SEMESTER - I

MAJOR – I

INTRODUCTORY MICROECONOMICS

Learning Objectives of the Course

Unit I: The objective of unit I is to research and analyse the variables influencing demand; quantify demand elasticity; anticipate demand; and define equilibrium and describe stable and unstable equilibrium.

Unit II: Unit II objective is to give insights into the behaviour of consumers and understand the decision-making processes that consumers go through as they make a purchase.

Unit III: Unit III objectives are to help the students comprehend how a producer makes decisions about what to produce and how much to produce and how to optimise his profit.

Unit IV: Unit IV purpose is to understand the concepts of short- and long-term costs, cost function forms, and how the long-term cost function fluctuates based on external economies and diseconomies of scale. Additionally, this section explains the ideas of revenues and the connections between TR, AR, and MR.

Unit-I: Theory of Demand and Supply: Determinants of individual demand and supply, law of demand and law of supply, demand and supply schedule, demand and supply curve, market versus individual demand and supply, movement along and shift of the demand curve and supply curve. Market equilibrium: static & dynamic, Existence, Uniqueness and Stability of equilibrium (Walrasian and Marshallian Approach). Elasticity of demand: point and arc elasticity, cross price elasticity and income elasticity of demand, elasticity of supply. Concept of equilibrium, Impact of tax and subsidy on market equilibrium, Tax burden, Concept of floor and ceiling price, Consumers' surplus and Producers' surplus.Mathematical applications of theory of demand and supply.

Unit-II: Consumer and Households Behaviour: Cardinal utility theory: Law of diminishing Marginal Utility, derivation of Marshallian demand curve. Ordinal utility theory: Indifference curves and their properties, budget line, consumer 's equilibrium. Income Consumption Curve, price consumption curve and Engel's curve. Elasticity of demand and classification of commodities, Normal, Inferior and Giffen goods, Price effect, Income effect and Substitution effect, Hicks & Slutsky Approaches, Price & Substitution Effects in case of Inferior and Giffen goods, Shapes of Indifference Curves in exceptional cases, Indirect utility function, compensated demand curve, Revealed Preference Theory: Concept, Weak and Strong Axioms, Derivation of the Law of Demand. Mathematical applications of Consumer and Household Behaviour.

Unit-III:Theory of Production: Concept of Production function, Production with a single variable input: TP, AP & MP; Production with two variable inputs, Law of variable proportion, Returns to Scale; Iso-quant and its properties, Iso-cost line, ,Marginal Rate of Technical Substitution (MRTS), Optimal input combination, Economic region of production, Constrained output maximisation, Cost minimisation, Elasticity of substitution, Scale elasticity of output, Wicksell-Jhonson Theorem, Cobb-Douglas and CES production function (basic properties only). Mathematical applications of Theory of Production.

Unit-IV:Theory of Revenue and Cost: The concepts of Total Revenue (TR), Marginal Revenue (MR) and Average Revenue (AR), Relation between AR and MR. Various concepts of Cost - Total Cost, Fixed and Variable Cost, Average and Marginal Costs, Shape of Cost Curves - Short-run and Long- run analysis;Modern concept: Saucer-type SAVC curve, J and L Shaped LAC curve, Economies and diseconomies of Scale. Mathematical applications of the theory of Revenue and Cost.

Recommended Readings:

1. Allen, R. G. D.: Mathematical Analysis for Economics, Macmillan.
2. Chiang, A. C. and K. Wainwright: Fundamental Methods of Mathematical Economics, McGraw Hill.
3. Gregory Mankiw, N. (2015): Principles of Micro Economics, CENGAGE Learning, Australia.
4. Henderson, J. M. and Quandt, R. D.: Micro Economic Theory – A Mathematical Approach, McGraw Hill.
5. Joseph E. Stiglitz and Carl E. Walsh: Economics, W.W. Norton.
6. Karl E. Case and Ray C. Fair: Principles of Economics, Pearson Education Inc.
7. Kalyanjit Roy Choudhury: Modern Micro Economic Theory, Pragati Publications.
8. Koutsoyiannis, A. (1975): Modern Microeconomics, Palgrave Macmillan, London
9. Maddala G. S. and Ellen Miller. (2004): Microeconomics Theory and Application, Mc Graw Hills.
10. Mukherjee, B. and Pandit, V.: Mathematical Methods for Economic Analysis, Allied.
11. Pindyck, Rubinfeld and Mehta: Microeconomics, Pearson Education Asia. (CTB)
12. Salvatore, D. (2003):Principles of Micro Economics, fourth edition OxfordUniversity Press, New York.
13. Simon & Blume: Mathematics for Economists, Viva Books.
14. Varian H.R: Intermediate Microeconomics: A Modern Approach, (CTB)
15. Satya Chakrabarty, Microeconomics, Allied Publishers

SEMESTER - II

MAJOR – II

INTRODUCTORY MACROECONOMICS

Learning Objectives of the Course

Unit I: The objective is to understand and estimate national income and its measurement techniques and determine the income flow in various economic sectors to recognize the significance of national income as an indicator of the well-being of an economy.
Unit II: The objective of this unit is to assess the impact of price on goods and services in economics that offers the real GDP and real worth of money to manage the rate of interest in the economy, and to comprehend the price control technique of goods and services. The unit also offers to gain insights about various forms of inflation, deflation, and the trade-off between inflation and unemployment.
Unit III: Unit III objectives are to explain fundamental ideas of classical theory; critically analyse the classical theory of income and employment and understand simple Keynesian model
Unit IV: The objective of Unit IV is to demonstrate fundamentals of money supply, the functions of the commercial and central banks of India, and their approaches to credit management.

Unit -I: National Income Accounting: Definitions of National Income, Concepts of GDP, GNP, NDP and NNP at factor cost and at market price, GNI; Circular flow of income (Two sector and Four Sector), Approaches to measuring National Income, Difficulties in the measurement of National Income, Numerical examples. Price indices: CPI, WPI and GDP deflator, Nominal GNP and real GNP, Personal Income, Personal Disposable Income and Personal Savings, National income as a measure of welfare, Stock and Flow Concepts.

Unit -II: Simple Classical and Keynesian Theory: Basic ideas of Classical Macroeconomics; Say's Law and Quantity Theory of Money, Loanable fund theory; The Classical Theory of Income and Employment determination; full Employment and wage-price flexibility; Classical Dichotomy and Neutrality of Money, The Great Depression of 1930s – failure of classical theory and the Keynesian revolution.
Components of Effective Demand and determination of Equilibrium Income in a closed and open economy, with and without government, Simple Keynesian Model in a closed economy, Stability of equilibrium, Multiplier Effects: Expenditure Multipliers, Balanced Budget Multiplier and Tax Rate Multiplier and Dynamic Multiplier.

Unit -III: Inflation and Unemployment: Concepts inflation and deflation, DPI and CPI - Inflationary gap- Bent Hansen's dynamic demand-pull inflation model, Philips curve (short run and long run) and the role of inflation - Natural rate of unemployment – Role and Effects of inflation, Anti- inflationary policies — Ackley's mark- up inflation.

Unit-IV: Money and Banking: Concept of money and money supply, Structure and functions of Commercial Banks, Credit creation by commercial banks, Money multiplier, Structure and functions of Central Banks, Credit Control Methods of Central Bank.

Recommended Readings:

1. Ackley, G. (1978), Macro Economics: Theory and Policy, Macmillan publication.
2. Branson, William H. (1979) Macro-Economic Theory and Policy, HarperCollins Publishers, New York.
3. Dornbush, R and S.Fischer (2018) - Macro Economics, Mc Graw Hill, New York.
4. Dwivedi, D. N. Macroeconomics, Tata McGraw Hill Pvt. Ltd., (Latest edition).
5. Froyen: Macroeconomics- Theory and Policy, Pearson Education
6. Ghosh, Chandana & Ghosh, Amber: Macroeconomics, PHI Learing, (CTB)
7. N. Gregory Mankiw: Macroeconomics, Worth Publishers.
8. Olivier Blanchard: Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
9. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
10. Sarkel, Jaydev(2015): Macro Economic Theory, Book Syndicate Publishers, Kolkata.
11. Shapiro, Edward (1987): Macro Economics Analysis, Galgotia Publication, New Delhi
12. Sikdar,S – Principles of Macroeconomics, Oxford University Press. (CTB).

4 Year Under Graduate Degree (Honours)
in
Economics

Learning Objective:

This course encompasses a comprehensive exploration of microeconomic principles. Initially, students will master the identification and understanding of the four primary market structures: perfect competition, monopolistic competition, oligopoly, and monopoly. They will develop the ability to articulate the distinctive characteristics of each structure and provide illustrative examples. Subsequently, the focus shifts to the theory of factor pricing, elucidating the dynamics of prices associated with factor services such as land, labor, capital, and entrepreneurship. Students will delve into wage rates, interest rates, specific rent, and profit as integral components of this theory. Moving forward, the course delves into the concept of general equilibrium in economics, emphasizing the conditions under which demand and supply achieve a harmonious balance, resulting in price stability.

Learning Outcome:

Initially, students will gain an understanding of market structures, learning how sellers engage in both perfect and imperfect competition within the market. They will also grasp the intricate relationships between various market structures, comprehending the similarities and differences among them. Simultaneously, the Theory of Value explores the pricing dynamics of goods produced. The course highlights the significance of achieving a general equilibrium in production and exchange, emphasizing its role in enhancing overall economic efficiency. Lastly, leveraging the quantitative techniques familiar to students from previous semesters, mathematical tools are employed to facilitate a deeper understanding of fundamental concepts in microeconomic theory.

Course: Major 3
Paper Title: Intermediate Microeconomics
Paper Code- ECO-MAJ 3

Unit I: Market Structures

i. Perfect Competition: Short-run and long-run equilibrium of the firm and Industry, Short-run supply of the firm and market, Long-run industry supply with and without external economics and diseconomies. Mathematical Applications.

ii. Stability of equilibrium: Marshallian and Walrasian conditions of stability equilibrium, Cobweb Model with numerical examples.

iii. Theory of Monopoly: Concept of imperfect competition; short run and long run price and output decisions of a monopoly firm; concept of a supply curve under monopoly;

comparison of perfect competition and monopoly, Multi-Plant monopoly, Price Discrimination, Theoretical Indices of Monopoly Power. Mathematical Applications.

iv. Theory of Monopolistic Competition: Monopolistic competition: Assumptions, SR & LR price and output determinations under monopolistic competition equilibrium, Selling Cost, Ideal output and Excess capacity, Comparison with Perfect Competition. Mathematical Applications.

v. Oligopoly: Characteristics, Conjectural variation and reaction pattern of oligopoly Models, Cournot, Sweezy, Stackelberg and Collusive Oligopoly, Mathematical Applications

Unit II: Factor Pricing

The demand for productive service(single variable input and two variable inputs) in perfect and imperfect markets, Firms demand industry demands input, Indifference curve analysis of labour supply, marginal productivity theory of input returns, Adding-up problems.

Determination in perfect and imperfect markets, Collective bargaining and exploitation, Perfectly competitive factor markets: Ricardian theory of rent, Economic rent and quasi-rent, Gross and Net Profits, Risk and Uncertainty theory of profit.

Unit III: General Equilibrium, Efficiency and Welfare

General Equilibrium and Economic Efficiency- Exchange, production and welfare, Pareto Optimality, Edgeworth box and contract curve, Pareto efficiency and perfect competition.

References:

1. Froyen R. T.,: *Microeconomics Theory and Policies*, Pearson
2. Varian H.R: *Intermediate Microeconomics: A Modern Approach*, East West Press
3. Pindyck, Rubinfeld and Mehta: *Microeconomics*, Pearson Education Asia
4. Gould and Ferguson: *Microeconomic Theory*, Richard D. Irwin
5. Ahuja H. L.: *Microeconomics - Theory and Policy:* S. Chand
6. Jehle, G. and Reny, P.: *Advanced Microeconomic Theory*, Addison Wesley
7. Sen, Anindya: *Microeconomics*, OUP
8. Mankiw and Taylor: *Microeconomics,* CENGAGE
9. Belleflamme, Paul and Peitz, Martin: *Industrial Organization –Markets and Strategies*, Cambridge University Press
10. Maddala and Miller: *Microeconomics- Theory Applications*, McGraw Hill
11. Snyder, C., Nicholson, W. (2010). Fundamentals of microeconomics. Cengage Learning. 3. Varian, H. (2010). Intermediate microeconomics: A modern approach, 8th ed. W. W. Norton.
12. Koutsoyiannis: Microeconomic Theory, Macmillan. (CTB)

4 Year Under Graduate Degree (Honours)
In
Economics

Learning Objective:

The course objective of intermediate macroeconomics is to offer a comprehensive overview of macroeconomic principles and theories that make up the basis of modern economic theory. By the end of the course, the students should have the ability to identify and understand the principles of macroeconomics and apply them to real-world economic problems. Another objective of this course is to introduce students to the global economy and how macroeconomic policies impact it.

Learning Outcome:

By the end of the course, students will possess a robust understanding of the core principles of macroeconomics and be able to apply these principles to real-world economic problems. A foundation is built for advanced courses in economics, business, and finance, and provides them with skills that are valuable to careers and policymaking. Students will also learn how to evaluate the effectiveness of economic stimulus programs and recommend economic policies that support sustainable economic growth.

Course: Major 4

Paper Title: Intermediate Macroeconomics

Paper Code: ECO-MAJ4

Unit I: The Keynesian System: Money, Interest and Income

Money in the Keynesian theory, Interest Rate Determination (Liquidity Preference Theory),Money Market, Bond market and Commodity Market, Derivation IS-LM Curves, Different Types of Multiplier in IS-LM Model, Effectiveness of Monetary and Fiscal policies in IS-LM Model, Transmission mechanism of and Crowding out effect. Determination of equilibrium income and interest rate, Comparative Statics - Monetary policies and fiscal policies, Crowding out Effect.

Unit II: The Principle of Effective Demand

The Complete Keynesian Model: Derivation of aggregate demand curve, Derivation of aggregate supply curves both in the presence and absence of wage rigidity; Effects of wage cut, Unemployment equilibrium and its causes - possible solutions including real balance effect, Keynes vs. Classics.

Unit III: Investment Function:

Investment Function: Concepts of Marginal productivity of capital, the marginal efficiency of capital (MEC), and the marginal efficiency of investment (MEI), Acceleration principle- fixed and variable. Multiplier- accelerator interaction model.

Unit IV: Money Supply and Budget

Measures of money supply with special reference to India (M1, M2, M3 and M4), Government Budget, Budget Deficit, Deficit financing and monetary policy.

References:

1. Dornbusch and Fischer: *Macroeconomics*, McGraw-Hill

2. Froyen: *Macroeconomics - Theory and Policy*, Pearson Education

3. Ackley, G.: *Macroeconomics,* Macmillan, London.

4. Mankiw: *Economics: Principles and Applications*, Cengage Learning

5. Ghosh Chandana & Ghosh Amber: *Macroeconomics*, PHI Learing, (CTB)

6. W. H. Branson: *Macroeconomic Theory and Policy*, All India traveller Bookseller, 2nd Edition

7. Ackley .G: Macroeconomic Theory and Policy, 2nd Edition. (CTB)

8. Errol D'Souza: Macroeconomics, Pearson Education, 2009.

4 Year Under Graduate Degree (Honours)
in
Economics

Semester IV

Learning Objective:

This course aims to equip students with Matrix and Determinant operations, input-output analysis tools while familiarizing them with its limitations (Unit I). Students will gain knowledge of dynamic movement in continuous and discrete time frameworks, including techniques for determining the time path of variables and their applications (Units II and III). Unit IV explores decision-making and game theory. Finally, Unit V focuses on teaching the formation and solution techniques for linear optimization problems with inequalities under mathematical programming.

Learning Outcome:

This course covers applications of Matrix and Determinants and optimization tools for input-combination selection in production (Unit I). It provides knowledge on finding the time path of variables and stability conditions in continuous (Unit II) and discrete (Unit III) time frameworks. Decision-making nuances and problem-solving tools are explored in Unit IV. Additionally, students learn techniques for forming and solving linear optimization problems with inequalities in mathematical programming (Unit V).

Course: MAJOR 5

Paper Title: Mathematical Methods for Economics

Paper Code: ECO-MAJ 5

Unit I: Matrix and Determinant

Vectors and Matrices, Matrix operations, Determinants, Bordered Hessian Determinant and Cramer's rule.

Unit II: Input-Output Analysis

Meaning of Input-Output Analysis, Features, Assumptions, Technological Co-efficient Matrix, Leontief's Input-Output Model, Closed and Open Input-Output Model, Hawkins-Simon Conditions, Impact of Labour Supply Constraints.

Unit III: Differential Equations

Definition of Differential Equation, Solution of First Order and Second Order Differential Equations; Applications in Economics: Time Path of Price and Quantity in Comparative Markets, Time Path of Income in Simple Keynesian Model, Time Path of Inflation and Unemployment Rate,

Unit IV: Difference Equations

Definition of Difference Equation, Solution of First Order and Second Order Difference Equations; Applications in Economics: The Cobweb Model, The Dynamic Multiplier, Samuelson's Multiplier Accelerator Interaction Model, Time Path of Inflation and Unemployment in Discrete Case.

Unit V: Theory of Games

Introduction and Definition of Game, Structure of Game, Pay-off Matrix, Two-Person Zero-Sum& Non-Zero-Sum Games, the Maximin and Minimax Principles, Games with and without Saddle Points, Dominance Property, Pure and Mixed Strategy

Unit VI: Linear Programming

Definition of Linear Programming, Formulation of LPP, Graphical Solution Methods, Slack& Surplus Variables, Basic Feasible Solutions, Simplex Method for Solving Maximization and Minimization Problem, Duality of Linear Programming, Degeneracy, Economic Interpretation of Duality, Shadow Price.

References:

1. Chiang and Wainwright: Fundamental Methods of Mathematical Economics, McGraw Hill book Co., New York.
2. Simon & Blume: Mathematics for Economists, Viva Books.
3. Sydsaeter& Hammond: Mathematics for Economic Analysis, Pearson Education.
4. Miller, Ronald E. and Blair, Peter D.: Input-Output Analysis: Foundations and Extensions, Prentice Hall
5. Osborne, M. J.: An Introduction to Game Theory
6. Gibbons, Robert: Game Theory for Applied Economics, Princeton University Press
7. Dixit, Skeath, Reiley: Games of Strategy, W. W. Norton
8. Chakravorty and Ghosh: Linear Programming, Moulik Library, Kolkata

4 Year Under Graduate Degree (Honours)
in
Economics

Learning Objective:

This course aims to provide insights into economic growth and development concepts (I), fostering an understanding of related issues (II). The theory of growth enables to develop knowledge about various growth and development theories (III) and understand models within the theory of growth (IV). Additionally, the course addresses issues surrounding sustainable development (V).

Learning Outcome:

This course encompasses acquiring knowledge of economic growth and development concepts (I) and understanding related issues (II). It delves into theories that enhance comprehension of the growth and development process (III) and explores various economic models of growth (IV). Additionally, the course covers the concept of sustainable development, fostering awareness of resource conservation and environmental protection (V).

Course: MAJOR 6
Paper Title: Growth and Development
Paper Code: ECO-MAJ6

Unit I: Conceptions of Development

Economic growth and development: meaning and Distinction between growth and development, factors (economic and non -economic) affecting growth and economic development, Obstacles to economic development, Indicators of economic development, basic needs approach PQLI, HDI-Construction and interpretation .

Unit II: Problems and Policy Issues in Development;

Poverty and Inequality**:** Definition of Poverty, Poverty measurement, HPI(Human Poverty Index), Causes of Poverty, Vicious Circle of Poverty .Economic inequality: Inequality axioms; a comparison of commonly used inequality measures,Connections between inequality and development, Gender Inequality, GDI,GEM.

Population and Economic Development **:** Theory of optimum population, theory of Demographic Transition, relation between population growth and development .

Unit III: Theories of Economic Development

The Classical Theory, Karl Marx's Theory, Rostow's Stages of Economic Growth, Nelson's Low Level Equilibrium Trap, Leibenstein's Critical Minimum Effort Thesis, Balanced and Unbalanced Growth Theories, Big Push Theory, Lewis Theory of Unlimited Supply of Labour.

Unit IV: Models of Economic Growth

The Harrod-Domar Model, Kaldor Model of Income Distribution, Solow's Model, Steady State Growth, Todaro's Model of Rural Urban Migration and Unemployment and Dual Gap Mode.

Unit V: Sustainable development

Sustainable Economic Development: Meaning, Effects of Economic Development on resources and environment, Goals of Sustainable Development.

References:

1.M. P. Todaro: *Economic Development,* Pearson Education Limited, Edinburg Gate, Harlow, England, 2000. (CTB)

2.A. P. Thirlwal: *Growth and Development*, MacMillan Press Ltd., London, 1999. (CTB)

3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee: *Understanding Poverty,* Oxford University Press, 2006.

4. Agarwala and Singh (eds.): *The Economics of Underdevelopment*, OUP

5. Y. Hayami: *Development Economics*, OUP

6. Debraj Ray: *Development Economics*, OUP

7. K. Basu: *Analytical Development Economics*, OUP

8. Rune Skarstein: *Development Theory*, OUP

9. P.W. Preston: *Development Theory*, Oxford-Blackwell

10. Agarwala and Singh (eds.): *The Economics of Underdevelopment*, OUP

11. Y.S. Brenner: *Theories of Economic Development and Growth*, George Allen & Unwin

12. Irma Adelman: *Theories of Economic Growth and Development*, Stanford University Press

4 Year Under Graduate Degree (Honours)
in
Economics

SEMESTER V

Learning Objectives:

This course aims to cultivate key skills in data collection, organization, and representation through tables, graphs, charts, and diagrams. It covers the concepts of central tendency and variability, emphasizing their significance in summarizing and assessing data spread. Additionally, the course delves into statistical methods for analyzing relationships between variables and provides a foundational understanding of probability theory and its practical applications.

Learning Outcome:

Upon course completion, students will proficiently comprehend data collection, tabulation, and representation through diagrams, charts, and graphs. They will demonstrate competence in calculating and interpreting central tendency measures like mean, median, and mode. The course equips students to effectively analyze data spread, choose suitable measures of dispersion, and provide meaningful insights into data distribution. Furthermore, students will understand relationships between variables and apply probability theory in various contexts.

Course: MAJOR - 7
Paper Title: STATISTICAL METHODS FOR ECONOMICS – I
Paper Code: ECOMAJ 7

Unit I: Data Collection, Frequency Distribution and Representation

Basic Concepts: Variable and Attribute, Population and Sample, Parameter and Statistic; Data collection: Primary data and Secondary data, Methods of collection of Primary Data; Presentation of Data: Simple Frequency Distribution and Grouped Frequency Distribution, Cumulative Frequency Distribution, Diagrammatic representation of Frequency Distributions.

Unit II: Measures of Central Tendency

Mean: Arithmetic Mean (A.M), Geometric Mean (G.M) and Harmonic Mean (H.M), their Properties, Advantages and Disadvantages; Relation among A.M., G.M. and H.M, Combined Mean; Median and Calculation of Median, Advantages and Disadvantages of Median; Mode, Calculation of Mode, Advantages and Disadvantages of Mode, Relation between Mean, Median and Mode; Partition Values: Quartiles, Deciles and Percentiles, their calculation.

Unit III: Measures of Dispersion

Meaning and Usefulness of Measures of Dispersion , Absolute Measures: Range, Quartile Deviation, Mean Deviation, Standard Deviation (S.D.) and its properties, Calculation of Absolute Measures, S.D. of Composite Group; Relative Measures: Coefficient of Variation, Coefficient of Quartile Deviation, Coefficient of Mean Deviation, their Calculation; Advantages and

disadvantages of different measures of dispersion, Relation between S.D. and other measures ; Lorenz Curve; Moments (Central and non central moments), Measures of Skewness and Kurtosis.

Unit IV: Correlation and Regression Analysis

Bivariate data, Bivariate frequency distribution, Scatter Diagram, Measure of association, Covariance, Correlation Coefficient and its Properties, Calculation of Correlation Coefficient: Karl Pearson's and Spearman's Rank Correlation; Uses and limitations of Correlation Coefficient; Simple Linear Regression, Properties of linear regression, Estimation of regression lines (Least square method) and regression coefficients, Interpretation of Regression Coefficients,.

Unit V: Probability Theory

Concepts: Probability, Random Experiment, Outcome, Events, Random Experiment, mutually Exclusive, Exhaustive, Equally likely, Sample space; Techniques of Counting, Classical Definition of Probability; Theorems of Probability: Addition and Multiplication theorem; Conditional Probability, Bayes' theorem, other approaches to Probability Theory, Comparison of Classical theory and Axiomatic theory of probability.

References:

1. Bowen & Starr: *Basic Statistics for Business and Economics*, McGraw Hill
2. Das, N.G. (1977): *Statistical Methods (Part-I & II)* M. Das & Co., Calcutta.
3. Goon, A.M., M.K. Gupta and B. Dasgupta (1986): *Fundamentals of Statistics, Vols. 1 & 2*, The World Press Private Limited. Calcutta.
4. Hoel, P.G. (1984): *Introduction to Mathematical Statistics, 5th edition*, Wiley, New York.
5. Hogg, R.V. and A.T. Craig (1970): *Introduction to Mathematical Statistics (3rd edition)*, Macmillan Publishing Co. New York.
6. Kenney, and keeping (1974)- *Mathematics of Statistics - Part I*, Affiliated East West Press, New Delhi.
7. Nagar, A.L. and R.K.Das (1977): *Basic Statistics*, OUP, Delhi.
8. Yule, G.U. and Kendall, M.G. (eds.) (1958): *Introduction to the Theory of Statistics*, Charles Griffin & Co. Ltd. London.
9. Gupta, S.P: Statistical Methods, S. Chand Publications.

4 Year Under Graduate Degree (Honours)
in
Economics
Semester- V

Learning Objective:

The course covers understanding the structure and trends in the Indian economy, including estimating national income and analyzing income distribution patterns. It emphasizes the significance of the agricultural sector, examining productivity, patterns, and employment distribution, with a specific focus on the land reform system in West Bengal. The study of the industrial sector delves into development trends, output, and productivity across various plan periods, addressing industrial policies, licensing, disputes, and the role of the public sector in India. Additionally, the course explores the role and composition of foreign trade in India, highlighting trends in exports and imports, and studying various foreign policies and capital.

Learning Outcome:

The course covers the structure of the Indian economy and explores income distribution patterns. It delves into the significance of the agricultural sector as a primary dependency for a large portion of the population. Additionally, it highlights the importance of the industrial sector in contributing to the country's development. The unit also provides insights into the role of foreign trade in India, offering a fundamental understanding of import and export trends.

Course: Major 8
Paper Title: Indian Economy Since Independence
Paper Code: ECO- MAJ 8

Unit I: Income Distribution Pattern in India: Structural Changes in the Indian Economy . Trends in National Income, Sectoral distribution of income ,The pattern of Income distribution in India

Unit II: Agriculture: Agricultural Sector, Farm size and productivity , Cropping Pattern in India . Green revolution- Productivity, Employment, and Distribution aspects , Land reforms with special reference to West Bengal , Agricultural Credit, Agricultural Marketing

Unit III: Industry: Industrial Development . Trends in industrial output and productivities in different plan periods . Small Scale and Cottage Industries and its Economic Reforms . Role of Public Sector in India and Critical review of its performance d. Industrial Policies of 1948, 1956, 1977 and 1991 . Industrial Licensing Policies – MRTP Act, FERA and FEMA , Industrial Disputes

Unit IV: Foreign Trade: Role, composition and direction of India's foreign trade, trends of export and import in India, export promotion verses import substitution; Balance of Payments of India; India's Trade Policies; Foreign Capital – FDI, Aid , MNCs, and WTO with special reference to economic reform,1991

Unit V: Contemporary Economic issues and institutions: Demographic dividend; Start-up India; Amalgamation of Public sector banks; Financial inclusion

References:

1. U. Kapila (2016): Indian economy since Independence. Academic Foundation, New Delhi
2. S. K. Misra and V. K. Puri (Latest Year): Indian Economy — Its Development Experience, Himalaya Publishing House, Mumbai
3. S. Chakraborty : Development Planning: The Indian Experience. Clarendon Press.
4. R. Dutt and K. P. M, Sundharam (Latest Year): Indian Economy, S. Chand & Company Ltd., New Delhi.
5. A. Panagariya (2008): India: the Emerging Giant, Oxford University Press, New York
6. S. Acharya and R. Mohan (Eds.) (2010): India's Economy: Performance and Challenges, Oxford University Press, New Delhi.
7. I. J. Ahluwalia and I. M. D. Little (Eds.) (1998): India's Economic Reforms and Development: Essays for Manmohan Singh, Oxford University Press, New Delhi

4 Year under Graduate Degree (Honours)
in
Economics

Semester-V

Learning Objective:

Public economics is the study of government policy from the points of view of economic efficiency and equity. The paper deals with the nature of government intervention and it implications for allocation, distribution and stabilization. Inherently, this study involves a formal analysis of government taxation and expenditures. The subject encompasses a host of topics including public goods, market failures, externalities, public expenditure, public revenue and public debt.

Learning Outcome:

Upon successful completion of this course, students will acquire a comprehensive understanding of various concepts in public economics. They will be proficient in analyzing government taxation and expenditures, gaining insights into the intricacies of public budgeting and debt management.

Course: MAJOR-9
Paper Title: Public Economics
Paper Code: ECO-MAJ 9

Unit-I: Public Good & Public Economics: Definition and Scope of Public Economics; Externalities, Market Failure and Government Intervention; Overview of Public Good; Characteristics of Pure Public Good; Distinction between Pure Public Good and Private Good; Market Failure in case of Pure Public Good; Lindahl Equilibrium.

Unit-II: Public Expenditure: Meaning, classification and principle of public expenditure cannons and effects- Production Employment and Distribution, causes of growth of public expenditure, Wagner's Law, Role of public expenditure in developing economy. Theories of Public Expenditure, Principle of Maximum Social Advantage, Principle of Maximum Benefit.

Unit-III: Public Revenue and Receipts: Sources of Public Revenue; Taxation - meaning, Direct & Indirect Taxation- merit & demerit, Cannons and Classification of taxes, impact and incidence of taxes, division of tax burden, taxable capacity, effects of taxation, characteristics of a good tax system, The Benefit Approach, Ability-to-pay Approach (horizontal and vertical equity), Major trends in tax revenue of central and state governments in India

Unit-IV: Public Budget and Public Debt: Public Budget: kinds of budget, economic and functional classification of the budget; Balanced and unbalanced budget; Balanced Budget Multiplier; Budget as an instrument of economic policy. Sources, effects, debt burden Fiscal Policies: Alternative and Supplementary.

References:

1. Musgrave: The Theory of Public Finance, McGraw Hill
2. Stiglitz, J.: Economics of the Public Sector, W.W. Norton
3. Ghosh & Ghosh: Economics of the Public Sector, Prentice Hall.
4. Allan, C.M.: The Theory of Taxation, Penguin.
5. Atkinson, D. & Stiglitz, J.: Public Economics, McGraw Hill.
6. Bagchi, Amaresh (ed): Readings in Public Finance, OUP.
7. Houghton, R.W. (ed): Public Finance, Penguin.
8. Due, John F. and Ann F. Friedlander (1997): Government Finance- Economics of the Public Sector AITBS Publishers and Distributors, Delhi.
9. Dalton, Hugh (1954): Principles of Public Finance, 4th edition, Routledge and Kegan Paul, London.
10. Ganguly, Subrata (1975): Public Finance, Nababharat Publisher, Calcutta

4 Year Under Graduate Degree (Honours)
in
Economics

Semester VI

Learning Objectives:

The course covers the concept, construction methods, and applications of index numbers. It delves into understanding random variables, Probability Density Functions, and probability distributions (both discrete and continuous) with their properties and applications. Additionally, the importance of sampling and various techniques for sampling is explored, along with the inference about populations based on sample data. The course concludes with a study of time-series data analysis for identifying patterns, trends, and making predictions.

Learning Outcome:

Upon course completion, students will master index numbers, covering simple and weighted averages, price and quantity indices, and construction methods. They will navigate challenges in index construction, utilizing chain-based indices and understanding the uses and limitations, particularly in Cost of Living and Wholesale Price Indices. The course delves into random variables, probability distributions, and properties, encompassing discrete and continuous variables, joint distributions, and key univariate distributions. Proficiency in sampling theory, including random sampling and associated distributions, will be achieved. Additionally, students will excel in classical statistical inference, emphasizing estimation and hypothesis testing for mean and variance. The course culminates in time series analysis, enabling students to identify trends, analyze growth curves, and make accurate forecasts.

Course: Major-10
Paper Title: STATISTICAL METHODS FOR ECONOMICS – II
Paper Code: ECO-MAJ10

Unit I: Index Number
Index number-Simple and Weighted Averages, Price and quantity index numbers, Methods of Construction of Index Numbers, Problems in Construction of Index Numbers, Tests for index Numbers, Chain based Index, Cost of Living Index Numbers, Wholesale Price Index, Errors in Index Numbers, Uses of Index Numbers.

Unit II: Random Variable and Probability Distributions
Definition of Random Variable: Discrete and Continuous Random Variable, Probability Mass Function and Probability Density Functions, Expectation and Variance of Random Variables, Joint Probability Distribution: Concept of Independence, Marginal and Conditional Distribution. Expectation of the product of two variates, Univariate Probability Distributions: Binomial, Poisson, Normal and Standard Normal Distribution - Mean, Variance, Skewness and Kurtosis.

Unit III: Sampling Theory

Population and Sample, Parameter and Statistic, Different Methods of Sampling, Random Sampling: Methods of Drawing Random samples (with and without replacement); Sampling Distribution, Standard Error, Sampling Distributions associated with Normal Population, Expectation and Standard Error of Sample Mean (with and without replacement), Derived Distributions: Chi-Square Distribution, Student's t Distribution, F Distribution (definition and important properties), Fisher's t distribution, concept of degrees of freedom.

Unit IV: Classical Statistical Inference

Basic Concepts of Estimation: Methods of Point Estimation - Maximum Likelihood Estimators and their properties, Method of Moments; Hypothesis Testing & Type-I and Type-II Errors, Simple applications of tests for the Mean and Variance of a Univariate Normal Population.

Unit V: Analysis of Time Series

Nature and decomposition of a time series - Analysis of trend, - Moving average method - Seasonal component - Cyclical and random components– forecast and accuracy.

References:

1. Cochran, W. G.: Sampling Techniques, 3rd ed., Willey Edition
2. Goon,Gupta,Dasgupta: Fundamentals of Statistics, Vol I, World Press Private Limited
3. Mood, A.M., F.A.Greybill and D.C. Boes: Introduction to the theory of statistics, McGraw Hill
4. Bowen & Starr: Basic Statistics for Business and Economics, McGraw Hill.
5. Mood, A.M., F.A.Greybill and D.C. Boes: Introduction to the theory of statistics, McGraw Hill
6. Hoel, Paul, G: Introduction to Mathematical Statistics, Wiley Series in probability and statistics
7. Mathai and Rathie: Probability and Statistics, The Macmillan Company of India Limited
8. Nagar and Das: Basic Statistics, OUP
9. Gupta S.P: Statistical Methods. S.Chand Publications.

4 Year Under Graduate Degree (Honours)
in
Economics

Semester VI

Learning Objective:

This course empowers students with a profound understanding of international economic relationships, honing analytical skills to evaluate the impact of trade policies, factor movements, and global events on national economies. It explores how international trade influences commodity and factor prices, facilitating insights into adjustments within and between economies. The comprehensive study delves into the multifaceted impact of trade policy, examining the nuanced relationship between tariffs and income distribution across different economic strata. Additionally, the course focuses on international economic transactions, covering the balance of trade, balance of payments, and related concepts. Students will delve into the components of the balance of payments, identify causes for disequilibrium, explore corrective measures, and understand implications of currency devaluation.

Learning Outcome:

This course equips students with analytical tools for assessing global economic scenarios, contributing to policy discussions, and making informed decisions. They will comprehend conditions leading to factor price equalization, the consequences of complete specialization, and dynamics outlined by the Rybczynski Theorem. Students will also gain a comprehensive understanding of the intricate relationship between trade policies, income distribution, and the balance of payments, enabling analysis of tariff impact, optimum tariff considerations, and effects of quotas on domestic and international trade. Upon completion, individuals will possess a thorough grasp of international economic transactions, including balance of payments analysis, identification of factors contributing to disequilibrium, and implementation of corrective measures. Understanding currency devaluation, convertibility, exchange rate dynamics, and the functions of global institutions facilitates insights into fostering international economic cooperation and stability.

Course: MAJOR-11
Paper Title: International Trade
Paper Code- ECO-MAJ 11

Unit I: What is international economics about? Distinction between Internal, regional and International Trade, Gains from international trade, Arguments for and against Free Trade and Protection, Classical theory of International Trade: Adam Smith's Absolute Advantage Theory; Ricardo's Comparative Cost Theory; Hecksher - Ohlin Theory of International Trade (price and physical definition of factor abundance), Terms of trade, Secular Deterioration in Terms of Trade and Concept of Intra- Industry Trade.

Unit II: Commodity and Factor Prices under Trade Factor Price Equalization Theorem, Complete Specialisation & Rybczynsky Theorem.

Unit III: Tariff under Optimal Market Conditions Some partial aspects of the Theory of Tariffs and Income Distribution, The Stolper-Samuelson Theorem, Optimum Tariff, Quotas and Quantitative Restrictions: Effects of Quotas- Quantitative restriction and the balance of Payment-Tariff vs. Quota.

Unit IV: Balance of Trade and Balance of Payment BOT, BOP, Current Account, Capital Account, Visible and Invisible, Causes for disequilibrium in Balance of Payments, Methods of correcting the disequilibrium. Devaluation of Currency, Convertibility of Currency Exchange Rate(Fixed & Flexible), Foreign Trade multiplier, Elasticity Approach & Absorption Approach, Functions of IMF, World Bank, GATT and WTO.

References:

1. Krugman, Paul R. and Obstfeld, Maurice: International Economics (8th ed.), Pearson Education.
2. B. Sodersten, and G. Reed (1994) : International Economics , Macmillan, London, 3rd edition.
3. Caves, Frankel, Jones: World Trades and Payments (9th Ed.), Pearson Education.
4. Gandolfo, G.: International Trade Theory and Policy, Springer.
5. Heller, H R.: International Trade- Theory and Empirical Evidence, Prentice Hall.
6. Salvatore, Dominick: International Economics (8th Ed.), Wiley India.
7. Kenan, P.B. (1994): The International Economy, Cambridge University Press, London.
8. Kindlaberger, C.P. (1983): International Economics, R.D. Irwin, Homewood.
9. Aggarwal, M.R. (199): Regional Economic Cooperation in South Asia, S Chand & Co., New Delhi.
10. Bhagwati, J.(ed.) (1981): International Trade- Selected Readings, Cambridge University Press, Mass.

COOCH BEHAR PANCHANAN BARMA UNIVERSITY

'ANCHANAN NAGAR, VIVEKANANDA STREET, COOCH BEHAR – 736101

4 Year Under Graduate Degree (Honours)
in
Economics

Learning Objective:

This course aims to provide a comprehensive introduction to the economic analysis of issues arising from the interactions between the natural environment and the human economy. It underscores the role of entropy laws in this process of interaction. It focuses on the ecosystem-services and discusses comprehensively the challenges arising due to externalities, public-good character and non-tradability of such services. In particular, it highlights the resulting nature of market failure along with issues for social welfare and distributive implications in determining human well-being.

The course adapts both micro- and macro-economic perspectives to the environmental issues. On the microeconomic aspect, the course will introduce and analyses the concepts, method, and techniques of valuation of non-tradable environmental goods and services on the one hand and economics of pollution control and regulations on the other. On the macroeconomic aspect, the course introduces (a) the concept of sustainable development and accounting in a dynamic capital-theoretic framework of analysis and (b) the approach to green national accounting and estimation of genuine savings and investment. Further, the course introduces developmental issues relating to trans-boundary and global pollution (climate change) and policies for their mitigation and control.

Learning Outcome:

On the successful completion of this course, the students will be able to

1. Discuss the environmental issues in relation to the theory of externalities, public goods, and welfare.
2. Illustrate and examine economic principles concerning the choice of instruments for controlling pollution and the relative strength and weaknesses of environmental policies based on command-and-control vis-à-vis market-based instruments.
3. Discuss various approaches and methods developed for valuing environmental goods and services.
4. Examine issues in the contemporary environmental discourse from an economists' point of view.

Course: Major 12

Paper Title: Environmental Economics

Paper Code: ECO-MAJ12

Module I: Economy and Environment

Origin, Definition and nature of Environmental Economics, Material Balance Model (BBM): Interlinkages between Economy and Environment, Choice Making and Welfare Economics

Module II: Environment and Public Good

Characteristics, Environmental quality as public goods, Externalities: negative & positive, Environmental damages as negative externalities, relation between public goods & Externalities.

Module III: Market Approaches to Environmental Problems

Market Approaches, Pollution Charges – Modelling, Product Charge as a Per Unit Tax, Pigouvian Tax and Subsidy- Modelling an 'Emission Charge', Single polluter case and Multiple polluter case. Carbon tax. The Concept of Property Rights-The Coase Theorem- Bargaining when Property Rights belongs to the polluters- Bargaining when Property Rights belongs to pollution victims. Limitation of Coase Theorem-Government Intervention as a Solution.

Module IV: Command and Control Solution to the Environmental Solutions

The Economics implications of using 'Standards'- Efficiency of Abatement Standards-Cost-ineffectiveness of 'Technology-Based' and 'Uniform' Standards.

Module V: Sustainable Development

Conventional Development Model, Approaches to Sustainable Development, Indicators of Sustainable Development and Practices, Indian constitution and environment.

Module VI: Optimal Exploitation of Natural Resources

Natural resource: Non-renewable resource: Hotelling's rule and discounting over time Principles of renewable resource management, Tragedy of Commons & Deforestation.

Module VII: Environmental Valuation, Technique and Policies.

National Income and Environmental Accounting, Environmental Impact Assessment, Environmental valuation Techniques, Indian constitution and environment-Montreal and Kyoto Protocol.

References:

1. J. Harris and B. Roach (2013): Environmental and Resource Economics—A contemporary approach, 3/e, Routledge.
2. B. Field and M. Field (2013): Environmental Economics, 6/e, The McGraw-Hill.

3. D. Pearce, R.K. Turner and I. Bateman (1993): Environmental Economics—An elementary introduction, Johns Hopkins Press.

4. Smith, Stephen A Very Short Introduction to Environmental Economics, OUP.

5. Kolstad C.D. (2011): Intermediate Environmental Economics, OUP.

6. D. Kitchen: Global Climate Change: Turning Knowledge Into Action, Prentice Hall.

7. Nicholas Stern: The Economics of Climate Change: Stern review.

8. Intergovernmental Panel on Climate Change: Assessment Reports.

9. Stockholm Resilience Centre (2009): Ecology and society.

10. Subhashini, Mathukrishan (2014): Economics of Environment, PHI.

11. Sengupta, Ramprasad (ed.): Ecological Limits and Economic Development, OUP.

12. Sengupta, Ramprasad: Ecology and Economics, OUP.