

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)



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.

- 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.



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 inputcombination 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,

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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

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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.

- 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



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



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.

- 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

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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.



- 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. COOCHBEHAR PANCHANAN BARMA UNIVERSITY ANCHANAN NAGAR, VIVEKANANDA STREET, COOCH BEHAR – 736101

Unit III: Sampling Theory

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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.



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.

- 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.



Semester VI

Learning Objective:

This course is designed to impart a thorough understanding of field research, emphasizing the definition of objectives and scopes in various research domains. It covers comprehensive insights into data collection and sampling methodologies. Additionally, the course delves into key statistical concepts, with a focus on the test of significance and the foundations for employing sampling in social research. The objective of another unit is to equip individuals with essential skills for effective communication in academic and professional settings. This includes crafting well-structured reports, presenting data effectively, delivering impactful oral presentations, and adhering to best practices for creating accurate bibliographies and references.

Learning Outcome:

This course empowers students to define clear research objectives and understand diverse field scopes. They gain practical knowledge of fieldwork methods applicable to various research contexts. Building a strong foundation in data collection and sampling, students distinguish between probability and non-probability techniques, enhancing their method selection skills. Acquiring a robust understanding of statistical techniques, particularly the test of significance, enables informed decision-making on research findings' relevance and reliability. Additionally, students develop proficiency in report writing, ensuring clarity, coherence, and professionalism. They become adept at visually presenting data for enhanced accessibility and understanding of research findings.

Students will have to prepare a field report of minimum 2500 words. The report will be evaluated by the Departmental teachers and 50 marks will be allotted for that. For vivavoce 25 marks will be allotted respectively. During the viva-voce and/or presentation one external expert from other affiliated colleges will be present along with the Departmental teachers for evaluation as decided by UGBOS .There can be some demonstration classes about the use of field survey data and methodology of the study. In case of field survey, the concerned teacher/teachers can give a guideline for the preparation of questionnaire and can administer the field survey to be done by the students.



Course: MAJOR-12 (Internal-Practical) Paper Title: Field Survey and Presentation Paper Code- ECO-MAJ 12 (Project Report-50, Viva-voce-25)

Unit I: Objectives and scope of the field survey, methods of field work in different areas, preparation of interview schedule/questionnaire

Unit II: Data collection and sampling: Sampling concepts, sampling techniques for the collection of data Probability sampling, Non-probability sampling; Sampling and Non-sampling error; Sample size determination.

Unit III: Test of significance, Statistical and logical basis of use of sampling in social research. Sources and types of open source socio-economic data; Tools and methods of data analysis. Descriptive Statistics, Graphical Representation.

Unit IV: General Tips for Writing Report; Presentation of Data; Oral Presentation; Bibliography and References

References:

- 1. Research methodology S.S. Vinod Chandra, S. Anand Hareendran, Pearson
- 2. Fundamentals of Statistics S.C. Gupta, V.K. Kapoor
- 3. Research Methodology. Methods & Technique: Kothari. C.R.
- 4. Methods of Statistical Ananlysis- P.S Grewal
- 5. Research Methodology: A Step-by-Step Guide for Beginners" by Ranjit Kumar

6.Research Design: Qualitative, Quantitative, and Mixed Methods Approaches by John W. Creswell