



**MAHARASHTRA EDUCATION SOCIETY
ABASAHEB GARWARE COLLEGE
(AUTONOMOUS)**

(AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY)

**Four-year B.A. Program in Economics
(Faculty of Humanities)**

SYLLABI UNDER NEP

**Fourth Year B.A. (Honours)
Economics**

**Choice-Based Credit System Syllabus
To be implemented from Academic Year 2026-2027**

Semester VII

Verticals	Course Code	Course Title	Credits	Type
Major I	ECO-401-MJ	ADVANCED MICRO ECONOMICS	4	Theory
Major II	ECO-402-MJ	PUBLIC ECONOMICS-THEORY	4	Theory
Major III	ECO-403-MJ	INTERNATIONAL TRADE	4	Theory
Major IV	ECO-404-MJ	ADVANCED EXCEL APPLICATIONS FOR ECONOMIC ANALYSIS	2	Practical
Elective	ECO-410-MJ Or ECO-411-MJE	AGRICULTURAL ECONOMICS OR INTERMEDIATE STATISTICAL TECHNIQUES	4	Theory
Research Methodology	ECO-440-RM	RESEARCH METHODOLOGY	4	Theory

Semester VIII

Verticals	Course Code	Course Title	Credits	Type
Major I	ECO-451-MJ	ADVANCED MACRO ECONOMICS	4	Theory
Major II	ECO-452-MJ	PUBLIC ECONOMICS-POLICY	4	Theory
Major III	ECO-453-MJ	INTERNATIONAL FINANCE	4	Theory
Major IV	ECO-454-MJ	INTRODUCTION TO PYTHON FOR ECONOMIC ANALYSIS	2	Practical
Elective	ECO-460-MJE Or ECO-461-MJE	LABOUR ECONOMICS OR ADVANCED STATISTICAL TECHNIQUES	4	Theory
OJT	ECO-481-OJT	ON JOB TRAINING	4	Practical

Advanced Micro Economics
Semester: VII

Course Code: ECO-401-MJ

Credit: 4

Course Objectives

After completing this course, students will be able to:

1. Understand the mathematical foundations and analytical tools used in microeconomic theory.
2. Explain consumer behavior using cardinal, ordinal, revealed preference, and modern demand theories.
3. Analyze production processes, cost structures, and profit-maximization decisions of firms using economic models.
4. Evaluate price and output determination under different market structures and apply strategic decision-making models such as game theory and linear programming to real-world economic problems.

Course Outcomes

Upon successful completion of the course, students will be able to:

- CO1.** Apply mathematical techniques, including differentiation and optimization, to solve microeconomic problems.
- CO2.** Analyze consumer behavior, demand relationships, and welfare implications using various theories of consumer choice.
- CO3.** Evaluate production, cost, and input-output relationships and determine optimal resource allocation for firms.
- CO4.** Compare and assess the functioning of different market structures, including perfect competition, monopoly, monopolistic competition, and oligopoly.
- CO4.** Apply game theory, behavioral models of the firm, and linear programming techniques to analyze strategic business decisions and contemporary economic issues.

1. Mathematical concepts for Microeconomics (15 Lectures)

- 1.1 Functions and Economic Models
- 1.2 Derivatives and Partial Derivatives
- 1.3 Rules of Differentiation
- 1.4 Optimisation Techniques (Unconstrained and Constrained)
- 1.5 Applications of Differential Calculus in Economics

2. Demand Analysis and Consumer Theory (15 Lectures)

- 2.1 Cardinal Utility Approach: Law of Diminishing Marginal Utility and Law of Equi-marginal Utility.
- 2.2 Law of demand (Mathematical Applications/Examples)
- 2.3 Elasticity of Demand: Types, Measurement, economic implications and determinants (Mathematical Applications/Examples)
- 2.4 Ordinal Approach: Indifference Curve Analysis. Some applications of indifference curve analysis.
- 2.5 Consumer Surplus: Concept and Measurement
- 2.6 Income and Price Expansion Paths, Income and Substitution Effects: Slutsky and Hicksian Approach.

2.7 Theory of Revealed Preference

2.8 Consumer behavior under condition of risk and Uncertainty- Lancaster's Theory-Recent development in theory of demand- Linear expenditure system.

3. Theory of Production and Cost (15 Lectures)

3.1 Production function with one variable factor: Total, Average and Marginal Product,

3.2 Law of variable proportions

3.3 Production function with two variable factors: Isoquants, Return to scale, CES production function

3.4 Cobb- Douglas Production Function, Derivation of Equation for Expansion Path (in Cobb-Douglas Production Function).

3.5 Elasticity of technical substitution.

3.6 Profit Maximisation and Optimum Input Combination.

3.7 Cost Functions: Short Run and Long Run.

3.8 Derivation of Short-Run Average and Marginal Cost Curves from their Total Cost Curves.

3.9 Long-Run Average Cost Curve. Long-Run Average Cost Curve in the Case of Constant Returns to Scale. Minimum Efficient Scale.

3.10 U-shape of the Long-Run Average Cost Curve, L-shaped Long-Run Average Cost Curve. The Learning Curve.

3.11 Algebraic Forms of Cost Functions: Cubic Cost Function. Quadratic Cost Function. Linear Cost Function. Numerical Problems on Cost Function.

4. Market Structure (15 Lectures)

4.1 Price and Output determination under perfect competition, monopolistic competition, monopoly.

4.2 Excess capacity, degree of monopoly power, price discrimination.

4.3 Oligopoly models, cartel and its application in real world.

4.4 Theory of games and its applications.

4.5 Behavioural theory of the firm: satisficing model

4.5 Linear Programming

Reference Books

1. H. L. Ahuja (2019) Advanced Economic Theory Microeconomic Analysis – S. Chand Publication, New Delhi

2. Koutsoyiannis Modern Microeconomics, Palgrave Macmillan, London 3.

D.N.Dwivedi (2011) Micro Economics – Pearson Publication, New Delhi.

3. Misra S.K. and V.K. Puri (2001): Advanced Microeconomic Theory, Himalaya Publishing House, New Delhi.

4. Mansfield, E. (1997), Micro Economics, W. W. Norton and Company, New York.

5. Mankiw, N.G. (2002), Principles of Economics, Thomson Asia Pvt. Ltd., Singapore.

6. Salvatore, D. (2003), Micro Economics, Oxford University Press.

7. Sen Amartya (2017) 'Collective Choice and Social Welfare' Penguin [Original Edition (1970)]

8. Kenneth Arrow, Amartya Sen and Kotaro Suzumura (2001) 'Handbook of Social Choice and Welfare' Edited

Public Economics-Theory
Semester: VII

Course Code: ECO-402-MJ

Credit: 4

Course Preamble

This course provides a comprehensive bridge between the mathematical foundations of public economics and the applied fiscal realities of India. By moving beyond introductory definitions, it challenges students to model market failures, evaluate taxation through general equilibrium and analyze the Indian budgetary framework using modern data-driven approaches. The inclusion of indigenous philosophies ensures a grounded understanding of welfare, while the focus on policy frameworks prepares students for professional roles in economic analysis and governance.

Course Objectives

1. To provide mastery over mathematical models of welfare, public goods and optimal taxation.
2. To decode the complexities of the Indian tax structure, budgetary classification and deficit implications.
3. To bridge the gap between pure theory and public policy-Budgeting & Reforms.
4. To analyze indigenous economic concepts like *Antyodaya* in the context of modern social welfare functions.

Course Outcomes (COs) - Successful completion of this course, students will be able to:

- **CO1:** Critically evaluate the First and Second Fundamental Theorems of Welfare and identify the limitations of Pareto efficiency in achieving social justice.
- **CO2:** Apply the "Theory of Second Best" and models of information asymmetry to analyze failures in healthcare and insurance markets.
- **CO3:** Design optimal provision rules for public, club and impure public goods using Samuelson and Lindahl equilibrium models.
- **CO4:** Analyze the incidence and efficiency of taxation using the Ramsey Rule and Harberger Model, specifically within the context of India's GST evolution.
- **CO5:** Differentiate between various budgetary techniques and assess the impact of deficit financing on macroeconomic stability.

1: Advanced Welfare & Indian Values

(15 Lectures)

- 1.1 Welfare Foundations: First and Second Fundamental Theorems of Welfare Economics.
- 1.2 Social Welfare Functions: Pareto Efficiency vs. Social Justice; Bergson-Samuelson Social Welfare Function.
- 1.3 Theory of Second Best: The Lipsey-Lancaster model and its implications for piecemeal policy reforms.
- 1.4 Information Asymmetry: Modeling Adverse Selection and Moral Hazard in public provision (Healthcare and Insurance).
- 1.5 Indigenous Welfare Theory: Application of *Antyodaya* and Integral Humanism in modern welfare models.

2: Public Goods, Mechanism Design & Strategic Policy

(15 Lectures)

- 2.1** Optimal Provision: Samuelson's condition for public goods, Lindahl-Johansen equilibrium, Club Goods and Impure Public Goods.
- 2.2** Market Failures: Advanced treatment of Externalities and the Coase Theorem.
- 2.3** Incentive & Mechanism: The Free-Rider problem, Introduction to the Clarke-Groves-Vickrey (CGV) Mechanism and the Clarke Tax.
- 2.4** Global Economics: The Tiebout Hypothesis, Global Public Goods-Climate Change and Pandemic Management.
- 2.5** Indian Context: Public-Private Partnerships, Problems of "The Commons" in the Indian rural economy.

3: Taxation & Indian Tax Reforms

(15 Lectures)

- 3.1** Pure Theory: Optimal Taxation- Ramsey Rule, Mirrlees Model.
- 3.2** Incidence Modeling: The Harberger Model of General Equilibrium Tax Incidence.
- 3.3** Behavioral Impact: Calculating Deadweight Loss, The Laffer Curve, Impact on Labor Supply and Corporate Investment.
- 3.4** Indian Tax System: Structure and recent reforms in Direct and Indirect taxes, Evolution of GST 2.0, Tax-to-GDP ratio challenges, Issues of Tax Evasion and the Shadow Economy.

4: Public Expenditure, Budgeting & Deficit Management

(15 Lectures)

- 4.1** Expenditure Theory: Wagner's Law vs. Wiseman-Peacock Hypothesis.
- 4.2** Budgetary Techniques: The Balanced Budget Multiplier, Outcome-based Budgeting vs Zero-base Budgeting in India.
- 4.3** Deficit Dynamics: Measuring Revenue and deficits, FRBM Act.
- 4.4** Deficit financing and its impact on inflation and interest rates.

Reference Books

- 1. Goode, R. (1986), Government Finance in Developing Countries, Tata McGraw Hill, New Delhi.
- 2. Houghton, J.M. (1970), The Public Finance: Selected Readings, Penguin, Harmondsworth.
- 3. Rajesh K.Jha (2012) Public Finance. Pearson Publication New Delhi
- 4. Musgrave, Richard A and Musgrave, Peggy B (1989), Public Finance in Theory and Practice, Tata McGraw Hill
- 5. Stiglitz, Joseph E (1999), Economics of the Public Sector, W. W. Norton and Company

Recommended Readings:

- 1. Buchanan, J.M. (1968), The Demand and Supply of Public Goods, Rand McNally, Chicago
- 2. Cornes, R. and T. Sandler (1986), The Theory of Externalities, Public Goods and Club Goods, Cambridge University Press, Cambridge.
- 3. Duff, L. (1997), Government and Market, Orient Longman, New Delhi.
- 4. Modern Public Finance, Richard D. Irwin, Homewood. Spulber, N. (1998), Redefining the State, Cambridge University Press, Cambridge.

5. Dorfman, R. (1970), Measuring the Benefits of Government Investment, Brookings Institution, Washington .
6. Herber, B.P. (1967), Modern Public Finance, Richard D. Irwin, Homewood
7. Mueller, D.C. (1979), Public Choice, Cambridge University Press, Cambridge.
8. Spulber, N. (1998), Redefining the State, Cambridge University Press, Cambridge.
9. Stiglitz, J.E. (1986), Economics of Public Sector, Norton, New York.

Recommended Journals:

1. Journal of Public Economics- Science Direct
2. South Asian Journal of Macroeconomics and Public Economics- Sage Journals
3. Journal of Public Economics-Elsevier

International Trade

Semester: VII

Course Code: ECO-403-MJ

Credit: 4

Preamble

International Trade is subject that is ever dynamic and relevant in the current context. International Trade provides a framework on international trade and finance in the theoretical context, along with economic analysis as well as practical applications. The subject discusses Classical and modern trade theories, Terms of Trade, Trade Policy, and Trade Agreements and Trade Organizations. Various issues discussed and analysed arising out of international trade.

Objectives:

- To develop an understanding of the theoretical concept in international trade.
- To analyse international economics with reference to terms of trade, trade policy, trade agreements etc.
- To provide knowledge to students regarding recent developments and changes in international banking, international banking agreements etc.
- To make the students understand role of international economic organization and global crisis development.

Learning Outcomes:

- Ability to understand the concepts of international economics such as comparative cost, terms of trade, trade policies and trade agreements.
- Ability to interpret and apply theory relating to international trade.
- Ability to discuss and debate the effects of trade policy, trade agreements, exchange rate policies on the world economy/trade.

1. Overview of Classical and Modern Trade Theories (20 lectures)

- 1.1 The Theory of Comparative Cost- David Ricardo
- 1.2 The Heckscher-Ohlin Theorem- The Opportunity Cost Approach
- 1.3 Verification of Physical Criterion and Price Criterion
- 1.4 Leontief Paradox – Factor Price Equalization [Edgeworth Box Diagram]
- 1.5 New Theories of Trade, Product Life Cycle and Technology Gap Models
- 1.6 Preference Similarity and Intra-Industry Trade
- 1.7 Economies of Scale and Monopolistic Competition
- 1.8 Krugman- Theory of Economic Geography
- 1.9 Neo-Heckscher Ohlin Theorem

2. Terms of Trade (8 lectures)

- 2.1 Concepts of Terms of Trade, Factors affecting Terms of Trade
- 2.2 Gross & Net Barter Terms of Trade
- 2.3 Terms of Trade and Economic Development

3. Trade Policy (16 lectures)

- 3.1 Free Trade vs. Protective Trade
- 3.2 Tariffs and Non-Tariff Barriers on Trade
- 3.3 Effects of Tariffs under Partial Equilibrium. (Price Effect, Terms of Trade Effect, Competitive Effect, Income Effect, Revenue Effect)
- 3.4 Effects under General Equilibrium, Stolper-Samuelson Theorem

4. Trade Agreements and Organization (16 lectures)

- 4.1 Introduction to International Trade Agreements- Dunkel Proposal and WTO, Important Agreements
- 4.2 Major developments since 1995, Effects on the Indian Economy
- 4.3 Direction and Composition of the Global Trade Growth, Developing Countries and participation in Global Trade, Growth of Trade in Services

Reference Books

Basic Reading List:

1. Gupta, K.R.(latest edition): “International Economics”, AtmaRam & Sons, Delhi
2. Kindleberger, C.P. International Economics, R.D. Irwin, Homewood
3. Salvatore, D. (1997), International Economics, Prentice Hall, New York
4. Salvatore, D. (Latest edition.) “International Economics”, Prentice Hall, NY
5. Soderston, Bo (2005), International Economics, The Macmillan Press Ltd., London
6. Srivastava, O.S.(latest edition), “International Economics”, Kalyani Publishers

Recommended Readings:

1. Chacholiades, M. (1990), International Trade: Theory and Policy, McGraw Hill.
2. Paul R. Krugman & Maurice Obstfeld (2009) International Economics Theory and Policy. Pearson Education Publication New Delhi
3. James Gerber (2012) International Economics Pearson Publication. ND
4. Paul, Justin (2004) ed., “International Business”, Prentice-Hall India Pvt. Ltd
5. Pugel T.A (2008) “International Economics”, Tata McGraw-Hill
6. Salvatore, D (2004) “Theory and Problems of International Economics” Schaum’s Outline Series, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
7. Sawyer, W.C and Sprinkle, R.L (2003) “International Economics”, Pearson Education
8. Williamson, J & Milner, C (1991): “The World Economy-A Textbook International Economics”, New York University Press, N. York.

Recommended Journals:

1. Journal of International Economics- Elsevier

2. The Journal of International Trade and Economic Development- Taylor and Francis Online
3. Foreign Trade Review- Sage Journals

Advanced Excel Applications for Economic Analysis

Semester: VII

Course Code: ECO-404-MJ

Credit: 2

In this practical work, hands-on training in applying statistical tools for analysis and display of data will be given to students. The easily available MS-EXCEL application will be used. Students are expected to give their practical performance during internal and final examinations.

Learning objective:

- Apply Excel functions and data manipulation techniques to transform raw datasets and prepare them for better analysis
- Employ Excel tools to conduct statistical analysis to gain hands-on learning in descriptive statistics, probability distributions, and hypothesis testing

Learning Outcomes:

The hands-on training received in the practical will be helpful to students for their research purposes. At the end of the course, students will be able to analyse large data sets using mathematical and statistical tools.

Unit-1: Model -I

(30 Hours)

Cell Referencing: Absolute, Relative, Mixed Reference

Basic Functions : Find & Replace, Blanks, Negative, Zero Values, Paste Special Values, Formats, Formulas, Go to Special Visible Cells

Lookup Functions: LOOKUP, VLOOKUP, HLOOKUP

Logical If Functions : IF, IFERROR, Nested IF, AND, OR, NOT

Creating Pivot Table: Sum, Count, Average , Filter Date Values as Month, Quarter, Years, Report Filter - Ultimate Tips , Creating Pivot Charts , Using Slicers to manipulate PivotTables

Unit -2: Model -2

(30 Hours)

Statistical Functions: COUNTA, COUNT BLANK, COUNTIF, SUMIF, AVERAGEIF • COUNTIFS, SUMIFS, AVERAGEIFS, SUMPRODUCT , Descriptive Statistics, Exponential Smoothing, F-Test Analysis, Histogram, Moving Average, Random Number Generation, Rank and Percentile, Sampling. Measures of Dispersion, Correlation, Covariance, Statistical Functions, ANOVA and Basic Statistical Analysis with Excel's Data Analysis ToolPak.

Assessment Methods

Internal Assessment Methods (Continuous Evaluation) (25 Marks)

- Practical Assignments
- Lab Performance / Hands-on Work
- Mini Project / Case Study
- Viva Voce
- Internal Practical Test

External Assessment Methods (Final Examination) (25 Marks)

- **Practical Examination:** Students perform tasks in the lab within a fixed time.

List of Practicals:

- Practice cell referencing in Microsoft Excel by applying relative, absolute, and mixed references in formulas.
- Use Find and Replace along with Go To Special to identify blanks, negative values, zero values, and visible cells in a dataset.

- Apply Paste Special options to copy values, formats, and formulas separately and analyse their effects.
- Implement lookup functions such as LOOKUP, VLOOKUP, and HLOOKUP to retrieve data from tables.
- Create logical formulas using IF, IFERROR, and Nested IF functions for decision-making.
- Use logical operators AND, OR, and NOT within formulas to evaluate multiple conditions.
- Create a Pivot Table to summarize data using SUM, COUNT, and AVERAGE functions.
- Apply filters in Pivot Tables to analyze date values by month, quarter, and year, and use report filters effectively.
- Create Pivot Charts and use slicers to interactively filter and visualize data.
- Use statistical functions such as COUNTA, COUNTBLANK, COUNTIF, SUMIF, and AVERAGEIF on datasets.
- Apply advanced functions like COUNTIFS, SUMIFS, AVERAGEIFS, and SUMPRODUCT for multi-condition analysis.
- Perform descriptive statistics and create a histogram to analyze data distribution.
- Apply techniques such as moving average and exponential smoothing for trend analysis and forecasting.
- Perform statistical tests including F-Test, correlation, covariance, and measures of dispersion.
- Use Excel's Data Analysis ToolPak to perform ANOVA, sampling, random number generation, rank, and percentile analysis.

References:

1. Excel 2013 Power Programming with VBA by John Walkenbach
2. Excel 2016 Power Programming with VBA (Mr. Spreadsheet's Bookshelf) by Michael Alexander, Richard Kusleika
3. Professional Excel Development: The Definitive Guide to Developing Applications Using Microsoft Excel, VBA, and .NET (2nd Edition) by Rob Bovey, Dennis Wallentin, Stephen Bullen, John Green
4. VBA for Modelers: Developing Decision Support Systems with Microsoft Office Excel by S. Christian Albright
5. Ready-To-Use Excel Macros by Michael Alexander
6. Michael Alexander and Dick Kulseika, "Microsoft Excel 365 Bible – The Comprehensive Tutorial Resource", Wiley, February 2022
7. Greg Harvey, "Excel 2019 for Dummies", Wiley, October 2018
8. Greg Harvey, "Excel 2019 All-in-One Desk Reference for Dummies", October 2018
9. Joseph Schmuller, "Statistical Analysis with Excel for Dummies", Wiley, December 21
10. Alan Murray, "Advanced Excel Formulas", Apress, August 2022
11. Paul McFedries, "Excel Data Analysis for Dummies", Wiley, January 2022
12. Wayne Winston, "Microsoft Excel Data Analysis and Business Modeling – Office 2021 and Microsoft 365", Microsoft Press, December 2021
13. Bill Jelen and Tracy Syrstad, "Microsoft Excel VBA and Macros – Office 2021 and Microsoft 365", Microsoft Press, March 2022

Agricultural Economics
Semester: VII

Course Code: ECO-410-MJE

Credit: 4

Preamble

Agricultural Economics is an applied field in economics; the subject provides an understanding of the production and distribution of agricultural goods and an overall understanding of the agricultural value chain. Agricultural Economics provides an understanding of the various aspects of agriculture and its value chain - productivity, labour, credit, markets for farm products, with appropriate economic analysis. The subject discusses agrarian structures with respect to growth, employment, efficiency and prices as well as incomes. It is important to analyse the challenges to agriculture in the context of emerging economies.

Course Objectives:

- To develop an understanding of agricultural economics in the theoretical as well as practical context.
- To discuss and debate the various issues and challenges faced by agrarian economies w.r.t. production, productivity, efficiency, employment, etc.
- To understand the latest developments in the agriculture sector such as government initiatives to improve productivity, precision farming, digital technology etc

Learning Outcomes:

- Ability to analyse and evaluate the subject with reference to various aspects of agrarian economies.
- Ability to develop an understanding of agriculture with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of agriculture.

1. Introduction (10 Lectures)

- 1.1 Meaning and scope of agricultural economics
- 1.2 Necessity to study agricultural economics separately
- 1.3 Agrarian Structure in India since 1991
- 1.4 Review of Agricultural Growth in India in post reform period
- 1.5 Barriers to Agricultural Growth in India

2. Agriculture Productivity and Agricultural Labour (13 Lectures)

- 2.1 Trends in Agricultural Productivity in India since 1991
- 2.2 Challenges to Agricultural Productivity– Crop Insurance, Irrigation, Exports
- 2.3 Need for Policy Intervention – Productivity, Equity and Sustainability
- 2.4 Technological developments in Agriculture –irrigation, seeds, fertilizers
- 2.5 Agricultural Labour- Nature and Problems

3 Agriculture and Credit (12 Lectures)

- 3.1 Rural Credit – Significance and Sources – institutional and non-institutional
- 3.2 Role of NABARD, Commercial Banks and Cooperative Institutions
- 3.3 Micro Finance in Rural Finance – Emergence, Role and Challenges
- 3.4 Challenges to Agricultural Credit in India

4 Agriculture and Markets (13 Lectures)

- 4.1 An Overview of The Agricultural Value Chain
- 4.2 Characteristics of Agricultural Markets in India
- 4.3 Agriculture and Price System in India
- 4.4 Role of Farmers' Marketing Cooperatives
- 4.5 Agro Processing- Need and Challenges
- 4.6 Agriculture in India and WTO Agreements

5 Agricultural Growth and Rural Development (12 Lectures)

- 5.1 Agricultural revolutions in India

5.2 Food Security in India – PDS, TPDS
5.3 Policies for Sustainable Agriculture in India

Reference Books Basic Reading List:

1. Subha Reddy (2008) 'Agricultural Economics' OUP
2. Agrawal A.N.(Latest Edition) Indian Economy Problem of Development and Planning
3. Datt R.& K.P.M Sundharm (Latest Edition) Indian Economy, S. Chand & Co.
4. Misra S.K.& V.K.Puri (Latest Edition) Indian Economy, Himalaya Publication House Mumbai.

Recommended Readings:

1. Ajit Singh and Hamid Tabatabai (1993) 'Economic Crisis and Third World Agriculture', Cambridge University Press
2. B.N.P Singh (2004) 'Indian Economy Today Changing Contours' .Deep and Deep Publications
3. C.S.Prasad (2006) 'Sixty years of Indian Agriculture'–New Delhi
4. Dewett Kewal (2005) Indian Economy C. Chand &Co. Ltd, New Delhi
5. Gopalji & Suman Bhakari (2012) 'Indian Economy Performance and Policies, Pearson Publication Delhi
6. Gulati & Kelley(1999), 'Trade Liberalization of Indian Agriculture' OUP
7. Hansra Parumal and Chandrakarn–'Modernization of Indian Agriculture in the 21st Century- Challenges, Opportunity and Strategies' Concept Publication Co. New Delhi.
7. Johnson P.A Development Issues of Indian Economy (2003) Manan Prakashan
8. Kapila Uma (ed.) Indian Economy Since Independence, Academic Foundation (2003)
9. Mamoria C.B.(2005) 'Agricultural Problems of India' Kitab Mahal Pub.
10. M.P.Singh (2004) 'Indian Economy Today-Problems Planning and Development' Deep and Deep Publication.
11. Singh Acharya, Sagar (2002) 'Sustainable Agricultural Poverty and Food Securities' Rawat Publications Jaipur Vol-I&II
12. S. Mahendra Dev (2010) Inclusive Growth in India: Agriculture, Poverty and Human Development, OUP
13. Norton George W. And Jeffery Alwang (1993) 'The Introduction to Economic and Agricultural Development' McGraw Hill Co. Publication

Recommended Journals:

1. Journal of Agricultural Economics- Wiley Online
2. The Indian Economic Journal- Sage Journals
3. International Journal of Agricultural Economics- Science Publishing
4. American Journal of Agricultural Economics-Oxford Academic
5. Journal of Agricultural and Applied Economics- Cambridge University Press
6. Economic & Political Weekly

Intermediate Statistical Techniques

Semester: VII

Course Code: ECO-411-MJE

Credit: 4

Preamble

The role of Statistics is important as well as relevant in Economics. The use of Statistics can provide a better understanding of various topics discussed and studied under economics. Statistical tools and techniques help understand, discuss and appreciate various topics under micro and macroeconomics better. Besides, applied subjects in economics make use of statistical tools and techniques to provide more elaborate and enhanced understanding of issues and challenges in the real world.

Course Objectives:

- To provide an understanding of Statistics and its application under various topics under economics.
- To demonstrate the practical and the applied aspects of economics with the help of Statistical techniques.

Learning Outcomes:

- Ability to develop, demonstrate and examine various topics under economics with the help of statistical techniques.
- Ability to examine subject areas in economics with the use of statistical tools.
- The course will help understand preliminary quantitative methods
- The course will be helpful for the application of different statistical techniques
- The course will help to interpret the data.

1. Skewness, Moments and Kurtosis

- 1.1 Skewness - Meaning and Types
- 1.2 Measures of skewness – Absolute, Relative, Karl Pearson's, Bowley's, Kelly's Coefficient of skewness
- 1.3 Moments – meaning, Raw Moments (About Origin), Central Moments (About Mean), measure of Skewness based on Moments
- 1.4 Kurtosis – meaning and measures of Kurtosis

2. Measures of Relationship

- 2.1 Correlation: Meaning, Significance of Correlation; Correlation and Causation
- 2.2 Types of Correlation: Simple, Partial, Multiple, Linear, Non-Linear Correlation
- 2.3 Methods of Studying Correlation-Scatter Diagram Method, Graphic Methods, Karl Pearson's Coefficient of Correlation, Rank Correlation Coefficient

3. Index Number

- 3.1 Uses of Index Number; Problems in Construction of Index Number
- 3.2 Methods of Constructing Index Numbers- Unweighted and Weighted Index Numbers
- 3.3 Types of Weighted Indices- Laspeyres Methods, Paasche Method, Bowley's Method, Fishers Ideal Method
- 3.4 Quantity or Volume Index numbers, Tests of Adequacy- Time Reversal Test, Factor Reversal Test; Chain Index Numbers

4. Time Series

- 4.1 Components of Time Series
- 4.2 Measurement of Trend- Freehand or Graphic Method, Semi-Average Method, Moving Average Method and Method of Least Squares
- 4.3 Measurement of Seasonal Variations; Measurement of Cyclical Variations
- 4.4 Calculation of Correlation in Time Series

References / Basic Reading List:

1. Anderson David & al (2015) 'Statistics for Business and Economics', 12th Edition, Cengage India.
2. Gupta S.C. (Latest Edition) 'Fundamentals of Applied Statistics' Sultan Chand & Sons.
3. Gupta S.C. (2014) 'Fundamentals of Mathematical Statistics' Sultan Chand & Sons.
4. Gupta S.P. (2014) Statistical Method, Sultan Chand & Sons, 46th Edition.
5. Nagar A.L. & Das R.K. (1997) 'Basic Statistics' 2nd Edition, OUP.
6. Rohatgi Vijay K., A.K. Md. Ehsanes Saleh (2008) 'An Introduction to Probability and Statistics, Wiley, 2nd Edition. M. A. I (Economics) MES Abasaheb Garware College (Autonomous), Pune
7. Vohra N.D. (2017) "Business Statistics' McGraw Hill Education

Recommended Reading:

1. Croxton F. E and Cowden D. J. (1968) 'Applied General Statistics' Pitman Publishing
2. Croxton F. E and Cowden D. J. (2012) 'Practical Business Statistics' Literary Licensing, LLC
3. Keller Gerald (2015) Statistics for Management and Economics, South Western Lind, 4. Marchal and Wathen (2017) 'Basic Statistics for Business and Economics' McGraw Hill Education, 7th Edition 5
5. Richard I. L, M. H. Siddiqui, D S. Rubin, Sanjay Rastogi (2017) Statistics for Management and Economics' 5th Edition, Pearson Education

Recommended Journals:

1. Journal of International Economics- Elsevier
2. Journal of Finance- Wiley Online
3. Journal of Applied Statistics- Francis & Taylor
4. Journal of Statistics Education- Francis & Taylor

Research Methodology
Semester: VII

Course Code: ECO-440-RM

Credit: 4

Preamble

The main objective of this paper is to make the students aware of the importance of Research Methodology. Today research is of importance in every field of life. Hence students need sound initiation in the world of research. Thus this syllabus is prepared to equip students with basics of research methodology and also provide them acquaintance with the main ingredients of major sources secondary data on Economics, some hands-on experience in conducting survey including designing questionnaire and interview schedules, collection of data, analysis of data and preparation of report.

Course Objectives:

- To enable an understanding of Research and its methods under various areas of Economics.
- To demonstrate the practical and the applied aspects of research in relation to Economics.

1 Introduction (08 Lectures)

- 1.1 Research: Meaning, Nature, Scope. And Importance
- 1.2 Scientific Research: Methods - Stages /Steps
- 1.3 Social Science Research - Meaning, Nature, Scope. And Importance
- 1.4 Review of Literature- Need, Scope, Use and Precautions
- 1.5 Types of research- Fundamental, Applied, Action

2 Research Problem and Design (10 Lectures)

- 2.1 Research Problem- Meaning, Identification and Selection of Research Problems
- 2.2 Research design; Meaning, Objective,
- 2.3 Need, Characteristics of Research design
- 2.4 Types of research Design – Descriptive, Diagnostic, Exploratory, Experimental, Qualitative, Quantitative

3 Data Collection And Data Analysis (12 Lectures)

- 3.1 Collection of Data – Meaning, Importance
- 3.2 Sources of data – Primary Data and secondary data
- 3.3 Methods of Primary Data Collection- Questionnaire and Interview method, Schedule, Observation Method;
- 3.4 Secondary Data Sources
- 3.5 Sampling Method –Meaning and Types—(Probability and Non-probability)
- 3.6 Analysis of Data- Classification and Tabulation of Data
- 3.7 Measures of central tendency, dispersion, correlation, etc.

4 Testing of Hypothesis (12 Lectures)

- 4.1 Hypothesis: Definitions, Characteristics and Importance
- 4.2 Types of Hypothesis)
- 4.3 Procedure of Hypothesis Testing
- 4.4 Basic Concepts: Level of Significance, Statistical Errors (Type --I and Type II Error)
- 4.5 Procedure of Testing of Hypothesis- Parametric and Non-Parametric tests

5 Report Writing (10 Lectures)

- 5.1 Objective of Report Writing
- 5.2 Importance of Research Report,
- 5.3 Features of Research Report
- 5.4 Steps/ Element of Research Report
- 5.5 Report Writing: Considerations and Precautions, Ordering References, Bibliography and Appendix in Research

Basic Reading List:

1. Banamati Mohanty (2015) 'Statistics for Behavioral and Social Sciences' Sage Texts
2. Bryman Alan (2018) 'Social research methods' OUP
3. Cooper Donald R. & Pamela S. Schindler (1999), "Business Research Methods", Tata McGraw-Hill Edition, New Delhi
4. Flick Uwe (2011) 'Introducing Research Methodology' Sage Publications
5. Kothari C. R, Gaurau Garg (2019) 'Research Methodology, Methods and Techniques', New Age International Publications, 4th Edition
6. Kumar Ranjit, (2012), "Research Methodology" 2nd Ed, Pearson Education
7. Wilkinson and Bhandarkar (2016) 'Methodology and Techniques of Social Science Research; HPH
8. Willson Jonathan (2017) 'Essentials of Business Research: A Guide to Doing Your Research Project' Sage Publications

Recommended Readings:

1. Basotia G.R. Sharma K.K. (1999) 'Research Methodology' Mangal Deep Publications
2. Don E. Ehridge (2004) 'Research Methodology in Applied Economics: Organizing Planning and Conducting Economics Research', John Wiley and Sons
3. Gopal M.H. (1971) 'An Introduction to Research Procedure in Social Sciences', Asia Publishing House
4. Kothari S. R (2012) 'Research Methodology, Methods and Techniques', Pragun Publications.
5. Khandhare V.B., Yadav Y., 2016, Chinmay Publication, Aurangabad.
6. Krishnaswamy, O.R. (1993) 'Methodology of Research In Social Sciences, HPH
7. Kurein C. T. (1973) 'A Guide to Research in Economics' Sangam Publishers for Madras Institute of Development Studies
8. Les Oakshott (2012) 'Essential Quantitative Methods for Business, Management and Finance', Palgrave Macmillan, 5th edition
9. Moser C.A., G. Kalton (1985) 'Survey Methods in Social Investigations' Routledge
10. BAV Sharma D Ravindra Prasad and P. Satyanarayana (1983) 'Research Methods in Social Sciences' Sterling publishers, New Delhi
11. Sadhu AN, Amarjit Singh (2007) 'Research Methodology in Social Sciences' HPH
12. Thakur Devendra (2009) 'Research Methodology in Social Sciences' Deep and Deep Publications
13. Young P.V. (1984) 'Scientific Social Survey and Research', Prentice Hall -India

Recommended Journals:

1. Journal of Mixed Methods Research- Sage
2. Journal of Applied Social Sciences- Sage
3. Research in Economics- Elsevier
4. Social Science Research- Elsevier
5. The Social Science Journal – Elsevier/ Science Directory

Advanced Macro Economics
Semester: VIII

Course Code: ECO-451-MJ

Credit: 4

Preamble

Macroeconomics or aggregative economics analysis establishes the functional relationship between various aggregates of the economy. Aggregative analysis assumed such a great significance in recent times that a prior understanding of macroeconomic theoretical structure is considered essential for proper comprehension of different issues and policies. Macroeconomics now is not only a scientific method of analysis but also a body of empirical economic knowledge. The course equips the students at the postgraduate level to understand systematic facts and theoretical developments for empirical analysis,

Course Objectives:

- To provide a thorough understanding of the principles of macroeconomics and the application of macroeconomic concepts in real-life situations
- To discuss the modern developments in macroeconomics. Programme Outcome:
- Ability to analyze and demonstrate knowledge of the basic theories/laws in macroeconomics.
- At the end of the course, the student should be able to evaluate macroeconomic concepts, models and its use in real life situations.

1. Traditional Approaches to Macroeconomics (15 Lectures)

- 1.1 Classical Approach-Introduction and main features
- 1.2 Keynesian Approach-Introduction and main features
- 1.3 Neoclassical Approach-Introduction and main features
- 1.4 Schools of thought in Macroeconomics after Keynes
- 1.5 Circular Flow Income in two-three and four sector economy
- 1.6 Methods and rules of calculating national income
- 1.7 National Income Accounting - revisited Concepts of growth and Development

2. Classical and Keynesian Macroeconomics (15 Lectures)

- 2.1 Classical Approach - Say's Law of market, Determination of Output and Employment - Effects of Change in Aggregate Demand and Supply Curve
- 2.2 Keynesian Approach: Determination of output and employment, Aggregate Demand and Supply function, concept of effective demand
- 2.3 Consumption Function: Income, consumption and saving linkages, Overview of Keynes psychological law, Permanent income hypothesis, Life cycle hypothesis, Relative income hypothesis

- 2.4 Investment Function: Keynes theory of investment, Concepts: Multiplier, accelerator and Super Multiplier

3. Demand and Supply of Money (15 Lectures)

- 3.1 Definition of Money, Debates relating to definition of Money
- 3.2 Liquidity measures according to Reddy Committee Report, 2001
- 3.3 The Liquidity Theory, Gurley and Shaw Hypothesis, Demand for Money- Classical and Keynesian
- 3.4 Cash Balance Approach) - Post Keynesian Theories of Demand for Money, Tobins Approach, Baumol's Inventory Theoretic Approach, Friedman's Theory of Demand for Money
- 3.5 Nominal v/s Real Cash Balance

4. Supply of Money (15 Lectures)

- 4.1 Financial Intermediation
- 4.2 A Mechanistic Model of Bank Deposit Determination.
- 4.3 A Behavior Model of Money Supply Determination,
- 4.4 A Demand-determined Money Supply process,
- 4.5 RBI approach to Money Supply-High Powered Money and Money Multiplier; Budget Deficit and Money Supply, Money Supply and Open Economy.
- 4.6 Control of Money Supply.
- 4.7 Theories of Interest Rates: Loanable funds theory o Keynesian theory, Wicksellian theory, Wicksellian theory,

Basic Reading List:

1. August Swanenberg (2005) 'Macroeconomics Demystified' A Self Teaching Guide, McGraw Hill Education
2. Ackley,G.(1978), Macro Economics : Theory and Policy, Macmillan, New York.
3. Agrawal Vanita, Macroeconomics: Theory and Policy, Pearson Publication, New Delhi.
4. Ahuja H.L., Macroeconomics: Theory and Practice, S.Chand & Co. New Delhi.
5. Blackhouse, R. and A. Salansi (Eds.) (2000) Macroeconomics and the Real World (2 Vols.), Oxford University Press, London. Dornbusch,
6. Campbell R. McConnell, Stanley L. Brue, (2001) Macroeconomics: Principples, Problems and Policies', McGraw Hill, Inc, New York.
7. Froyen Richard T (2006) 'Macroeconomics– Theories and Policies' Pearson Education; 8 th edition

8. Gupta S.B. (1997) 'Monetary planning for India' OUP
9. Jha, R. (1991), Contemporary Macroeconomic Theory and Policy, Wiley Eastern Ltd., New Delhi.
10. Mankiw Gregory (2007) 'Macroeconomics' Worth, New York
11. Rao, V.K.R.V. (1983) India's National Income : 1950 to 1980, Sage Publications, New Delhi
12. Gupta, S.B. (1995), Monetary Planning in India, OUP, New Delhi.
13. Sampat Mukherjee (2013), 'A Global Text-Macroeconomics', New Central Book Agency
14. Soumyen Sikdar (2006) 'Principles of Macroeconomics' Oxford University Press

Recommended Readings:

1. Branson, W.A. (1989), Macroeconomic Theory and Policy, (3rd Edition), Harper and Row, New York.
2. Culbertson, J.M. (1968), Macroeconomic Theory and Stabilization Policy, McGraw Hill, Kogekosh, Tokyo.
3. Duesenberry, J.S. (1949), Income Saving and the Theory of Consumer Behaviour. Harvard University Press, Harvard.
4. Edey, M. and A.T. Peacock (1967), National Income and Social Accounts, Hutchinson University Library, London
5. Fisher, Dornbusch, Schmale's (1988) 'Economics' McGraw Hill International Edition ; 2nd edition
6. Friedman, M. (1957), The Theory of Consumption Function, Princeton University Press Princeton.
7. Friedman, M. (1956), Studies in the Quantity Theory of Money, The University of Chicago Press, Chicago
8. Glahe, Fred, R.(1973), Macroeconomics: Theory and Policy, Harcourt Brace Javanovich, Inc, New York.
9. Harris Lawrence (1980) 'Monetary Theory' McGraw Hill Inc. M.A. I & II
10. Keynes, J.M. (1936), 'The General Theory of Employment Interest and Money', 7 Macmillan, London.)
11. Ruggles, R. and N. Ruggles (1956), National Income Accounts and Income Analysis, McGraw Hill New

Public Economics-Policy
Semester: VIII

Course Code: ECO-452-MJ

Credit: 4

Course Preamble

Modern Public Economics has evolved from simple budgetary accounting to complex fiscal management involving digital transformations and global policy coordination. This course bridges the gap between normative fiscal theories and the practical operation of the Indian economy. This course explores the dynamic evolution of Indian fiscal federalism, the transition from central planning to cooperative federalism and the sustainability of public debt. It addresses contemporary global challenges, including international digital taxation and green finance, preparing students to navigate the complexities of a 21st-century digital and environmentally conscious economy. Students will develop the analytical skills required to evaluate real-world fiscal policy.

Course Objectives

1. To evaluate the institutional shift from central planning to cooperative federalism in India.
2. To master the analytical tools for assessing public debt sustainability and macro-fiscal stability.
3. To understand the transition of the Indian social sector from universal subsidies to Direct Benefit Transfer (DBT).
4. To equip students with knowledge of contemporary issues like Digital Taxation (OECD) and Green Finance.

Course Outcomes (COs) - Successful completion of this course, students will be able to:

- **CO1:** Appraise the role of NITI Aayog and the Finance Commission in managing vertical and horizontal fiscal imbalances in India.
- **CO2:** Conduct debt sustainability analysis and evaluate the effectiveness of the FRBM Act in controlling "off-budget" borrowings.
- **CO3:** Perform impact assessments of flagship Indian schemes using program evaluation techniques.
- **CO4:** Analyze the efficiency gains and leakage reductions achieved through Digital Public Infrastructure (DPI) system.
- **CO5:** Formulate informed perspectives on global fiscal challenges, including OECD Pillar 1 & 2 taxation, carbon credits, and the fiscal implications of Central Bank Digital Currencies.

1: Indian Fiscal Architecture & Federalism

(15 Lectures)

- 1.1** Institutional Evolution: The transition from the Planning Commission to NITI Aayog, Competitive vs. Cooperative Federalism.
- 1.2** Finance Commission Dynamics: Constitutional provisions, Criteria for vertical and horizontal devolution, Comparative analysis of the Finance Commissions-15th and 16th.
- 1.3** Fiscal Imbalances: Analyzing Vertical and Horizontal imbalances in the Indian context, Theory of Grants-in-aid and the devolution of resources.

1.4 Local Governance: Financial autonomy of Urban and Rural local bodies (73rd & 74th Amendments), Role of State Finance Commissions.

2: Public Debt & Macro-Fiscal Management (15 Lectures)

- 2.1 Debt Dynamics:** Sources of Public Debt in India -Internal and External, Debt-to-GDP dynamics and the Sustainability Gap, Intergenerational Equity.
- 2.2 Legal & Regulatory Framework:** Critical evaluation of the FRBM Act, State-level fiscal responsibility laws (SEFs) and the "Off-budget" borrowing debate.
- 2.3 Stabilization Policy:** Interdependence between Fiscal and Monetary policies, Automatic vs. Discretionary stabilization, Fiscal policy responses to global shocks and trade volatility.
- 2.4 Management:** Principles of Debt Management, repayment strategies, and the impact of deficit financing on price levels.

Unit 3: Expenditure Policy (15 Lectures)

- 3.1 Strategic Expenditure:** Economic and functional classification of Indian expenditure, The Crowding-out effect vs. Crowding-in effect of public investment.
- 3.2 Program Evaluation:** Impact assessment techniques for flagship schemes (e.g., VB-G RAM G, PM-Kisan, Ayushman Bharat and PM Awas Yojana).
- 3.3 Subsidies & Welfare:** The economics of targeted subsidy design, The political economy of Freebies vs. Merit Goods.
- 3.4 DBT Policy -** The role of Direct Benefit Transfer and JAM Trinity in reducing leakages.

Unit 4: Digital Economy & Contemporary Global Issues (15 Lectures)

- 4.1 Digital Public Infrastructure (DPI):** Economics of the India Stack (Aadhaar, UPI, ONDC), Digital transformation of government services and its impact on fiscal efficiency.
- 4.2 International Taxation:** Challenges of taxing the Digital Economy, Understanding OECD Pillar 1 and Pillar 2, Impact on India's revenue.
- 4.3 Environmental Finance:** Economics of Green Growth, Green Bonds, Carbon Credits, and financing the climate transition in developing economies.
- 4.4 Future of Fiscal Policy:** Regulating digital monopolies, cryptocurrencies, and the fiscal implications of Central Bank Digital Currencies (CBDC).

Reference Books

- 1. Bhatia H.L "Public Finance "Vikas Publishing House, 18th edition
- 2. Jha Rajesh K. (2012) Public Finance. Pearson Publication New Delhi
- 3. Mankar & Sharma (2001) "Public Finance Theory & Practice, Himalaya Publishing
- 4. Stiglitz, Joseph E (1999), Economics of the Public Sector, W. W. Norton & Co
- 5. Tyagi B.P., Public Finance, Jai Prakash Nath Publisher, Meerat (UP).

Recommended Readings:

- 1. Shome, P. (Ed.) (1995), Tax Policy: Handbook, Tax Division, Fiscal Affairs Department, International Monetary Fund, Washington D.C.
- 2. Tripathy R.N. (2002) Public Finance in Underdeveloped Countries, Indus Publishing Company

3. Rajesh K.Jha (2012) Public Finance. Pearson Publication New Delhi
4. Gopalan Swapna (2008) Gender Budgeting: Concepts and Experiences, ICFAI University Press
5. Gopalan Swapna (2008) Gender Budgeting in India: Towards achieving Gender Equity, ICFAI University Press
6. Mundle Sudipto (2005) “ Public Finance: Policy Issues for India” Oxford University Press
7. Rangarajan C, D. K. Srivastava (2011) Federalism and Fiscal Transfers in India’ OUP, India
8. Y. V. Reddy, G. R. Reddy (2019) ‘Indian Fiscal Federalism’ Oxford University Press
9. Latest Budget Papers- Government of India
10. Economic Survey (Annual)

Recommended Journals:

1. Journal of Public Economics- Science Direct
2. South Asian Journal of Macroeconomics and Public Economics- Sage Journals
3. Indian Journal of Finance
4. The Indian Economic Journal- Sage Journals

International Finance
Semester: VIII

Course Code: ECO-453-MJ

Credit: 4

Preamble

International Economics is subject that is relevant in the current context. International Finance provides an understanding of the various aspects of International Finance in the analytical context along with a theoretical background. The subject discusses Balance of Payments, Foreign Exchange, Risk, Currency Management as well as international capital flows. Various topics are discussed and analysed that relate to international finance, banking and markets.

Objectives

- To develop an understanding of the theoretical concept in international finance- Balance of Payments, exchange rate policies, capital flows, etc.
- To compare and contrast the scenarios on international trade in India vis-à-vis the world economy.
- To provide knowledge to students regarding recent developments and changes in international banking, international banking agreements etc.
- To make the students understand role of international economic organization and global crisis development.

Learning Outcome:

- Ability to understand and interpret the concepts such as Balance of Payments, Exchange Rates, Foreign Exchange transactions, International capital flows, etc.
- Ability to critically analyse the effects of deficits, exchange risk, role of foreign capital on the world economy/trade.
- Ability to discuss and debate on subjects related to international trade and finance w.r.t the Indian Economy.

1. Balance of Payment (16 Lectures)

- 1.1 Balance of Trade- Concept, Structure & Components
- 1.2 Balance of Payments- Concept, Disequilibrium, Causes of Disequilibrium
- 1.3 Correction of Disequilibrium-Automatic Correction, Deliberate Correction
- 1.4 Foreign Trade Multiplier- Meaning, Working, Implications & Limitations
- 1.5 Policies for Internal and External Balance-Fiscal and Monetary Policy Under Fixed and Floating Exchange Rates
- 1.6 Devaluation of Indian Rupee- Effect on Balance of Payment in 1991

2. Foreign Exchange (16 lectures)

- 2.1 Components of Foreign Exchange Market- Transfer of Purchasing Power, Provision of Credit, Provision of Hedging Facilities
- 2.2 Transactions in the Foreign Exchange Market- Options, Forwards, Futures, and Swap, Concept of Arbitrage, Hedging and Speculation; Types of Risk in International Markets
- 2.3 Determination of Rate of Exchange- Purchasing Power Parity Theory, Balance of Payments Theory, Monetary Models
- 2.4 Exchange Control-Scope of Exchange Control, Objectives and Methods of Exchange Control
- 2.5 Exchange Rate Systems- Fixed and Flexible Exchange Rates-Case for and against Fixed and Flexible Exchange Rates

3. International Capital Flows (12 lectures)

- 3.1 Classification of International Capital Flows-Direct and Portfolio Investment, Government, Institutional and Private Capital, Short term and Long term Capital, Home and Foreign Capital, Foreign Aid
- 3.2 Importance and Role of Foreign Capital-Trade and Investment, Theories of International Investment, Factors Affecting International Capital Movements
- 3.3 Current and Capital Account Convertibility- Concept and Prerequisites, Developments on Convertibility in the Indian Context
- 3.4 Foreign Exchange Management Act- Objectives and Features

4. International Banking (16 lectures)

- 4.1 International Banking- Concept, Classification - Offshore Banking Unit, Foreign Banks, Foreign Subsidiaries/ Affiliates, Correspondent Banks
- 4.2 International Banking Laws- Choice of Law, Proper Law, Use of Language and Nature of Legal Disputes;
- 4.3 International Banking Agreements-Basel Norms; Introduction to LIBOR
- 4.4 Changing Role of International Economic Organizations- IMF and IBRD (World Bank)- Global Crisis and Development, Introduction to BRICS Bank

Reference Books Basic

Reading List:

- 1. Gupta, K.R.(latest edition): “International Economics”, Atma Ram & Sons, Delhi
- 2. Indian Institute of Banking & Finance (2011) ‘International Banking’
- 3. Kindleberger, C.P. International Economics, R.D. Irwin, Homewood.
- 4. Salvatore, D. (1997), International Economics, Prentice Hall, Upper Saddle River, N.J., New York.

5. Srivastava, O.S. (latest edition), “International Economics”, Kalyani Publishers

Recommended Readings:

1. Ellsworth P.T., (1969) ‘The International Economy’ New York Macmillan Publishing Co.
2. Frederic Mishkin and Stanley Eakins (2006) “Financial Markets and Institutions”, Pearson 5th Ed.
3. Heller, Robert H., (1968) ‘International Trade’ Prentice Hall, Englewood Cliffs
4. Indian Institute of Banking & Finance (2017) ‘International Banking Legal & Regulatory Aspects’
5. Joyce Joseph (2013) ‘IMF and the Global Economic Crisis’ Cambridge University Press
6. O’Neill Jim (2013) ‘The Growth Map: Economic Opportunity in BRICS and Beyond’ Penguin, UK
7. Sharma Ruchir (2013) ‘Breakout Nations: In pursuit of Next Economic Miracles’ Penguin UK
8. Sharma Ruchir (2017) ‘The Rise and Fall of Nations’ Penguin UK
9. Verghese, S.K., (1986) ‘Foreign Exchange and Financing of Foreign Trade’, Vikas Publishing House, New Delhi.
10. Williamson, J & Milner, C (1991): ‘The World Economy-A Textbook in International Economics’, New York University Press, N. York.

Recommended Journals:

1. Journal of International Economics- Elsevier
2. Journal of Finance- Wiley Online
3. Journal of Emerging Market Finance- Sage Journals
4. Journal of Financial Economics-Elsevier /Science Direct

Introduction to Python for Economic Analysis
Semester: VIII

Course Code: ECO-454-MJ

Credit: 2

Course objectives

- To introduce students to the fundamentals of Python programming and its applications in economic analysis and data handling.
- To develop the ability to manage, process, and analyze economic data using Python and the pandas library.
- To enable students to apply programming logic, control structures, and basic statistical techniques for solving simple economic problems and interpreting results.

Course Outcomes

After successful completion of the course, students will be able to:

CO-1 Demonstrate proficiency in Python programming concepts, including data types, operators, control structures, functions, and data handling techniques.

CO-2 Import, clean, manage, and analyze economic datasets using Python and pandas, and generate basic visualisations.

CO-3 Apply Python-based analytical tools to perform basic statistical analysis and interpret economic data for informed decision-making.

Unit I: Basics of Python and Data Handling

(30 Hours)

Introduction to Python and its use in economic analysis, Need and applications in economic analysis, Installation of Python (Anaconda / Jupyter Notebook / Google Colab), Basic syntax and structure of Python, Variables and data types: integer, float, string, Input and output functions, Lists and basic operations, Indexing and slicing, Operators: arithmetic, relational, logical, Comments in Python, Introduction to pandas, Reading CSV files and displaying datasets, Basic data handling (selection and filtering).

Unit II: Control Structures and Basic Data Analysis

(30 Hours)

Decision making: if, if-else, Looping: for, while, Basic functions (user-defined), Simple programs using economic examples, Measures of central tendency: Mean, Median, Introduction to simple data analysis, Basic graphs: bar chart and line graph, Interpretation of results in economic context.

Assessment Methods

Internal Assessment Methods (Continuous Evaluation) (25 Marks)

- Practical Assignments
- Lab Performance / Hands-on Work
- Mini Project / Case Study
- Viva Voce
- Internal Practical Test

External Assessment Methods (Final Examination) (25 Marks)

- **Practical Examination:** Students perform tasks in the lab within a fixed time.

List of Practicals:

- Install Python and work with Jupyter Notebook / Google Colab, and execute basic commands like `print ( )`.
- Create variables of type integer, float, and string, and display their values.
- Write programs using `input()` and `print()` to calculate simple economic values like income and expenditure.
- Perform arithmetic operations (+, −, ×, ÷) and solve simple numerical problems.
- Create lists (e.g., income data), access elements, and perform basic operations.
- Extract specific elements from lists using indexing and slicing techniques.
- Use arithmetic, relational, and logical operators in different conditions.
- Write programs using `if` and `if-else` (e.g., classify income groups as low, middle, high).
- Use `for` loop to calculate totals (e.g., total expenditure from a list).
- Use `while` loop for repetitive calculations.
- Create simple user-defined functions (e.g., function to calculate average income).
- Import the pandas library and create a basic DataFrame.
- Read a CSV file containing economic data and display it.
- Calculate mean and median from a dataset (income, consumption, etc.).
- Create simple graphs such as bar chart and line graph to represent economic data.

Reference Books:

1. E. Balaguruswamy, “Introduction to Computing and Problem Solving with Python”, McGraw Hill Education, 2018
2. Martin, “Python : The Complete Reference”, McGraw Hill Education, 2018
3. Wes McKinney, “Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython”, O’Reilly Media, 2017.
4. Jake VanderPlas, “Python Data Science Handbook: Essential Tools for Working with Data”, O’Reilly Media, 2016.
5. Joel Grus, “Data Science from Scratch: First Principles with Python”, O’Reilly Media, 2019.
6. Allen B. Downey, “Think Stats: Exploratory Data Analysis in Python”, O’Reilly Media, 2014.
7. Luca Massaron and John Paul Mueller, “Python for Data Science for Dummies”, Wiley, 2019.

Labour Economics
Semester: VIII

Course Code: ECO-460-MJ

Credit: 4

Preamble

Labour Economics is a specialized area in economics; the subject covers the study of labour, the industrial structure and industrial relations. Labour Economics provides an understanding of the various aspects of labour markets on structure, division of labour, employment and wage determination with a relevant theoretical background. The subject discusses labour markets, wages and wage determination, labour dynamics and industrial relations. Various contemporary topics are discussed and analysed such as migration, absenteeism, wage differentials and social security under labour economies.

Course Objectives:

- To develop an understanding of labour economics in the theoretical as well as practical context.
- To discuss and debate the various issues and challenges faced by labour with reference to division of labour, employment, wage determination, etc.
- To demonstrate on the various aspects of labour dynamics and labour relations w.r.t. India

Learning Outcomes:

- Ability to analyse and evaluate the subject with reference to various aspects of Labour economics.
- Ability to develop an understanding of the labour with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of labour w.r.t. the Indian Economy.

1 Introduction

(12 Lectures)

- 1.1 Labour Economics as a Discipline
- 1.2 The “Old” and “New” Economic Perspective
- 1.3 Concept of Labour Force, Determinants of Labour Force Participation
- 1.4 Historical Emergence and Relevance of Labour Economics
- 1.5 Indian Labour Market- Changing Structure and Impact of Globalization
- 1.6 Unemployment in India and Policies for Employment Generation

2 Labour Markets and Wage Determination

(14 Lectures)

- 2.1 Labour Markets- Rural & Urban, Formal and Informal, Organized and Unorganized, Contract Labour
- 2.2 Growth and Trends in Labour Market,- New Legislation, Unionization, Labour Dynamics, Labour Market Flexibility
- 2.3 Theories of Wages- Marginal Productivity Theory, Theory of Collective Bargaining, Modern Theory of Wages- Demand and Supply Theory

2.4 Wage Structure, Minimum Wage, Fair Wage, Wage Differentials- Inequality, Inter- sectorial Differences, Gender Differences

2.5 Evolution and Features of Wage Policy in India

3 Migration and Absenteeism (10 Lectures)

3.1 Approaches to Labour Migration, Inter-sectorial and International Migration

3.2 Trends, Causes and Effects of Migration

3.3 Labour Turnover and Absenteeism in Labour Markets in India- Causes, Effects and Policy Measures

4 Industrial Relations (12 Lectures)

4.1 Labour Unions in India- Growth, Structure and Development

4.2 Employers' Organization in India- History, Emergence and Role

4.3 Globalization and Labour Markets- International Division of Labour, Impact on Developing Economies

4.4 Current trends in Collective Bargaining

4.5 Social Security Measures

5 Labour Market reforms (12 Lectures)

5.1 Exit Policy since 1991, Need for an Effective Policy

5.2 Child Labour in India- Cause for Concern and Policy Measures

5.3 Women Workforce- Need for equal Opportunity, Skill and Earnings

5.4 Contract Labour- Increasing Use and Need for Regulation

Basic Reading List:

1. Pierre C (2015) 'Labour Economics' Prentice Hall India
2. Alan Mountjoy (2007) 'Industrialization and Underdeveloped Countries' Adline Transaction
3. Joshi M. V. (1999) 'Labour Economics and Labour Problems' Atlantic
4. McConnell, C.R. And S.L. Brue (1986), Contemporary Labour Economics, McGraw- Hill, New York

Reference Books:

1. Datt, G (1996), Bargaining Power, Wages and Employment: An Analysis of Agricultural, Labour: Markets in India: Sage Publications, New Delhi
2. Dasgupta Sukti, Sher Singh Verick (2016) 'Transformation of Women at Work in Asia-An Unfinished Development Agenda' (Ed.) Sage Publication
3. Flanagan Robert J. (2006) 'Globalization and Labor Conditions: Working Conditions and Worker Rights in a Global, OUP
4. Hajela, P.D. (1998), Labour Restructuring in India: A Critique of the New Economic Policies, Commonwealth Publishers, New Delhi.
5. Jhabvala, R.and R.K. Subrahmanya (Eds) (2000), The Unorganized Sector:

Work Security and Social Protection: Sage Publications, New Delhi

6. Lester R. A. (1964) 'Economics of Labour, Macmillan, NY, 2nd Edition
7. Papola, T.S.P.P. Ghosh, A.N.Sharma (Ed.) (1993). Labour, Employment and Industrial Relations in India, B. R. Publishing Corporation, New Delhi
8. Rosenberg M.R. (1988), 'Labour Markets in Low Income Countries' in Edited Book by Chenery H. B. and T.N. Srinivasan "The Handbook of Development Economics" North Holland, New York

Recommended Journals:

1. Indian Journal of Labour Economics- Springer
2. The Indian Journal of Industrial Relations- JSTOR
3. Management and Labour Studies- S

Advanced Statistical Techniques

Semester: VIII

Course Code: ECO-461-MJ

Credit: 4

Preamble

The role of Mathematics is important in Economics. The use of Mathematics can provide a better understanding of various areas under Economics with mathematical applications to economic theories and with the help of modelling techniques. Mathematical applications help understand, discuss and appreciate micro and macroeconomics concepts and theories better. Besides, applied economics make use of mathematical applications to provide more elaborate and enhanced understanding of challenges in the real world.

Course Objectives:

- To provide an understanding of Mathematics and its application under various topics under economics.
- To demonstrate the practical and the applied aspects of economics with the help of Mathematics.

Learning Outcomes:

- Ability to develop, demonstrate and examine various topics under economics with the help of Mathematics.
- Ability to evaluate and examine subject areas in economics with the mathematical economics.

1 Theoretical Distributions

- 1.1 Binomial Distribution
- 1.2 Poisson Distribution
- 1.3 Normal Distribution
- 1.4 Relation between Binomial, Poisson and Normal distribution

2. Sampling (Statistical Inference) and

- 2.1 Parameter and statistics
- 2.2 Sampling and Non- sampling errors
- 2.3 Sampling distribution: Sampling distribution of the mean, sampling distribution of proportion, student's t-distribution, Chi-square distribution, Sendecor's F distribution
- 2.4 Degree of freedom, Standard error, Central limit theorem, Finite population correlation
- 2.5 Statistical inference: Point estimation, Interval estimation, sample size and its determination, test of significance.

3. Testing of Hypothesis

- 3.1 Hypothesis Testing: What is Hypothesis Testing?
- 3.2 Basic concepts concerning the testing of hypotheses: Null hypothesis and Alternative hypothesis, Type-I, and Type II error, Level of significance, Two-tailed and one-tailed tests
- 3.3 Testing of Hypothesis: Test statistics and critical region, Critical value and decision rule, Procedure for hypothesis testing

- 3.4 Hypothesis testing for mean, proportion, and variance
- 3.5 Hypothesis testing for the difference of two means, two proportions, and two variances
- 3.6 p-value approach, Power of the test, Limitations of test of hypothesis.

4 Parametric and Non-Parametric Tests

- 4.1 Test of Significance for Large Samples and Small Samples (Parametric Tests)
- 4.2 Student's t-distribution- One Samples t-test, Independent Samples t-test, Dependent t-test,
- 4.3 F-test, Z-test
- 4.4 Non-Parametric Tests- Chi-Square, Sign Test, Mann-Whitney U Test, ANOVA

References / Basic Reading List:

1. Anderson David & al (2015) 'Statistics for Business and Economics', 12th Edition, Cengage India.
2. Gupta S.C. (Latest Edition) 'Fundamentals of Applied Statistics' Sultan Chand & Sons.
3. Gupta S.C. (2014) 'Fundamentals of Mathematical Statistics' Sultan Chand & Sons.
4. Gupta S.P. (2014) Statistical Method, Sultan Chand & Sons, 46th Edition.
5. Nagar A.L. & Das R.K. (1997) 'Basic Statistics' 2nd Edition, OUP.
6. Rohatgi Vijay K., A.K. Md. Ehsanes Saleh (2008) 'An Introduction to Probability and Statistics, Wiley, 2nd Edition.
7. Vohra N.D. (2017) "Business Statistics' McGraw Hill Education

Recommended Reading:

1. Croxton F. E and Cowden D. J. (1968) 'Applied General Statistics' Pitman Publishing
2. Croxton F. E and Cowden D. J. (2012) 'Practical Business Statistics' Literary Licensing, LLC
3. Keller Gerald (2015) Statistics for Management and Economics, South Western
- Lind, Marchal and Wathen (2017) 'Basic Statistics for Business and Economics' McGraw Hill Education, 7th Edition 5
4. Richard I. L, M. H. Siddiqui, D S. Rubin, Sanjay Rastogi (2017) Statistics for Management and Economics' 5th Edition, Pearson Education

Recommended Journals:

1. Journal of International Economics- Elsevier
2. Journal of Finance- Wiley Online
3. Journal of Applied Statistics- Francis & Taylor
4. Journal of Statistics Education- Francis & Taylor