SCHEME OF STUDY FOR BS ECONOMICS

(5th Semester Intake)

w.e.f Spring 2023 & onwards

DEPARTMENT OF ECONOMICS

UNIVERSITY OF SARGODHA

SARGODHA - PAKISTAN

<p style="text-align: center;">**BS Economics (5th Semester Intake)**</p>

Eligibility: At least 45% marks in Graduation or equivalent
Duration: 2 years
Semester: 4
Degree Requirements: As per university policy

Proposed Scheme of Studies for BS Economics (after 14 Year Education)

Semester I

Codes	Subject	Credit Hours
ECON-6301	Principles of Microeconomics	3(3-0)
ECON-6302	Principles of Macroeconomics	3(3-0)
ECON-6303	Mathematical Economics I	3(3-0)
ECON-6304	Statistics for Economists	3(3-0)
ECON-6305	Islamic Economics	3(3-0)
ECON-6306	Major Issues in Pakistan's Economy	3(3-0)
Total Credit Hours		18

Semester II

Codes	Subject	Credit Hours
ECON-6307	Intermediate Microeconomics	3(3-0)
ECON-6308	Intermediate Macroeconomics	3(3-0)
ECON-6309	Public Sector Economics	3(3-0)
ECON-6310	Managerial Economics	3(3-0)
ECON-6311	Development Economics, Theory and Policy	3(3-0)
ECON-6312	Mathematical Economics II	3(3-0)
Total Credit Hours		18

Semester III

Codes	Subject	Credit Hours
ECON-6313	Econometrics I	3(3-0)
ECON-6314	Microeconomics	3(3-0)
ECON-6315	Financial Management for Business Firm	3(3-0)
ECON-6316	Agricultural Economics	3(3-0)
ECON-6317	Monetary Theory and Policy	3(3-0)
ECON-6318	Research Methodology	3(3-0)
Total Credit Hours		18

Semester IV

Codes	Subject	Credit Hours
ECON-6319	Econometrics II	3(3-0)
ECON-6320	Macroeconomics	3(3-0)
ECON-6321	Human Resource Development and Management	3(3-0)
ECON-6322	International Trade Theory & Finance	3(3-0)
ECON-6323	Investment and Project Appraisal	3(3-0)
ECON-6324	Economic Principles, Strategies & Techniques of Marketing	3(3-0)
Total Credit Hours		18

Semester I

ECON-6301   **Principles of Microeconomics**   3(3-0)

The course is designed for the beginners with either no formal background or very little acquaintance with economics. The objective is to give the students with a clear understanding of the basic concepts, tools of analysis and terminologies used in microeconomics. Emphasis will be on the use of graphs, diagrams and numerical tables/schedules for exposition. The teacher is expected to draw examples from the surrounding world to clarify the concepts.

Contents

1. Introduction

   a) An overview of the social system, Economy as integral part of the social system
   b) Economic agents and economic problem
   c) Classification of economics, Importance and scope of micro-economics, Basic concepts

2- The Price Mechanism

   a) The concept of a market economy, Laws of demand and supply
   b) Market equilibrium and determination of price
   c) Concept of elasticity of demand and supply, Importance of elasticity.

3- Consumer's Behaviour

   a) Consumers/ households as economic agents, Problem of the consumers, The utility theory
   b) Laws of diminishing marginal utility and equi-marginal utilities,
   c) Budget constraint and consumer's equilibrium, Individual demand and market demand

4- Firms and Industries

   a) Business enterprises, Forms of business organization: Proprietorship, Partnership, Joint stock companies, Multi-national corporations,
   b) Classification of the firms, Production and supply of commodities Objectives of the firm
   c) Output maximization and cost minimization, Industrial structure & market supply.

5- Production and Cost Functions

   a) Production function, Primary inputs: factors of production, Secondary/intermediate inputs
   b) The laws of returns, Revenues of the firm
   c) Cost function Short-run and Long-run costs, Equilibrium of the firm.

6- Market Structure

   a) Classification of markets i.e.Perfect competition, Imperfect competition: Monopoly and Monoposony, Monopolistic competition
   b) Price determination

Recommended Book

   1. Mankiw, G. - Principles of Economics – Latest Edition, South-West Publishers.
   2. Samuelson and Nordrons - Economics –Latest Edition- McGraw Hill.

Suggested Books

   1. McConnel and Bruce - Principles of Economics -17thEdition (2006)- McGraw Hill.
   2. Lipsey and Goerant-Principles of Economics-10thEdition (2003)- Oxford University Press

ECON-6302   **Principles of Macroeconomics**   **3(3-0)**

The course is designed for the beginners with no formal background or little acquaintance with economics. The objective is to give the students with a clear understanding of the basic concepts, tools of analysis and terminologies used in macroeconomics. Emphasis will be on the use of graphs, diagrams and numerical tables/schedules for exposition. The teacher is expected to draw examples from the surrounding world to clarify the concepts.

Contents

1. Introduction

   a) The economy in aggregate, Complexities of the world of business, Scope of macroeconomics
   b) Brief account of the development of macro-economics after the World War-II
   c) Concept of business cycles, Concepts of Inflation and Unemployment
   d) Macroeconomic variables and their mutual relationship, Macro-models

2. National Income

   a) Definition and various concept of national income, Measures of national income
   b) Computation of national income: Product, Income and Expenditure approaches
   c) Circular flow of income, Nominal versus Real income, Per capita income and the standard of living

3. Components of Aggregate Demand

   a) The Concept of Open and closed economy models
   b) Concept of aggregate markets: Product, Money, Labor and Capital markets
   c) Components of aggregate demand: Consumption, Investment and Government spending

4. Money and Banking

   a) Money: definition, forms and functions
   b) Central Bank and its functions with reference to the State Bank of Pakistan, Commercial banking
   c) The Quantity Theory of money, Inflation: measurement and impacts, causes of inflation and remedies
   d) Monetary policy: brief introduction

5. Public Finance and Taxation

   a) Sources of public revenue, Various forms of taxes
   b) Major heads of public expenditure, Revenue and Capital account, Concept of budget deficits
   c) Sources of filling the gaps, Deficit financing, Fiscal policy: meaning and objectives.

6. International Trade

   a) Global distribution of resources, Concept of imports and exports,
   b) Theory of absolute and comparative advantage, Currency exchange rates,
   c) Balance of Payments: causes of deficits in BOP of Pakistan and remedial measures,
   d) Custom Unions, The problem of external debt, Commercial Policy: objectives and scope

Recommended Books

   1. Mankiw,G–*Principles of Economics*-(Latest Edition)- South-West Publishers.
   2. Samulson and Nordrons - *Economics* –18thEdition (2004)- McGraw Hill. Inc.

Suggested Books

   1. Parkin, Michael - *Macroeconomics*, 7thEdition (2004)- Prentice Hall.
   2. Miller, R.L.*Economics Today* -14thEdition (2005) - Addison Wesley.

ECON-6303   **Mathematical Economics-1**   **3(3-0)**

The course is designed to enable the students use mathematical tools in clarifying their economic concepts and solving problems. This is because economic analysis requires extensive use of mathematics in the present day world of complexity. Mere logical reasoning and diagrammatic approach is perhaps not sufficient.

Contents

1. The Nature of Mathematical Economics
   a) Ingredients of mathematical models
   b) Equation of a straight line and its forms
   c) Types of functions
   d) Indices & their rules
2. Equilibrium Analysis in Economics
   a) A linear and non linear market model
   b) General Market Equilibrium
   c) Equilibrium in a linear National Income Model.
3. Linear Models and Matrix Algebra
   a) Laws of matrix operations and its types of matrices
   b) Transpose and their properties
   c) Determinant & its properties
   d) Solution of linear equations through Gaussian method
   e) Cramer's rule and Inverse of a matrix method
   f) Properties of inverse of a matrix
   g) Use of matrix approach in market & national income models
4. Input-Output Analysis
   a) Input-output model
   b) The use of input-output model in Economics
5. Differentiation
   a) Rules of differentiation
   b) Economic applications of derivative
   c) Utility, profit & revenue maximization and minimization of cost
6. Partial & Total Differentiation
   a) Partial differentiation & its rules
   b) Total differential & total derivative
7. Economic Applications of Partial & Total Differentiation
   a) Comparative static analysis
       i.   Partial equilibrium market model
       ii.   National Income model
8. Optimization
   a) Free optimization and constrained optimization by using lagrange method
   b) Homogenous, Cobb Douglas and CES Production function
   c) Jaccobian determinants
9. Linear Programming
   a) Graphical and Simplex method
   b) Duality theorem

Recommended Books
1. Chiang, A. C., Fundamental Methods of Mathematical Economics, 4th ed. (McGraw Hill Publishing Company, 2004).
2. Dowling E. T., Mathematics for Economists, Schaum's Outline Series, 3rd ed.
       (McGraw Hill Publishing Company, 2009).

Suggested Books
1. George, Alvery et al ., *Essentials of Mathematics with Business Applications*,
       18th ed. (McGraw Hill Publishing Company, 2004).

2. Frank, Budnick ,*Applied Mathematics for Business, Economics and Social Sciences*, 4th ed.   (McGraw Hill Publishing Company, 2011).

The main objective of this course is to acquaint students with the basic techniques of statistical methods with strong emphasis on its application to economic theories and principles.

Contents

1. Descriptive and inferential statisticS
   - **a)** The four basic activities in statistics
   - **b)** Type of measurement scale
   - **c)** Types of data, errors, biased and unbiased.
2. Presentation of Date and Measure of Central Tendency
   - **a)** The frequency distribution and its types
   - **b)** Graphic and diagrammatic representation
   - **c)** Types of Averages
   - **d)** Quintiles
3. Measure of Dispersion, Skewness and Kurtosis
   - *a)* Absolute and relative measure of dispersion
   - b) Standardized variable
   - c) Coefficient of skewness and Kurtosis
4. Probability and Probability Distribution
   - a) Discrete and continuous distributions: Binomial, Poisson and Normal Distributiondistribution
5. Survey Sampling and Sampling Distributions
   - **a)** Sampling distribution
   - **b)** The central limit theorem
   - **c)** Sampling distributions for single mean and proportion
   - **d)** Difference of means and proportions
6. Estimation and Confidence Intervals
   - a) C.I about the population mean and proportion for small and large samples
   - b) Confidence interval for differences of means and population proportion
   - c) One sided confidence interval
7. Simple Linear Regression and Correlation Analysis
   - a) Linear regression analysis
   - b) Correlation analysis and rank correlation
   - c) Estimation of the mean values and predication of individual values
8. Multiple Linear Regression and Correlation Analysis
   - a) Multiple regression analysis
   - b) Matrix approach and deviation form
   - c) Multicollinearity
   - d) Global test and Individual variable significance test
   - e) Multiple correlation and partial correlation
9. Applied Statistics
   - a) Index Numbers and its application in economics
   - b) Time series analysis and forecasting
   - c) Modeling cyclic behavior using box-Jenkins ARIMA processes
   - d) Regression analysis in forecasting
   - e) Delphi method and expert judgment

Recommended Books
   1. Lind, Douglas A., Marshal, William G. and Mason, Robert D., *Statistical Techniques in Business and Economics* ,15th ed. (Boston: McGraw Hill, 2015).
   2. Chaudhry, Sher Mohammad and Kamal, Shahid, *Introduction to Statistical Theory* , 7th ed. (Lahore: IlmiKitabKhana, 2010).

Suggested Books
   1. Siegel, Andrew F., *Practical Business Statistics* ,7th ed. (Boston: McGraw Hill, 2012).
   2. Newbold, Paul, Carlson, William L. and Thorne, Betty M, *Statistics for Business and Economics*, 5th ed. (New Jersey: Prentice Hall, 2

ECON-6305   **Islamic Economics**   **3(3-0)**

This subject offers a comprehensive introduction to Islamic Economics, focusing on its major Economic Thoughts: Contribution of Scholars, Islamic Economic System, and its key silent features and objectives. This course introduces some microeconomic concepts in Islamic Framework, the modes of financing in Islam, distribution in Islamic economy. More specifically, the course introduces some basic macroeconomic concepts, demand and supply of money and banking, Zakat, Social Justice in Islamic State, Economic Planning and Development in Islam, the Islamisation process in Pakistan, and examines the New Emerging Issues and Challenges.

Content

1. Introduction to Islamic Economics
    a) Nature and importance of Islamic Economics
    b) Brief Introduction of Basic Values of Islam
    c) Islamic Economics Versus Secular Economy and Mixed Economic System
2. IslamicEconomicSystem
    a) Concept of equality and Efficiency
    b) Welfare and IncomeDistribution
    c) Comparison of Islamic Economic System with Capitalism and Socialism
3. The Modes of Financing in Islam
    a) Modaraba and Mushark
    b) Types of Bai. (Bai-Salam, Bai Muajjal, Morabaha.)
    c) Saving and Investment in Islam. Investment of Savings for Gains
4. Microeconomics and Macroeconomics in the Islamic Framework
    a) Consumer Behavior in Islam. Utility, Moderation, optional ConsumptionBehavior
    b) Market Structure - Monopoly and Competition, Resource Allocation in Islamic   Environment and Cartels
    c) Consumption, saving and Investment Functions in Islamic Environment
    d) Determents of Islamic Consumption Function, Concept to Help others, Welfare
    and Religious believes. Zakat and Usher
5. Demand and Supply of Money and Banking
    a) Central Banking and Monetary Policy in Islamic Framework
    b) Western Justification of interest. Islamic Concept of Riba, its Implications
6. Zakat, Social Justice in Islamic State
    a) Distributive Role of Zakat and Social Justice. Zakat as a tool in Fiscal Policy
    b) The Tax Policy of Islam. Nature and Scope of Fiscal Policy in Islamic State
    c) New Emerging Issues and Challenges

Recommended Books

1. Mannan, M.A., *Islamic Economics: Theory and Practice, A Comparative Study*, (Cambridge, Hodder and Stoughton, 1986) Latest Edition
2. Dar, A.H., and Akram, M., *Islamic Economics-* (Publisher IlmikitabKhana,)Latest edition

Suggested Books

1. Khan, F.M., *Macro Consumption Function in an Islamic Economic Framework*, (ICRIE, KAAU, KSA 1984)

To introduce students about the key features of macroeconomic management, its process in Pakistan, and also critical issues facing macroeconomic management in Pakistan.

Contents

1. National Income Accounts
   a) GDP (Nominal and Real) and GNP
   b) Measure of Inflation and Employment and GDP
2. Review of Alternative Models of Economic Management
   a) Capitalism and Mixed Economy
   b) Islamic Economics or Islamic Capitalism
   c) Pakistan's Models of Economic Management
3. Background of Pakistani Economic Management
   a) British Colonialism and Muslim Responses
   b) Ali Garh and the Upbringing of Muslim Nationalism
   c) Relationship between Muslim Nationalism and Capitalism
4. Agricultural Sector of Pakistan
   a) Agriculture Sector and its key issues in Pakistan
   b) The Green Revolution and its Impacts
   c) Land Reforms (both of Ayub and Bhutto)
5. Industrial Sector of Pakistan
   a) Process of industrialization from 1947-88
   b) Industry after Structural Adjustment Program—1988-onwards
   c) Key Issues in Pakistani Industry
6. Fiscal and Monetary Policies and Inflation in Pakistan
   a) Fiscal Development
   b) Monetary Policy Management and Inflation in Pakistan
   c) Inflation and its Causes in Pakistan
7. Public and External Debts in Pakistan
   a) Difference between the Debts
   b) Concerns Regarding Pakistan's Fiscal Deficit
8. Structural Adjustment Program (SAP) and Pakistan
   a) Globalization and Export of Development Thinking
   b) SAP, Did Pakistan need to go for SAP?
   c) Why does Pakistan Adopt IMF Program
9. Performance of Pakistan on Foreign Economic Front
   a) BOP
   b) Impacts of Trade Policy, Globalization and WTO on poverty in Pakistan
   c) Exchange Rate Regimes in Pakistan
10. Social Sector in Pakistan
    a) Health Sector and Education and its Issues
    b) Poverty and Income Distribution
11. RecentChallenges Facing Pakistan Economy
    a) Deteriorating law andorder Situation
    b) Energy Crises and Rising Circular Debt

Recommended Books

1. Zaidi Akbar, *Issues in Pakistan's Economy,* (Oxford University Press, Karachi, 2011)

2. IshratHussain, *The Economy of an Elite State*, (Oxford University Press, Karachi, 2007)

Suggested Books

1. IshratHussain, (2009) "Pakistan's Economy-1999/2000-2007/2008: AnObjective Appraisal", Business Review, Vol 4 (1): p. 7-48; IBA, Karachi

Semester II

ECON-6307   **Intermediate Microeconomics**   **3(3-0)**

The objective of the course is to clarify and extend further the microeconomic concepts and to develop analytical skills and solving petty problems. In addition to diagrammatic approach the course intend to get accustomed the students to simple mathematics and numerical tools. The teacher is expected to draw examples from surroundings for exposition. The students may be given assignments to collect information from the markets and to analyze the data. They may have tours to the industrial units and to observe the process of production and problems in supply and demand.

Contents

1.Introduction

- a) Scope of Microeconomics and areas of its concern.
- b) The role of markets and importance of price signals in efficient allocation of resources.
- c)   Economic models as abstraction from the reality.

2**.** Theory of Consumer Behavior

- a) Cardinal and ordinal approach to utility
- b) The indirect utility function
- c) Homothetic and Non-homothetic Preferences, Introduction to the Revealed Preference Theory.

3. Demand & Elasticity

- a) Derivation of demand functions using indifference curves,
- b) Elasticity of demand, its Importance and different types.

4.Production Functions

- a) Different production functions: Cobb Douglas and CES etc.
- b) Iso-quant maps, the cost line and equilibrium of the firm.

5. Cost of Production

- a) Different types of costs.
- b) Cost minimization subject to given/pre-determined level of output.

6. Behavior of the Firm

- a) Equilibrium of the firm when it faces the market.
- b) Economic profit and rent, Short-run, Long-run position of a price taking and price seeking firm

7. Market Structure and Price Determination

- a) The Perfectly Competitive Market.
- b) Monopoly and Monopsony, bilateral monopoly, price discrimination.
- c) Monopolistic Competition and Oligopoly.
- d) Pricing of the Factors of Production.

Recommended Books

1. Walter Nicholson- *Intermediate Microeconomics*- 6th Edition (1994) or latest –The Dryden Press: Harcourt Brace College Publishers

2. Koutsoyiannis, A.-*Modern Microeconomics*- 2nd edition (1979)-Macmillan.

Suggested Books

1. Varian Hall R.-*Intermediate Microeconomics: Modern Approach*-6th edition (2002)- W. W. Norton Publishing Company, New York.

2. Dowling, Edward – *Mathematics for Economists*-(1980) -(Schaum's Outline Series) McGraw Hill Inc.

This course offers the student a comprehensive introduction of macroeconomics so as they develop the capacity to understand the issues and problems of the economy in a global scenario. In particular, they have to capture the nature and scope of various public policies. In addition to diagrammatic approach, the students are confronted to simple mathematical analysis.

Content

1. The introduction of Keynesian revolution and growth of Macroeconomics
    a) Oken's Law and unemployment, Price Indices and Inflation
    b)   Exogenous and Endogenous variables and their functional relationships
    c)   Introduction to the Classical and Keynesian Schools of Thought
2. Measurement of National Income
    a)   The circular flow of National Income, GDP and GNP
    b)   Personal and disposable income
    c)   Injections into and Leakages from the economy: Saving and Investment
    d)   The closed and open economy models
3. Theories of Consumption
    a)   The Absolute income, Relative income, Permanent income and Life-cycle income
    b)   Kuznet's findings and Reconciliation of Marginal and Average Propensity to Consume
4. Saving and Investment
    a)   Real and Financial investment, Autonomous and Induced investment
    b)   Lags in Investment Demand, Volatility of Investment, Equilibrium in the goods market
    c)   Derivation of IS curve (graphic), Factors affecting the position and slope of the IS curve,   the Saving-Investment gap in developing countries
5. The Demand for and Supply of Money
    a)   The demand for money, The Quantity Theory of Money, The Liquidity Preference
    b)   The supply of money: M1, M2, M3 concepts, Derivation of LM Curve (graphic)
6. Aggregate Supply and the Labour Market
    a)   Labor market and its Equilibrium: The flexible and sticky wage models
    b)   The concepts of full-employment and underemployment, Supply shocks and stabilization
    c)   Interaction of aggregate demand and supply and price determination
7. Inflation and Unemployment
    a)   Types, causes and measurement of inflation
    b)   Transitory and structural unemployment
    c)   Phillips curve in the short-run and long-run

Recommended Books

1. Shapiro, Edward, *Macroeconomic Analysis*. (Harcourt Brace Inc. 2000)
2. Froyen, Richard, *Macroeconomics: Theories and Policies*. (Pearson Publisher, 2012)

Suggested Books

1. Mankiw, Gregory N., *Macroeconomics*. (Worth Publishers, 2018)
2. Blanchard, Oliver, *Macroeconomics*. (Prentice Hall International, 2017)

This course investigates the role of the public sector in the economic arena. We will attempt to explain why government intervention is needed, how it influences the behaviour of the private sector and what the welfare effects of such influences are. We will also survey political economy, which regards actions of the public sector as determined by political processes. Topics covered may include welfare economics, market failures, and political economy.

Contents

1. Introduction and Role of Public Sector
   a) The Economic Functions and Public Goods: Allocation of Resources,
   b) Redistribution of Income and Wealth and Stabilization. Pricing Public Goods.
2. The Theory of Public Goods
   a) Fiscal Principles and Concepts: The Traditional Principle of Tax Neutrality is Expended Principle of Fiscal Neutrality. Exhaustive Vs. Non-Exhaustive Public
   b) Expenditures, Income Elasticity of Government Expenditures, Tax Vs. Non-tax Revenues, Microeconomic Vs. Macroeconomic Regulatory Taxes, Tax Base, Tax Rate Relationship; Progressive, Regressive and Proportional Taxes, Marginal Propensity to Tax and Marginal Vs. Average Tax Rates
   c) Income Elasticity of a Tax Integral Fiscal Non-Neutrality. Tax Efforts and Tax Collection Performance in Pakistan.
3. Public Revenue and Taxes
   a) The Economic Case for the Public Sector to Allocate Resources: Market
   b) Imperfections, Decreasing Costs of Production, Public Goods and Externalities.
   c) Pricing Decreasing Cost Industry.
4. The Theory of Public Goods
   a) Public and Private Goods, Pure Public Goods, Should Public Sector be Produced
   b) Vs. Private Goods? Semi Public Goods, Merit Goods, Free Rider Problem,
   c) Externalities and Public Policy.
5. Distributional Equity in Taxation
   a) The Ability to pay and Economic benefits (received). Cannons of Taxation
   b) The Optional Income Tax Approach. Optimum Tax and Revenue Collection.
6. Tax Structure of Pakistan
   a) Various Kinds of Taxes and their Objectives / Performance in Pakistan. Income and Sales Taxes, Excise and Custom Duties, Export and Import Taxes
   b) Tax Reforms in Pakistan and their Impacts.
7. Tax Shifting and Incidence
   a) General Equilibrium Vs. Partial Equilibrium: Tax Incidence Analysis.
   b) Determinants of Tax Shifting under Partial Equilibrium Conditions. Impacts of Tax Shifting on Price.
8. Fiscal Policy: Public Expenditure and Budget
   a) Theories of Public Expenditures, Wagner's Law,   Efforts of Public
   b) Expenditures. Components of Public Expenditures in Pakistan,
   c) Sources and Direction of the Growth of Public Expenditures. Kinds of Budget, Surplus,
   d) Deficit and Balanced: Preparation of Budget Cycle in Pakistan, Development and Non-Development Budget and its Patterns. Zero Based Budget
9. Inter - Government Fiscal Relations
   a) Fiscal and Economic Aspects of Federalism, Federal — Provincial Fiscal Co-ordination, Collection of Revenue and Provincial Share and its Distribution Criteria, Deficit Financing and its Impacts.
10. Development Finance
    a) Fiscal Policy in a Developing Economy, Tax Structure of LDCs, Role of Deficit Financing.
    b) Fiscal Policy in Pakistan and its Impacts
11. Public Debt
    a) Need and Burden of Public; Debt: Domestic and Foreign. Debt Modeling and Forecasting Debt Needs. Optional Debt.
    b) Debt Modeling and Offer Curve, Problem of Debt Servicing, Structure of Public Debt in Pakistan:
    c) Internal and External Debt Problem of Pakistan. Ricardian View of Public Debt.

Recommended Books

1. David N Hyman,   Public Finance, A Contemporary Application of—. Harcount Brace College Publishers.(Latest edition)
2. Rosen and Harvey S., (1999), Public Finance, Mc-Craw Hill.

Suggested Books

1. Bernard P. Herber, (1999), Modem Public Finance.
2. Mutgrave R.A. and B.P., Musgravi; (Latest Eds.), Public Finance in Theory and Practice, McGraw Hill.
3. Stiglitz E, (2000), Economics of 1 he Public Sector, W. W. Norton & Co.

Managerial Economics is a core course of M.Sc Economics aimed at presenting and developing a microeconomic approach to business decisions. The concepts and problems are analyzed from the perspective of the firm and the managers' decisions. Emphasis is thus placed on the study of the production process and the analysis of interactions in markets, both with the customers and the rival firms.

Content

1. Nature, Scope and Overview of Managerial Economics
   a) The Nature and Scope of Managerial Economics, The Managerial decision making process.
   b) Theory of the firm. Profit maximization. Cost Minimization.
   c) Economic optimization. Economic relations of variables.
   d) The Incremental concept in Economic Analysis. Demand, Supply and Equilibrium.
2. Demand Analysis, Estimation and Forecasting
   a) The Basis for Demand. The Market Demand function. Demand sensitivity
   b) Elasticity, Price Elasticity of Demand with Managerial applications.
   c) Income Elasticity of Demand with Managerial applications.
   d) Regression Analysis: Demand estimation. Demand forecasting.
3. Production and Cost Analysis
   a) Production function; Total, Marginal and Average Product. Revenue and Cost
   b) Production function estimation.　Productivity Measurement.
   c) Homogenous and Homothetic Production Function. Short run and long run cost
   d) Learning curves and application of Cost-value-profit analysis. Cost estimation.
4. Linear Programming
   a) Production planning, for a single product Production planning for a multiple products
   b) Graphic s specification and solution. Simplex method of solution.
   c) The dual in linear programming. Shadow prices in linear programming.
5. Decision Making Under Risk and Uncertainty
   a) Introduction. Risk Analysis of Decision Alternatives. Adjustment for Risk
   b) Decision Making. The Expected Value Criterion. The Standard Deviation criterion
   c) The Coefficient of Variation Criterion. The Certainty Equivalent criterion
   d) The Maxima and Maximax Criterion. The Decision Tree
6. Pricing Analysis and Decisions
   a) A Review of Market Structures and Basic Pricing Models. Perfect Competition.
   b) Monopoly. Monopolistic Competition. Oligopoly. Selected Pricing Models.
   c) Marginalist Pricing. Mark up pricing. New Product Pricing. Oligopoly Model.
   d) Contestable Markets.　Pricing Strategies for Firms and Market Power.
   e) Monopolistic Competition. Price Discrimination, Monoposony and Price Product
7. A Critique of Traditional Theory of the Firm
   a) Full Cost Pricing Model. Mark-up Pricing Model.
   b) Problem from Marginal Price-formula. Limit Pricing Models.
8. Managerial Theories and Models of the Firm
   a) Baumol's Theory of Sales Revenue Maximization. Marris's Model of Managerial enterprise
   b) Wiiliamson's Model of Managerial Discretion
   c) Model by Cyert and March.
9. Public Sector Production and Pricing of Goods.
   a) Public and Private Goods and their pricing mechanism Decreasing cost Industryand pricing
   b) Externalities and Market Pricing issues. Rent seeking and control.
   c) Government Policy and International Trade, tariff and pricing.
   d) Import Competitiveness and tax, International pricing Techniques / Strategies.
10. Capital Budgeting ant Investment
    a) Pre-requisites of Capital Budgeting. Investment Criteria and Decisions. Cash flow estimation
    b) Internal Rate of Return,
    c) Profitability-Index Criterion and other criterion. Optimal Capital Budget.

Recommended Books

1. Salvatore, D. *Managerial Economics in a Global Economy*, 8th Ed. Oxford University Press (McGraw Hill, 2015).
2. Hirschey, M. *Managerial Economics*, 14th Ed (U.S.A. Thomson South-Western, 2016).

Suggested Books

1. Paul Keat , Philip K Young , Steve Erfle .,*Managerial Economics: Economic Tools for Today's Decision Makers*.7th ed (Pearson , 2013).
2. W. Bruce Allen, Keith Weigelt , Neil A. Doherty, Edwin Mansfield. *Managerial Economics: Theory, Applications, and Cases* .8th Ed (W. W. Norton & Company; 2012).

ECON-6311   **Development Economics, Theory and Policy**   **3(3-0)**

This course provides an understanding the evolution and relevance of Development Economics concepts and its policy suggestions in addressing the widespread issues like inequality, unemployment, poverty, gender disparities, labor productivity etc. The course would explain the humanistic perspective of economics and explicitly involves the explanation of multi-dimensional nature of Development Economics.

Content

1. Economic Development

   a) Economic Development and Growth
   b) Measurement of Economic Development and Growth.
   c) Characteristics of Least Developing Countries (LDCs)
2. Major Theories of Development

   a) Classical and Contemporary Theories
3. Agriculture and Industry

   a) Complementarity of Sectors
   b) Green Revolution and Industrialization
4. Population, Education and Human Capital

   a) Demographic Significance for Development
   b) Investment in education and returns.
5. Debt and Aid/Assistance

   a) Sources of Borrowing
   b) Policies to combat debt problem
6. WTO, Liberalization and International Trade

   a) Trade as an engine of growth
   b) WTO and Regional Trade
7. Poverty and Income Distribution

   c) Poverty concepts
   d) Income inequality
8. Economic Growth and Environment

   a) Sustainable Development

Recommended Books

   1. Todaro, M. and Smith, S., *Economic Development* (Pearsons New York, 2015).

   2. Meier G. M. and Rauch J. E., *The globalization of World Politics: An Introduction to International Relations.* (Oxford University Press, 2000).

Suggested Books

   1. Cypher J. M. and Dietz James L., *The Process of Economic Development.* (Routledge New York, 2004)

   2. Jhingan, M. L., *The Economics of Development and Planning.* (New Delhi). (Latest edition)

To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in the field of economics. In order to satisfy the requirements of this course, students will need to acquire a thorough understanding of the mathematical concepts introduced during the semester, and will need to demonstrate that they can apply the corresponding tools and ideas to unfamiliar problems.

Contents

1. Complex Number and Circular Functions
   a) Imaginary and Complex Numbers
   b) Properties of Sine & Cosine functions
   c) Eular relations
   d) Alternative representation of Complex Numbers
2. Integral Calculus
   a) Rules of Integrations and Operation
   b) Definite integrals , their properties and area under a curve
   c) Improper integral
   d) Economic Applications of Integrals
   e) The Domar growth model
3. Differential Equations (Continuous Time)
   a) First order linear and non linear differential equations
   b) Solution of first order linear differential equations
   c) Phase diagrams
   d) Types of time paths and the dynamic stability of equilibrium
   e) Market models and Solow growth model
   f) Solution of second order linear differential equations and its dynamic stability
   g) The Interaction of inflation and unemployment in continuous time
   h) Convergence and the Routh theorem
4. Difference Equations (Discrete Time)
   a) First order linear and non linear difference equations its solution and verification of results
   b) Conditions for dynamic stability of equilibrium
   c) The Cobweb model , market model with inventory and model with price ceiling
   d) The qualitative/graphic approach and phase diagrams
   e) Higher Order Difference Equations
   f) Second-order linear difference equations
   g) The Multiplier-Acceleration interaction model
   h) Inflation-unemployment model in discrete time
   i) Higher order difference equations and their solutions
   j) Convergence and the Schur's theorem
   k) Solution of simultaneous difference equations
5. Non-Linear Programming
   a) Non-linearity's in Economics
   b) The Kuhn-Tucker Sufficiency theorem
   c) The Arrow-Enthoven Sufficiency theorem
   d) Quasi-concave programming
   e) Economic applications

Recommended Books
1. Chiang, A. C., Fundamental Methods of Mathematical Economics, 4th ed. (McGraw Hill Publishing Company, 2004).
2. Dowling E. T., Mathematics for Economists, Schaum's Outline Series, 3rd ed.
      (McGraw Hill Publishing Company, 2009).

Suggested Books

1. George, Alvery et al ., *Essentials of Mathematics with Business Applications*,
   18th ed. (McGraw Hill Publishing Company, 2004).

2. Frank, Budnick ,*Applied Mathematics for Business, Economics and Social Sciences*, 4th ed. (McGraw Hill Publishing Company, 2011).

Semester III

ECON-6313   **ECONOMETRICS-I**   **3(3-0)**

The course is designed for undergraduates for their understanding to derive relationship between economic variables from the available data. The students should be in a position to apply statistical methods to data via simple mathematical models and to interpret the results by using economic theory. The teacher should expose the students to the use of computer in solving simple econometric problems and assignments.

Contents

1-   Introduction

a)   Definition and scope of Econometrics   b) Economic theory as the basis for empirical analysis

c)   Mathematical and Econometric models d) Application of Statistical techniques to Economic data e) Ingredients of Econometric modeling: Specification, Estimation, Evaluation and Forecasting.

2-   The Classical Linear Regression Model (CLRM)

     a)   Explaining Variables and parameters, Regressors and Regressand, Estimators and estimates, Correlation theory, Simple and multiple Regression theory, Mathematical versus econometric model. Structure of the linear econometric model with two or more variables

     b)   Rationale for inclusion of the disturbance term, Assumptions of the model with special reference to the disturbance term, The least squares principle, BLUE properties of the OLS estimators, Extensions of the model: Time as explanatory variable, Dummy variables, Regression through the origin, Standardized regression coefficients.

     c)   The estimation procedure, The economic interpretation of the estimated coefficients, Hypothesis testing and the use of Z, t, F, test statistics, The confidence interval and tests of significance approaches, The ANOVA technique, The explanatory power of the model, Coefficient of determination vs. correlation coefficient:, Econometric forecasting Important features of a good forecast. Computation of elasticities.

3-   Deviation from the Classical Assumptions

     a)   Multicollinearity

     b)   Heteroscedasticity

     c)   Autocorrelation

4-   The Simultaneous Equations Models

     a) Types of equation systems (Simultaneous, Recursive, Block-Recursive & Seemingly unrelated)
     b) Identification problems
     c) Indirect Least Squares (ILS) & Two Stages Least Squares (2SLS) methods.

Recommended Books

     Koutsoyiannis, A.- Theory of Econometrics - McMillan.(Latest edition)

     Gujrati, D.N. - Basic Econometrics – Latest Edition - McGraw Hill Company.

Suggested Books

     Dougherty, Christopher – Introduction to Econometrics – Latest Edition   Oxford University Press.

The course is designed for senior undergraduates. The objective is to confront them to advanced theoretical concepts and rigorous analysis with mathematical tools at hand. They have to develop the analytical skills and to enhance the capabilities to solve somewhat complicated problems. As usual, the teacher is expected to draw examples from the surrounding world for exposition. The students may be given frequent assignments and exercises from the texts, which may be discussed by the teacher in the class after submission. The students should be motivated to use computer for solving the assignments.

Contents

1. The Theory of Consumption andDemand

   a) Utility maximization and ordinary (Marshallian&Hicksian) demand functions.
   b) The inter-relationship between ordinary and compensated demands,
   c) Homogeneity of demand functions, Euler's relation and demand elasticities,
   d) The Slutsky Equation: derivation and interpretation, Gross and net substitutes.
2. The Theory of Production and Supply

   a) Different production functions, Properties of Cobb-Douglas and CES production functions,
   b) Equilibrium of the firm in the short and long run, Demand for variable factors,
   c) Elasticity of substitution, the role of technical progress.
3. Market Structures and Price Determination

   a) Perfect competition, price and output determination,
   b) The imperfect competition: Monopoly and Monopsony, Duopololy and Oligopoly, Monopolistic competition,
   c) Natural monopolies and the global markets, The multinational corporations,
   d) Introduction to: Game theory and strategic behaviour, Market with uncertainty and imperfect information.
4.General Equilibrium and Welfare Economics

   a) The concept of efficiency and welfare, Conditions of allocative efficiency.
   b) Theorems of optimality/welfare Production possibility frontier and Social indifference curve,
   c) Introduction to computation of general equilibrium in a 2x2x2 (two consumers, two sectors/ commodities, two factors) economy.

Recommended Books:

1. Nicholson, Walter - *Microeconomic Theory: Basic Principles andExtensions- 8th Edition* (2002) or latest - Thomson & Learning Inc.

2. Henderson &Quandt - *Microeconomic Theory: A MathematicalApproach*-3rd Edition (1980)– McGraw Hill International.

Suggested Books

1. Silberberg, E. &Suen, W.-*The Structure of Economics: A Mathematical Analysis*- 3rd Edition(2001) – McGraw Hill International

2. Layard & Walters – *Microeconomic Theory*- (1978) – McGraw Hill Book Company.

This course focuses on the application of modern financial techniques to operating and investing decisions. It comprehensively analyzes working capital management and capital budgeting decisions within the context of the firm's business strategy. The course is designed for managers in non-financial functions and financial analysts and managers in financial lending organizations who make working capital loan decisions and it ensures students reach a proficient level of professional applicability.

Contents

1. Introduction to Financial Management
   a) The Role of Financial Management
   b) Defining Financial Management
   c) Organization of the Financial Management Functions
   d) *The Business, Tax and Financial Environments*
2. Tools of Financial analysis and Planning
   a) Financial Statement Analysis
   b) *Cash-Flow Analysis and Financial Planning*
   c) Accounting statement of Cash Flows
   d) Cash-flow forecasting
3. Valuation
   a) The Time Value of Money
   b) The interest rate
   c) Simple and Compound interest
   d) Compounding more than once a year
   e) *The Valuation of long-term Securities*
   f) Distinctions among valuation concepts
   g) Bond Valuation
   h) Preferred stock valuation, Common stock valuation, Rates of Return (or Yields)
4. *Risk and Return*
   a) Defining risk and return, Using probability distributions to measure risk
   b) Attitudes toward risk, Risk and return in a portfolio context
   c) Diversification, The capital asset pricing model
5. *Cost of Capital*
   a) *Required Returns and the Cost of Capital,* Overall cost of capital of the Firm
   b) The CAPM: Project-Specific and Group-Specific required rates of return
   c) Evaluation of Projects on the Basis of Their Total Risk, *Operating and Financial Leverage,* Operating Leverage, Financial Leverage, Total leverage, Cash-Flow ability to service debt

6. Working Capital Management-I
   a) Overview of Working Capital Management
   b) *Cash and Marketable Securities Management*
7. *Working Capital Management-II*
   a) *Accounts Receivable and Inventory Management,* Inventory management and control
   b) *Short-term Financing*
8. Investment in Capital Assets
   a) Overview of capital budgeting process
   b) Estimating project "After-Tex incremental operating cash flows"
   c) Capital Budgeting Techniques
   d) Project evaluation and selection: Alternative Methods
   e) Risk and Managerial Options in Capital Budgeting
9. Long-term Financing
   a) *Long-Term Debt, Preferred Stock and Common Stock*
   b) *The Loans and Leases*

Recommended Books

1. Fundamentals of Financial Management By James C. Van Horn 12th Edition
2. Principles of Managerial Finance By Lawrence J. Gitman 10th Edition

Suggested Books

1. Block, S.B., Hirt, G.A., & Short, J.D. (2015). Foundations of Financial Management. (10th Canadian ed.). Toronto, ON: McGraw-Hill Ryerson Ltd.
2. Eugene F. Brighum, Joel H. Houston. Fundamentals of financial Management (12th edition)

This course provides a comprehensive introduction to agriculture economics, focusing in particular on its importance in an economy and its role for other sectors of the economy, its structure and role in economic development. More specifically, the course introduces key concepts related to resource use efficiency, supply response, theory of rent, surplus, and theories and models in agriculture economics.

Content

1. Introduction, Importance, Structure and Role of Agriculture

    a. Agricultural Revolution, Importance of Agriculture, Agriculture vs. Industrial development
    b. Current State of Agricultural Development. Brief Overview of Sources of Growth.
    c. Traditional Agriculture and Productivity.
    d. Framing Environment: Natural Hazards and Economic Uncertainties
    e. Farm Size in Pakistan and Productivity
    f. Product Contribution, Market Contribution, Factor's Contribution

2. Theory of Rent and Agriculture in Dualistic Development Models

    a. The Theory of Economic Rent. Rent and Quasi-Rent The Ricardian 'Corn Rent.
    b. Characteristics of Landownership in Underdeveloped Agriculture and Pakistan.
    c. Tenant's Status in Pakistan. Agricultural productivity in Pakistan and use of inputs.
    d. The Lewis, Ranis-Fei (FR), Jorgenson and Kelley, Williamson, Cheetham Models
    e. Dual Economy Models. Agricultural Adequacy; Mellor's Model.

3. Resource Use Efficiency, Technical Change and Supply Response

    a. Efficiency of Resource Utilization. Technological Change in Agriculture.
    b. Technical Change in LDCs: with Special Reference to Pakistan.
    c. The Cobweb Model: An Illustration. Price-Supply Response in Backward Agriculture
    d. Response in the Underdeveloped Agricultural labour Market, Specifically in Pakistan
    e. Green Revolution in Pakistan and Responses. Present Status of Green Revolution in Pakistan:

4. Population and Food Supplies

    a. Classical Model. Contra-Malthusian Model.Ecological Disequilibrium.
    b. Synthesis of Population and Food Supply Theories.
    c. Malnutrition in Developing Countries like Pakistan and Remedial Manners.
    d. Choice of Planning Strategy for Agriculture Development, Agricultural Project Planning.

5Institutional Constraints, Agriculture and International Trade

    a. Inequitable Landownership. Land Reform. Capital and Finance in Underdeveloped Agriculture.
    b. Marketing Imperfections and Marketing Policy in Pakistan.
    c. Support Price Policy in Pakistan. Determinants of support prices. Impacts of support prices.
    d. Main Features of Trade in Agricultural Goods. Trade Policies in Developed
    e. WTO and Pakistan's agriculture: quality, dumping, subsidies. State Trading, Sanitary

Recommended Books

    1.Ghatak S.,&Ingersent, *Agriculture and Economic Development*, (Latest Edition), Harvester Press.

    2.Capstick Margret, *The Economics of Agriculture*, London, George Allen Unwin Ltd., latest edition.

Suggested Books

1. Colman D. and Young T., *Principals of Agricultural Economics, Markets and Prices in Less Developed Countries*, (1989), Cambridge University Press.
2. Yujiro Hayami and Vernon W. Ruttan, *Agricultural Development*, John Hopkin University Press, London. (Latest edition).

This course provides cognizance of the significance of monetary phenomenon within any economy. Understanding of the theoretical base behind the functioning of money and its allied concepts and how they are meaningful in the conduct of monetary policy and its implications within national borders and beyond. Further, it will inculcate ability to understand the formulation, function and execution of monetary policy relative to contemporary national and international circumstances.

Content

1. Introduction and Development Of Monetary Mechanism
   a. Evolution of Money and Payment System.
   b. Definition, Function and Measurement of Money
2. Role of Money in the Economy
   a. Classical Dichotomy and Keynesian IS LM Framework
   b. Money in Aggregate Demand & Aggregate Supply Analysis.
   c. Keynesian Vs. Monetarist views of Equilibrium Output, Employment and Prices
3. Demand for Money and Money Supply process
   a. Theories of Money Demand
   b. Keynesian Liquidity Preference Framework
   c. Multiple Deposit Creation and Monetary Base
   d. Determinants of the Money Supply
4. The Conduct of Monetary Policy: Central Bank
   a. The Conduct of Monetary Policy: Goals and Targets.
   b. Tools of Monetary Policy by Central Bank
5. Money & Interest Rates
   a. Determinants and Kinds of Interest Rates
   b. The Risk and Term Structure of Interest Rates
6. Money and Inflation
   a. What is Inflation, its Causes and types
   b. Philips Curve and Accelerating Inflation.
   c. Inflation in Pakistan: Sources and Policies to Combat Inflation
7. Monetary Policy in International Framework
   a. Monetary Policy in Fixed and Flexible Exchange Rates.
   b. Exchange Rate, Monetary Policy and Balance of Payment.

Recommended Books

1. Mishkin, F. S., *The Economics of Money, Banking & Financial Markets* (Pearsons, New York, 2001).

2. Miller, R. L. and David V. H., *Money, Banking & Financial Markets*. South Western, Singapore. 2001)

Suggested Books

1. Vanish K., *Monetary Theory*, (Vikas Publishing House, Delhi, 2001)
2. Mishkin F. S.*, Financial Markets and Money*, (Harper & Row Publisher, 2000).

This course covers the basics of conducting applied economic research. This includes the selection of topic, literature review and survey, selection of research method and approach, formulation of hypothesis, testing of hypothesis using statistical analysis, and summarizing results. You will organize and complete the research project in stages. This process includes the following steps: • choice of a topic; • finding, critically evaluating and describing the relevant economics literature on this topic; • developing a research proposal; • finding relevant economic data sources and collecting economic data; • analyzing these data using appropriate statistical and econometric techniques; • clearly and meaningfully summarizing, tabulating and explaining the findings; • writing a final report/paper; • preparing a presentation.

Content

1. Importance of Research Methodologies.
2. Research techniques in social sciences and their limitations.
   a) Theory and basis of research.
   b) Empirical and theoretical research.
   c) Stages of research process.
3. Identification of problem/issue, data, theory and estimation and related problems.
4. Thinking, Field Research Designs; the process of field research, Exploratory Research, Casual Inference.
5. Methods of communication in survey.
   a) Vision survey and communication techniques.
   b) Art of asking questions and getting quality information.
   c) Preparation of Research Proposal Questionnaire,
6. Sample Design;
   a) the Nature of Sampling,
   b) Measurement and Scaling;
   c) Measurement, Measurement Scales,
   d) the Characteristics of Sound Measurement,
   e) the Development of Measurement Tools,
   f) Scaling, the Nature of Scaling, Response Methods, Scale Construction.
7. Data Collection Methods
   a) Survey Instruments and Field Procedures; Survey Instrument Designs,
   b) the Survey Situations, the Instrument Development Process,
   c) Questionnaire Development, Field Procedures, Personal Interviewing, Telephone Interviewing,
   d) Interviewing by mail, observations. Data collection, Observation,
   e) Experimentation and Simulations;
   f) Experimentation and Simulation. Choice of Research Technique, Experimental Research Design, Simulation, Observation, Observation Designs.
8. Use of Secondary Data;
   a) the Nature of Secondary Data Sources, the Use of Secondary Data,
   b) Types of Secondary Data Sources, Statistical Sources, Data Research Procedures,
   c) Evaluating Secondary Data. Vision Survey:
9. Interpretation of Replies. Data Presentation and Analysis:
   a) Elements of Analysis, Data Preparation, Special Data Problem, Tabulation,
   b) Data Presentation, and Data Analysis.
10. Report Writing; the Questions and analysis of Research Proposal.
    a) Organization of Research Paper.
    b) How to format and Write country Research Report.
    c) Executive summary and abstract of a report. Conclusion and its basis.
    d) Evaluation of Research Work.
11. The Research Report, Research Report Format, Writing and editing of research Report.

Recommended Books

1. Ranjit Kumar , Research*Methodology: A Step-by-Step Guide for Beginners*, 5th Edition.(SAGE Publications Ltd , 2018).
2. Johnson, Glenn *Research Methodology for Economists: Philosophy and Practice*, (McMillan ublishing Co.,1986).

Suggested Books

1. Uma Sekaran, Roger Bougie.,*Research Methods for Business. A Skill Building Approach*, 7th Ed.(John Willey & Sons, Inc,1992).
2. Charles M. Judd, Louise H. Kidderand Eliot R. Smith., *Research Methods in Social Relations,* 6th Ed.(Holt, Rinehart & Winston, 1991).

Semester IV

ECON-6319   **ECONOMETRICS-II**   3(3-0)

The course is designed for senior undergraduates more inclined towards quantitative studies. The objective is to enable the students dive deep into complex problems of the real world economic life. They have to understand data problems, to have good grasp over advanced estimation techniques and to have the capability of inferring results accurately. The students have to learn certain computer packages like SPSS, E-views and Strata besides Excel. The students are required to devote at least one hour per week to computer laboratory. They have to develop the capacity to read and understand research papers to understand estimation techniques and their interpretations.

Contents

1-   Overview of the Classical Regression Model

   a) The multiple regression (K-variable) model in matrix format, Assumptions of the model, The Least-Squares estimation procedure in matrix notation, Properties of the OLS estimators, Interpretation of the Beta coefficients ($\beta1$, $\beta2$,…., βk), Hypothesis testing using matrix approach.
   b) Forecasting in OLS model, Time as an explanatory variable, Regression on Dummy variables, Dummy variable trap, Chow test, Specification bias and Errors in variables, Estimation with endogenous lagged variables, Restricted Least Squares,
2-   The Generalized Least-Squares Model

   a) Deviation from the assumptions of the classical regression model, The problem of heteroscedasticity,

   b) The GLS model in matrix format, Detection of the problem and consistent estimators, The problem of autocorrelation: Autoregressive and Moving Average processes, The Durbin-Watson statistics, Alternative estimation techniques.

3-   The Maximum Likelihood Estimators

   a) The likelihood function, Properties of ML estimators
   b) Consistency, Asymptotic normality, efficiency, Comparison with OLS estimators, Instrumental variable (IV) estimators

4-   Time Series Analysis

   a) Rationale for univariate analysis, ARMA and ARIMA Models, Comparison of forecast based on ARIMA and regression models.
   b) Stationarity, Unit roots, co-integration and error correction models, Introduction to Autoregressive Distributed Lag models, ARCH models

Recommended Books

Asteriou, D. – Applied Econometrics: A Modern Approach Using E-Views and Microfit – Revised Edition (2007) Palgrave Macmillan

 Judge, George G. et al - The Theory and Practice of Econometrics- ((Latest edition) John Willey and Sons

Suggested Books

Gujrati, D.N. - Basic Econometrics – Latest Edition - McGraw Hill Company.(Latest edition)

This course provides a comprehensive introduction to Macroeconomics; the objective is to enhance their analytical skills and to clarify further their macroeconomic concepts with quantitative tools at hand. They must have a strong theoretical foundation so as to understand the real problems of the economy with particular emphasis on inflation, unemployment, instability, deficit and debt etc. to which the developing countries are confronted at present.

Content

1. Macroeconomics: The Classical Framework
   a) Ingredients of the Classical model: The Says law of markets.
   b) The Quantity theory of money, The Marginal Productivity theory, Equilibrium in the goods and money markets.
   c) A critical appraisal of the Classical model, Dichotomy in the economy.
2. The Demand Management Economy
   a) The Keynesian framework, liquidity preference function, ISLM model and its mathematical derivation, interaction of the goods and money markets in a closed economy.
   b) The multiplier effects of fiscal and monetary actions, derivation of aggregate demand function.
   c) The Neoclassical critique of the Keynesian model: the Keynes effect, the Pigou effect, the Real Balances effect, The Keynesian-Neoclassical Synthesis
3. The Supply Side Economics
   a) Demand for and Supply of Labour, The wage rate determination, Rigidity versus flexibility of nominal wage rate.
   b) The short-run Production function, Derivation of Aggregate Supply under the Classical and Keynesian assumptions, the supply side disturbances leading to stagflation.
4. The Open Economy Macroeconomics
   a) Balance of Payments: Current and Capital account, The IS-LM-FB model due to Mundell and Fleming, The case of a small open economy
   b) The relative effectiveness of Fiscal and Monetary policies under the Fixed and Floating exchange rate regimes, Devaluation and its impacts for developing countries.
5. Macroeconomic Policy Debate
   a) Macroeconomics Policy: the Fiscal, Monetary and Commercial policies
   b) Seignorage and Inflation: Monetarists vs. Activists, the short-run and long-run analysis of the Phillips Curve

Recommended Books

1. Froyen, Richard, *Macroeconomics: Theories and Policies*. (Pearson, 2012)
2. Gupta, G.S., *Macroeconomics: Theory and Applications*. (McGraw Hill, 2014)

Suggested Books

1. Mankiw, Gregory, *Macroeconomics*. (Worth Publisher, 2018)
2. Branson, Willium, *Macroeconomics: Theory and Policy*. (Harper and Row, 1989)

This course provides a comprehensive overview of how an economy can get benefit from nurturing its human resource and its management in line with the parameters of Knowledge Economy. The focus of the course would be to give in depth analysis of human resource related determinants behind the efficiency driven and innovation driven economies.

Content

1. Introduction and Issues
   a. Population Growth and Resource Stress .
   b. Role of Human Resources in Economic Development
2. Human Resources and Economic Growth
   a. Human Development Index
   b. Human Capital and its Implications
3. Investment in Human Capital and Returns
   a. Demand for Education
   b. Returns to Education and its Implications
   c. Investment in Human Development in Pakistan
4. Mobility and Migration
   a. Migration Decision Determinants
   b. Migration and Development in Pakistan.
5. Women and Human Development
   a. Determinants of Women's Time Allocation
   b. Development of Women; Education and Training
   c. Policies to improve women conditions in Pakistan.
6. Health, Nutrition and Human Development
   a. Poverty and Basic Needs: Impacts on Human Capital and Productivity
   b. Nutrition, Health, Child Mortality. Infant Mortality
7. Employment, Unemployment and Manpower Forecasting
   a. Labor market information system in Pakistan.
8. International Development Cooperation
   a. Role of Global Institutions i.e. UN, ILO, WTO

Recommended Readings

1. Mahboob-ul-Haq, *Reflections on Human Development* (Oxford University Press, 1998).
2. Aslam C. and Hamid A., *Human Development and Management in Pakistan,* (Ferozsons, Lahore 1999).

Suggested Readings

1. Harbinson and Myers, C.A., *Educational Manpower and Economic Growth* (latest edition), McGraw Hill

2. Kemal A.R., *Human Resource Development in the Labor Surplus Economies (*Pakista*n* Manpower Institute, Islamabad, 1989).

This course provides a comprehensive introduction to international trade and finance, focusing in particular on trade theory explaining why does trade take place; its history and key concepts, major theoretical frameworks, main factors and agents. More specifically, the course introduces key concepts related to flow of goods and services, funds, monies and currencies from one country to another country.

Content

1. Importance and Basis of Trade
   g. Why Study International Economics? Basis of Trade, Gains from Trade.
   h. Absolute Advantage, Comparative. Pattern of Trade. Offer Curves and Free Trade Equilibrium.
   i. The Elasticity of Exports Demand and Balance of Payment. Substitution and Income Effects
2. Growth and Trade
   f. Factor endowment and Heckscher – Ohlin theory, factor price equalization,
   g. factor intensity reversal. Newly industrializing countries (NICs). Rybeczunksy theorem.
   h. Markets, cartels and international trade. Dumping / discrimination and WTO
   i. Multinationals firms and foreign direct investment, transfer of capital, technology.
3. Tariff quota and trade policies
   a. Tariff and Small Country: Effects of Tariff, Price and Demand for Imports,
   b. Welfare impacts. Impacts of Tariff on Government Revenue
   c. The Optimal Tariff. Tariff and Distribution of Income. Brief Introduction of Tariff and WTO
   d. Subsidies and Quota, Voluntary Quota, Quantitative Restrictions, Voluntary Export Restrictions
4. Foreign Exchange Market and Balance of Payments (B.O.P)
   a. Foreign Exchange Rates (F.E.R). Spot Exchange Rate. Capital Flow and Speculations.
   b. Forward Exchange Market, Interest Arbitrage and Parity, Speculators, Hedgers and Traders,
   c. Forward Exchange Rate, Purchasing Power Party (PPP), Income Absorption Approach to B.O.P.
   d. Monetary Approach to B.O.P. Methods dealing with undesired Short-run Capital Flow.
5. Open Economy: Monetary and Fiscal Policy and International Institutions
   a. Internal and External Balance. Monetary and Fiscal Policy with Fixed Exchange Rates.
   b. Fixed Exchange Rate, Free Floating Exchange Rate, Managed Exchange Rate
   c. International Institution: Trade, Capital and B.O.P.
   d. Introduction of International Institutions, Role; and Major Activities of IMF and World Bank
6. International Movement's of Factors and Major Contemporary International Economic Issues
   e. WTO: GATT and Emergence of WTO. Expected Impacts on Trade, Liberalization and B.O.P
   f. WTO Rules: Sanitary, Phytosanitary, Dumping, Anti-Dumping etc Rules and Their Impacts.
   g. Emerging Regional Trading, Blocks, Special Preference and Monetary

Recommended Books

1. Donomick Salvatore B, *International Economics*. (Latest edition), Prentice Hall.
2. Chacholiades, Miltiades, *International Trade Theory and Policy* (latest edition). McGraw Hill Book Company New York, London.

Suggested Books

1. Sodersten B. and GeoffryRead.*International Economics* (Latest edition), MacMillan Press Ltd.
2. Peter Holinder&Thomas A.,Pugel., *International Economic*. (Latest Edition).

The ultimate outcome of a public or a private investment is determined by the financial, economic, managerial and political parameters associated with the project. A project evaluation that closely links the financial and economic analysis, and in turn identifies the distribution of benefits and costs over the various interest groups, will be far more likely to identify fatal flaws in the design of a project that will an appraisal that segments the analysis and does not address the interdependencies of the components.

This course will enable students to understand the concepts which underlie the appraisal of investment projects and the advantages and drawbacks of each of the main approaches used (namely cost benefit analysis, multi criteria analysis and other important concepts.

Contents

1. Introduction:

   a) Meaning of Project Appraisal, usefulness and significance
   b) Aspect of project appraisal with a special focus on economic versus financial analysis
   c) Contours and Dimensions of a project and its essential ingredients
   d) Project Vs. Plans. Project Cycle
2. Identify Project Benefits and Costs:

   a) Objectives of Costs and Benefits
   b) The Incremental / Net Benefits and "With" and "Without" Comparisons
   c) Categories of Costs and Benefits.
3. Pricing Project Costs and Benefits:

   a) Prices reflecting values, Market price and financial analysis, Finding market prices and related problems
   b) Change in relative prices and inflation: Shadow Prices and economic analysis
   c) Removal of market price distortions in traded and non-traded goods
   d) Premium on foreign exchange through use of Shadow exchange rate and conversion factor approach.
4. Comparing Project Costs and Benefits (Measuring of a Project Worth):

   a) Undiscounted measures of project worth
   b) Discounted measures of NPW, IRR, BCR, Net benefit – Investment Ratio, Comparative assessment of discounted measures
   c) Social vs. Economic benefits and selection of projects
5. Applying Discounted Measures of Project Worth:

   a) Sensitivity analysis
   b) Switching value
   c) Choice among mutually exclusive alternatives
   d) Domestic resource cost of foreign exchange earning / saving.
6. Cost Effectiveness Analysis:

   a) Areas and elements of analysis
   b) Methods of analysis: Constant Effect Method, Constant Cost Method, Measuring of cost effectiveness, Present Worth, Annual Worth, Cross over discount rate, Limitation of analysis.
7. Financial (Investment) Analysis:

   a) Theoretical and empirical examination and saving and investment
   b) Concept of capitalization types of securities, non-banking financial institution

c) Development financing, Asset Structure, Stock Prices, Money Market, Portfolio Theory and Investment Analysis

d) Financing the industrial sector; Large scale and small scale, Interest rate. Bond market, Real and financial investment

e) Financial intermediaries; Speculation and Inter – relationship of financial and real variables in the economy

Recommended Books

1. Edwin J., Elton and Martin J Goober, *Modern Portfolio Theory and Investment Analysis*, John Wiley and Sons (Latest edition).

2. United Nations, "*Guide to Practical Project Appraisal_Social Benefit Cost Analysis in Developing Countries.*" Oxford & IBH publishing Co. New Delhi. (latest edition).

Suggested Books

1. Hussain, Ch. M: *"Project Appraisal, Monitoring and Evaluation Process with Special Reference to Pakistan "*Royal Book Co. Karachi, (1985).

2. United Nations, "*Manual for Evaluation of Industrial Projects"* Oxford & IBH Publishing Co. New Delhi, (1980).

ECON-6324   **Economic Principles, Strategies & Techniques of Marketing**   **3(3-0)**

This course is designed to provide students with an understanding of the principles of Marketing. There will be a focus on the management of the marketing activities and how marketing relates to overall organisational functioning, including the management of exchange processes between business units and consumers and between firms. It will include topics such as environmental analysis, industry and competitor analysis, objective setting, marketing strategies, market mix components, and finally implementation and control mechanisms.

Contents

1. Introduction to Marketing
   a) Key Marketing Concepts, Scope of Marketing, Evolution of Marketing
   b) Importance of Marketing, Marketing as an Exchange Process, Marketing as a
   c) Demand Management Tool. Marketing Cost and Price Relationship.
2. Supply Chain / Value Chain Management
   a) Primary and Secondary activities in Supply Chain / Value Chain. Identify and
   b) Maximizing linkages within the Various Activities.
   c) The SMP Process. The BCG Matrix, GE Nine Cell Model and Porter's Generic
3. International Market mg: The Target Markets & Marketing Mix
   a) Identify Target Markets. Forecasting Market Demand, The Target Market
   b) Strategies, Key Elements of Marketing Mix, Local Vs. International Marketing,
4. Product Management
   a) The Consumer and Industrial Products. Product Planning and Development,
   b) Product Adoption and Diffusion, Product Life Cycle, Product Positioning and Differentiation, Product Mix Strategies.
5. Marketing Cost, Finance and Cost Management
   a) Analysis of Cost, Marketing Cost for Products, Reasons for Higher Cost and Methods to Minimize,Abuses and Advantages of Marketing Cost Debate overLegitimacy Solution, Need for Marketing Finance. Kinds of Marketing.
   b) Financing. Significance of Prices, Methods of Price Determination.
6. Distribution Management and Market Intermediaries
   a) Designing Distribution Networks. Channels Conflict and Channel Power.
   b) Physical Distribution,The Wholesale Market, Retail Marketing.
   c) Consumer Motive to Marketing, Models of Consumer, Buyer Behaviour,
   d) Influences on Buyer's Behaviour, Industrial Buyer Behaviour.
7. Managing Marketing in Various Forms of Competition
   a) Industrial Analysis., Industry and Market Concepts of Competition, Strategies of Leaders, Challengers, Followers and Nichers.
   b) Global Marketing, Industrial Marketing, Services Marketing, Agricultural Marketing,Key Organizations for Marketing, Market Control, Marketing Audit.
8. Segmentation and Targeting
   a) Significance, Advantages of Market Segmentation, Segmentation Variables, Segmenting Industrial Markets, Effectives of Segmentation, Market Targeting, Strategic Opinion.
9. Pricing Strategies and Sales
   a) Theories of Pricing and Value. Supply and Demand Model, Mark-up Pricing, Dumping, Economic Choice, Pricing and Market Orientation, Market Share
   b) Short-run and Long-run Pricing, Predicting Future Conditions Forecasting Sales

Recommended Books

1. Kotler, P. and Armstrong, G. 2008. Principal of Marketing. 12th Edition Prentice-Hall International, Inc.
2. The Fundamentals of Marketing" 11th Edition by Etzel, Walker & Stanton, McGraw Hill

Suggested Books

1. Basic Marketing 8th edition by Jerome McCarthy, Prentice Hall.
2. Marketing Management: Strategic Approach with a Global Orientation 3rd Edition by Boyd H.W., Latest edition.