Revised Curriculum, Syllabus and Pattern of Question Papers for M. Sc. Economics (Annual System): Two Years Program of 1400 Marks w.e.f. Session 2012 & Onwards

M. Sc. Economics (Part -I)

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<th>Paper No.</th>
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<th>Maximum Marks</th>
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<td>Paper 1</td>
<td>Microeconomic Theory</td>
<td>100 Marks</td>
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M. Sc. Economics (Part-II)

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<td>International Economics</td>
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List of Optional Papers

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<th>Maximum Marks</th>
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<td>Labour Economics</td>
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<td>II</td>
<td>Optimization and Dynamic Analysis</td>
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<td>III</td>
<td>History of Economic Thoughts</td>
<td>100 Marks</td>
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<td>IV</td>
<td>Human Resource Development</td>
<td>100 Marks</td>
</tr>
<tr>
<td>V</td>
<td>Population Economics</td>
<td>100 Marks</td>
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</tbody>
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Revised Pattern of Question Papers for M. Sc. Economics (Annual System) w.e.f. First Annual, 2014 & onwards as Approved by the University Bodies

The Question paper will consist of 6 Questions in all. Question 1 of 40 marks consisting of 4 parts of 10 marks each will be compulsory and the candidates will have to attempt 3 Questions (Subjective) of 20 Marks each from the remaining 5 Questions.
Revised Syllabus & Contents of the Papers

M.Sc. Economics (Annual System) Part- 1

Paper 1: MICROECONOMIC THEORY

Topic: 1
Some Fundamentals of Micro Economics

Topic: 2
Theory of Consumer Behaviour

Topic: 3
Theory of Production
The Concept of Production Function; Production with one variable and two variable inputs, Laws of Returns and Returns to scale. The substitution and Resource effects of change in input prices. Euler’s Theorem. The elasticity of substitution. Some special production functions: Cobb Douglas Production function. CES Production Function. Translog Production function. Homogenous Production Function.

Topic: 4
Cost of Production and Revenue
Definition and kinds of costs. Cost Functions. Traditional, Modern and Engineering costs Theories. Economics of Scale and Scope. Revenue Analysis (Total, Marginal and Average Revenue).

Topic: 5
The Theory of Market Behaviour


Topic: 6
Pricing of Factors of Production and Income Distribution
Factor Pricing in perfectly competitive and imperfectly competitive Markets. Elasticity of Factor substitution, Technological progress and Income Distribution.

Topic: 7
General Equilibrium and Economic Efficiency

Topic: 8
Welfare Economics

Recommended Books:

Additional Readings:

(*Strongly Recommended).
Topic: 1
Introduction to Macro Economics and National Income

Topic: 2
Classical Theory of Output and Employment
a) The classical revolution, production function and employment, demand for and supply of labor, labor market equilibrium, the determinants of output and employment, derivation of classical aggregate supply curve.
b) What is money? Functions of money and types of money, how quantity of money is measured? The quantity theory of money, the money demand function and the quantity equation, relationship between money, prices and inflation, Seigniorage, real vs nominal interest rates, the Fisher effect. The classical aggregate demand curve. The classical theory of the interest rate. Say’s Law of markets, pricing implications of the classical equilibrium model.

Topic: 3
Keynesian Theory of Income and Output Determination
a) Simple Keynesian model, conditions for equilibrium output. The components of aggregate demand. Consumption function, saving function (relationship between APC, MPC, APS, MPS, investment function) Govt. expenditure and net exports, aggregate demand equals aggregate output. Theory of multiplier, derivation of simple multiplier, Govt. expenditure and tax multiplier, export and import multiplier, super multiplier, employment multiplier, balanced budget multiplier. Budget surplus and full employment.

Topic: 4
Theory of Consumption and Their Implications

Topic: 5
Theory of Investment
Investment VS capital, kinds of investment, determinants of investment MEC VS MEI Present value criterion for investment, Internal Rate of Return Criterion, Neo classical
model of fixed business investment. Taxes and investment, Tobin’s q theory, Residential investment model, Acceleration Principle, Rigid and Flexible Accelerator, Inventory Investment Model.

Topic: 6

IS – LM framework
IS curve, it derivation, shape of IS curve, factors affecting the slope and position of IS curve (Mathematical version) LM curve, its derivation, factors affecting the slope and position of LM curve. Policy effects in the IS-LM model. Monetary and fiscal policy multipliers in the IS-LM curve model.

Topic: 7

Aggregate Demand and Aggregate Supply Analysis
Keynesian aggregate demand curve, its derivation, factors determining its slope and position. The aggregate demand schedule combined with the classical theory of aggregate supply. The Keynesian contractual view of labor market – a flexible price – fixed money wage model, comparison of classical and Keynesian theories of labor supply. The Keynesian aggregate supply curve with variable money wage. Policy effects in the variable–wage Keynesian model. The effects of shifts in the aggregate supply schedule, factors that shift the aggregate supply schedule. Aggregate supply models. The sticky wage model, the imperfect information model, the sticky – price model, The Worker Misperception Model.

Topic: 8

Inflation
The concept of inflation, Demand pull and Cost push inflation, hyperinflation, social cost of inflation, theory of stagflation, The Relation of Wages Changes to Unemployment. The Philips curve – the theoretical basis for the Philips curve. Unemployment and price expectations. The long-run Philips curve. Deriving the Philips curve from the aggregate supply curve. Adaptive expectations and inflation inertia, The Natural Rate Theory, Monetarist View of the Philips Curve, Keynesian view of the Philips curve.

Topic: 9

Government Debt and Budget Deficits

Topic: 10

Economic Fluctuations, Long-Term Growth and Full Employment
a) The theory of real business cycles, interpretation, labor market, technology shocks, household behavior, the persistence of output fluctuation, limitations of the models Samuelson’s multiplier – accelerator interaction theory of trade cycles, Kaldor’s model of the business cycle. Hicks’s theory of business cycle, AD-AS theories of output functions.

b) Basic neoclassical growth model/Solow growth model – the accumulation of capital, determination of steady state equilibrium in the long-run, how savings affects growth, the golden rule level of capital, how population affects the steady state level, technological progress in the Solow model, policies to promote growth endogenous growth theory.
Recommended Books:


* Strongly Recommended

Additional Reading Material / Research Papers:

4. Rosalind Leveic arid Alexander Reborens, Macro-economics: An Introduction to Keynesian Neo-Classical Controversies; Macmillan (Latest edition),
Paper 3: MATHEMATICAL ECONOMICS

Topic: 1
The Nature of Mathematical Economics and Economic Models
Introduction; Ingredients of mathematical models; Real numbers; Concept of Sets; set operations; Relations and functions; Types of Functions; Asymptotes; Exponents & their rules; Bivariate and multivariate Functions; Levels of Generality; Some Examples of Economic Applications

Topic: 2
Static Analysis in Economics
Introduction; Constructing the Linear model and solutions; Non-linear models; The quadratic formula; Finding roots; General equilibrium ; Economic Applications and examples of Static Analysis

Topic: 3
Linear Models and Matrix Algebra
Matrices, arrays and vectors; Matrix operations; Vector operations; Commutative, associative and distributive laws; Types of matrices; Transposes and inverses; Finite Markov chains; Conditions for non singularity of a matrix; Minors and cofactors; Determinant & its properties; Laplace expansion; Solution of linear equations through Cramer's rule and Inverse of a matrix method; Properties of inverse of a matrix; Use of matrix approach in market & national income models; Input–Output Analysis; Some Economic Applications and examples

Topic: 4
Comparative Statics and Derivatives
Introduction; The derivative; Limit theories; Review inequalities and absolute values; Continuity and differentiability; Rules of differentiation; Higher order derivatives; Economic applications of derivatives; Partial Differentiation; Some Economic Applications (Marginal products, elasticities, Shepard's Lemma and the conditional input demand function, macro models and market models); Dependence or Independence of Equations; Differentials; Differentials and Elasticity; Rules of Total Differential; Some Economic Applications (Isoquants, isocost lines, indifference curves and budget lines); Total Derivatives; Implicit Functions; General Function Models; Some Economic Applications; Limitations of Comparative Static

Topic: 5
Optimization: Functions of Single Variable
Introduction; Optimum Values and Extreme Values; First Derivative Test; Economic Applications; Second and Higher Derivatives; Some Economic Applications; Maclaurin and Taylor Series; Nth Derivative Test for Relative Extremum of one variable

Topic: 6
Optimization: Functions of Time
Introduction; Nature of Exponential Functions; Growth Problems; Economic Interpretation of e; Continuous and Discrete Growth; Discounting and Negative Growth; Logarithms; Rules of Logarithms; Logarithmic Functions; Derivatives of Exponential and Logarithmic Functions; Optimal Timing; Some Economic Applications
Topic: 7

**Optimization: Functions of more than one Variable**
Extreme values of an objective Function of more than one choice Variables; Finding maximum/minimum; Quadratic forms; Characteristic roots; Concavity and convexity; Differentiability; Some Economic Applications; Reduced form models; General form models

Topic: 8

**Optimization: Constrained & Extrema**
Free and constrained optimization; Effects of Constraints; Finding Stationary Values; Second-Order Conditions; Quasiconcavity and Quasiconvexity; Some Economic Applications; Homogeneous Functions and Economic Applications

**Recommended books:**


\(^*\) **Strongly Recommended**
Paper 4: DESCRIPTIVE AND INFERENTIAL STATISTICS

Topic: 1
Introduction to Statistics
Descriptive and inferential statistics; population and sample, parameter and statistic; The four basic activities in statistics: Designing a plan for data collection, Exploring the data, Estimating an unknown quantity, Hypothesis testing; Type of measurement scales: Nominal, Ordinal, Interval and Ratio; Types of data: Univariate, Bivariate and Multivariate data, Primary and secondary data, Quantitative data and qualitative data, Time series, Cross-sectional and pooled data; Significant digits and rounding off numbers. Numerical examples and questions relating to all contents given in this topic.

Topic: 2
Presentation of Data and Measures of Central Tendency
Introduction; Classification; Tabulating numerical data: The frequency distribution, the cumulative frequency distribution, the relative frequency distribution, the percentage frequency distribution; Graphic and diagrammatic representation: Bar chart, Pi chart, Histograms, Frequency curves and Histograms; Histograms by Hand: Stem-and-Leaf. Measure of central tendency; Introduction; Types of Averages: Mean: Arithmetic mean, Geometric mean, Harmonic mean, Trimmed and Winsorized means; Quartiles: Median, Quartiles, Deciles, Percentiles; The mode; Box plot and detailed box plot; Empirical relation between Mean, Median and Mode; The cumulative distribution function.

Topic: 3
Measures of Dispersion, Skewness and Kurtosis
Absolute and relative measures of dispersion; Different measures of dispersion: The Range, Quartile deviation, Mean deviation, Variance and standard deviation: Definition and interpretation of variance and standard deviation, Computation of Variance and standard deviation, Step deviation method or coding method, Coefficient of variation, Standardized variable, Properties of standard deviation and variance; Skewness: Karl Pearson's coefficient of Skewness, Bowley's coefficient of Skewness; Kurtosis.

Topic: 4
Probability and Probability Distribution
A survey of probability concepts: Classical probability, Empirical concept, Subjective probability; some rules of probability: Rules of addition, Rules of multiplication; Conditional Probability, Bayes Theorem; Counting rules: The multiplication formula, The permutation formula, The combination formula; Mathematical Expectation, Random variables, Discrete random variable Continuous random variable; The mean, variance and standard deviation of a probability distribution; Binomial probability distribution, and its computation, Properties of Binomial probability distribution; The normal probability distributions: Properties of normal distribution.

Topic: 5
Survey Sampling and Sampling Distributions
Sampling and Sample: Advantages of sampling, Representative samples, design and sample survey, Sampling frame; Probability and non-probability sampling; Sampling with and without replacement; Sampling with and non-sampling error, sampling bias; Sampling distribution of the mean; The central limit theorem; Sampling distribution of differences between means.
Topic: 6  
**Estimation Theory & Hypothesis Testing**  
Point estimates and confidence intervals; Criteria for good estimators; The t-distribution;  
Point estimators of mean and variance; Estimation by confidence interval: Confidence interval estimate of a population mean (Known & Unknown Variances), Confidence interval for differences of means, Confidence interval for population proportion, Confidence interval for differences between proportions; Types of hypotheses; Type I versus Type II errors; Tests of population means and variances; Two sample tests; The F distribution; Testing for the variances of two populations  

Topic: 7  
**Chi Square Application & Analysis of Variance**  
Introduction; Goodness-of-fit test: Equal and unequal expected frequencies; Limitations of Chi square; Using the goodness-of-fit test to test for normality; Contingency Table Analysis. Introduction, The F-distribution; Comparing two population variances; ANOVA assumptions; ANOVA test; Inferences about pairs of treatment means; Two-way analysis of variance.  

Topic: 8  
**Simple Linear Regression and Correlation Analysis**  
Scatter diagram; Standard methods for obtaining regression line: (i) Inspection, (ii) Semi average, (iii) Least squares principle; Assumptions underlying linear regression and its properties; Measures of variations: Standard error of the estimate, Coefficient of determination; Prediction in Regression Analysis; Interpolation versus extrapolation; Correlation analysis; Scatter diagram; The coefficient of correlation: Properties/characteristics of coefficient of correlation, Correlation and causation; The relationship among the correlation coefficient, the coefficient of determination and the standard error of estimate; Inference about the correlation coefficient; t-test for correlation coefficient; Rank correlation coefficient; Some Economic Applications  

Topic: 9  
**Applied Statistics**  
Index Numbers, Un-weighted index numbers; Simple aggregative index; Weighted indexes; Laspeyre's price index, Paaseche's price index; MarshalEdgeworth price index; Fisher’s ideal index; Consumer Price Index (CPI), Producer Price Index (PPI), CPI versus GDP Deflator; Issues in constructing and using index numbers; Application of index numbers to business and economics; An overview of time series analysis; Component Factors of the classical multiplication time series model and their estimation: Secular trend; Cyclical variation, Seasonal variation, Irregular variation; Smoothing the annual time series and using it in forecasting: Moving averages, Weighted moving averages, Exponential smoothing; Using trend and seasonal component in forecasting; Time series and forecasting; Some Economic Applications
Recommended Books:


*Strongly Recommended*

Additional Readings


Paper 5: MONETARY ECONOMICS AND PUBLIC FINANCE
Topic: 1

**Introduction and Development of Monetary Mechanism**


Topic: 2

**Value of Money and Demand for Money**


Topic: 3

**The Money Supply Process**


Topic: 4

**Commercial Banking**


Topic: 5

**The Conduct of Monetary Policy: Central Bank**


Topic: 6
Public Finance: Introduction

Topic: 7
a) The Theory of Public Goods

b) The Theory of Public Goods

Topic: 8
Distributional Equity in Taxation

Topic: 9
Tax Shifting and Incidence

Topic: 10
Fiscal Policy: Public Expenditures and Budget
Recommended books:


*Strongly Recommended*
Paper 6: DEVELOPMENT ECONOMICS

Topic: 1
Economics, Institutions, and Development: A Global Perspective

Topic: 2
Theories of Underdevelopment and Growth

Topic: 3
Historic Growth and Contemporary Development: Lessons and Controversies

Topic: 4
Growth, Poverty and Income Distribution
Topic: 5

**Population Growth and Economic Development: Causes, Consequences, And Controversies**


Topic: 6

**Unemployment: Issues, Dimensions and Analyses**


Topic: 7

**Urbanization and Rural-Urban Migration: Theory and Policy**


Topic: 8

**Education and Development**

Topic: 9

**Agricultural, Industry and Rural Development**

Topic: 10

**Environment and Development**

Topic: 11

**Trade Theory and Development Experience**

Topic: 12

**Balance Of Payments, Third World Debt, and the Macroeconomic Stabilization Controversy**

Topic: 13

**Foreign Finance, Investment and Aid: Controversies and Opportunities**
Recommended Books:

10. Mahboob ul Haq, Poverty Curtain,
11. A profile of Poverty in Pakistan (In collaboration with UNDP)

(*Strongly Recommended)
Paper 7: ISLAMIC ECONOMICS

Topic: 1

Introduction: Islamic Economics

Topic: 2

Major Economic Thoughts: Contribution of Scholars

Topic: 3

Theory of Consumption and Production

Topic: 4

Behaviour of Firm under Islam Framework

Topic: 5

Distribution in Islamic Economy

Topic: 6

Prohibition of Interest and Interest Free Banking
Definition of Interest, Riba in the period of Ignorance, Definition of Riba or Interest in Islam, Kinds of Interest, Distinction between Trade and Riba, Moral, Social, Economic Importance of Prohibition of Interest, Western Justification of interest. Interest-Free Banking, Functions of the Bank in Interest-Based Economy and Interest-Free Banking. Need for Interest-Free Banking, Banking in the Economic System of Islam, Model of Interest-Free Banking, Interest-Free Banking in Pakistan, Current Modes of Interest-Free Banking, Islam and Insurance Islamic Modes of Financing: Bai Salam, Bai Murabaha, Bai Muajjal, Ijara, Rent.

Topic: 7

Fiscal Policy

**Topic: 8**  
*Money and Inflation in Islamic Economy*  

**Topic: 9**  
*Macro economic Concepts and Economic Role of Islamic State*  

**Topic: 10**  
*Economic Planning and Development in Islam*  

**Topic: 11**  
*The Islamisation Process in Pakistan*  

**Topic: 12**  
*New Emerging Issues and Challenges*  
**Recommended Books**

1. Islamic economics: Dar A.II & Moo Akram Ilmi Kitab Khana*, Lahore (Latest edition.)
3. Consumption Function in an Islamic Economic Framework*, M. Fahim Khan, International Centre for Research in Islamic Economics, King Abdual Aziz Univ, KSA.

* Strongly Recommended

**References:**

5. Chapra, Umer, Monetary Policy in an Islamic Economy, in Money and Ranking in Islam, Institute of Policy Studies, Islamabad.
Paper 8: INTERNATIONAL ECONOMICS

Topic: 1
Introduction to International Trade
- The relevance of international economics
- The scope of international economics
- The role of trade
- The role of international monetary relations
- The mercantilist thesis on trade
- Three basic questions
  - Absolute advantage
  - Comparative advantage
- The case of Greek bananas
- Comparative costs expressed in money
- Opportunity cost

Topic: 2
International Equilibrium with Increasing Costs
- Increasing opportunity costs
- Community indifference
- General equilibrium in a single economy
- A neoclassical demonstration of comparative advantage
- Differences in tastes as a basis for trade
- Offer curves
- International equilibrium
- The terms of trade
- East-West trade

Topic: 3
The Heckscher-Ohlin Model and Alternative Trade Theories
- The basic assumptions of the Heckscher-Ohlin model
- The meaning of factor intensity
- Factor abundance
- The main propositions of the Heckscher-Ohlin model
- The Rybczynski theorem
- The Heckscher-Ohlin theorem
- The Stolper-Samuelsom theorem
- The factor-price equalization theorem
- Empirical testing of the Ricardian theory
- The Leontief paradox
- Explanations of the Leontief paradox
- The specific factors model
- Empirical challenges to traditional theories
- Increasing returns
- Monopolistic competition and international trade
- Linder’s thesis
- Technological gap and product cycle

Topic: 4
Growth and Trade
- The nature of the growth process
- The sources of economic growth
- Classification of technical progress
- The effects of growth on small countries
- The scenario
- Factor accumulation
- Technical progress
- The effects of growth on large countries
- The terms of trade effect
- The effect of growth on social welfare
- Growth in the world economy
- The Perbisch-singer thesis

Topic: 5
The Theory of Tariffs
- Types of tariff
- The partial equilibrium analysis of the tariff
- The general equilibrium analysis of the tariff
  - The small country case
  - The effects of the tariff on a large country
- Tariffs and world welfare
- The tariff as a production subsidy plus a consumption tax
- Measuring the costs of protection
- Effective protection
- Empirical evidence on effective protection
- The optimal tariff
- Tariff wars in the 1930s
- The theory of domestic distortions
- The infant-industry argument
- Other economic arguments for protection
- Non-economic arguments for protection
- Candle makers Versus The Sun

Topic: 6
Instruments of Commercial Policy and Customs Unions
- Export taxes
- Ghana’s export taxes on cocoa
- Export subsidies
- Quantitative restrictions
- International cartels
- OPEC
- The voluntary export restraint on Japanese autos
- Dumping
- Other Nontariff barriers
- The Poitiers plan
- Highlights of U.S. tariff history and trade liberalization
- Preferential trading arrangements: some definitions
- The nature of

Topic: 7

The Foreign Exchange Market and The Balance of Payments

Topic: 8

The Price and Income Adjustment Mechanism

Topic: 9

Fiscal and Monetary Policy For Internal, External Balance And Exchange Rate

Topic: 10

The Monetary Approach and the International Monetary System
An outline of the monetary approach, The basic model of the monetary approach, Policy implications of the monetary approach, Reconciliation between the monetary and traditional approaches, The purchasing-power-parity theory, Big Macs and the PPP theory, The monetary approach to exchange rate determination, the International Monetary System: Types of international monetary systems, The characteristics of a good international monetary system, Adjustment, liquidity, and confidence, The gold standard (1870-1914), The interwar period, The Breton woods system (1944-1971),The
present system of managed flexibility, International cooperation from the plaza to the louver, The European monetary system

**Recommended Books:**


* Strongly Recommended*

**Additional Readings:**

Paper 9: ECONOMETRICS

Topic: 1
Introduction to Econometrics
Definition and scope of econometrics; Methodology of econometrics; Types of Econometrics; The Role of the Computer

Topic: 2
Two Variables Regression Analysis
Some basic ideas of Regression analysis; OLS estimation; Interpretation and economic meanings of the Results; Goodness of fit; Properties of the OLS estimator; Scaling and Units of Measurement; Functional Forms of Regression Models; Interval estimation; Hypothesis Testing; Prediction; Some extensions of the simple linear regression model.

Topic: 3
Multiple linear regression analysis
Some basic ideas; OLS estimation; Interpretation and economic meanings of the Results; Multiple Coefficient of Determination; Hypotheses testing; $R^2$ and F; Testing for parameter stability; Prediction.

Topic: 4
Dummy Variables And Qualitative Response Regression Models
Illustration of the use of a Dummy Variable; Extension to more than two categories and to multiple sets of dummy variables: ANOVA models, ANCOVA models; Dummy variable alternative to Chow test; Interaction Effects; Seasonal Analysis; Piecewise linear regression. Introduction of Qualitative Response Regression Models; The linear probability model; The Logit model; The Probit model; The Tobit model

Topic: 5
Multicollinearity
Concept of Multicollinearity; Consequences of Multicollinearity problem; Methods for detection of Multicollinearity problem; Remedial measures for Multicollinearity problem; Estimations and Interpretations.

Topic: 6
Heteroscedasticity
Heteroscedasticity and its Implications; OLS estimation in the presence of Heteroscedasticity; Generalized least squares (GLS); Detection of Heteroscedasticity; Remedial measures.

Topic: 7
Autocorrelation
The nature of autocorrelation; OLS estimation in the presence of autocorrelation; Detection of autocorrelation; Remedial measures; Misspecification vs pure autocorrelation; Newey-West procedure; Forecasting with auto-correlated disturbances.

Topic: 8
Model Specification Errors
Introduction to Model specification; Types of Specification errors; Consequences and Tests of Specification Errors; Errors of Measurement; Approaches in Choosing an Appropriate Model.
Topic: 9  
**Dynamic Econometric Models**

Topic: 10  
**Simultaneous-Equation Models**
Simultaneous Equation Models; Various Types of simultaneous equation Models; The identification problem; Estimation of Simultaneous Equation Models

**Recommended Books:**

*Strongly Recommended*
Research Articles


Paper 10: FINANCIAL ECONOMICS

Topic: 1
Financial Markets and Financial Instruments

Topic: 2
The Term Structure of Interest Rates

Topic: 3
Introduction to futures and options
Defining options and futures, Understand rights and obligations of the parties involved in various types of options, Familiarity with the basic taxonomy used in options analysis.

Topic: 4
Markets, Trading and Financial Intermediation
Types of Markets; Types of Traders; The Trading Process; Defining Financial Intermediation; Different Types of Financial Intermediaries; The Role of Banks in Financial Intermediation.

Topic: 5
Asymmetric Information and Capital Structure Theory
Moral Hazard; Adverse Selection; Solutions; Defining Capital Structure; Modigliani and Miller Propositions I and II; how taxes affect financing choices; Dividend policy issues. CAPM, APT.

Topic: 6
The Institutional Environment and Finance

Topic: 7
Financial Development and Growth
Defining Financial Development; the Finance-growth Nexus; Bank Based versus Market Based Economies.
Recommended Books:

3. Cecchetti, Money, Banking and Financial markets*.
4. Elton and Gruber, Modern Portfolio Theory and Investment Analysis

* Strongly Recommended
Paper 11: MANAGERIAL ECONOMICS

Topic: 1
Nature, Scope and Overview of Managerial Economics

Topic: 2
Demand Analysis, Estimation and Forecasting

Topic: 3
Product and Cost Analysis

Topic: 4
Linear Programming
Production planning for .a single product Production planning for a multiple products" Graphic specification and solution. Simplex method of solution. The dual in linear programming. Shadow prices in linear programming.

Topic: 5
Decision Making Under Risk and Uncertainty

Topic: 6
Pricing Analysis and Decisions

Topic: 7
A Critique of Traditional Theory of Firm
Topic: 8
Managerial Theories and Models of the Firm

Topic: 9
Capital Budgeting and Investment

Recommended Books:


* Strongly Recommended

Suggested Readings (Articles):

6. Chambers, Marcus j, and Baily, Roy e. A theory of commodity price fluctuations, journal of political economy, 104 (October 1996), 924-957
Paper 12: MAJOR ISSUES IN PAKISTAN’S ECONOMY

Topic: 1
Overview of Pakistan Economy

Topic: 2
Development Planning and Resource Mobilization

Topic: 3
Agriculture and Industrial Development: Emerging Issues

Topic: 4
Sectoral Development, Employment Patterns and Unemployment

Topic: 5
International Debt and Dependency

Topic: 6
Poverty and Income Distribution

Topic: 7
**Inflation, Foreign Trade Deficit and Emerging Issues**

Topic: 8
**Infrastructural services-I**
**Health**
Health system and their problems, why health matters: The economic significance, health facilities in Pakistan. Development of the health facilities under the five years plans.

**Education**

Topic: 9
**Infrastructural service-II**
Importance of transportation and communication salient feature of transport in Pakistan major means of transport in Pakistan Transport System.

**Communication**
Communication network, electronic media information technology, telecom sector, internet. Role of communication in economic development

**Energy resources**
Sources of power generation, energy crises, Role of energy in Pak-economy, critical analysis of the energy policies.

Topic: 10
**Fiscal policy in Pakistan**
Structure of public finance, government receipts, government expenditure, the concept of public sector development program (PSDP). Pakistan’s Taxation Structure, deficit financing in Pakistan. Anti-inflationary fiscal policy.
Recommended Books:

2. Govt. of Pakistan, Pakistan Economic Survey* (Latest Publication), Ministry of Finance, Economic Advisory Wing, Islamabad.
8. Mahbool-ul-Haq, Human Development In South Asia, Annual Reports.
10. Aslam M., Perspective on Development Planning In Pakistan, Allied Book Centre; Lahore, 2001-2002.

(Note: Teacher(s) must assign latest research papers pertaining to each topic)

* Strongly Recommended
Paper 13: AGRICULTURAL ECONOMICS

Topic: 1
Introduction and Importance of Agriculture

Topic: 2
Structure and Characteristics of Agriculture in LDC’s

Topic: 3
Role of Agriculture in Economic Development

Topic: 4
Theory of Rent and the concept of “surplus”.

Topic: 5
Agriculture in Dualistic Development Models

Topic: 6
Resource Use Efficiency and Technical Change in Peasant Agriculture

Topic: 7
Supply Response
Topic: 8
Institutional Constraints and Remedial Policies

Topic: 9
Population and Food Supplies

Topic: 10
Agriculture and International Trade

Recommended Books:

6. Khan Mahmood-ul-Hassan. The Economics of Green Revolution in Pakistan, New York, Published 1975

* Strongly Recommended
Optional Paper I: LABOUR ECONOMICS

Topic: 1
Importance of Labor Economics

Topic: 2
Labor Markets Analysis: Demand for Labor

Topic: 3
Labor Market: Supply of Labor and Wages

Topic: 4
Wages, Unemployment and Inflation

Topic: 5
Labor Market Discrimination
Discrimination in Labor Market: Gender Race and Ethnicity. Efficiency Wage Theories and Coordination Failure.

Topic: 6
Labor Market Information System

Topic: 7
Theories of Labor Movements

Topic: 8
Child Labor
**Recommended Books:**


* *Strongly Recommended*
Optional Paper II: OPTIMIZATION AND DYNAMIC ANALYSIS

Topic: 1
Economic Dynamics and Integral Calculus
Dynamics and Integration; The Nature of Indefinite Integrals; Basic Rules of Integrations & Rules of Operation; The Substitution Rule and the Rule of Integration by Parts; Definite Integrals; Major properties of Definite Integral; A Definite Integral as an Area Under a Curve; Improper Integrals; Economic Applications of Integrals; Finding Total Functions from Marginal Functions; Investment & Capital Formation; Present Value of Cash Flow; Present Value of a perpetual low; Domar Growth Model

Topic: 2
Differential Equations: Continuous Time:
First Order Linear Differential Equations
Meaning and Definition; Homogenous & Non-Homogenous Cases; Solution of First Order Linear Differential Equation with Constant Coefficient & Constant Term and its Verification; Economic Applications: Dynamics of Market Price. Solution and its Verification of First Order Differential Equation with Variable; Coefficient and Variable Term; Exact Differential Equation its Solution and Verification; Non-linear Differential Equations of the First Order and First Degree; Bemoulli Equation; Separable Variables; The Qualitative Graphic Approach; Concept of Phase Diagram; types of Time Paths and their Dynamic Stability; Economic Applications; Solow Growth Model.

Topic: 3
Differential Equations: Higher Order Differential Equations
Solution and Verification of Second order Linear Differential Equations with Constant Coefficient and Constant term: Distinct Real Roots; Repeated Real Roots and Complex Root Cases; Dynamic Stability of Equilibrium; Economic Applications; A Market Model with Price Expectations; The Interaction of Inflation and Unemployment; Solution of Higher order Differential Equations with Constant Coefficient and Constant Term; Convergence and the Routh Theorem.

Topic: 4
Difference Equations: Discrete Time:
First Order difference Equations
Solution and its Verification of First Order Difference Equations; The Dynamic Stability of Equilibrium; Economic Applications; The Cobweb Model; A Market Model with inventory: Nonlinear Difference Equations; The Qualitative-Graphic Approach; Phase Diagrams Types of Time Path; A Market with a Price Ceiling

Topic: 5
Higher Order Difference Equations
Solution and Verification of Second-Order Linear Difference Equation with Constant Coefficients and Constant Term; Distinct Real Roots, Repeated Real Roots and Complex Roots cases; The Convergence of the Time Path; Economic Applications; Samuelson Multiplier-Acceleration Interaction Model; Inflation and Unemployment in Discrete Time; Higher Order Linear Difference Equations and their Solutions; Convergence and Schur Theorem Again; The Solution of Simultaneous Differential Equations.
**Topic: 6**

**Linear Programming**

Introduction of linear Programming; Graphical approach, simplex method; Some Economic applications of linear programming; Concept of primal & dual; Duality theorems; Solving of Primal via dual; Economic interpretation of a dual

**Topic: 7**

**Game Theory and Economics**

Introduction; The Mathematics of Competition; Basic Concepts; Zero-sum and variable-sum games; Saddle Point; Winning strategies; maximin and minimax strategies; Graphical Method and Simplex method

**Topic: 8**

**Optimization Review and Further Topics**

Classical Optimization and Constrained Optimization; Fixed point theorem; Non-linear Programming and Kuhn-Tucker Conditions; The Constraint Qualification; Some Economic Applications; Sufficiency Theorems in Nonlinear Programming; Envelope Theorem; Duality and Envelope Theorem: The Primal Problem; Dual problem; Roy’s Identity; Shephard’s Lemma; Some Economic Applications

**Recommended Books:**


*Strongly Recommended*
Optional Paper III: HISTORY OF ECONOMIC THOUGHTS

Topic 1:

Topic 2:
The contributions of Mercantilists and the Physiocrats. A doctrine of Economic process, transition to liberalization. Wage theory to natural price, the task of government. Overtime, changing role of government.

Topic 3:

Topic 4:

Topic 5:

Topic 6:

Topic 7:
The Emergence' of Modern Economic Growth, Building Blocks, Industrial Revolution, Structuralist and Dependency School of thought; Sunkel, Amit SameI', Frank and others' contribution. Technological Change and Impacts.

Topic 8:

Topic 9:
of Economics, Quality and International Trade and emergence of markets, New Regionalism’s, New directions of research. Environment and sustainable growth.

**Recommended Readings:**
2. Economic Theory in Retrospect*, Blaug, *(1918)*, Cambridge University Press

* Strongly Recommended
Optional Paper IV: HUMAN RESOURCE DEVELOPMENT

Topic: 1

**Introduction and Issues**

Topic: 2

**Human Resource and Economic Growth**

Topic: 3

**Investment in Human Capital and Returns**

Topic: 4

**Mobility and Migration of Human**
Migration Decision: Determinants, Migration as Investment, Migration Models. Labor Migration from Pakistan, Earnings / Remittance and Impacts. Migration and Development in Pakistan.

Topic: 5

**Women and Human Development**

Topic: 6

**Health, Nutrition and Human Development**

Topic: 7

**Employment, Unemployment and Manpower Forecasting**

**Topic: 8**

**International Dialogue: Development Cooperation.**


**Recommended Books:**


* Strongly Recommended*
Optional Paper V: POPULATION ECONOMICS

Topic: 1
The Nature of Population Study
Populations, Samples, Formal Demography and Population Analysis

Topic: 2
Analytics
Demographic Research in Action, Variables, Graphical Analysis, Models, Frequency, Distributions, Graphical Presentations of Frequency Distributions, Averages, Absolute and Relative Numbers

Topic: 3
The Sources of Information for Demographers

Topic: 4
The Growth of Population

Topic: 5
The Distribution of Population
A Note on Density, The Uneven Distribution of World Population, World Urbanization, Urbanization Explained, American Urbanization, Urbanization in Less Developed Countries

Topic: 6
Mortality
Basic Measures of Mortality, Differential Mortality, Major Causes of Death, Trends in Mortality

Topic: 7
Fertility
A Note on Nuptiality, Basic Measures of Fertility, Differential Fertility, Trends in Fertility, The Theory of the Demographic Transition, Appendix: Fertility Inhibition, or Birth Control

Topic: 8
Migration
Basic Concepts and Measures of Migration, Sources of Data on Migration, Functions of Migration, Significant Types of Migration, Differentials and Selectivity of Migration, Motivations for Migrating, Consequences of Migration

Topic: 10
International Migration
Topic: 11

Internal Migration
A Short History of Internal Migration, Internal Migration in Developing Nations

Topic: 12

The Composition of Population
Population Processes and Population Composition, Sex Composition, Age Composition, Comparisons of Age and Sex Composition, Factors Affecting the Sex and Age Composition, Demographic Consequences of Age and Sex Structure, Economic Age Categories, Racial Composition

Topic: 13

The Socioeconomic Effects of Population Change
The Economic Impact of a Rising Dependency Ratio, Aging: A Problem for Developed Nations, Some Implications of Zero Population Growth

Topic: 14

Population Policy
Definitions, Goals, and Ethical Considerations, Population Policy in the Less Developed Countries, Population Policy in the Developed Countries, The Policy Debate on Immigration

Recommended Books:

* Strongly Recommended