** |
| V | C | ECO301 | Fundamentals of International Trade | 3 | 1 | 0 | 4 |
| C | ECO302 | Economics of Money and Banking | 3 | 1 | 0 | 4 |
| C | ECO303 | Mathematical Finance | 3 | 1 | 0 | 4 |
| Total Credits |  |  |  |  | **12** |
| VI | C | ECO311 | Fundamentals of Game Theory | 3 | 1 | 0 | 4 |
| C | ECO312 | Economics of Industrial Organization | 3 | 1 | 0 | 4 |
| C | ECO 313 | Fundamentals of Agricultural Economics | 3 | 1 | 0 | 4 |
| Total Credits |  |  |  |  | **12** |
| VII | C | ECO401 | Microeconomics I | 3 | 1 | 0 | 4 |
| C | ECO402 | Macroeconomics I | 3 | 1 | 0 | 4 |
| C | ECO403 | Mathematical Methods in Economics  | 3 | 1 | 0 | 4 |
| C | ECO404 | Statistical Methods in Economics  | 3 | 1 | 0 | 4 |
| C | ECO405 | Political Economy | 3 | 1 | 0 | 4 |
| DE |  |  | 3 | 1 | 0 | 4 |
|  | Total Credits |  |  |  | **24** |
| VIII | C | ECO411 | Microeconomics II | 3 | 1 | 0 | 4 |
| C | ECO412 | Macroeconomics II | 3 | 1 | 0 | 4 |
| C | Eco413 | Econometrics.  | 3 | 1 | 0 | 4 |
| C | ECO414 | Public Economics | 3 | 1 | 0 | 4 |
| C | ECO415 | Issues in Indian Economy | 3 | 1 | 0 | 4 |
| DE |  |  | 3 | 1 | 0 | 4 |
|  |  |  |  |  |  |  |  |
| Total Credits |  |  |  |  |  | **24** |
| IX | C | ECO501 | Development Economics  | 3 | 1 | 0 | 4 |
| C | ECO502 | International Macroeconomics and International Finance | 3 | 1 | 0 | 4 |
| C | ECO503 | Economic Growth Theories | 3 | 1 | 0 | 4 |
| C | ECO504 | Trade Theory and Policy | 3 | 1 | 0 | 4 |
| DE |  |  | 3 | 1 | 0 | 4 |
| GE |  | Generic Elective Course | 3 | 1 | 0 | 4 |
|  |  | Internship or Project based Learning (during vacation) |  |  |  | 2 |
| Total Credits |  |  |  |  | **26** |
| X | C | ECO511 | Masters’ Thesis/Dissertation Or DE/GE for 8 credits |  |  |  | 8 |
| DE |  |  |  |  |  | 4 |
| DE/GE |  |  |  |  |  | 8 |
| Total Credits |  |  |  |  | 20 |
| Sum Total Credits |  |  |  |  |  | **138** |

**Syllabus**

**ECO101**

**Course Name: Principles of Microeconomics**

**Credit: 4**

**Course Objectives**

This course provides an introduction to a core area of economics known as microeconomics. The purpose of this course is to provide a key incite on the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures. This course is also designed to provide the complete information on different ways in which various decision making units in the economy (individuals and firms) make their consumption and production decisions and how these decisions are coordinated.

**Learning outcomes of the course**

On successful completion of this course students should be able to:

* Understand the operation of a competitive market economy
* Identify the central economic problems that every competitive economy faces.
* Explain how competitive markets organize the allocation of scarce resources and the distribution of goods and services
* Identify the Opportunity Costs involves in various courses of action in their real life
* Strategies employed by different economic agents –consumer, producer/business firm, factor of production- while making decision regarding their economic activities.
* Describe the effects of different markets on the price of a product, the quantity of a product, the allocation of society's resources
* Interpret charts, graphs, and tables and use the information to make informed judgments
* Identify the similarities and differences between the product market factors market
* Develop the hypothetical frameworks on determination of prices of various factors of production under different market conditions

**Unit 1: Basic concepts**

The Basic Economic Problem- Scarcity and Choice, the Basic Market Model; Interfering with the market versus working through the Market. Distinction between Microeconomics and Macroeconomics.Concepts of equilibrium- statics, dynamics, comparative statics, partial Equilibrium and General Equilibrium analysis.Positive Economics and Normative Economics.

**Unit 2: Consumer’s Behavior**

Utility: Cardinal versus Ordinal; Indifference Curve - Assumptions and Properties; Consumer’s Equilibrium; Price Effect-Income Effect, Substitution Effect; Engel’s Curve Derivation of the Demand Curve; Giffen Paradox; Basic elements of Supply and Demand: the law of demand, forces behind the demand curve, shifts in demand curve, Elasticities of demand – price, income and cross elasticities. The law of supply, factors behind the supply curve shifts in supply curve, role of time element in supply function.

**Unit 3: Theory of Production and Cost**

Production Function and its related concepts; Total, Average and Marginal Products and the Law of Variable Proportions, Returns to Scale, production with two variable inputs: Isoquants, assumptions and Properties, marginal rate of technical substitution, Isocost curve, producer equilibrium- constrained output maximization and constrained cost minimization. Cost function: different concepts of costs, short run cost analysis and long run cost Analysis.

**Unit 4: Market Structure**

Price and output determination under perfect competition; short run and long run equilibrium of the firm using total and marginal approach, constant cost industries, increasing cost industries, decreasing cost industries. Supply behavior in competitive industry. Imperfect competition; definition, varieties of imperfect completion – Monopoly, monopolistic competition, oligopoly- and Price and output determination under these markets.

**Additional Unit: Factor market and Factor Pricing (Introductory level)**

Basics of distribution, Traditional theory of distribution, modern theory of distribution. Theories on Factor –Wage, rent, interest rate, and profit- price determination. Fundamentals of wage determination; demand for labor, marginal physical productivity of labor, supply of labor.

**Basic Readings**

1.Koutsoyiannis A Modern Microeconomics 2nd Revised edition Macmillan (2008)

2. Robert Pindyck and Daniel Rubinfield, Micro Economics, edtion 7, Prentice Hall

**Other Recommended Readings:**

* Karl E. Case, Ray C. Fair, Principles of Economics, Pearson Education Asia
* Dominick Salvatore, Micro Economics- Theory and Applications, Oxford University Press
* Sampat Mukherjee, Modern Economic Theory, New Age International Publishers
* Rahul A. Shastri, Micro Economic Theory, University Press (India) Limited
* D. N. Dwivedi , Micro Economic Theory and Applications, Pearson Education
* G S Maddala and Ellen Miller, Micro Economic Theory and Application, Tata MacGraw Hill
* Paul A Samuelson William Nordhaus, Microeconomics 19th Edition, MacGrawhill
* Hal R. Varian Intermediate Microeconomics: A Modern Approach (Eighth Edition) 2009, W. W. Norton & Company
* James Mitchell Henderson, Richard E. Quandt, Microeconomic Theory,edition 3, McGraw-Hill, 1980
* N.Y Melliwra H A. Book Co. 3. Koutsoyiannis, A., Modern Microeconomics\*, London, Macmillan, (Latest. Edition).

\*\*\*

**Course Code: ECO111**

**Course Name: Principles of Macroeconomics**

**Credit: 4**

**Course Objectives**

The main purpose of this course is to equip students with the tools and ideas necessary to understand the aggregate economy and to make informed opinions about different macroeconomic theories on national income and employment determination, determination of household consumption expenditure on final consumer goods and services, determination of investment expenditure on acquisition of capital goods by business firms. This course also provides an introduction to other core areas of macroeconomics such money, inflation, deflation, stagflation and the inflation & unemployment trade-off.

**Learning outcomes of the course**

On successful completion of this course students should be able to:

* Understand the historical aspects of macroeconomics and Identify the major differences between microeconomics and macroeconomics
* Examine how the economy behaves at the aggregate level and how national income is measured and determined.
* Identify the major factors explaining household consumption expenditure on final consumer goods
* Understand how the households behaves while making decision regarding their consumption expenditure on final goods and services
* Understand how the business firms behaves in general and what methods they adopt while taking decision regarding their investment projects
* Interpret different macroeconomic concepts such as output growth, money, inflation and unemployment

**Unit 1: Basics of Macroeconomics**

What is Macroeconomics, the origin and roots of macroeconomics, major issues and concerns of macroeconomics, why a separate study of macroeconomics?, National income accountings; Circular flow of income in two, three and four sectors, Concepts of national income, measurement of national income – value added method, income method, expenditure method, difficulties in measurement of national income, National income estimation in India.

**Unit 2: Determination of Income and Employment**

The complete Classical model of full employment; essential features and implications of Classical theory, Keynes’ objections to classical theory, Theory of Effective Demand; Simple Keynesian model of Income Determination for a closed economy, determination of national income in open economy, paradox of thrift.

**Unit 3: Consumption and investment**

Keynes consumption function; three conjecture, the early empirical success, secular stagnation hypothesis, consumption puzzle, Overview of post Keynesian theories of consumption; Relative Income hypothesis, Life Cycle Hypothesis, Permanent Income Hypothesis. Meaning and types of Investment, Business Fixed Investment, The Determinants of Investment, Tobin’s *q*, Residential Investment, Inventory Investment -Reasons for Holding Inventories, How the Real Interest Rate and Credit Conditions Affect Inventory Investment. Classical theory of investment, and Keynesian theory of investment; Marginal Efficiency of Capital. Theory of investment Multiplier, Accelerator Theory,

**Unit 4: Money and Inflation**

Concept, functions and significance, Theories of Demand for Money: Classical, Cambridge and Keynes. Theories of Rate of Interest: Classical, Loanable and liquidity preference.

Meaning. Impact and control of inflation, demand pull and cost push inflation, inflationary and deflationary gap analysis, inflation and its social cost, choice between inflation, deflation and stagflation, overview of inflation and unemployment trade-off.

**Basic Text Referred:**

1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010
3. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc.,

**Recommended Readings:**

1. Shapiro, E.: Macroeconomic Analysis.

2. SurajB.Gupta : Monetary Economics, S.Chand and Company Ltd.

3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.

4. Errol D’Souza, Macroeconomics, Pearson Education, 2009.

5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc

\*\*\*

**Course Code: ECO201**

**Course Name: Fundamentals of Finance**

**Credit: 4**

**Course Outline/Objectives**

This course introduces the basic concepts of finance and financial decisions that the firm and individual make. The course starts with the various objectives and functions of financial management and then eventually moves towards learning the basic theories of finance. While discussing the financial markets it also brings out the brief idea about equity shares, bond and derivatives.

**Learning Outcomes**

The main object of the course is to develop theoretical background and conceptual understanding of various aspects of finance and financing of modern firms.

* While learning the basic theories and their implications students can identify the key theme in finance and are expected to grasp the necessary knowledge for evaluating the firm, equity shares and bonds etc.
* Students can apply the fundamental tools of finance and understand the market players make decisions.
* The concept of risk and uncertainty and portfolio analysis would enable the students to learn the investment decision making.
* The course also intends to develop skills in analyzing the investment behavior in capital market and the pricing behavior of securities*.*

**Unit 1: An overview of Corporate Finance**

Concept, scope, classification of finance function, objectives of financial management, profit maximization vs. wealth maximization.Financial markets and institutions.

Sources of finance**:** Short term sources-Public deposits, Cash credit limit/Overdraft, Letter of credit, Commercial papers.

Long term sources- Shares, Debentures /Bonds, Leasing, Hire-purchase, Venture capital, emerging financial instruments.

**Unit 2: Time value of money (introductory level)**

Basic theory of interest, Valuations of bond and stocks: discounting and present value; internal rate of return; evaluation criteria.

The term structure of interest rates; yield curves; spot rates and forward rates.

**Unit 3: Financing and Investment Decisions**

Cost of capital, Capital Structure, Dividend Decision.Capital budgeting-Nature, scope, techniques, NPV and other investment rules.

**Unit 4: Basic theories of Finance**

Concept of Risk and Returns: types of risks, random asset returns; risk-return trade off; portfolios of assets; mean-variance portfolio analysis. Diversification of risks.Markowitz theory of portfolio. Efficient market hypothesis: random walk, technical analysis, fundamental analysis.

CAPM: The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio;security market line. Arbitrage pricing theory (APT).

Additional Unit: Introduction to derivatives and options; forward and futures contracts; options; other derivatives;

**Recommended Texts:**

1. AswathDamodaran, *Applied Corporate Finance*, John Wiley & Sons
2. Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance*, McGraw-Hill.
3. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, *Fundamentals of Corporate Finance*. McGraw-Hill
4. Prasanna Chandra. *Financial Management Theory and Practice*, Tata McGrow Hill
5. Seldon M Ross. *An Elementary introduction to Mathematical Finance,* Cambridge University Press

\*\*\*

**Course Code: ECO211**

**Course Name: History of Economic Thought**

**Credit: 4**

**Course Outline/Objectives**

This course is an introduction to the history of the development of economics, particularly economic theory under the different school of thoughts in the context of historical environment-social, political and economic. The course offers the student an exposure to the key models and concepts of the history of economic thought; the controversies between its major schools of thoughts and historical consciousness of economic ideas.

**Learning Outcomes**

1. comprehend the development of the economic thought and the theory of economics in historical perspective
2. comprehend the analysis of ancient economic thinkers in different parts of the world
3. comprehend the distinction between economic thought and economic ideas
4. debate similarities and differences among different economic schools
5. comprehend similarities and differences between different early school economic thought
6. Interpret and analyze critically classical school of economics including analysis of Adam Smith, David Ricardo R.T. Malthus along with the analysis of Karl Marx’s theory.
7. Appreciate the genesis of Indian Economic Thought and Leading Early Thinkersbeginning from Kautilya,Nairoji, to Ambedkar and Gandhi

**Unit 1:**

Evolution of History of Economic Thought and main periods in the History of Economics; Need of studying History of Economic Thought; Various ways to study History of Economic Thought; History of Economic Thought versus Economic Ideas; Lack of agreement in Economic Thought;

Genesis of Economics and Ancient Economic Thinkers: Hesoid, Homer, Xenophone, Aristotle, Plato, Fan Li, and Abu Yusuf.

**Unit 2:**

Early Schools of Thought: Mercantilism – Traders and trade policy, surplus, role of government, William Colbert; Physiocracy – Agriculture, land and surplus, taxation, Natural Order, Net Product and Circulation of Wealth (Quesney’s Tableau Economique). William Petty and Richard Cantillion.

**Unit 3:**

Classical – Economic growth, Laissez Faire & Stationery state; Adam Smith – Wealth of nations, Division of labour& specialization, Theory of Invisible hand and Self-interest, Adam Smith’s Theory of Value and Distribution; David Ricardo – Theory of Value, Theory of distribution & Diminishing returns; R.T. Malthus – Population theory; Karl Marx – Theory of Value, Surplus Value and Class Struggle, Capitalist Crisis and Removal of Capitalism.

**Unit 4:**

Genesis of Indian Economic Thought and Leading Early Thinkers: Kautilya – Role of state, Taxation, Foreign trade, Good governance; D.B. Nairoji – Economic nationalism, Brain drain, Poverty; B.R Ambedkar – Caste system in India & Division of Labourers, Golden path of development – Balance between Public and Private sectors; M.K. Gandhi – Environmentalism, Self-reliance, Distinction between ‘Standard of living’ and ’Standard of life’, Rural development.

**Recommended Readings:**

1. Haney H. – History of Economic Thought
2. Eric Roll – History of Economic Thought
3. Bhatia H.L.– History of Economic Thought
4. Gide and Rist –History of Economic Doctrine
5. Sinha V.C. – AarthikVicharonKaItihaas
6. Ganguly B.N. – Indian Economic Thought

\*\*\*

**Course Code: ECO301**

**Course Name: Fundamentals of International Trade**

**Credit: 4**

**Course Outline/Objectives**

The purpose of this course is to provide students with a thorough grounding in the theory of international trade as well as international trade policy and to demonstrate the relevance of the theory in the analysis of (a) existing patterns of international trade and what determines them, (b) the conduct of trade policy and (c) the economic implications of international trade. Course is also dealing with the concepts of balance of payment accounting and foreign exchange market.

**Learning outcomes**

1. Understand, at the level of formal analysis, the major models of international trade and be able to distinguish between them in terms of their assumptions and economic implications
2. Understand the principle of comparative advantage and its formal expression and interpretation within different theoretical models
3. Understand the Heckscher Ohlin model of trade and its interpretation and implications
4. Demonstrate the basic understanding of new trade theories such as Human Capital and Factor Availability
5. Be able to apply partial equilibrium in analysing the economic effects of trade policy instruments such as tariffs, quotas, export subsidies
6. Be familiar with, and be able to critically analyse the main arguments for protection and conversely be able to critically evaluate the relevance and realism of arguments for free trade, taking into account the costs and benefits of trade policy measures on different sections of the community and the implications for the formulation of trade policy
7. Be familiar with the Balance of Payment accounting and foreign exchange market system.

**Unit 1. Introduction**

What is international economics about? An overview of world trade.

**Unit 2. Theories of International Trade**

Mercantilist View on International Trade, The Ricardian, and Heckscher-Ohlin models; new trade theories: Human Capital, and Factor Availability;

**Unit 3. International Trade Policy**

Instruments of trade policy; international monetary systems Free Trade and Protection- Arguments for and against Free Trade and Protection; Tariffs-Classifications of Tariffs, Effects of Tariffs- Partial Equilibrium analysis, Concept of Optimum Tariff; Quotas- Types, Effects; Tariffs versus Quotas.

**Unit 4. Balance of Payment**

The Structure of BOP; Accounting Principle; Disequilibrium in BOP- Types of Disequilibrium; Causes of Disequilibrium; Adjustment Mechanism- Correction under Fixed and Flexible Exchange Rate regimes, Functions of Foreign Exchange Market; Determination of Equilibrium Exchange Rate; Concepts of Spot and Forward Rates.

**Readings:**

1. Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), 9th edition, 2012.
2. Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10th edition, 2011.

\*\*\*

**Course Code: ECO302**

**Course Name: Economics of Money and Banking**

**Credit: 4**

**Course overview**

This course explores the practical aspects of money and banking within the economy. Topics will include money creation, banking operation, central banking system-conduct of monetary policy, and monetary management in an open economy. Emphasis is given to the changing role of financial institutions as well as new financial instruments. The course develops a number of theoretical frameworks for the analysis of domestic economic perspective related to money, banking operation, monetary transmission mechanisms, which provides a base for the understanding of classical and Keynesian approaches for monetary theory and their empirical evidence. The course also focuses on the issues of monetary policy implementation in the closed and open economy contexts, like determinants of the price level, rate of inflation, exchange rate in different regimes.

**Learning outcomes of the course**

On successful completion of this paper students should be able to:

1. Understand the basic concepts of money including its origin, functions
2. Understand the role of money, money demand and money supply in theeconomy
3. Describe the process of money creation by the banking system and the role of the central bank
4. Understand the general principles of bank management
5. Identify the key banking sector reforms in India and policy implications of those reforms with respect to development of Indian economy
6. Elucidate the liability and asset portfolio management "problem" of banks
7. Assess and evaluate the conduct of monetary policy by the central bank with respect to an open economy management
8. Understand the analysis of market for reserves and federal funds rate with special reference to changes in monetary policy tools
9. Asses the changing role of financial institutions as well as new financial instruments in the economy

**Unit 1: Money**

Concept, functions, measurement; Supply of money: Mechanics of money supply creation; measures of money supply in India. Demand for money: Fisher, Cambridge, and Keynesian and Friedman theories.

**Unit 2: Commercial Banking System**

Meaning, functions, assets and liabilities-Balancing liquidity with profitability, Process of credit creation by commercial banks. General principles of banking management, Indian banking system: Changing role and structure; banking sector reforms.

**Unit 3: Central Banking**

Meaning and functions, techniques of credit control with special reference to India, conduct of monetary policy: Goals, targets, indicators and instruments of monetary control; Analysis of market for reserves and federal funds rate with special reference to changes in monetary policy tools. Monetary management in an open economy.

**Unit 4: Financial Institutions**

 Economic analysis of financial structure; Basic puzzles about financial structure throughout the world, transaction costs and its impact on financial structure, problem of asymmetric information – adverse selection and moral hazard and its impact on financial structure. Role of financial markets and institutions in Economic development.

**Basic text books referred**

1. SurajB.Gupta, Monetary Economics, S. Chand and Company Ltd
2. SurajB.Gupta., Monetary Planning for India, University Press, New Delhi.
3. Frederic S. Mishkin., The Economics of Money, Banking and Financial Markets, Pearson, Addison, Wesley. Newyork, 7th Edition (2004)
4. Peter Howells and Keith Bain., the Economics of Money and Banking, Pearson, Education Limit. 3rdEdtion (2005).
5. L. M. Bhole and J. Mahukud, Financial Institutions and Markets, Tata McGraw Hill, 5th

edition, 2011

\*\*\*

**Course Code: ECO303**

**Course Name: Mathematical Finance**

**Credit: 4**

**Course Description:** This course introduces the basic mathematics to be used in finance. It is ideal for the students who want to a rigorous study in finance in their final year of under-graduation level. This course ensures that students can experience mathematical and economic perspective of the subject. Using mathematics as a tool this course covers a wide range of topics in finance, such as, the time value of money, portfolio theory, capital market theory, security price modeling, and financial derivatives.

**Leaning objectives:**The course provides students with advanced knowledge and understanding of the main theoretical and applied concepts in Mathematical Finance. With the successful completion of the course students are expected to grasp the following concept of finance.

1. Students can able to understand the mathematical foundation of quantitative finance.
2. They can grasp the standard and advanced quantitative methodologies applied in the area of financial economics.
3. They can create and evaluate the potential models for the pricing of shares and bonds.
4. They can construct, analyze and evaluate the models for investment of financial assets.
5. They can able to understand the emerging theories and techniques in the area of financial economics.

**Learning outcome:** These days the finance industries demand the recruits with strong quantitative skills. After successfully completing the course students may achieve their career goals in this area, i.e seeking career in the finance industry. The course also provides research skills for those who subsequently wish to pursue research and/or an academic career.

**Unit 1**

Review of basic mathematical tools, probability theory and random variables. Economic indicators that may affect the financial markets. Mathematics of the Time Value of Money: Simple interest, Compound interest, Annuities and amortization theory, NPV, IRR.

**Unit 2**

Mathematics of Investment: Buying and selling stocks, Common stock valuation, cost of new issues of common stock, stock value with two-stage dividend growth, Bond valuation, premium and discount prices, premium amortization, discount accumulation, estimating the yield rate. Mathematics of Return and Risk: Expected rate of return, measuring the risk, risk aversion and risk premium, return and risk at the portfolio level.

**Unit 3**

Portfolio Theory: Markowitz Portfolio Model, Two securities portfolio, N-securities portfolio, Investor Utility, Diversification and randomly selected securities. Capital market Theory: the financial beta (β), The Capital Market line, The CAPM equation, The Security Market Line, CAPM security risk decomposition. Portfolio Risk Measures: The Sharpe ratio, the Sortino ration, Value-at-Risk.

**Unit 4**

Derivatives: Forwards, Futures and Options. Dynamics of making profits with options, Intrinsic Values of Calls and Puts, Time value of Calls and Puts, The delta ratio, determinates of option value, Option valuation. Option Pricing: The Black-Scholes-Merton (BSM) mode. The BSM model vs market data.

**Reference:**

1. A. O. Petters and X. Dong, ***An Introduction to Mathematical Finance with Applications*** (Springer, 2016)
2. M. J. Alhabeeb, ***Mathematical Finance***, (Wiley, 2012)
3. S. Ross, ***An Elementary Introduction to Mathematical Finance***, Third Edition (Cambrige U. Press, Cambridge, 2011)
4. J Janssen, R. Manca, and E. V. di Prignano, ***Mathematical Finance: Deterministic and Stochastic Models*** (Wiley, 2009)
5. S. Roman, ***Introduction to the Mathematics of Finance*** (Springer, 2004)

\*\*\*

**Course Code: ECO311**

**Course Name: Fundamentals of Game Theory**

**Credit: 4**

**Course Description:** Game theory is a formal study of conflicts and cooperation. The game theoretic concepts apply whenever the actions of several agents (individuals, groups, firms etc. or any combination of these) are interdependent. The concept of Game theory provides a language to formulate structure, analyze, and understand the strategic scenario. This course would provide the students the main ideas of how the game theories can help to understand the economic and social phenomena. It emphasizes the idea behind the theories rather than their mathematical expression typically taught in mathematics. The course would introduce some equilibrium concepts of game theory and their usage in economics along with various numerical examples and applications. The basic knowledge of game theory can dramatically improve the strategic instinct and the decision making skill of students.

**Unit 1**

Introduction to Game Theory; History of Game Theoretic Analysis; classifications of games; theory of rational choice

**Unit 2**

Strategic Game and Nash Equilibrium: The Pay-off matrix; the Prisoner’s dilemma. The concept of Nash Equilibrium; dominating and dominated strategies; zero-sum game,

**Unit 3**

Mixed Strategy Nash Equilibrium: concepts and examples; strategic game with randomization. Games with perfect information.

**Unit 4.**

Games with imperfect information; Bayesian Games; Cournot’s duopoly game with imperfect information; auction; other applications.

**Reference:**

1. Osborne J Martin (2004), An Introduction to Game Theory, Oxford University Press.
2. Fudenberg, D. and Tirole, J. (1991), Game Theory, MIT Press.
3. Gibbons, R. (1992), A Primer in Game Theory, Prentice-Hall.
4. Myerson, R. (1991): Game Theory: Analysis of Conflict, Harvard University Press.

\*\*\*

**Course Code: ECO312**

**Course Name: Fundamentals of Industrial Organization**

**Credit: 4**

**Course Objectives**

This course provides a foundation for the study of theoretical models of industrial organization. This field of study is mainly concerned with different strategic motives and interactions in oligopolistic markets, employing the techniques taught in the compulsory course on Game Theory. It also provides a theoretical framework for analysis of antitrust/competition policy, as well as other policies relating to regulation, innovation, intellectual property rights, and strategic trade policy, which are covered in other courses.

**Course Learning Outcomes**

Upon completing this course, the student would have learned to think analytically, using game theoretic tools, about the principal issues concerning oligopolistic markets, competition, and apply them to the real world of industry. They would also be prepared to understand competition policy more naturally and foundationally.

**Unit 1:**

Introduction to industrial organization; Theory of the firm; Markets and Strategies; Firms, Consumers and the market; pricing behaviors

**Unit 2:**

Static oligopoly models with homogenous and differentiated products. Strategic
substitutes and strategic complements. Dynamic models: Stackelberg and free
entry

**Unit 3:**

Spatial models of horizontal and vertical product differentiation. Repeated game oligopoly: Stability and sustainability of cartels.

**Unit 4:**

Entry and entry deterrence strategies.Vertically related markets and vertical contracts between firms. Advertising; Research and Development; adoption of new technology

**References and Readings**

1. Belleflamme, P. and Peitz, M. (2015). Industrial Organisation: Markets and Strategies. Cambridge University Press
2. Cabral, L. (2017). Introduction to Industrial Organization. MIT Press
3. Shy. O. (1996). Industrial Organization: Theory and Applications. MIT Press
4. Tirole, J. (1988). The Theory of Industrial Organization. MIT Press
5. Bharthwal, R. R. (2010). Industrial Economics. Wiley Eastern Ltd
6. Hay, D.A., Morris, D.(1991)*. Industrial Economics and Organisation*. Oxford University Press
7. Krouse, Clement G. (1990). *Theory of Industrial Economics*. Basil Blackwell Ltd
8. Sen, A. (ed.) (1996). *Industrial Organisation*. Oxford University Press
9. Waterson, M. (1984). *Economics Theory of the Industry*. Cambridge University Press

\*\*\*

**Course Code: ECO313**

**Course Name: Fundamentals of Agriculture Economics**

**Credit: 4**

**Unit 1**

Agriculture Economics - Definition of Agriculture Economics, Scope, Nature and Characteristics of Indian Agriculture, Differences & Linkages between Agriculture and Industry, Development in Agriculture Colonial & After Independence, Farm Organisation, Availability of Inputs, Agricultural Infrastructure, Cropping Pattern, Size of Land Holdings, Land Reforms, Risk and Instability in Agriculture

**Unit 2**

Economics Laws in Agriculture - Production, Cost, Supply Response, Introduction to Market Price Determination and Input Demand, Concept of Elasticity, Agriculture Price Policy in India, Agriculture Marketing, Importance of Agriculture for National Economy, Production Pattern regional variation recourse use efficiency

**Unit 3**

Green Revolution - Production, Productivity, HYV, Irrigation Fertilizer Mechanisation, MSP Debate on Economic System for Agricultural Marketing, Agricultural Credit, Government Financial Support

**Unit 4**

Foreign Trade in Agriculture - India's Competitiveness in International Market, Storage Facility, Issues in Indian Agriculture & WTO Rules

**Important Readings**

1. Soni R. N. & M. Sangeeta: **Leading Issues in Agricultural Economics**, Vishal Publishing Co. Jalandhar
2. Sadhu and Singh: Fundamentals of Agricultural Economics, Himalaya Publishing House Mumbai
3. Drummond H. Evan & Goodwin John W. : **Agricultural Economics**, Printice Hall
4. Tsakok Isabelle: **Success in Agricultural Transformation**, Cambridge University Press
5. Barkley Andrew, et al: **Principles of Agricultural Economics**, Routledge London
6. Puri VK & Mishra: **Indian Economy**, Himalaya Publishing House
7. GOI: **Economic Survey 2019-20**

\*\*\*

**Course Code: ECO401**

**Course Name: Microeconomics I**

**Credit: 4**

**Course Objectives**

The Course examines how individuals and firms make decisions by weighing up preferences, costs and benefits, and how the interaction of their decisions leads to utility-maximization, market and social outcomes. The model of market supply and demand is employed to examine the effects of taxes, subsidies and other government interventions in market activity. The implications of different market structures, including perfect competition and monopolistic are examined.

**Learning outcomes**

1. Demonstrate an understanding of the concepts of utility functions, demand functions and preference structure to compare the choices of consumer
2. Demonstrate the ability to apply optimization techniques to decisions made by consumers and firms
3. Students will be able to demonstrate an understanding of producer choice, including cost and production function analysis
4. Demonstrate an understanding of how markets work to allocate resources and the optimal individual decision making that underlies market outcomes
5. Identify perfect competition, monopoly and monopolistic market structures and discuss their implications for resource allocation
6. Explain the advantages and potential shortcomings of markets, discuss the conditions under which markets do and do not work well

**Unit 1**

Theory of Consumer: Preference relations and their properties, Consumption Decision (Optimizing Behaviour of the consumer under alternative preference structures- Utility, Indifference curves and revealed preference). Comparative statics of the consumer’s decision, income and substitution effect –Hicks and Slutsky analysis Slutsky Equation, derivation of ordinary and compensated demand function, derivation of demand functions: Perfect Substitute, perfect compliments and quasi-linear utilities, Demand elasticity. Consumer’s surplus

**Unit 2:**

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, Cobb-Douglas, CES, and Trans-log production functions and their properties;

**Unit 3**

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; Natural Monopoly

**Unit 4**

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,

**Basic Readings**

1. Gravelle, H and Ray Rees (2004), *Microeconomics*, 3rd edition, Prentice Hall Longman London.
2. Sen, A. (1999), *Microeconomics : Theory and Applications*, Oxford University Press, New

Delhi.

1. Varian, H. (2005), *Intermediate Microeconomics: A Modern Approach* W.W. Norton, New York.
2. Roy Choudhary, K Microeconomics, Vol 1.
3. Varian, H. (2004), *Microeconomic Analysis*, W.W. Norton, New York.
4. Microeconomic Theory: Basic Principles and Extensions (Upper Level Economics Titles)Cengage; 11 edition (2014)

\*\*\*

**Course Code: ECO402**

**Course Name: Macroeconomics I**

**Credit: 4**

**Course Objectives**

This course Introduces students to the main classes of models in modern macroeconomics. The first half of the course will be aimed at providing students with astound knowledge of modern macroeconomic theories of income and employment determination while the second half will deal with the theories of consumption and investment along with measures to analyze unemployment and inflation including contrasting economic views on unemployment. Final part of the course will mainly focuses on integration of goods and money market and the use of fiscal and monetary police to achieve economic goals.

**Learning outcomes of the course**

On successful completion of this course students should be able to:

1. Demonstrate the problem of macroeconomic aggregations using partial and general equilibrium analysis
2. Examine how the economy behaves at the aggregate level and how national income is measured and determined both in closed and open economy context
3. Demonstrate various theories explaining the major factors determine consumption expenditure on final goods and services.
4. Define money and describe the theories on money demand and money supply including the process of money creation by the banking system and the role of the central bank.
5. Apply macroeconomic measures to analyze unemployment and inflation including contrasting economic views on unemployment.
6. Explain the components of aggregate economic activity, fluctuations and effects for the national economy and how fiscal policy is used to achieve economic goals.

**Unit - 1: Introduction to Macroeconomics**

Why and how to study macroeconomics; Scope of macroeconomics, Macroeconomic Variables- Stocks and Flows, Problem of Aggregation: Macroeconomic Equilibrium. National Income Accountings.

**Macroeconomic Debate (Introductory)**

Classical Macroeconomics: The Economy in the long run; Keynesian approach of Macroeconomics.

Models of Income and Employment Determination: An Overview. Walrasian interpretation of Keynesian unemployment; New Keynesian Interpretation, Post-Keynesian Interpretation.New classical economics.

**Unit - 2 Consumption Function and Investment Function**

Keynes consumption theory, Kuznet’s Puzzle, Life Cycle Hypothesis, Permanent Income Hypothesis, Random Walk Hypothesis, Keynesian Theory of Investment, Accelerator principles, Neo-Classical and New Classical Theories of Investment.

**Unit - 3 Money and Inflation**

Demand for Money- Friedman, Baumol, Tobin, Patinkin’s Real Balance Effect, Issues regarding endogenous and exogenous supply of money, R.B.I.’s Approach to Supply of MoneyDemand-Pull and Cost-Push Inflation, Phillips Curve Controversy, Natural Rate of Unemployment-Adaptive expectations and Rational expectations models of inflations.

The quantity theory of money.

**Unit – 4 Economy in the short-run**

Goods markets and the IS curve, Financial or money market and the LM curve, Goods market and money market together-The IS-LM model- closed economy case; Fiscal policy and monetary policy under alternative supply assumptions, Policy Mix. Aggregate demand and supply.

**Recommended Texts.**

1. Dornbusch Rudi, Fischer, Stanley and Startz Richard. *Macroeconomics*, Tata McGraw-Hill Publishing Co. Ltd.
2. Mankiw Gregory N. *Macroeconomics*, Worth publishers
3. Blanchard Olivier. *Macroeconomics*, Prentice Hall

\*\*\*

**Course Code: ECO403**

**Course Name: Mathematical Methods in Economics**

**Credit: 4**

**Course Objectives:**The course covers a wide range of mathematical methods in applied economics. Specifically, it aims to provide the basics of mathematical methods and the range of mathematical techniques that are used to explain various applied economics problems. Also the course attempt to provide the insight of some advance level mathematical tools in understanding and formulating various economic theories.

**Learning Outcomes:**After successfully completion of the course students are expected to learn thefollowing.

1. The students are expected to be familiar with a wide range of mathematical tools that are usedto explain various economic theories.
2. The students can successfully demonstrate the economic meaning of mathematical models.
3. They can learn to optimize the resources and thus understand how the economic policy
makers make decision.
4. They can able to demonstrate most of the theories in economics precisely and strategically.
5. They can able to understand the economic dynamics.

**Unit 1**

Concept of a function; Limits, continuity and differentiability of a real valued function; Convex and concave functions, Differentiation- Partial and total; Interpretation of partial derivatives.Optimization with single and multivariable functions- Unconstrained and constrained optimization in simple economic problems.

Integration-simple and Definite, Applications to Economic variables

**Unit 2**

Concept of a vector - its properties; Concept of matrix - their types, Simple operations on matrices, matrix inversion. Determinants and their basic properties; Solution of simultaneous equations through Cramer‘s rule; Jacobians and Hessians: Input-output Analysis.

Difference equations - Solution of first order and second order difference equations; Differential

Equations

**Unit 3**

Linear programming — Basic concept; Formulation of a linear programming problem — Its structure and variables; Nature of feasible, basic and optimal solution; Solution of simple linear programming problems through graphical and simplex method; Concept of duality and statement of duality theorems; Formulation of the Dual and its interpretation.

**Unit 4**

Game Theory: an introduction. Dominated and Dominant Strategies: The Prisoner‘s Dilemma, mixed strategy Nash Equilibrium; Saddle point solution; Simple applications to economics.

**Recommended Texts**

1. Chiang, Alpha, C. and Kevin Wainwright. Fundamental methods of Mathematical
2. Economics, latest edition, McGraw Hill.
3. Knut Sydsaeter and Peter J Hammond. Mathematics for Economic Analysis, Pearson
4. Education India.
5. Carl P Simon and Lawrence Blume. Mathematics for Economists, W. W. Norton &
6. Company.
7. Mike Rosser. Basic Mathematics for Economists, Routledge
8. Eric Rasmusen. Games and Informations, Basil Blackwell.
9. Martin, J Osborne. An Introduction to Game Theory, Oxford University Press.

\*\*\*

**Course Code:ECO404**

**Course Name: Statistical Methods in Economics**

**Credit: 4**

**Course Objective:**The Course deals with simple tools and techniques, which will help a student in data collection, presentation, analysis and drawing inferences about various statistical hypotheses. The students are expected to formulate problems in economic theory and learn simple solutions with one or two variables.

**Learning Outcomes:**

* Compare and contrast various types of data.
* Select and estimate measures of central tendency and dispersion based on specific economic problems.
* Apply various sampling methods based on the context and need of the study.
* Apply the rules of probability theory and able to identify which approach is used in a given scenario.
* Understand the concept of Bayes theorem with its economic applications.
* Use correlation analysis on different types of data sets to find the degree of association.
* Estimate cause and effect relationship through regression analysis
* Able to select a good estimator in the process of estimation.
* Perform hypothesis testing using z test t-test, chi-square and f-tests and interpret the results.

**Unit 1**

Typical data sets arising in economics, Qualitative, Quantitative, Income, Expenditure, Time Seriesand Panel data. Major sources of data sets: Census, Government agencies, e-resources,Graphical representations, Measures of Central tendency, Measures of dispersion.Sampling methods: Census, simple random sample with and without replacement, stratified sampling methods.

**Unit 2**

Probability theory: Laws of addition and multiplication; Independence of events, Conditional probability and concept of independence; Bayes theorem with applications; Random variable; Discrete and Continuous random variables; Probability density functions; Binomial, Poisson and Normal distributions, their mean and variance, graphs of normal density functions.

**Unit 3**

Correlation: Pearson‘s product moment and Spearman‘s rank correlation-their properties; Partial and multiple correlations, linear and nonlinear regression. Estimation: Concept of an estimator and its sampling distribution: Desirable properties of a good estimator; Point and Interval estimation.

**Unit 4**

Testing of statistical hypotheses – Formulation of the problem; Null and alternative hypothesis; Type 1 and Type 2 errors, Goodness of fit; Confidence intervals and level of significance; Hypothesis testing for means, variance, regression coefficients based on standard normal, t, Chi-square and F tests.

Basic Readings:

* Lee, C. F., Lee, J. C. and Lee, A. C. Statistics for Business and Financial Economics. (2000), World Scientific, Singapore.
* Black, Ken. Business Statistics. (2004), John Wiley & Sons.
* Taylor, S. Business Statistics. (2001), Palgrave.
* Bluman, A. G. Elementary Statistics. (2009), McGraw-Hill
* Newbold, P., Carlson, W. L. & Thorne B. M. Statistics for Business and Economics, Pearson

\*\*\*

**Course Code:ECO405**

**Course Name: Political Economy**

**Credit: 4**

**Course Description:**

This course explores the relationship between political institutions and economic development, covering key theoretical issues as well as recent empirical evidences. Topics include corruption, democracy, dictatorship, and war. Discusses not just what we know on these topics, but how we know it, covering how to craft a good empirical study or field experiment and how to discriminate between reliable and unreliable evidence.

**Scope and Objective of the Course:**

In this course, we will study some of key theoretical ideas for why and how politics affects economic development. We will also look at a variety of empirical examples drawn from throughout the developing world. There are three basic goals for this course and these are as follows:

* Building a foundation for thinking about the role of political economy in understanding economic development.
* Understanding some core theoretical concepts in political economy, with illustrations from developing countries whenever possible.
* Understanding empirical evidence in economics. What makes a good empirical study? How do we learn about the world empirically? What are some of the techniques we can use to better understand the world?

**Unit 1:**

Introduction: Why study political economy and development? Motivation and course overview; Different traditions in political economy – classical political economy, marxist political economy, new political economy

**Unit 2:**

Does Political Economy Matter for Economic Development? Some Facts and Empirical Techniques.The Role of Leaders and Democratic Institutions; The Deep Determinants of Economic Development: Macro Evidence; The Deep Determinants of Economic Development: Micro Evidence; inequality and economic growth; political economy and social/human development

**Unit 3:**

Voting: The Median Voter Theorem; Voting in Practice: Citizen-Candidate Models, Politician Identity and the Failure of the Median Voter Theorem; Voting in Practice: Agency Models; Voting in Practice: Vote buying and voter intimidation; Sometimes It Gets Complicated: Condorcet's Paradox and Arrow's Impossibility Theorem. Good vs. Bad Dictatorships; Commitment problems in Dictatorship

**Unit 4:**

Collective Actions: The Logic of Collective Action; Ethnic Heterogeneity and Contributions to Public Goods; Monitoring and Collective Action Problems; Recovery from Civil War; Why Do Wars Happen; Civil War. Corruption: Is Corruption Inefficient; The Corrupt Official's Decision Problem: Balancing Risks, Rents, and Incentives; The Industrial Organization of Corruption; Politicians and Firms

**Recommended Text:**

* Bardhan (1999), Political Economy of Reforms in India, New Delhi: NCAER.
* Bardhan, P. (1998), *Political Economy of Development in India*, Oxford: Oxford University Press.
* Chandrasekhar, C.P. and JayatiGhosh, (2002), Market that failed: Decade of neoliberal reforms in India, New Delhi: Left Word Books.
* [Charles Sackrey](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Charles+Sackrey&text=Charles+Sackrey&sort=relevancerank&search-alias=books), [Geoffrey Schneider](https://www.amazon.com/Geoffrey-Schneider/e/B08TYXJ241/ref%3Ddp_byline_cont_book_2)  and [Janet Knoedler](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_3?ie=UTF8&field-author=Janet+Knoedler&text=Janet+Knoedler&sort=relevancerank&search-alias=books) (2013), *Introduction to Political Economy*, 7th/8th edition, Dollars and Sense.
* Fine, Ben and Milonakis, Dimitris (2008), *From Political Economy to Economics: Method, the Social and the Historical in the Evolution of Economic Theory*. Routledge.
* Frankel, F. (2005), India’s Political Economy: a gradual revolution, 1947-2004, Oxford University Press.
* Jevon, W. Stanley. The Theory of Political Economy
* Ricardo, David. (1817). *Principles of Political economy and Taxation*, the Sraffa edition.
* Roland, G. (2000) *Politics, Market and Firm*s, The MIT Press: Cambridge, Mass.
* Roncaglia, Alessandro. (2005). *The Wealth of Ideas*. Cambridge University Press, Cambridge
* Simon, David (2005). *Fifty Key Thinkers on Development*, Routledge.
* Smith, Adam. (1776). *An inquiry into the nature and causes of the wealth of nations,* The Glasgowedition.
* Sweezy, Paul (1970). *The Theory of Capitalist development: Principles of Marxian Political economy*. Modern Reader Paperbacks, New York

\*\*\*

**Course Code:ECO411**

**Course Name: Microeconomics II**

**Credit: 4**

**Course Outline/Objectives**

The Course will selectively cover recent developments in macroeconomics of fluctuations, open economy, policy, and micro-foundations. The focus will be on substantive issues and applications of basic principles. The workhorses of macroeconomic issues will be applied to analyse economy-wide topics of current interest. Familiarity with the material covered in texts as mention in Macroeconomics-I is assumed.

**Learning Outcomes**: This course would aim to provide an advanced knowledge of modern Macroeconomics. After successfully learning this course the student may achieve in the followings.

1. The student can develop the intellectual ability of explaining some core economic issues.
2. They can able to demonstrate how the economy works at different situations both in short-run as well as long-run.
3. They can apply the economic theories the contemporary economic and social issues.
4. They can develop skills of synthesising the argument found in academic research and also in media.
5. They can develop skill of logical economic arguments.
6. The student can understand how the fiscal policy makers and the monetary policy makers interact and also they can able to analyse the policy decision.
7. They can improve to make economic policy debate.

**Unit 1: Oligopoly & Game Theory**

Non-collusive (Cournot, Bertrand, Edgeworth, Chamberlin, kinked demand curve and Stackelberg’s solution) and collusive (Cartels and mergers, price leadership) models; Price and output determination under monopsony and bilateral monopoly; Game Theory: Nash Equilibrium, Prisoners’ Dilemma, Dominant Strategies, Repeated Games, Zero-Sum Game, Mixed Strategies

**Unit 2: 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;

**Unit 3: General Equilibrium**

Core of Exchange economy; Market exchange; General equilibrium models of exchange and production; Existence of competitive equilibria; Uniqueness and Stability of Competitive equilibrium;

**Unit 4: Welfare Economics**

First and Second Fundamental Theorems of Welfare Economics. Pareto Criterion; Kaldor Criterion; Scitovsky Criterion; Social welfare function; Compensation principle; Theory of Second Best — Arrow’s impossibility theorem; Rawl’s theory of justice,

Market Failure: Market failure; Sources of market failure and their implications - Externalities; Public Good; Asymmetric Information.

Recommended Readings:

1. Varian, Hal R., Intermediate Microeconomics, 1990, 5th Edition, W.W. Norton and Company (Varian -5).
2. Varian, Hal R., Microeconomic Analysis, 1992, 3rd Edition, W.W. Norton and Company (Varian - 3).
3. Henderson &Quandt, 1988, Microeconomic Theory - A Mathematical Approach, McGraw Hill. (Henderson).
4. Layard, P.R.G and Walters, A.A., 1978, Microeconomic Theory, McGraw Hill (Layard).
5. Mascolell, A., et. al., 1995, Microeconomic Theory, Harvard University Press (Mascolell)
6. Russell, R.R. and M. Wilkinson, 1979, Microeconomics: A Synthesis of Modern and Neo- Classical Theory, John Wiley, New York. (Russell)
7. McKenna, C.J., 1986, The Economics of Uncertainty, Wheat Sheaf Book (Mckenna) Harry Townsend (ed.), 1965, Price Theory, Penguin Education (Townsend
8. Gravelle, H and Ray Rees (2004), *Microeconomics*, 3rd edition, Prentice Hall Longman London.
9. Sen, A. (1999), *Microeconomics : Theory and Applications*, Oxford University Press, New
10. Microeconomic Theory: Basic Principles and Extensions (Upper Level Economics Titles)Cengage; 11 edition (2014)
11. Mas-Collel, Whinston and Green, Micro-economic Theory, OUP, 1995
12. Modern Microeconomics 2e,Koutsoyiannis 2nd Revised edition Edition 2nd Publisher: Macmillan,
13. Nicholson, W., Microeconomic Theory: Basic Principles and Extensions, eighth edition, South Western Thomson Learning, 2002

\*\*\*

**Course Code:ECO412**

**Course Name: Macroeconomics II**

**Credit: 4**

**Course Outline/Objectives**

The Course will selectively cover recent developments in macroeconomics of fluctuations, open economy, policy, and micro-foundations. The focus will be on substantive issues and applications of basic principles. The workhorses of macroeconomic issues will be applied to analyze economy-wide topics of current interest. Familiarity with the material covered in texts as mention in Macroeconomics-I is assumed.

**Learning Outcomes**: This course would aim to provide an advanced knowledge of modern Macroeconomics. After successfully learning this course the student may achieve in the followings.

 The student can develop the intellectual ability of explaining some core economic issues.

1. They can able to demonstrate how the economy works at different situations both in short-run as well as long-run.
2. They can apply the economic theories the contemporary economic and social issues.
3. They can develop skills of synthesizing the argument found in academic research and also in media.
4. They can develop skill of logical economic arguments.
5. The student can understand how the fiscal policy makers and the monetary policy makers interact and also they can able to analyze the policy decision.
6. They can improve to make economic policy debate.

**Unit 1: Macroeconomics in the Short Run**

Fluctuations of Macroeconomic variables, The Stylized facts.

Open Economy Issues: Open economy IS-LM and IS-MP, the Mundell-Flemming Model, Macroeconomic Policy and Exchange Rate Regimes. Asset Price Volatility, Interest rate and Exchange rates, Crisis models and Strategic interactions.

**Unit 2: Micro-foundations of Real and Nominal Rigidities**

Determination of Aggregate supply curve, Wage-Price rigidities. Imperfect Information, Imperfect Competition and Asymmetric Information, Solving for Rational Expectation Equilibrium, Coordination Failure

**Unit 3: Macroeconomics in the Medium Run**

Ricardian Equivalence, the Open economy consumption smoothing, and foreign capital, the firm; Tobin‘s q theory of investment, Business Cycle Dynamics-nominal and real.

**Unit 4: Macro Policy**

Coordination of Fiscal and Monetary Policy, Rules versus Discretion, Credibility, Commitment devices, Monetary Transmission Mechanism and Targeting, Policy debates.

**Recommended Texts-**

1. Blanchard Olivier & Fischer Stanley. *Lectures on Macroeconomics*. Cambridge: MIT Press,
2. Blanchard Olivier. *Macroeconomics*, Prentice Hall
3. Heijdra B., van der Ploeg F. *Foundations of Modern Macroeconomics*, Oxford University Press
4. Romer D. *Advanced Macroeconomics*. McGraw Hill Book Company: London,

\*\*\*

**Course Code:ECO413**

**Course Name: Econometrics**

**Credit: 4**

**Course Outline:**

The course is quantitatively rigorous and requires advanced knowledge of mathematics and
statistics. An important objective of the course is to introduce regression analysis to students so that they are able to understand its applications in different fields in economics. Attention is also given to the violations of CLRM model, aspects of discrete choice models, and simultaneous equations models. Specifically, by the end of the course, students will be able to specify assumptions, formulate and estimate appropriate models, interpret the results and test their statistical significance. Students are required to conduct research in teams where they apply the techniques learnt during the course and present their results.

**Learning Outcomes**

1. After successfully completion of the course students are expected to learn to estimate the regression model, derive the parameter estimators and learn to interpret.
2. They can able to learn the consequences of the violations of CLRM assumptions, how to detect the problems of autocorrelation and heteroscedasticity and also able to learn to learn the remedial measures.
3. They can understand and would learn to quantify the qualitative variables and the interpretations. They would learn to use the dummy variables both as explanatory as well as dependent variable.
4. They would learn the important simultaneous equation models and the simultaneous equation bias.
5. The student can use these techniques of econometrics in their MA dissertations.

**Unit-1:**

Classical Linear Regression Model- two and three variables- assumptions, estimation,
testing and forecasting, BLUE properties of OLS estimators (derivation and proof); Variance of
disturbance term; Matrix method of linear regression models; Introduction to multiple linear regression model and tests of linear restrictions; Simple regression coefficients versus partial regression coefficients.

**Unit-2 :**

Multicollinearity, Auto-correlation, and Heteroscedasticity: Nature, Causes, Consequences, Detection and Remedial measures.

**Unit-3:**

Dummy variables; Models for Binary Choice-Linear Probability Model; The logit and the Probit Model. Distributed lag models.

**Unit-4:**

Simultaneous Equation Models (Structural form and Reduced form) and Simultaneous Equation Bias; Identification (Under-identified, Exactly identified and Over-identified model); Various Methods of Simultaneous Equation Model Estimation.

**Recommended Text Book**

1. Damodar N. Gujarati, ***Basic Econometrics****;* 4th Edition, McGraw Hill, 2008.
2. Jaffery Wooldridge, **Introductory Econometrics: A Modern Approach, CengageLearnig**
3. Koutsyannis, **Theory of Econometrics**, Palgrave
4. G. S. Madalla, **Introduction to Econometrics**, McMillan Publishing Company
5. DimitriosAsterious and Stephen G. Hall, **Applied Econometrics,** Palgrave
6. Christopher Daugherty: Introduction to Econometrics
7. Crish Brooks, Introductory Econometrics for Finance

\*\*\*

**Course Code: ECO414**

**Course Name: Public Economics**

**Credit: 4**

**Course Outline/Objective**

The main goal of the course is to provide students with the necessary skills to formulate public policies with an understanding of their economic implications. Topics covered include welfare economics, market failures, fiscal tools (budget, taxes, expenditure, public debt, and fiscal federalism), regulations, and political economy. This goal will be achieved by equipping students to: (1) understand justifications for public policy changes, (2) understand how government policies can change the production and distribution of resources in the hope of addressing social problems, (3) understand instruments used to finance public policy choices, and (4) assess desirability of particular public policies and expenditures. This course shall be presented through a variety of multimedia enriched e-content, activities and assessments so that the students be able to understand various topics very well.

**Learning Outcomes**

On successful completion of this course students will be able to:

1. Learn the basic tools, concepts and models necessary for competence in key topics in Public Economics.
2. Understand the role that prices play in a market economy, both as a method of allocating resources in the private sector, and as a guide for public policy.
3. Understand the twin objectives of efficiency and equity, and explain why there is often a trade-off between these two objectives.
4. Understand the connection between relative prices and notions of efficiency.
5. Discuss the use of taxes, public expenditures, public debt, and federal finances for promoting socially efficient resource allocation and a desirable income distribution. Also, go through rigorous theories related to these fiscal tools.
6. Learn to analyze policy challenges facing governments around the world and learn about potential solutions to these challenges as well as obstacles in implementing them.
7. Learn a set of perspectives into the economic activities of the government sector that will help them become enlightened participants - engaged citizens, voters, politicians, and/or civil servants - in society.
8. Discuss critically key issues in public economics, informed by recent research.
9. Present a coherent argument orally and in writing on topics in public economics.

**Unit-1: Introduction: Public Goods and externalities**

Market Failure and the rationale for Government Intervention. Alternative Classifications of Public Goods, Optimal Provision of Public Goods, Private Provision of Public Goods, Nash-Cournot Solution, Preference Revelation, Samuelson and Lindahl Equilibrium, Club Goods Model. Externalities: Positive and Negative, Externalities and Social Costs. Pigouvian Tax, Coase Theorem.

**Unit 2: Public Finance**

Fiscal Policies and instruments: Taxation: Efficiency, Equity, Cost of Collection and Compliance; Tradeoff between Efficiency and equity; Effect of Taxes on labor supply and Savings-Income, commodity and wealth tax. Laffer‘s Curve, Direct and indirect taxes. Tax Reforms in India.Non-Tax Fiscal Instruments**:** Profit and Dividends, Rents and Royalties, Non-revenue Effects of Non-Tax Instruments

**Unit-3**

Public Debt**:** Public Debt and External Debt, Theories of Public Debt, Ricardian Equivalence, Debt Management Techniques

Budget and Fiscal Policy**:** Capital and Revenue Accounts, Dynamic Nexus between Two Accounts, Budget Deficits, Theories of Deficits, Indian Budget Deficits: Union and States.

**Unit-4**

Public Expenditure**:** Theories of Public expenditure**.** Leviathan Hypothesis, Niskanen Model, Efficiency and Equity Tradeoff, Transfers and Subsidies, Financing of Social Programs.

Fiscal Federalism**:** Principles Determining Federal Division of Revenue and expenditure, Vertical and Horizontal Imbalances, Transfer Mechanism in India, Role of Finance & Planning Commissions, Sharing of Taxes, Non-tax Revenues and Grants.

**Recommended Texts**

1. Jonathan Gruber. *Public Finance and Public Policy*, Worth Publishers
2. John Leach. *A course in Public Economics* , Cambridge University Press
3. Jean Hindriks and Gareth D. Myles, *Intermediate Public Economics*, MIT Press
4. Musgrave R.A. and P.B. Musgrave. *Theory and Practice of Public Finance*, Tata McGraw Hills
5. Gupta Janak Raj. *Public Economics in India: Theory and Practice*, Atlantic Publisher
6. BagchiAmaresh. *Readings in Public Finance*, Oxford University Press

**Course Code: ECO415**

**Course Name: Issues in Indian Economy**

**Credit: 4**

**Course Outline/Objectives**

The course introduces the students to the various dimensions of the Indian Economy and the contemporary Problems of Indian Economy. This course is also aims to provide the basic information regarding the developmental strategies and structural adjustment reform measures that countries across the world adopt to eradicate the poverty and unemployment, to reduce inequalities and regional imbalances. The course also focuses on the changing role of state, markets and civil society institutions with respect to economic development.

**Learning Outcomes**

1. Understand the Indian economy better and will get some idea about the problems faced by the Indian economy
2. Demonstrate the development process in India after independence
3. Develop a perspective on the external sector reforms and industrial sector reforms undertaken in global economies including in India for last three decades
4. Demonstrate various structural adjustment programs and reform measure that the government of India has been initiated to eradicate poverty and unemployment, to reduce inequalities and regional imbalances since Independence
5. Understand what the primary measures of inflation in India are and be able to assess the impact of inflation on inflow and outflow of foreign capital India.

**Unit 1**

Post 1991 development in global economies; Trade and exchange rate liberalization, market oriented reforms, Capital flows from World Bank and IMF. Structural adjustment programmes and conditionalities. Exchange rate and trade policy changes, Industrial policy and setting up of regulatory structures like SEBI, TRAI, IRDA, etc.

**Unit 2**

Infrastructure sectors.Investment requirements of roads, power, ports and other infrastructure sectors private-public partnership mode SMEs and Informal sector Labour market reforms - Exit policy and liberalization of labour markets.

Rural Livelihood: Livelihoods and Employment: Structure of rural poverty, Food security and the Public Distribution System; Employment Security- NREGA

**Unit 3**

Economic development and institutions – Role of state, markets and civil society institutions.. Characteristics of Indian markets and need for state interventions. Growth of Indian economy since independence – Sectoral growth rates and changing structure.Poverty trends.Inequalities and regional imbalances.

**Unit 4**

Growth of domestic savings and investment.Role of foreign capital - borrowing, equity and direct investment.Technology inflows. Monetary policy issues: Price level and inflationary trends – Composition of wholesale price index. Retail prices.

**Basic Reading**

1. Ray, Debraj; Development Economics, Oxford University Press, 2002.
2. To be supplemented by scholarly readings from Economic and Political Weekly, Indian Economic journal and Indian Economic Review
3. Uma Kapila, Indian Economy: Issues in Development & Planning and Sectoral Aspects

**Course Code: ECO501**

**Course Name: Development Economics**

**Credit: 4**

**Course Objective:** This course familiarizes the students with emergence of the field of development economics in the context of international events. It aims to focus on various development theories and approaches in dealing with underdevelopment and pressing issues of poverty and inequality, with the concepts and measurement.

**Learning Outcomes:**

* Analyze the shift of focus from economic growth as a single dimensional concept to economic development which is a multi-dimensional concept.
* Demonstrate familiarity with some central themes and issues of economic development.
* Demonstrate the understanding of the difference between growth and development, major development and growth theories, the measurement of inequality, significance of agriculture in developing countries, poverty and population issues facing the world, international trade, and importance of foreign aid.
* Examine the factors responsible for perpetuation of the conditions of underdevelopment in same economies.
* Differentiate different measures of poverty and inequality and pros and cons of different measurement.
* Review the policy implications of these key development economic theories
* Critically analyze how the theory of development economics impacts upon practical implementation macro development policies in varying local and global contexts

**Unit 1**

Concept of Development – From GDP per capita to holistic indicators.PPP and international differences.International poverty line and estimates of poor.Factors of development.Colonialism and dependency theories. Schumpeter –Innovation, enterprise and process of ‘creative destruction’. Rejection of trade as the ‘engine of growth’.Nurkse and Prebisch arguments. Structural changes: Kuznets analysis of structural change.

**Unit 2**

Concept and Measures of Poverty-, Pareto Distribution, Head- Count Ratio, Income Gap Ratio, FGT Index. Concept and Measures of Inequality – Lorenz Curve and Gini coefficient, Issues in composite Indices, Problems of Aggregation. Inequality and Growth- the inverted U curve hypothesis, Inequality and growth –Interrelationships.

**Unit3**

Role of capital formation – vicious circle arguments, Rostow’s stages of development, Kuznet’s economic history analysis of characteristics of development. Capital formation and allocation of investment- Balanced and unbalanced growth theories. Rosenstein –Rodan and Hirschman.Denison’s growth accounting – Contribution of labour, capital and Technology.

**Unit 4**

Role of agriculture. Dual economies and surplus labour argument, Ranis-Fei Model, Unemployment- efficiency wage theory as an explanation for wage rigidity and involuntary unemployment, Collusive theory of unemployment. Population growth and critical Minimum Effort.Demographic transition.Demographic dividend.

**Readings:**

1. A.P. Thirlwall: *Growth and Development*, ELBS.
2. D Ray: *Development Economics*, OUP.
3. S. Ghatak: *Introduction to Development Economics*, Rutledge.
4. KaushikBasu: *Analytical Development Economics The Less Developed Economy Revisited*, OUP.
5. D Lal; *The Poverty of Development Economics*, OUP.
6. G. Meier: *Leading issue in Economic Development* (4th Edition),OUP.
7. Meier and Rauch: *Leading Issues in Economic Development* (8th Edition),OUP

**Course Code: ECO502**

**Course Name: International Macroeconomics and International Finance**

**Credit: 4**

**Course Outline and Objective**

This course links the fields of macro-economics and finance in open economy. It provides coverage of economic principles that underlie the operation of macroeconomics tools and other financial institutions. The roles of balance of payment adjustment mechanism in monetary, portfolio, extended portfolio, with fixed and flexible exchange rate system are examined. The course aims at providing students with the means to analyse monetary questions and institutions. It is not a course designed to further technical expertise in the instruments used in financial markets but covering the theories of uncovered interest arbitrage, swapping, hedging and speculations. It’s also targeting the applications of forward, future, open, and spot market operations. Theories related to internal and external equilibrium of the economy will be discussed. The course has aim to target the understanding of international monetary markets and its fluctuations with macroeconomic policy decisions such as coordination of fiscal and monetary policy, optimum currency area, fixed and flexible exchange rate system, domestic pricing, central and commercial bank actions, aggregate demand and supply, interest rate and expectations.

**Learning Outcomes**

1. Develop the understanding of macroeconomic policy decisions and its impact on open economy and balance of payment adjustments.
2. Develop the Understanding of aggregate demand and supply application with fixed and flexible exchange rate system to discover the open market fluctuations.
3. Demonstrate the ability to adjust internal and external disequilibrium with fiscal and monetary policy coordination
4. Develop the understanding of financial market of swap, hedging, future, forward, open, and speculations
5. To understand how foreign trade multiplier works and creates repercussion effects in open economy
6. To understand the international financial institution, dollarization and reserve currency issues and their impact on domestic and open economy.
7. Understanding of portfolio and asset market with fixed and flexible exchange rate system
8. Ability to use balance of payment adjustment mechanism in absorption, devaluation and monetary decisions of a country
9. To understand the quantitative applications and derivations of theories in practice

**Unit-1**

International Macroeconomics- Prices and Output in an open economy.Long-run adjustment mechanisms.Automatic adjustment – foreign trade multipliers.Fiscal and monetary policy under flexible exchanges.Interdependence and Multi-lateral co-ordination.

Balance of payments.Current account and fiscal deficit.Capitalaccount.Disequilibrium and adjustment. Elasticity conditions for adjustment in trade account. Currency markets transactions. Currency standards, convertibility and reserve currencies.Exchange Rates.

**Unit-2**

Purchasing power parity.Interest rate parity.Nominal, real and effective exchange rates.Fixed and flexible exchange rates. Exchange controls. Short-run and long run capital movements.Hedging, speculation and hot money transfers under capital account convertibility. Implication of capital flows—Mundell-Fleming Model, currency crisis and contagion.

**Unit-3**

Money and the role of banks.EU and monetary integration.Dollarization.Optimum currency areas, Monetary, banking and foreign exchange regulations.

The International Monetary Fund.Reforming the international institutional architecture.China and reserve currency issues.

**Basic Readings**

1. Bhagwati, J. N., A. Panagariya and T.N.Srinivasan(1998), *Lectures on International Trade,*OUP, New Delhi, Second Edition.
2. Krugman, P.A. and M Obstfeld (2003), International Economics: *Theory and Policy, Sixth Ed.*
3. Dominick Salvatore, *International Economics*: Trade and Finance, John Wiley International Student Edition, 10th edition, 2011.

**Course Code: ECO503**

**Course Name: Economic Growth Theories**

**Credit: 4**

**Course Outline/Objective**

This course offers an introduction to the theories and models of economic growth. It will use these models to shed light both on the process of economic growth at the world level and on sources of income and growth differences across countries. Topics covered include income distribution and economic growth, where Kaldor and Pasinetti’s work will be mentioned, and the standard economic growth model of Solow. Macroeconomic questions addressed include: Why are some countries rich and some poor? What differences among countries can explain economic success and failures? This course is aimed at Economics students on the Mathematical Pathway and homework questions will typically involve solving problems etc. Course also employs the knowledge of endogenous growth models of AK, Lucas and Romer and its interpretation within theoretical model.

**Learning Outcomes**

1. Demonstrate a deep analytical understanding of exogenous and endogenous growth models
2. Understand the main insights into the economic growth process that economists have gleaned over the past half century.
3. Solve and manipulate a variety of simple models in economic growth.
4. Identify applications and limitations of the models learned.
5. To develop an understanding of the evolution of growth models;
6. To display a good grasp of those factors that contribute to or inhibit economic growth (population, capital, technology, human capital, and institutions;
7. To develop the understanding of Solow growth model and its applications in real life
8. To understand the conditional and unconditional convergence in growth models
9. Develop the understanding of role of money, wealth, saving, physical capital, income distribution, and role of initial per capita, in economic growth.

**Unit-1**

Problem of Economic Growth- Problem of Economic Growth and the General Solution; Growth Equilibrium; Harrod –Domar Model of Economic Growth

**Unit-2**

Neo-Classical Models of Growth: Growth model of R.M. Solow, Instability & Convergence debate, Ms. Joan Robinson and Concept of Golden Age and Golden Rule of Accumulation; Models of Optimum Economic Growth- Keynes-Ramsey Rule, Cass-Koopmans Model

**Unit-3**

Neo-Keynesian Models of Growth & Distribution- Kaldor and L. Pasinetti

Technology and Growth- Hicks, Harrod and Solow- Neutrality of Technical Change, Embodied and Dis-embodied Technical Change, Growth Accounting.

Money and Growth- James Tobin and H.G. Johnson;

**Unit-4**

Endogenous Growth Models- AK Models, Lucas Model of Human Capital, Romer Model of Endogenous Innovation.

**Recommended Texts**

1. Barro, Robert J. and Xavier Sala-i-Martin, Economic Growth, McGraw-Hill,
2. H.G. Jones, “An Introduction to Modern Theories of Economic Growth” McGraw-Hill Book Company
3. Jones C.I., “Introduction to Economic Growth” W.W. Norton & Company, New York
4. Romer, David, Advanced Macroeconomics, New York: McGraw-Hill Co.,
5. Sen, A.K.,ed.(1970) Growth Economics, Penguin Books.
6. Blanchard, O. and Fischer, S. 1989. Lectures on Macroeconomics.

**Course Code: ECO504**

**Course Name: Trade Theory and Policies**

**Credit: 4**

**Course Outline/Objectives**

The course examines the gains from trade, the determinants of patterns of international trade and the effects of trade on income distribution, the relationship between trade, and economic growth. The course relies predominantly on a standard collection international trade models to understand the motivations behind modern trade policies. Course employs the understanding of classical, neo-classical and modern trade theories and its implications for economic welfare and gain. Course develops the understanding of analysing the partial and general equilibrium effect of trade policies and theory of custom union. This course is also discussing about the recent issues of WTO and regional trade agreements.

**Learning Outcomes**

1. Compare at the level of formal analysis, the major models of international trade and be able to distinguish between them in terms of their assumptions and economic implications.
2. Develop the basic understanding of trade theories and its interpretation and implication on world economy
3. An ability to analyze the partial and general equilibrium effect of trade policies, a) trade policy instruments such as tariffs, quotas, export subsidies, (b) retaliatory measures such as anti-dumping duties and countervailing duties and (c) the creation of regional trading arrangements such as free trade areas, customs unions and common market.
4. Distinguish and critically analyze the main arguments for protection and conversely be able to critically evaluate the relevance and realism of arguments for free trade, taking into account the costs and benefits of trade policy measures on different sections of the community and the implications for the formulation of trade policy.
5. Analyzing the partial and general equilibrium effect of theory of custom union
6. Analyzing the effects of Immiserizing growth and intra-industry trade
7. Identify major recent developments in the world trading system, and be able to critically analyse the WTO negotiations and regional trading arrangements.
8. Able to analyze the country’s gain in free, restricted and no trade situations
9. An ability to measure the economic welfare and gain of participating international trade
10. An ability to measure the trade gain through offer curves, trade indifference curve and production possibility curves

**Unit 1**

Classical trade theories on comparative advantage, gains from trade, Opportunity cost. Incomplete specialization.Heckscher Ohlin factor endowment model. Factor price equalization Theorem.Stolper-Samuelson theorem. Specific Factor Model, terms of trade and offer curve analysis, empirical approaches and paradox

**Unit 2**

Factor intensity reversals and pattern of trade, Intra-industry and intra-firm trade.

Imperfect Competition: Imperfect competition, homogeneity: Krugman, Trade and growth; Rybczynski theorem, Immiserizing growth; endogenous growth with homogeneity and heterogeneity

New Trade Theories: Vernon, Posner

**Unit 3**

General and partial equilibrium effects of tariffs on welfare. Arguments for protection, Political economy of trade agreements and upcoming issues of protections, Effective rate of protection

Non tariff barriers: Quota, Voluntary Export Restraints, Countervailing duties and export subsidies, dumping. Effects of tariffs on factor prices.

**Unit 4**

Theory of customs union – ‘second best’ argument – trade creation and trade diversion, Stages of integration Regional trade groupings, GATT and WTO

**References**

1. Pugel, T.A.( 2008), *International Economics*, 13th Edition, Tata Mcgraw hill publishing Co, New Delhi.
2. Bhagwati, J. N., A. Panagariya and T.N.Srinivasan(1998), *Lectures on International Trade*, OUP,NewDelhi, Second Edition.
3. Krugman, P.A. and M Obstfeld (2003)*, International Economics: Theory and Policy,Sixth Ed.*
4. Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10th edition, 2011.