

Scheme of Studies & Course Outlines for

M. Sc. Economics (Four semesters of 60 Credit Hours)

(For Morning & Afternoon Programs under semester System from Session 2012-2014 & onwards)

First Semester

ECON-301	Microeconomic Theory-I	3-Credit Hours (100 marks)
ECON-303	Macroeconomic Theory-I	3-Credit Hours (100 marks)
ECON-305	Mathematical Economics	3-Credit Hours (100 marks)
ECON-307	Descriptive and Inferential Statistics	3-Credit Hours (100 marks)
ECON-309	Development Economics	3-Credit Hours (100 marks)

(All Compulsory)

Second Semester

ECON-302	Microeconomic Theory-II	3-Credit Hours (100 marks)
ECON-304	Macroeconomic Theory-II	3-Credit Hours (100 marks)
ECON-306	Optimization and Dynamic Analysis	3-Credit Hours (100 marks)
ECON-308	Basic Econometrics	3-Credit Hours (100 marks)
ECON-310	Economic issues in Pakistan	3-Credit Hours (100 marks)

(All Compulsory)

Third Semester

ECON-401	Economics of Money and Banking	3-Credit Hours (100 marks)
ECON-403	Econometric Analysis	3-Credit Hours (100 marks)
ECON-405	Public Finance	3-Credit Hours (100 marks)
ECON-407	International Trade: Theory & Policy	3-Credit Hours (100 marks)
ECON-409	Agricultural Economics	3-Credit Hours (100 marks)

(All Compulsory)

Fourth Semester

(Compulsory Courses)

ECON-402	International Finance	3-Credit Hours (100 marks)
ECON-404	Islamic Economics	3-Credit Hours (100 marks)
ECON-406	Financial Economics	3-Credit Hours (100 marks)

Two optional courses will be selected from the list of optional



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Optional Courses

ECON-410/		
ECON-412	Thesis	6-Credit Hours (200 marks)
ECON-414	Applied Economics	3-Credit Hours (100 marks)
ECON-416	Corporate Governance	3-Credit Hours (100 marks)
ECON-418	Cost-Benefit Analysis and Project Evaluation	3-Credit Hours (100 marks)
ECON-420	Economics of Poverty and Income Distribution	3-Credit Hours (100 marks)
ECON-422	Energy Economics	3-Credit Hours (100 marks)
ECON-424	Environmental Economics	3-Credit Hours (100 marks)
ECON-426	History of Economic Thought	3-Credit Hours (100 marks)
ECON-428	Human Resource Development	3-Credit Hours (100 marks)
ECON-430	Industrial Economics	3-Credit Hours (100 marks)
ECON-432	Labor Economics	3-Credit Hours (100 marks)
ECON-434	Managerial Economics	3-Credit Hours (100 marks)
ECON-436	Population Economics	3-Credit Hours (100 marks)
ECON-438	Research Methods in Economics	3-Credit Hours (100 marks)
ECON-440	Transport Economics	3-Credit Hours (100 marks)



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Detail of Course Outlines

FIRST SEMESTER

ECON-301 MICROECONOMIC THEORY-I

Microeconomics: Comparison with other branches of economics; The uses and limitations of Microeconomic theories; The problem of Scarcity; The Concept of opportunity cost; Markets; Firms and Individuals; Demand and Supply: A Review; Relative and absolute Prices; Real and Nominal Prices; Cobweb Theorem; Slope and Elasticity of Demand; Different Kinds of elasticity of demand; Price Controls; Consumer and Producer's surpluses.

Consumer's equilibrium under Cardinal Approach and consumer demand curve; Ordinal Approach axioms and Consumer's equilibrium under Ordinal Approach; Effects on consumer equilibrium; Marginal rate of consumer substitution; Properties of indifference curves; Graphical derivation of Marshallian; Hicksian and Slutsky demand curves; Theory of Revealed Preference; Implication of Elasticities and Problem Solving Approach; Identification of Inferior goods; Griffin goods and normal goods.

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.

Definition and kinds of costs; Cost Functions; Traditional; Modern and Engineering costs Theories; Economies of Scale and Scope; Revenue Analysis (Total, Marginal and Average Revenue); Derived Demand; Cost Minimization. Decreasing and Increasing Cost Industry and Price Determination.

Recommended Books:

1. Bilas, Richard A, Microeconomic Theory*, McGraw-Hill Kogakusha Ltd, (2nd Edition).
2. Koutsoyiannis, A, Modern Microeconomics*, London, Macmillan, (Latest Edition).
3. Pindyck, Robert. S , Daniel L. Rubinfeld and Prem L.Mehta, Microeconomics*. Pearson Education Inc, (Sixth Edition).
4. Henderson, J.M & Quandt, R.E, Microeconomic Theory*, N.Y Macmillan II A Book Co.
5. Varian Hal R., Microeconomics Analysis*, Norton & Company, New York, 1992.
6. Ferguson, C.E & Gould, J.P, Microeconomic Theory, Macmillan, (Latest Edition).
7. Layard and Walter A.A., Microeconomics, McGraw Hills, (Latest Edition).
8. Walter Nicholson, Microeconomic Theory, Basic Principles and Extensions (6th edition)

****Strongly Recommended***



ECON-303 MACROECONOMIC THEORY-I

The development of Macroeconomics: Introduction; main objectives; scope and subject matter of Macroeconomics. Circular flow of national income; national income aggregates; measurement of GNP: expenditure approach, income approach, product approach; GNP as a measure of welfare; Outlays and components of demand; some important identities; rules for computing GDP; real GDP VS nominal GDP; actual GDP VS potential GDP; prices indices; GDP deflator; CPI; PPI; Measuring joblessness; The unemployment rate; unemployment; GDP and Okun's Law; Inflation and Inflation rate; GDP growth rate.

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; 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.

Simple Keynesian model; conditions for equilibrium output; The components of aggregate demand; Consumption function; saving function; investment function (relationship between APC, MPC, APS and MPS); Government expenditures and net exports; aggregate demand equals aggregate output; Theory of multiplier; derivation of simple multiplier; Government expenditures and tax multiplier; export and import multipliers; super multiplier; employment multiplier; balanced budget multiplier; Budget surplus and full employment; Money in the Keynesian system; Interest rate and aggregate demand; Keynesian theory of interest rate; Keynesian theory of demand for money; Regressive expectation model; portfolio balance approach.

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.

IS curve; its 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.

Recommended Books:

1. Branson, William H., (Latest Edition), Macroeconomic Theory and Policy*, Harper and Row Publishers, New York / London.
2. Froyen, R. T., Macroeconomics: Theories and Policies*, (Latest Edition), Prentice Hall .



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3. Branson, William H. and Litvack James M., *Macroeconomics**, (Latest Edition), Princeton University.
4. Glahe, Fred R., (Latest Edition), *Macroeconomics, Theory and Policy*, Harcourt Brace Jovanovich Inc.
5. Mankiw, Gregory N., (Latest Edition) , *Macroeconomics**, Worth Publishers, New York.
6. Peel D. and Minfow P., (Latest Edition), *Advance Macroeconomics*, Edward Elgar, Cheltenham, U.K.
7. Delorme. Jr., *Macroeconomics*, 2nd Edition.
8. Romer, David (Latest Edition), *Advanced Macroeconomics**, McGraw Hills, New York,London.
9. Sargent, Thomas J., *Rational Expectations and Inflation**, Harper and Raw Publishers, New York / London.

* ***Strongly Recommended***

ECON-305 MATHEMATICAL ECONOMICS

The Nature of Mathematical Economics; Economic Models: Ingredients of mathematical models: Real Number Systems: Concept of Sets: Relations and Functions: Types of Functions; Equilibrium Analysis in Economics: Partial and General Market Analysis: Some Economic Examples and Interpretations; Linear Models and Matrix Algebra: Matrices and Vectors with its Operations: Laws and Forms of Matrices: Finite Markov Chains: Conditions and Tests of Nonsingularity: Properties of Determinants: Finding the Inverse Matrix: Cramer's Rule: Leontif Input-Output Models; Comparative Statics and the Concept of Derivatives; Rules of Differentiation and their Use in Comparative Statics; Applications to Comparative –Static Analysis; Concept of Functional Dependence; Comparative-Static Analysis of General-Function Models: Differentials and Total Derivatives: Derivatives of Implicit Functions: Comparative Statics of General-Function Models.

Recommended books:

1. Alpha C. Chiang and K. Wainwright, *Fundamental Methods of Mathematical Economics**, Latest Edition, Mc Graw-Hill.
2. Dowling, Edward T. *Introduction to Mathematical Economics** (part of Schaum's easy outlines series), New York, McGraw-Hill, 2006.
3. Pemberton and Rau, *Mathematics for Economists**, Manchester University Press, 3rd Edition, 2011.
4. Abadir, K.A. and Magnus, J. R., *Matrix Algebra**, Cambridge University Press, 2005.
5. Fuente, A. de la, *Mathematical Methods and Models for Economists**, Cambridge University Press, 2000.
6. Sydsaeter, Knut and Peter Hammond. *Essential Mathematics for Economic Analysis, 2nd Ed.* Financial Times, Prentice Hall, Harlow, England. ISBN is 0-273-68180-X, 2006.
7. Simon, Carl P, and Lawrence Blume, *Mathematics for Economists*. New York: W.W. Norton & Company, Inc., 1994.

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8. Anthony, Martin Henry George, *Mathematics for economics and finance* Cambridge, Cambridge University Press, 1996.
 9. Bradley, Teresa, *Essential mathematics for economics and business*, 2nd Edition, Chichester, J. Wiley, 2002.
 10. Jacques, Ian, *Mathematics for economics and business*, 5th Edition, Harlow, FT Prentice Hall, 2006.
 11. Rosser, M. J, *Basic mathematics for economists*, 2nd Edition, London, Routledge, 2003.
 12. Weber E. Jean, *Mathematical Analysis, Business and Economic Applications*, (Latest Edition) I-Harper and Row Publishers, New York.
 13. Blume, Lawrence, *Mathematics for economists* New York, Norton, 1994.
 14. Hoy, Michael, *Mathematics for Economists*, Cambridge, MA: MIT Press, 2001.
 15. Klein, Michael W., *Mathematical Methods for Economics*. Boston, MA: Addison-Wesley, 2002.
 16. Hoy, Livernois, McKenna, Rees and Stengos, *Mathematics for Economics*, MIT Press, 3rd Edition, 2011.
- * ***Strongly Recommended***

ECON-307 DESCRIPTIVE AND INFERENCE STATISTICS

a) Descriptive and Applied 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; 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

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; Measure of central tendency; Introduction; Types of Averages: Quintiles; Median; Quartiles; Deciles; Percentiles; The mode; Empirical relation between Mean; Median and Mode

Absolute and relative measures of dispersion; Different measures of dispersion: The Range; Quartile deviation; Mean deviation; Variance and standard deviation: Standardized variable; Properties of standard deviation and variance; Skewness.

Index Numbers; Un-weighted index numbers; Simple aggregative index; Weighted indexes; Laspeyre's price index; Paaseche's price index; Marshal Edgeworth 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

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A survey of probability concepts: Classical probability; Empirical concept; Subjective probability; some rules of probability: Rules of addition; Counting rules: 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.

b) Inferential Statistics

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 and non-sampling error; sampling bias; Sampling distribution of the mean; The central limit theorem; Sampling distribution of differences between means.

Point estimates and confidence intervals; Criteria for good estimators; Point estimators of mean and variance; Estimation by confidence interval: Confidence interval estimate of a population mean (Known & Unknown Variances); Types of hypotheses; Type I versus Type II errors; Z and t test distribution and their properties; Chi square distribution and its properties; ANOVA test.

Recommended Books:

1. Chaudhry, Sher Mohammad and Kamal Shahid, *Introduction to Statistical Theory**, Lahore: Iimi Kitab Khana, 2009.
2. Lind, Marchal, Wathen, *Statistical Techniques in Business and Economics**, McGraw-Hill Companies, 12th Edition, 2005.
3. H.K. Chow, *Introductory Statistics**, 2nd edition, Prentice Hall, 2007.
4. Barrow, M., *Statistics for Economics, Accounting and Business Studies*, 4th edition (Longman), 2005.
5. Agresti, Alan, *Statistical methods for the social sciences*, 3rd Edition, Upper Saddle River, N.J., London: Prentice Hall, 1997.
6. Mc Clave, J.M., Benson, P. G., Sincich, T., *Statistics for Business and Economics* (9th or 10th ed.) Pearson Publishing, 2005.
7. Berenson M L., D. M. Levine, and T. C. Krehbiel, *Basic Business Statistics*, 11th edition, Pearson Prentice Hall, 2009.
8. J. Siegel, .Andrew F., *Practical Business Statistics* (5th edition), Boston: McGraw Hill, 2003.
9. New bold, Paul, Carlson, William L. and Thorne, Betty M, *Statistics for Business and Economics* (5th edition), New Jersey: Prentice Hall, 20m.



10. Keller, Gerald and Warrack, Brian, *Statistics for Management and Economics* (5th edition), Boston: Duxbury Thomson Learning, 2000.
11. Stephan and Spegal, *Statistics*, latest Edition, Schum's Outline Series.

* ***Strongly Recommended***

ECON-309 DEVELOPMENT ECONOMICS

The nature of development economics; Why study development economics? Some critical questions; The important role of values in development economics. Traditional economic measures; The new economic view of development; Three core values of development; The three objectives of development; Diverse Structures and Common Characteristics of Developing Nations; Some classifications of developing countries; common characteristics of developing nations.

Nurkse's Model of Vicious Circle of Poverty; Nelson's low level equilibrium trap; Leibenstein's critical minimum theory; Rosenstein Rodan's Big Push theory; The linear stages theory: Rostow growth model and Harrod Domar growth model; Structural change models; International dependence revolution: Neocolonial Dependence Model; The False-Paradigm Model; The Dualistic-Development Thesis; Dualistic theories; The Neo-classical counter revolution: Challenging the Statist Model: Free Markets; Public Choice; and Market-Friendly Approaches. The Growth Game; The Economics of Growth: Capital; Labor; and Technology; Capital Accumulation; Population and Labor Force Growth; Technological Progress; The Historical Record: Kuznets's Six Characteristics of Modern Economic Growth.

The Growth Controversy; Some Basic Concepts: Size and Functional Distributions of Income; Size Distributions; Lorenz Curves; Dualistic Development and Shifting Lorenz Curves: Some Stylized Typologies; GINI Coefficients and Aggregate Measures of Inequality; Functional Distributions; A Review of Evidence: Inequality and Absolute Poverty in Third World Countries. Inequality: Variations among Countries; Absolute Poverty: Extent and Magnitude; The Human Poverty Index; Economic Characteristics of Poverty Groups; The Kuznets Hypothesis and Other Tests Redefining Development Goals: Growth with Improved Income Distribution.

The Basic Issue: Population Growth and the Quality of Life; A Review of Numbers: Population Growth—Past, Present and Future; World Population Growth through History; Structure of the World's Population; The Hidden Momentum of Population Growth; The Demographic Transition; The Causes of High Fertility in Developing Countries: The Malthusian and Household Models; The Malthusian -Population Trap; Criticisms of the Malthusian Model. The Microeconomic Household Theory of Fertility; The Demand for Children in Developing Countries: Some Empirical Evidence; Implications for Development and Fertility; The Consequences of High Fertility: Some



Conflicting opinions; Goals and Objectives: Toward-a Consensus Some Policy Approaches.

The Employment Problem: Some Basic Issues Dimensions of LDC Unemployment: Evidence and Concepts; Employment and Unemployment: Trends and Projections; Four Dimensions of the Employment Problem; Labor Force: Present and Projected; Labor Underutilization: Some Definitional Distinctions; Linkages among Unemployment; Poverty and Income Distribution; The Phenomenon of Jobless Growth and the Output-Employment Lag; Economic Models of Employment Determination.

The Migration and Urbanization Dilemma; Urbanization: Trends and Projections; The Urban; Informal Sector; Women in the informal Sector; Urban Unemployment Migration and Development; Toward an Economic Theory of Rural-Urban Migration: A Verbal Description of the Todaro Model, A Diagrammatic Presentation, Five Policy Implications; The Shape of a Comprehensive Migration and Employment Strategy.

Education and Human Resources; Education in Developing Regions; Public Educational Expenditure; Enrollments; Literacy; Costs and Earnings; The Gender Gap: Women and Education; The Economics of Education and Employment; Educational Supply and Demand: The Relationship between Employment Opportunities and Educational Demands; Social versus Private Benefits and Costs; Education, Society, and Development; Some Issues in Education and Economic Growth; Inequality and Poverty; Education and Internal Migration; and the Brain Drain; Education of Women; Fertility and Child Health; Education and Rural Development: Summary and Conclusions; Major Educational Policy Options; Policies Largely External to Educational Systems; Policies Internal to Educational Systems; International issues in development economics: foreign Aid; BOP; Debt Problem.

Recommended Books:

1. Todaro, M.P, Economic Development*, Latest Edition, Heinemann;London.
2. Balasubramanyam V and Hall. S (Latest Edition) Current Issues in Development Economics, London.
3. Chenery H.B and Srinivasen, Hand book of Development Economics*, Vol I & II Amsterdam (Latest Edition), North Holland.
4. Cypher J. M and Dietz James (Latest Edition), The process of Economic development*.
5. Ghatak Subarat, (Latest Edition), Introduction to Development Economic, Routledge*, Taylor and Francis Group, London /New York.
6. Herrick B, and Kindlebergerc, (Latest Edition), Economic Development, McMillan New York.
7. Jones H, G. An Introduction To Modern Theories Of Economic Growth, (Latest Edi), McGraw Hill.
8. Hirshman, A.O., Strategy of Economic Development, Yale University Press.



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9. Mahboob ul Haq, Centre for Human Resource Development, Human Development in South Asia, Annual Report Islamabad.
10. Mahboob ul Haq, Poverty Curtain.
11. A profile of Poverty in Pakistan (In collaboration with UNDP).
12. Meier Gerald M, Leading Issues In Economic Development*, (Latest Issue) Oxford Uni Press.
13. Thirlwall A. P., (Latest Edition), Growth And Development*, With Special Reference To Developing Economics, 7th Edition ,Palgrave Publisher.
14. UNDP, Human Development Report, Annual Reports.
15. Van Den Berb H,(2001) Economics Growth Development, McGraw hill.
16. William Easterly, Growth without Development, A case Study Of Pakistan, World Bank.
17. World bank, world Development Report, Annual Report,(Various Issues).
18. William Easterly, Growth without development, A Case study of Pakistan, World Bank.
19. Yotopolus, P. A. and Nugent Jeffery B, Economics of Development, Empirical Investigation (Latest issue), *Harper and Row Publishers, London/ New York.*

****Strongly Recommended***

SECOND SEMESTER

ECON-302 MICROECONOMIC THEORY-II

Pure and Perfect competition: equilibrium of firm in Short run; The supply curve of the firm and the industry; Short run equilibrium of industry; Equilibrium of firm and Industry in Long Run; Optimum Resource allocation; Dynamic changes and Industry Equilibrium: Shift in the Market demand; Predictions of the perfect competition model when costs change; Effects of Imposition of a Tax; Monopoly and its basis; The negatively sloping demand curve: Short run and Long Run equilibrium; Predictions in dynamic changes: Shift in the Market demand; An increase in the costs of monopolist; Imposition of a Tax; Comparison with perfect competition: Bilateral Monopoly; Multi-plant Monopolist Firm; Price Discrimination; Govt. regulated Monopoly. Monopolistic competitive conditions: The historical setting of the theory of monopolistic competition; Characteristics of Monopolistically competitive firms; The concepts of industry & group: The basic Chamberlin theory of Monopolistic competition: (Model No 1: Equilibrium with new firms entering the industry; Model No 2: Equilibrium with Price competition; Model No 3: Equilibrium with Price competition and free entry); Critique of Chamberlin Model. Comparison with pure competition; Oligopolistic conditions: A simple statement of the problem of oligopoly: Non-collusive Oligopoly: Models of Cournot; Bertrand; Chamberlain; Sweezy & Stackelberg Collusive Oligopoly: Model of cartels and Price Leadership; Factor Pricing in perfectly competitive and imperfectly competitive Markets; Elasticity of Factor substitution; Technological progress and Income Distribution.

General Equilibrium and Economic Efficiency: Partial and general Equilibrium Analysis; Two interdependent markets -moving to general equilibrium (an example); Efficiency in exchange.



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Equity and Efficiency; Efficiency in Production; Welfare Economics: Criteria of social welfare: Growth of GNP as a welfare criterion; Bentham's criterion; A cardinalist criterion; The Pareto optimality criterion; The Kaldor-Hicks Compensation criterion; The Bergson criterion 'social welfare function; Maximization of social welfare; Determination of the welfare maximizing output mix; Commodity distribution and Resource Allocation; Welfare Maximization and Perfect Competition.

Recommended Books:

1. Koutsoyiannis, A. Modern Microeconomics*, London; Macmillan, (Latest Edition).
2. Bilas, Richard , Microeconomic Theory*, McGraw-Hill Kogakusha;Ltd, (2nd Edition).
3. Pindyck, Robert. S, Daniel L. Rubinfeld and Prem L.Mehta, Microeconomics*, Pearson Education Inc, (Sixth Edition).
4. Henderson, J.M & Quandt, R.E. Microeconomic Theory*, N.Y Macmillan II A Book Co.
5. Varian Hal R, Micro Economics Analysis*, Norton & Company, New York, 1992.
6. Ferguson, C.E & Goul, J.P, Microeconomic Theory, Macmillan, (Latest Edition).
7. Layard and Walter A.A., Micro Economics, McGraw Hills, (Latest Edition).
8. Walter Nicholson, Microeconomic Theory: Basic Principles and Extensions, (6th edition).

ECON-304 MACROECONOMIC THEORY-II

Theories of Consumption: Duesenbury Hypothesis; Keynesian Consumption Function. Permanent Income Hypothesis / Life Cycle Hypothesis; Beyond Permanent Income Hypothesis; Kuznet's findings and Reconciliation of Marginal Propensity to Consume and Average Propensity to Consume and Evidences; Mathematical derivation of Consumption Models; The MPS Model; Wealth effect in the Static Model; Implications of Consumption Theories for Policy Formulation and Stabilization Policy; Random Walk Model.

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.

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. The size of Government Debt; Measurement Problem: Inflation; Capital Assets; Business Cycle etc; Ricardian view or Debt: Ricardian



Equivalence; Consumers and Future Taxes; Tax shooting; Delayed Stabilization; Ricardo and Ricardian Equivalence and Debate; Model or Debt Crises.

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; 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:

1. Branson, William H., (1979), Macroeconomic Theory and Policy*, Harper and Row Publishers, New York / London.
2. Froyen, R. T., Macroeconomics: Theories and Policies*, (Latest Edition), Prentice Hall, 7th Edition, 2002.
3. Branson, William H., and Litvack James M., Macroeconomics*, (Latest Edition), Princeton University.
4. Glahe, Fred R., (Latest Edition), Macroeconomics, Theory and Policy, Harcourt Brace Jovanovich Inc.
5. Mankiw, Gregory N., (2000) Macroeconomics*, Worth Publishers, New York.
6. Peel D. and Minfow P., (2002). Advance Macroeconomics, Edward Elgar, Cheltenham, U.K.
7. Delorme. Jr., Macroeconomics, 2nd Edition.
8. Romer, David, (2001). Advanced Macroeconomics*, McGraw Hills, New York, London.
9. Sargent, Thomas J., (Latest Edition) Rational Expectations and Inflation*, Harper and Row Publishers, New York / London.

* ***Strongly Recommended***

ECON-306 OPTIMIZATION AND DYNAMIC ANALYSIS

Concept of Optimization; Optimization: Special Variety of Equilibrium Analysis; The nature of exponential functions; Nature exponential functions and the problem of growth; Logarithms; Logarithmic functions; Derivatives of Exponential and Logarithmic Functions; Optimal Timing; Further Application of exponential and Logarithmic Derivatives; The Differential version of optimization conditions; Extreme values of a function of two variables; Objective functions with more than two variables; second order conditions in Relation to Concavity and Convexity; Economic applications; Comparative Static aspects of optimization; Effects of Constraint; Finding the Stationary values; Second Order Conditions; Quasiconcavity and Quasiconvexity; Non linear programming and Kuhn Tucker Conditions; The Constraint Qualification; Economic Applications; Sufficiency Theorems in Non linear Programming; Maximum Value functions and the Envelope Theorem; Duality and the Envelope Theorem.



Economic Dynamics and Integral Calculus: Dynamics and Integration: Indefinite Integrals: Definite Integrals: Improper Integrals: Some Economic Applications of Integrals: Domar Growth Model; First Order linear differential equations with constant coefficient and constant term; Dynamics of Market price; Variable coefficient and variable term; Exact Differential equations; Non linear Differential equations of the first order and first degree; The Qualitative Graphic Approach; Solow Growth Model; Second Order linear differential equations with constant coefficients and constant term; Complex numbers and circular Functions; The interaction of inflation and unemployment; Differential equations with a variable term; Discrete time; differences and difference equations; Solving a first order difference equations; The dynamic stability of equilibrium; The Cobweb model; Second order linear difference equations with constant coefficients and constant term; Samuelson Multiplier Acceleration interaction model; Inflation and Unemployment in Discrete time; Game Theory.

Recommended Books:

1. Alpha C Chaing and Kevin Wainwright, Fundamental Methods of Mathematical Economics, Latest Edition, McGraw hill.
2. Brichenhall C. & P. Grout, Mathematics for Modern Economics, Latest Edition.
3. Dowling; E.T, Mathematics for Economists, Latest Edition.
4. Intrilligator; M.D, Mathematical Optimization and Economic Theory
5. Kooros; A., Elements of Mathematical Economics, Latest Edition.
6. Varian; H.R, Microeconomic Analysis, Latest Edition.

ECON-308 BASIC ECONOMETRICS

Definition and scope of Econometrics; Methodology of Econometrics; Types of Econometrics; The Role of the Computer; 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; 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. 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.

Recommended Books:

1. Gujarati, N. D., Basic Econometric Harper, Row, Latest Edition.
2. Johnston, J. J., Econometrics Methods McGraw Hill, Latest Edition.
3. Koutsouyiannis, A. R., Theory of Econometrics Harper, Row, 2nd Edition.
4. Pindyck, R.S. Rubinfeld, Econometric Models and Economic Forecasts, McGraw Hill, Latest edition.
5. Christopher Dougherty, Introduction to Econometrics, Third Edition, Oxford.



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6. Dominick Salvatore and Derrick Reagle, Statistics and Econometrics, Latest edition.
7. Maddals, G.S. Econometrics McGraw Hill, latest Edition.

ECON-310 ECONOMIC ISSUES IN PKISTAN

Pakistan's Development Experience; Agriculture Development; Agricultural Pricing Issues; Rural Development Policy; Resource Mobilization; Industrial Development; Policy and Issues; Internal and External Migration; Urban Informal Sector; Income Distribution and Poverty; Unemployment Issue; Foreign Aid and Debt Burden; Commercial Policy; Planning Process in Pakistan; Balance of Payments Issues; Trade Regimes; Issues of Fiscal and Monetary Policies; Financial & Capital markets; Structural Adjustment Policies.

Recommended Books:

1. S. Akbar Zaidi, Issues in Pakistan Economy, Oxford Univ. Press, Karachi, Latest Edition.
2. Khawaja Amjad Saeed, The Economy of Pakistan, Karachi: Oxford University Press, Latest Edition.
3. Government of Pakistan, Pakistan Economic Survey (Various Issues including Latest One)
4. Ishrat Hussain, Pakistan: The Economy at the Cross Roads - Past Policies and Present Imperatives, Oxford Univ. Press, Karachi.
5. Khan, Shahrukh R., 50 Years of Pakistan's Economy - Traditional Topics and Contemporary Concerns. Oxford Univ. Press, Karachi (2000).
6. Mahboob-ul-Haq, Centre for Human Development (MHCHD), Poverty Profile of Pakistan, (1989), Oxford University Press.
7. World Development Reports, World Bank.

THIRD SEMESTER

ECON-401 ECONOMICS OF MONEY AND BANKING

Money and its functions; kinds of money; evolution of monetary system; Monetary Standards; Monetary Aggregates; Demand for money: meaning of holding money; demand for money; and recent development theories in demand for money; Quantity theory of money; Supply Of Money: Definition of supply of money (M1; M2; M3); exogenous and endogenous determinants of money supply; Money Multiplier; Deposit Multiplier; Credit Multiplier; Central bank as monetary base; Banking: Commercial bank: structure and functions of commercial banks; money / credit creation. Functions of commercial banks; Central Bank: structure and functions of central bank; control of money supply; tools to control of money supply; Monetary policy and independence of monetary authority: targets; goals of monetary policy; management determinant; and role of monetary policy; short and; long run aspects Determination of interest rates; Lags in Monetary Policy; Efficiency of Monetary Policy; Islamic Banking.



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Chairman, Department of Economics

Recommended Books:

1. Fredric, S. Mishkin, Financial Markets Institutions and Money. Harper Collins College Publishers, Latest Edition.
2. Fredric S. Mishkin, Economics of Money, Banking and Financial Markets.
3. Lawrence Harris, Monetary Theory McGraw Hill, 1985.
4. Luckett G. Dudley, Money and Banking, 3rd Ed, McGraw Hill 1984.
5. Goldfeld & Chandler, The Economics of Money and Banking Harper& Row Publishers.
6. Vaish, M.C., Monetary Theory Vikas Publishing House, Delhi 2000.
7. Bennett. T. McCallum, Monetary Economics (Theory &Policy), McMillan 1989.

ECON-403 ECONOMETRIC ANALYSIS

Concept of Multicollinearity; Consequences of Multicollinearity problem; Methods for detection of Multicollinearity problem; Remedial measures for Multicollinearity problem; Estimations and Interpretations; Heteroscedasticity and its Implications; OLS estimation in the presence of heteroscedasticity; Generalized least squares (GLS); Detection of heteroscedasticity; Remedial measures; 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; Introduction to Model specification; Types of Specification errors; Consequences and Tests of Specification Errors; Errors of Measurement; Approaches in Choosing an Appropriate Model; Distributed Lag Models and Estimations: The Koyck Transformation; The Almon Transformation; Other models of Lag Structures; Autoregressive Models and estimation: The Partial Adjustment Model; The Adaptive Expectations Model; Tests of Autocorrelation in Autoregressive Models; Simultaneous Equation Models; Introduction of Qualitative Response Regression Models; The linear probability model; The Logit model; The Probit model; The Tobit model; Introduction to Time series data handling techniques.

Recommended Books:

1. Gujrati, D., Basic Econometrics, McGraw Hill, Latest Edition.
2. Intrilligator, Econometric Model, Techniques and Applications N.J.Printice Hall, Latest Edition.
3. Johnston, Econometric Models McGraw Hill, Latest Edition.
4. Christopher Dougherty, Introduction to Econometrics, Third Edition, Oxford.
5. Dominick Salvatore and Derrick Reagle, Statistics and Econometrics, Latest edition.
6. Koutsoyinnis, Theory of Econometrics McMillan, Latest Edition.
7. Maddala, J.S. Econometrics McGraw Hill, NewYork, Latest Edition.
8. Pindyck R.R., Applied Econometrics, 2nd Ed Mc Graw Hill 1993.

ECON-405 PUBLIC FINANCE



Public Finance defined; importance of the study of public finance; need for the public sector; main functions of the public sector; The Theory of Public Goods; Public & Private goods; pure public goods; semi public goods; merit goods; free rider problem; externalities. Revenue; Tax and non tax revenue; categories of taxes; income and cooperative taxes; wealth tax; sales tax; excise and custom duties; surcharges; Direct and indirect taxes; Tax Criteria: Efficiency Criteria; the benefit principle; Ability to pay; limitation of tax effort: Laffer Curve approach: Tax Structure of Pakistan. Tax Reforms in Pakistan and Problem of tax evasion; Tax Incidence; Impact and incidence of taxes; partial equilibrium in view of product tax; partial equilibrium view of factor tax; general equilibrium in view of tax incidence; Public Expenditure; Components of public expenditure in Pakistan; causes of growth of public expenditure in Pakistan. Budget; Preparation of budget cycle in Pakistan; Development and non-development budget; budget procedures; balanced budgets; deficit and surplus budget; zero based budget; program budget; planning programming budgeting system; Public Debt; Structure of public debt in Pakistan; who bears tax burden; to tax or to borrow; Fiscal Policy; Fiscal policy defined; analytical foundations of fiscal policy; static and dynamic theory of fiscal policy; techniques of measuring influence; the role of fiscal policy in developing countries with emphasis on resource allocation; income redistribution; capital formation and stabilization; analysis of means of financing economic development including capital imports; domestic savings; inflation and taxation; fiscal policy in Pakistan;

Recommended Books:

1. Musgrave & Musgrave, Public Finance in theory and Practice 5th Edition.
2. Otto Eckstien, Public Finance 3rd Edition, 1973.
3. Richard Aronson, Public Finance International Student Ed 1985.
4. Due John F., Government Finance.
5. Chellieah R.J., Fiscal policy in less developed countries.
6. Harvey, S.Rosen, Public finance 5th Ed, McGraw Hill 1999.
7. Eleanor Brown & Robert, L., Reading, Issues and Problems in Public Finance IRWIN.
8. Bernard, P.Herber, Modern Public Finance, A.I.T.B.S 1999.
9. David, N.Hyman, Public Finance, A Contemporary application of to Policy: Harcourt. Brace College Publishers 1996.

ECON-407 INTERNATIONAL TRADE: THEORY & POLICY

Introduction to International Economics; The scope and significance of international economics; International Economic Theories and Policies; Current International Economic Problems and Challenges; Various Classical Theories of International Trade and Critical appraisals; Demand and Supply, Offer Curves, and the Terms of Trade; Factor Endowments and the Heckscher-Ohlin Theory: Empirical evidences and critical appraisal; Economies of Scale, Imperfect Competition and International Trade; Economic Growth and International Trade. International Trade Policies: Trade Restrictions, Theory of Tariffs; Instruments of Commercial Policy: Non Tariff Trade barriers and the New Protectionism; Economic Integration: Types and

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reasons for economic integration; The theory of customs unions; International Trade and Economic Development; International Resource Movements and Multinational Corporations.

Recommended Books:

1. Dominick Salvatore, International Economics: Trade and Finance, Latest Edition, Wiley.
2. Miltiades Chacholiades, International Economics, New York, McGraw Hill Co.
3. Sodersten, B.O., International Economics New York, Harper and Row, Latest Edition.
4. James C. Ingram, International Economics, 3rd ed. John Wiley & Sons, 1994.
5. Grubel, Herbert G., International Economics, Homewood IL, Richard D. Irwin (Ins), Latest.

ECON-409 AGRICULTURAL ECONOMICS

Agricultural Revolution; Importance of Agriculture; Food Safety; Agriculture vs. Industrial development Debate- Current State of Agricultural Development; Brief Overview of Sources of Growth; Introduction to issues in Agriculture; Traditional Agriculture and Productivity; A framework of Analysis; Product Contribution; Market Contribution; Factor Contribution; Foreign Exchange Contribution. Agriculture vs. Industry Debate of Development; Economic Rent; The Theory of Rent; Rent and Quasi-Rent; The Ricardian 'Corn Rent; The Rental Market; Agricultural Surplus; Characteristics of Landownership in Underdeveloped Agriculture and Pakistan; The Theory of Share Tenancy; Some Extensions of the Share Tenancy Model; Tenure Status in Pakistan; Agricultural productivity in Pakistan and use of inputs; The Lewis Model; The Fei-Ranis (FR) Model; The Jorgenson Model; Kelley, Williamson, Cheetham Model: Criticism; Dual Economy Models; Agricultural Adequacy; Mellor's Model.

The Cobweb Model: An Illustration; Price-Supply Response in. Backward Agriculture; A simple Supply Response Model; Supply Response in the Underdeveloped Agricultural labour Market; Specifically in Pakistan; The Concept of Marketed Surplus: Some Methods of Estimation; Some Criticisms of Krishna's Method and the Alternative Approach of Behrman Perennial Crops and Marketed Surplus in Pakistan; Green Revolution in Pakistan and Responses; Present Status of Green Revolution in Pakistan: Empirical Analysis; Inequitable Landownership and Land Reform; Capital and Finance in Underdeveloped Agriculture; Marketing Imperfections and Marketing Policies in Pakistan; Measures to Improve Marketing System in Pakistan; Support Price Policy in Pakistan; Determinants of support prices; Impacts of support prices; Main Features of Trade in Agricultural Goods; Trade Policies in Developed Countries and their Impacts.

Recommended Books:



1. Colman D., Young T. Principles of agricultural economics: Markets and prices in less Developed Countries, Cambridge University Press, Cambridge, 1989.
2. Kenneth L. Casavant, Craig L. I. and Deborah E. Bridges, Agricultural Economics and Management, 1999, Prentice Hall.
3. Ellis F. Peasants economics: Farm households and agrarian development, Cambridge University Press, 1988.
4. Capstick Margret. The Economics of Agriculture, London George Allen Unwin Ltd. latest edition.
5. Chaudhary M. Aslam, Agricultural Development and Public Policies, Izhar Sons, Lahore, 1989.
6. Ghatak S., and Ingersent K., Agriculture and Economic Development, (Latest Edition), Harvester Press.
7. Johnston, Bruce, F & Fellir Kily. Agricultural and Structural Transformation, Economic Strategies in late Developing Countries.
8. Khan Mahmood-ul-Hassan. The Economics of Green Revolution in Pakistan, New York, Published 1975

FOURTH SEMESTER

ECON-402 INTERNATIONAL FINANCE

Introduction of International Finance; International Financial Markets: The basis of the foreign exchange market; Organization of the market; Exchange rate systems; The international character of the foreign exchange market; Exchange risk; Forward exchange; Covered interest arbitrage; Balance of Payments Problem: Balance of payments accounts. Autonomous and accommodating items; Disequilibria in balance of payments of corrective measures; Price Adjustment Mechanism; The partial equilibrium model; Price elasticities of demand for imports and exports; The J-Curve Effect; Theory of Exchange Rate Determination: Determination of fixed and flexible exchange rates; Debate on fixed and flexible exchange rates; Devaluation and its effects; appreciation and depreciation; Expenditure switching policies; Elasticity and absorption approaches to devaluation and their synthesis; Monetary approach to balance of payment; Income Adjustment Mechanism: Income determination in an open economy. The foreign trade multiplier; Foreign repercussions; National income and the balance of payments; The world Debt Crisis; Fiscal and Monetary Policies for internal and external balance; Flexible versus Fixed Exchange Rates: Models; The Monetary Approach: Basic Model, Policy Implications, PPP Theory; The International Monetary System.

Recommended Books:

1. Miltiades Chacholiades, Principles of International Economics New York, McGraw Hill Co. 1981.
2. Maurice D. Levi, International Finance, 5th edition, Routledge, 2009.
3. Sodersten, B.O. , International Economics, New York, Harper and Row, Latest Edition.



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4. Caves, R.E. & Jones, R.W World Trade and Payments. An Introduction Boston, Little, Brown, and Company, (Inc.) Latest Edition.
5. James C. Ingram, International Economics 3rd ed. John Wiley & Sons, 1994.
6. Grubel, Herbert G., International Economics Homwood Illinoesa, Richard D. Irwin (Ins), Latest
7. Jeff Madura, International Financial Management, 10th edition.

ECON-404 ISLAMIC ECONOMICS

Introduction of Islamic Economics; Nature of Islamic Economics; Need and Importance of Islamic Economics; Islamic economic system and Other Economic Systems; Brief Introduction of Basic Vales of Islam; Taqva; Halal and Haram; Justice; Benevolence; Equality; Brotherhood and Cooperation as Determinants of Economic Behaviour and Policies; Sources of Islamic economics: the Holy Quran; The Sunnah of Allah's Apostle (S.A.W).

Meanings and Importance; Islam and Consumption of Wealth; Moderation; Theory of Consumer's Behaviour in an Islamic Society. Islamic Approach to Production; Ownership of land. Tenancy (Muzarat).Partnership (Shirakat). Modarbah; Objectives of an Islamic Firm; Al-Hisba and Islamic Firm; Islamic Firm under different market conditions; Islam and Price Mechanism; Meaning; Quranic Emphasis on the Circulation of Wealth; Rent; Profit; Wages; Dignity of Labour; Measures to Stop Concentration of Wealth: Legal Measures; Optional Measures. Islamic Law of Inheritance; 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 and 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.

Meaning; Objectives; Instruments of Fiscal Policy; Islamic State and its Fiscal Policy; Zakat as an Instrument of Fiscal Policy;Effects of Zakat on the Allocation; Zakat and Economic Stability. The Institution of Bait-ul-Mal; Principles of Tax Policy in Islam; Public Expenditure in Islamic Economy; Zakat and Ushr Ordinance 1980; Central Banking and Monetary Policy in Islam. Inflation VS Design of Capital market; Monetary Policy in an Islamic Framework; Effects and Causes of inflation in Islamic Economy; Consumption; saving and Investment Functions in Islamic Environment; Determents of Islamic Consumption Function; The Islamic State: Its Meaning; Aims and Functions; Concepts of Economic Planning and Development in Islam

Recommended Books:

1. Dar A. H. & M. Akram, Islamic economics, Ilmi Kitab Khana, Lahore (Latest edition.)
2. M.A Mannan, Islamic Economics: Theory and Practice, A Comparative Study,. Cambridge, Hodder and Stoughton, Latest edition.
3. M. Fahim Khan, Consumption Function in an Islamic Economic Framework, International Centre for Research in Islamic Economics, King Abdul Aziz Univ, KSA.



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Chairman, Department of Economics

ECON-406 FINANCIAL ECONOMICS

Introduction to Financial Economics; Scope and Subject matter of the financial economics; Real Assets versus Financial Assets; The Role of Financial Assets in the Economy; Users of the Financial System; Types of Financial Instruments; Characteristics of Financial Instruments; Financial Innovation; Theories of Term Structure – The Expectations Hypothesis, Liquidity Preference, Market Segmentation Theory, Preferred Habitat Theory, Interpreting the term structure, Measuring the term structure; 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; Types of Markets; Types of Traders; The Trading Process; Defining Financial Intermediation; Different Types of Financial Intermediaries; The Role of Banks in Financial Intermediation; Moral Hazard; Adverse Selection ;Solutions ; Defining Capital Structure; Modigliani and Miller Propositions I and II; How taxes affect financing choices; Dividend policy issues; The Regulatory Role of the Government; How the Legal Environment Affects Access to External Finance; How the Legal Environment Affects Financial Decisions.

Recommended Books:

1. Charles P. Jones, Investments latest Edition
2. Bodie, Kane and Marcus, Investments 5th Edition.
3. Grinblatt and Titman, Financial Markets and Corporate Strategy, 2nd Edition.
4. Cecchetti, Money, Banking and Financial markets.
5. Elton and Gruber, Modern Portfolio Theory and Investment Analysis, Latest Edition.
6. Bebczuk, R. N. (2003) Asymmetric Information in Financial Markets: Introduction and Applications. Cambridge University Press
7. Copeland, Weston and Shastri (2005). Financial Theory and Corporate Policy. 4th Edition.
8. Livingston, M. (1999). Money and Capital Markets. 3rd Edition (or later).
9. Fredric, S. Mishikin, Financial Markets Institutions and Money. Harper Collins College Publishers, Latest Edition.
10. William F. Sharpe & Gordon J., Investments 5th Ed, Prentice Hall, 1996

OPTIONAL COURSES

ECON 410/ECO 412 THESIS

ECON-414 APPLIED ECONOMICS

Basic Data Handling Techniques and Descriptive data analysis, Estimation of econometric models, hypothesis testing and diagnostics and solutions of econometric problems, Diagnostics



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and estimation of univariate time-series models, Diagnostics and estimation of multivariate time-series models (VAR models, causality, impulse response analysis, variance decomposition and co-integration), Survey data analysis of household consumption, Survey data analysis of manufacturing production, Survey data analysis of agricultural production, Analysis of macroeconomic and financial time-series data with applications in consumption, investment, budget and international trade, money, inflation, interest rate, exchange rate and stock prices, Writing an empirical project/research.

Recommended Books:

1. Gary Koop, 2004, Analysis of Economic Data, John Wiley & Sons Ltd.
2. Thomas Sowell, 2009, Applied Economics, Revised and enlarged Edition, Basic Books.

ECON-416 CORPORATE GOVERNANCE

The corporate Governance: An Overview and Introduction; The Theory and practice of Corporate Governance; Corporate Governance Models; Rights and Privileges of Shareholders; Conflict between managers and shareholders; Corporate Governance and Other Stakeholders; Board of Directors; Role, Duties and Responsibilities of Auditors; Business Ethics; Corporate Social Responsibility; Environmental Concerns; The role of Media; Capital Market Regulator in Pakistan; Issues in Corporate Governance.

Recommended Books

1. Corporate Governance, Latest Edition, Dr Safdar Butt.
2. Corporate Governance (Principles, Policies and Practices), A. C. Fernando.
3. Corporate Governance 2nd edition, Christine A. Mallin, Oxford University Press.
4. Corporate Governance and Chairmanship a personal view by Adrian Cadbury by Oxford University Press.

ECON-418 COST – BENEFIT ANALYSIS AND PROJECT EVALUATION

Cost-Benefit Analysis: Introduction and Overview, Welfare Foundations of Cost-Benefit Analysis, Rationale for Policy Intervention, Calculating Costs and Benefits, Aggregating Costs and Benefits: The Net Present Value Rule, An Illustrative Example, Dealing with Uncertainty, The Public Sector Discount Rate, The Valuation of Non-Market Goods, Project Evaluation, Investment Planning and Programming, Project appraisal and risk management, Project management and quality, Project appraisal and environmental impact, Cost estimating and financing, Project organization and management, Project failure, success and lessons learned

Recommended Books

- Nicholas, J.M., 1990, *Managing Business & Engineering Projects*, Prentice Hall.
- Shtub, A., Bard, J. and Globerson, S., 1994, *Project Management - Engineering, Technology and Implementation*, Prentice Hall, International Edition.
- Wearne, S., 1991, *Control of Engineering Projects*, McGraw-Hill.
- Bennet, J., 1985, *Construction Project Management*, Butterworths.



Walker, A., 1989, *Project Management in Construction*, BSP Professional Books.
 E. J. Mishan. *Cost-Benefit Analysis: A Handbook*. Praeger, New York, NY, 1976.
 Peter G. Sassone and William A. Schaffer. *Cost-Benefit Analysis: A Handbook*. Academic Press, NY, 1978.
 J. Schofield. *Cost-Benefit Analysis in Urban and Regional Planning*. Allen and Unwin, London, UK, 1978.
 Ronald D. Sylvia. *Program Planning and Evaluation for the Public Manager*. Brooks-Cole Publishing Co., Monterey, CA, 1985.

ECON-420 ECONOMICS OF POVERTY AND INCOME DISTRIBUTION

Size and Functional Distribution of Income; Place of Distribution, Poverty and Inequality in the development models; Measures of Income Inequality and Poverty; Causes of Income Inequality and Poverty; Remedial Measures; Growth with Redistribution; Basic Need Approach; Policy options; Poverty and Income Distribution in Pakistan.

Recommended Books:

1. Adelman, I. & S. Robinson, *Income Distribution Policy in Developing Countries* Oxford University Press, 1978.
2. Chaudhry, Imran S., "Evolving Views on Poverty and Welfare: An Analysis of Conventional and Islamic Approaches", *Journal of Research*, B. Z. University, Multan, 2005, Vol.7, pp. 39-56.
3. Chaudhry, Imran S. & Shahnawaz malik, "Rural Poverty in Pakistan: Some Related Concepts, Issues and Empirical Analysis ", *Pakistan Economic and Social Review* , University of Punjab, Lahore, Vol. 44, No. 2, pp. 259-276, 2006.
4. Chaudhry, Imran S. & Shahnawaz malik, "Urban Poverty and Governance: The Case of Multan City", *The Pakistan Development Review*, Islamabad, Vol. 45, No. 4, pp. 819-830, 2006.
5. Chaudhry, Imran S. & Shahnawaz malik, "Urban Poverty and Governance: The Case of Multan City ", *The Pakistan Development Review* , Islamabad , Vol. 45 , No. 4, pp. 819-830, 2006.
6. Chaudhry, Imran S., Shahnawaz malik & M. Zahir Faridi, "Factors Affecting Rural Poverty: A Qualitative Approach", *The Journal of Humanities and Social Sciences*, Peshawar, Vol. 15, No. 01, 2007
7. Desai, M. J., *A General Theory of Poverty*, *Indian Economic Review* 1983.
8. Ercelawn, A., "Income Inequality and Poverty in Rural Pakistan" *Pakistan Journal of Applied Economics*, 1984.
9. Griffin, K. B. *Alternative Strategies for Economic Development* MacMillan, 1989.
10. International Labor Org., *Poverty in Rural Asia* (eds)
11. Malik, Shahnawaz, "The Estimates and Trends in Poverty in Pakistan" *The Indian Journal of Social Science* (India) (1991) .
12. Malik, Shahnawaz, "Trends in Inequality in Pakistan" *Journal of Economic Affairs* (India) (1991).
13. Malik, Shahnawaz, "Determinants of Rural Poverty in Pakistan: A Micro Study" *Pakistan Development Review*, 1996.
14. Naseem, S. M., *Poverty, Inequality and Underdevelopment in Pakistan*, Vanguard, 1981.
15. Sen., A., "Poverty, inequality and Unemployment: Some Conceptual Issues in Measurement" *Economic and Political Weekly*, 1973.

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16. World Bank, World Development Report (Various Issues).

ECON-422 ENERGY ECONOMICS

Introduction to Energy Economics and the interrelationship between energy, the economy, society, and the environment, Natural resource economics: static criteria and dynamic criteria for efficient allocation, Techniques for overall cost determination, marginal cost determination, life cycle cost, economic comparison of energy technologies, financial analysis of renewable energy projects, financial vs. economic analysis, Consumer behavior and demand elasticity, Procedure to determine the best economic choice of energy technology for specific applications, Environmental impacts of conventional and renewable technologies, Environmental Impact determination and economic of pollution control, expressing Impacts in economic and social terms.

Recommended Books

1. J.M. Griffin, and H.B. Steele (1985): Energy Economics and Policy, Academic Press
2. Tom Tietenberg (1992), Environment and Natural Resource Economics, second edition Academic Press.

ECON-424 ENVIRONMENT ECONOMICS

Introduction to Environment Economics; The Economy and Environment; Analytical Tools. Benefits and costs; supply and demand; willingness to pay, benefits; costs; technology the equimarginal principle; marginal cost and supple; Economic efficiency and markets; Economic efficiency; equity; social efficiency; external costs and benefits; The Economics of Environmental Quality; Pollution Control; General model; the equi marginal principal applied to emission reduction; long run sustainability; Environmental Analysis: Impact analysis, cost effective analysis, benefit cost analysis, risk analysis; Benefit cost analysis; risk analysis; measuring damages directly; Environmental Policy Analysis; Criteria for evaluating environmental policies; federal policies; centralized policies; Command and control strategies; incentive based strategies; emission taxes and subsidies; transferable discharge permits; International Environmental Issues; Environmental policies in industrialized countries; economic development and the environment; the global environment; international environmental agreements.

Recommended Books:

1. Barry C, Field , Environmental Economics, An Introduction, McGraw Hill
2. Miller Alan, An Introduction to ecology, Ecoethics and Economics, Rowman and Allen held Lanham Md, 1991
3. Baumal William, Economics, Environmental policy and quality of life, Prentice Hall, Euglewood Cliffs
4. McKee David, Energy the Environmental public Policy, Issues for the 1990's. Praeger, New York 1991



ECON – 426 HISTORY OF ECONOMIC THOUGHT

Introduction; Ancient and Medieval Economic Thought; Mercantilism; Harbingers of Adam Smith; Adam Smith I: Value Theory; Adam Smith II: Growth and Income Distribution; Adam Smith III: Political Economy and Ideology; Malthus and Ricardo I: Population and Scarcity; Malthus and Ricardo II: The Theory of Value and Distribution; Malthus and Ricardo III: Accumulation and Gluts; Karl Marx I: Value Theory, Karl Marx: Accumulation, Growth and Crises.

Recommended Books

1. Backhouse, Roger, A History of Modern Economic Analysis. Oxford, Blackwell, 1985.
2. Blaug, Mark, Economic Theory in Retrospect. Fifth edition. Cambridge, C.U.P., 1996.
3. Deane, Phyllis, The Evolution of Economic Ideas. Cambridge: Cambridge U.P., 1978.
4. Dobb, M. H., Theories of Value and Distribution since Adam Smith. Cambridge, C.U.P., 1973.
5. Ekelund, Robertb and Hebert, Robertf, History of Economic Thought and Method. New York, McGraw-Hill, 1990 (3rd edition).

ECON-428 HUMAN RESOURCE DEVELOPMENT

Concepts and Measurement of HRD; its relevance for economic development; basic concept and terminologies; Strategies of Human Resource Development; education and investment in human capital; Different approaches relating to the contribution of education to economic growth, returns to Growth, international comparison, Production Function, Social and Private Demand; Issues in Formal and Informal Education; Efficient allocation of resources, maximization of the objective, labor market structure, demand and supply of human skills; International Migration of Human Skills: problems; manpower requirement approach, human resource led development, industrialization and employment; Health and Nutrition Policies: Issues, Problems, comparison with the other developing Countries

Recommended Books:

1. Amjad, R: Human resource Planning, ILO-ARTEP New Delhi, 1987.
2. Asian Development Bank: Human Resource Policy and Economic development Selected Country Studies, Manila 1990.
3. Blaug, M., An Introduction to Economics of Education Penguin Press, and London, 1970.
4. Bowles, S., Planning Educational Systems for Economic Growth Harvard University Press 1969.
5. Mahboob ul Haq, Reflections and Human Development Oxford University Press, 1995.
6. Human Development Center: Human Development in South Asia. The Crisis of Governance Oxford University Press, Karachi 1999.
7. ILO, World Employment Report Geneva, 1999.



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8. Rizwan ul Islam, Rural Industrialization and Employment in Asia ILO-ARTEP, New Delhi 1987.

ECON-430 INDUSTRIAL ECONOMICS

The scope and method of industrial economics; the welfare economics of competition and monopoly; the determinants of market structure; economic theories of oligopoly pricing and conditions facilitating as well as limiting oligopolistic co-ordination; the dynamics of monopoly and oligopoly pricing; price discrimination market structure; administrated prices and macroeconomic stability; product differentiation, market structure and competition; factors influencing the industrial location choice; policy approaches to monopoly and oligopoly.

Recommended Books:

1. C.H.Krikpartrick, Industrial Structure and Policy in Less Developed Countries, English Language Book Society, 1999.
2. Rajat K. Ray, Industrialization in India, Growth and Conflict in the Private Corporate Sector 1914-47 Oxford University Press, Delhi, India. 1982.
3. Stephen R. Lewis, Economic Policy and Industrial Growth in Pakistan: PIDE 1969.
4. K.L.Gupta, Industrialization and Employment in Developing Countries, A Comparative Study: Routledge, UK, 1999.

ECON-432 LABOR ECONOMICS

Importance of Labor Economics; Introduction: Industrialization and Emergence of Labor Analyze Labor Markets and Conditions; Labor Markets Analysis: Demand for Labor; Labor Market Indicators; Demand for Labor; Decision Making and Labor Hiring; Labor Migration: Reasons and Impacts. Determinants of Labor Supply; Concepts of Human Capital; Human Capital productivity and Wages; The Determinants of Labor Force Participation; Supply of Labor and Household Productions; Labor- Skill, Training and Productivity; The Dual Labor Market Theory; Labor Unions and Wages; Labor Unions and Underemployment; Underemployment and Social Protection; Labor Market Discrimination; Discrimination in Labor Market: Gender Race and Ethnicity; Efficiency Wage Theories and Coordination Failure; Labor Market Information System; Labor Market Information System and Efficiency; Labor Statistics and Labor Policy; Human Welfare and Labor Policy; Minimum Wages; Rationale and Impacts; Theories of Labor Movements; Trade Unions in Pakistan; Labor Legislation in Pakistan; Impacts of Labor Union; Labor Policies in Pakistan: Critical Evaluation; Child Labor: Definition and extent of child labor; Child labor and moral aspects; Child labor an international issue: Extent of Child labor in developing countries; Child labor in Pakistan; Policies to combat child labor; Child labor and international trade issue.

Recommended Books:

1. Comith Stephen, (2003), Labour Economics*, Routledge Publishers.



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2. Bruce, Kaufman; c. Kaufman, Julie L; Hotchkiss, (2002), Economics of Labour Markets, Thomson Publisher.
3. Current Issues in Labour Economics*, (1989), Palgrave Mcmillan.
4. Reynolds, Labor Economics and Labor Relations.
5. Grley, Ashenfelter (edt), Layard, P. R. G, (cdt), Hand Book of Labour' Economics, Elsevier Science Pub. Co. (1986).

ECON-434 MANAGERIAL ECONOMICS

Introduction to Managerial Economics, Decision Making Under Risk and Uncertainty: Demand Theory: Concepts and Estimation; Production and Cost Analysis; Pricing Analysis and Decisions: A Review of Market Structures and Basic Pricing Models; Limit Pricing Models; Managerial Theories of the Firm: Baumol's Theory of Sales Revenue Maximization; Linear Programming; Capital Budgeting.

Recommended Books:

1. Douglas, E. J., Managerial Economics Prentice Hall, 1996.
2. Keat and Young, Managerial Economics Maxwell 1998.
3. Petersen and Lewis, Managerial Economics, Maxwell 1996.
4. Salvatore, D., Managerial Economics 3rd Ed, McGraw Hill.
5. Koutsoyiannis, A., Modern Microeconomics.

ECON-436 POPULATION ECONOMICS

The Nature of Population Study; Analytics; Demographic Research in Action; Variables, The Sources of Information for Demographers; The Growth of Population; The Distribution of Population; Mortality; Fertility; Migration; International Migration; Internal Migration; The Composition of Population; The Socioeconomic Effects of Population Change; Population Policy.

Recommended Books:

1. Hauser, P. M., and O.D. Duncan, The Study of Population, Chicago: University of Chicago Press, 1964.
2. Nam, C.B. The Progress of Demography as a Scientific Discipline. Demography 16 (November 1979).
3. Thompson, W.S, and D.T. Lewis, Population Problems, 5th Ed., New York: McGraw-Hill, 1965.
4. Johannes Overbeek, University of Maine at Orono, Population An Introduction, Harcourt Brace Jovanovich, Inc. New York, San Diego, Chicago, San Franscisco, Atlanta London, Sydney, Toronto.
5. Gaugh, M.E., A Geography of Population and Settlement. Dubuque: Broman, 1970.
6. Miller, Z.L., The Urbanization of Modern America: A Brief History, New York, Harcourt Brace Jovanovich, 1973.



ECON-438 RESEARCH METHODS IN ECONOMICS

Introduction; Research, research in business; scientific thinking; Research Designs; the research process; research design; what is research design; classification of design; exploratory research; casual inference; Sample Design; the nature of sampling, probability sampling; complex probability sampling; non- probability sampling; Measurement and Scaling; measurement scales; the characteristics of sound measurement; the development of measurement tools; scaling; the nature of scaling; response methods; scale construction; Data Collection Methods; Survey Instruments and Field Procedures; survey instrument designs; the survey situations; the instrument development process; questionnaire development; field procedures; personal interviewing; telephone interviewing, interviewing by mail; observations; Data collection, experimentation and Simulations; experimentation and simulation; experimental Research design; simulation; observation; observation designs; Use of Secondary Data; the nature of secondary data sources; the use of secondary data; types of secondary data sources; statistical sources; data research procedures; evaluating secondary data; Data presentation and Analysis: elements of analysis; data preparation; special data problem; tabulation; data presentation; and data analysis; Report writing; the research proposal; the research report; research report format; writing the research report.

Recommended Books:

1. Zikmund, Business research methods, Latest Edition.
2. Uma Sckaran, Business research methods, Latest Edition.
3. Newman, Research methods in Social Sciences, Latest Edition.

ECON – 440 TRANSPORT ECONOMICS

Introduction of Transport Economics; The Transport System: Operator Cost Structures, Review of Optimization, Firm Behavior: Production & Technology, Firm Behavior: Profit Maximization & Production. Economies, Firm Behavior: Cost Minimization, Firm Behavior: Monopolies & Price Discrimination, Consumer Behavior: Utility Maximization, Consumer Behavior: Demand Relationships, Welfare Theory: Consumer Surplus & Other Measures, Market Imperfections: Negative Externalities, Roadway Congestion & Pricing TBA, Value of Time TBA, Econometrics & Statistical Applications, Project Presentations

Recommended Books:

1. Kockelman and Chen's (2012), *The Economics of Transportation Systems: A Reference for Practitioners*.
2. Small and Verhoef's (2007), *Economics of Urban Transportation* (2007)
3. Sergio Jara-Diaz's (2005), *Transport Economic Theory* (2005).

