

Complementary Copy

SCHEME OF STUDIES

M.A.

ECONOMICS

(Under Annual System)

For the year 2012 and onward



DEPARTMENT OF ECONOMICS
GC UNIVERSITY, FAISALABAD

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1. Introduction

Over time, the subject of Economics has continuously gained significant importance. It is playing a central role in the new developments like globalization and emergence of World Trade Organization (WTO).

Its application to enhance human welfare has become even more vital. The need to improve curriculum and keep up with the pace of new developments, it is important to incorporate new literature in the training courses and degree programs. Thus, keeping in view the emergence of new trends in businesses and Governance, new curriculum for M. A. Economics has been developed, which may be adopted by the universities. The universities are autonomous bodies, therefore, they may make appropriate changes in it as per their needs. The present curriculum also contains teaching and evaluation methodology so that students are well trained and equipped with latest knowledge and skills to cope with the new emerging challenges.

2. Aims, Objectives and Learning Outcomes

Specific aims of the *M.A. ECONOMICS Degree* are as given below:

- i) Development of sound theoretical knowledge of the subject.
- ii) Application of economic theories and enhancing problem solving ability.
- iii) Coverage of new areas of specialization, as per market needs.
- iv) Preparation for advanced studies leading to M. Phil. and Ph.D.
- v) Training to produce quality teachers, researchers and policy makers
- vi) Dissemination of comprehensive knowledge focused at problem solving for national and international economic issues.
- vii) Equip students with postgraduate level knowledge and skill comparable to the top Pakistani standard and similar international institutions.

3. Contents and Structure of Courses

The new curriculum consists of contents of courses of compulsory and optional papers, teaching and evaluation methodology. The number of courses has been enhanced, keeping in view the changes in market demand for economists. In the new curriculum not only the contents of the courses have been up dated but also the new emerging issues and latest reading material has also been included. In this respect, latest research papers, pertaining to each paper have also been recommended to complement text books.

The contents of the core papers have been divided into two parts. The first part provides an overview of major topics covered in the papers. The aim is to prepare students for advanced studies. Thus, students having an ability but failure to get a chance for grooming will get a chance and time to make up their deficiencies and cope with the advanced material. In part two, new material has been added for which advanced approach must be adopted for dissemination of

latest knowledge of the subject. This part will require homework, problem solving and writing term paper etc. The teachers are advised to use all these techniques to cover maximum literature on each subject.

Special attention has been paid while preparing contents and chalking out teaching methodology focused at; to discourage short cut methods of study to just obtain degree without gaining sufficient knowledge of the subject. Keeping in view the above, teaching methodology has been proposed which may be adopted in each course, depending upon the nature of the courses and facilities available in each institution.

4. Description of Papers

List of Courses

PART-I

| Paper No. | Scheme of Studies | Course Code | Marks |
|------------------------------------|----------------------------------|-------------|------------|
| Paper-1 | Micro-economic Theory | Eco-C11 | 100 |
| Paper-2 | Macro-economic Theory | Eco-C12 | 100 |
| Paper-3 | Mathematical Economics | Eco-C13 | 100 |
| Paper-4 | Statistics for Economists | Eco-C14 | 100 |
| Paper-5 | Islamic Economics | Eco-C15 | 100 |
| Paper-6 | Major Issues in Pakistan Economy | Eco-C16 | 50 |
| Total Marks for M.A. Part-I | | | 550 |

PART-II

| Paper No. | Scheme of Studies | Code | Marks |
|---|---|---------|-------------|
| Paper-1 | International Trade Theory and Finance | Eco-D11 | 100 |
| Paper-2 | Econometrics: Theory and Application | Eco-D12 | 100 |
| Paper-3 | Development Economics: Theory and Policy | Eco-D13 | 100 |
| Paper-4 | Research Methodology | Eco-D14 | 50 |
| Optional Papers (students will opt only two optional papers from the following. All optional papers are of 100 marks each) | | | |
| Paper-5.1 | Advanced Mathematical Economics | Eco-D55 | 100 |
| Paper-5.2 | Monetary Theory and Policy | Eco-D51 | 100 |
| Paper-5.3 | Public Sector Economics | Eco-D52 | 100 |
| Paper-5.4 | Managerial Economics | Eco-D53 | 100 |
| Paper-5.5 | Environmental Economics | | 100 |
| Paper-5.6 | Agricultural Economics | Eco-D54 | 100 |
| Paper-5.7 | Human Resource Development and Management | | 100 |
| Paper-5.8 | Economic Principles, Strategies and Techniques of Marketing | | 100 |
| Total Marks for M.A. Part-II | | | 550 |
| Grand Total Marks for M.A. Degree | | | 1100 |

5. Degree Awarding Criteria

The students must score 40% marks in each compulsory and optional papers to pass the course. However, they must score 45% marks in aggregate to pass Part-I and Part-II each exam in a single attempt, the student must pass three papers of 100 marks each in part I and also the same number of courses in Part II, otherwise, he/she will have to appear in examination again in all papers.

In addition to compulsory papers, students must pass two optional papers.

6. Assessment Strategy

To assess whether students have gained and absorbed sufficient knowledge of the subject, it is important to evolve appropriate strategy and techniques to test the students. Presently, the annual system of examination and testing has failed to achieve the desired objectives. Students do succeed to obtain good marks with shortcut methods and selective study. Besides, it is popular to consult one book which is of low quality and provide selective study aimed at marks obtaining mechanism, not comprehensive knowledge and proper training. This trend must be discouraged. Given the above problems, following strategy has been evolved to provide guideline for evaluation:

- i) Internal and external evaluation of scripts must be carried out.
- ii) A clear mechanism for evaluation particularly internal evaluation must be announced and provided in writing to the students at the beginning of the course i.e. along with course outline.
- iii) To ensure full coverage of the reading material, periodical homework assignments must be assigned and duly evaluated. These assignments may be given proper weightage in the final internal evaluation / awarding marks.
- iv) Two types of seminars / workshops should be held in the course/papers for which the department, prescribe them appropriate:
 - a) by experts, other than the teacher concerned. It must be followed by homework assignments.
 - b) by a group of students or individuals to train them for teaching and reproducing the material absorbed.
- v) As far as internal and external evaluation is concerned, the weightage assigned to internal examinations, assignments, homework and quizzes may vary as per local environment, needs and facilities available in the institutions concerned. It is important that both types of evaluations must be made a part of degree awarding criteria.
- vi) In the internal evaluation some weightage must also be assigned for attendance in class and participation of students in class discussions / seminars.

(Other university rules will apply.. Assessment of private students will continue as being done at present))

7. Evaluation of Papers/Courses

After a detailed discussion, experts reached a consensus that present annual system of evaluation has failed not only to equip the students with needed knowledge but they are also unable to perform on job. Thus, the assessment of students must ensure that students have gained sufficient knowledge at the required level and he / she is able to deliver on job. Thus, the following system for evaluation may be adopted:

- i) The Annual system may be continued in the institutions where it is considered that no alternative system is possible to be introduced at this moment. Thus, after every year, university will conduct examination, which will be called external evaluation.
- ii) Internal and external evaluation of the students will be carried out. The weightage for internal and external evaluation may be decided as per needs / facilities of the institution concerned. It is proposed that 40% weightage of marks/division/grade may be assigned to internal evaluation and 60% for external evaluation. Teacher concerned, in consultation with the department faculty / chair may decide the distribution of weightage for internal evaluation for attendance, examinations, homework and seminar etc., for each paper. However, private students may be evaluated by the external examiners. In this case, internal examiner will prepare a sample copy of the questions and external examiner may change it up to 75%. Answer scripts must also be evaluated by the internal examiner and the internal examiner may change the marks (awarded by the external) up to maximum of 10%. Average of the marks assigned by internal and external examiner will be reflected on the transcript. He may return the script back to external examiner, if he thinks there is a need to change the marks more than 10%. Second evaluation of the external examiner may be considered final.
- iii) The instructor must report internal assessment to the department / institution chair twice in a year; the mid-year assessment and final assessment at the end of the year. Department head must send the internal examination / assessment results to the Controller of Examination, for all papers, within two months of the final assessment by the faculty. Before announcing the result, three senior faculty members of the Department of Economics, of the concerned University, must verify the result.

Brief Introduction to Courses

All major courses of hundred marks each are of one academic year duration, which is equivalent to two semesters and three hours per week of lecturing/teaching.

1. **Micro-economic Theory**

This course aims at providing comprehensive knowledge of consumer, firm, and market theory and their applications. The course is spread over two parts. The first part revises major concepts in microeconomic theory at an intermediate level. The second part, while ushering participants to more topics, gets rigorous in its treatment to the microeconomic theory. In particular, the students are expected to develop deductive reasoning and comprehend classical methodology pertaining to models of consumer behavior, firms' decision making, perfect and imperfect market structure, general equilibrium analysis, uncertainty, risk analysis, game theory, and welfare economics. Special importance is placed on developing problem solving skills to the issues related to microeconomics. It is expected that the course would enable its participants to comprehend major microeconomic models which will help in business decision making.

Prerequisite for this course is elementary-level knowledge of microeconomic theory and intermediate level calculus.

2. **Macroeconomic Theory**

The main objective of this course is to familiarize students to the fundamental theories and models in macroeconomics. The course is covered in two parts. The first part consists of topics such as national income and its determination, consumption, savings and investments, demand and supply of money, and aggregate demand and supply. The topics in this part would be analyzed at an intermediate level. The second part of this course includes advanced level topics. The treatment to topics, such as exchange rates and open economy, long run economic growth, economic fluctuations, and macroeconomic policy debate involves the use of mathematical tools and models. Special emphasis is placed on scrutinizing the models developed in this course on the basis of real time macroeconomic data. The participants of this course would be expected to comprehend key debates over macroeconomic issues and policy-dilemmas faced by various economies.

Prerequisite for this course is introductory-level knowledge of macroeconomic theory and intermediate level calculus.

3. **Mathematical Economics**

The aim of this course is to equip students with the basic mathematical tools that are useful as an approach to economic analysis. Participants of this course would approach the fundamental theories of micro- and macro-economics using mathematical models. In particular, students would learn the static and/or equilibrium analysis, comparative-static analysis, and static optimization problems. The participants, after the completion of this course, are expected to understand and analyze economic models and their multivariate relationship, encompassing the economics theories.

Prerequisite for this course is a basic knowledge of introductory-level algebra.

4. **Statistics for Economists**

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. The material covered in this course would enable students in not only testing the predictions of economic theories at an elementary level, but it would also help develop the basic skills necessary to take advanced courses like econometrics and growth models. Major topics covered in this course are measures of central tendency, probability, sampling design, estimation techniques,

analysis of variance, non-parametric statistics, and Bayesian analysis. It is expected that after the completion of this course, students would be comfortable in handling and analyzing data and use of estimation techniques.

No prerequisite for this course is required. However, basic knowledge of statistics will be an added advantage.

5. **Islamic Economics**

The main objective of this course is to acquaint students with the economic aspects of Islamic principles and their application to analyze contemporary economic problems. The course helps to build nexus between the Islamic principles and mainstream economic theories. The topics covered in this course range from microeconomic to macroeconomic concepts pertaining to fundamentals of Islamic thoughts. It focuses on, among others, the contributions in development economics of Abu Yousaf to debate on good governance and functioning of market system of Ibn-e-Khuldon. Major topics in this course are Islamic models of finance, banking systems, welfare and distribution of income, zakat and social justice, and current process of Islamization of economic system in Pakistan.

Prerequisite for this course is basic knowledge of holy Qura'an, Hadith, Shariah and economic theory.

6. **Major Issues in Pakistan Economy**

This course aims to provide an overview of Pakistan's economy while focusing on the current issues. Students would make use of models to investigate and analyze various economic problems and challenges faced by Pakistan's economy. Major issues covered in this course are manpower planning, unemployment, poverty, income distribution, economic growth, budget deficits, public debt, Sectoral imbalances, growth without significant development and expected impacts of WTO regime. This course would benefit its participants in research projects and provide a better understanding of Pakistan's economy.

Prerequisite for this course is a basic knowledge about Pakistan economy and macroeconomics and development models.

7. **International Trade Theory and Finance**

This course is designed to familiarize students with international economics. It is divided into two parts. The first part covers the trade theory, and the other international finance. Emphasis in this course is on the rigorous treatment of traditional and current trade and exchange rate theories and models. Models of gains from trade, pattern of trade, international flow of factors of production, trade related competitive theories, liberalization reforms, balance of payments problems, determinants of exchange rate, and future markets are some of the topics covered in this course. Furthermore, implications of international flow of funds and debt crises are covered in depth. By providing training-built analytical ability, which is particular for policy formulation, this course would prepare students for jobs in both public and private sector organizations.

Prerequisite for this course is intermediate-level knowledge of economic theory and mathematics.

8. **Econometrics: Theory and Application**

This course aims at introducing students to the quantitative aspects of various econometric theories. This is achieved through providing the students with an understanding of basic econometric theory and models. In particular, the topics covered in this course are the nature of regression analysis, single- and multi-variable regression analysis, assumptions of the classical regression model, econometric modeling, regression on dummy dependent variable, simultaneous equation models, and time series econometrics. Special emphasis is placed on the application side of this course. Participants would make use of statistical soft wares to undertake regression

analysis. Students after the completion of this course are expected to be comfortable in data analysis, apart from contributing to empirical research and analyzing projects.
Prerequisite for this course is intermediate-level knowledge of calculus, statistics, and economic theory.

9. **Development Economics: Theory and Policy**

This is a course about the understanding of the economies popularly known as developing countries. In this course, students are introduced to the conceptual meaning of economic development while distinguishing it from economic growth and the common characteristics of developing countries. The course develops necessary abilities in the students to generalize and apply development economic theories to solve the most pressing problems of the developing world. It helps to understand structure and functioning of institutions, markets, and policies adopted in the developing countries to accelerate welfare of their citizens. The course covers theories of economic growth and models and their application pertaining to contemporary issues of the developing world, such as poverty, income distribution, unemployment, and macroeconomic destabilization. After the completion of this course, students are expected to contribute to the society with their opinions about the development problems from various forums of public and private organizations.

A considerable knowledge of introductory-level macroeconomic and microeconomic theory is an advantage; otherwise no special prerequisite for this course is required.

10. **Research Methodology**

This course aims at preparing students to strengthen their research abilities with the standard paraphernalia of research methodology. The contents of this course are designed to facilitate research at micro and macro levels and of both qualitative and quantitative nature. Apart from learning research techniques and developing necessary skills, the participants of this course would also develop scientific and rational thinking.

Prerequisite for this course is intermediate-level knowledge of economic theory, statistics, and econometrics along with some degree of writing and computer skills.

11. **Optional Courses and Specialization**

Major objective of these courses is to provide training in nearly all those areas of economics that are significant as per market demand. All the courses cover state-of-the-art material in the respective areas. A wide choice of selection comprising eight courses and more than ten areas of specialization is provided. Students can choose optional courses according to their career ambitions. They may select a topic of their interest for their thesis and take a course in the same area to build a strong background in that particular area. Students can also choose two optional courses in such a way as to combine them with relevant compulsory courses and end up specializing in two areas.

MICRO-ECONOMIC THEORY

Part-A

- Topic 1: Introduction**
Microeconomics: Comparison with other Branches of Economics. An Overview of Microeconomics Topics, Consumer's Decision, Markets, Economic Models. Development of the Economic Theory of value. Production, Cost and Welfare. Cost Minimization, Introduction to Maximization of a functions. Functions of several variables & their optimization. Implicit functions. Derived Demand. Game Theory.
- Topic 2: Theory of Consumer Behaviour and Demand Analysis**
Axioms of Rational Choice. The utility function, Arguments of utility function. Indifference curves and Marginal Rate of substitution (MRS). Indifference curves and Transitivity. Convexity of Indifference curve. An alternative derivation: Marginal utility, MRS. Concepts of Perfect substitutes and perfect complements. Non-homothetic Preference. Consumer's equilibrium. Income & Substitution effects: Hicksian Framework and Slutsky equation. Revealed Preference and the Substitution effect. Indirect utility function & its derivation.
- Topic 3: Market Demand & Elasticity**
Market demand curves. Types of demand curves. Short Run and Long Run analysis: Elasticity and relationships among elasticities of demand. Theoretical issues in Market demand analysis. Implication of Elasticities and Problem Solving Approach. Identification of Inferior goods, Giffin goods and normal goods.
- Topic 4: Production Functions**
The Concept of Production Function; how to Choose Variables. Variation in one input. Isoquant Maps and the rate of technical substitution. Returns to scale. The elasticity of substitution. Some common production functions. Technical progress. Equilibrium of the firm. Cobb Douglas Production function. CES Production Function. Translog Function.
- Topic 5: Cost of Production**
Definition of costs. Cost functions. Traditional Vs Modern theory of cost. Changes in input prices. Short Run, Long Run distinction. Input substitutability. Input Cost and Demand for Factors of Production. Derived Demand. Cost Minimization. Decreasing and Increasing Cost Industry and Price Determination.

Part B

- Topic 6: Profit Maximization and Supply**
The nature & behaviour of firms. Profit maximization. Marginal Revenue. Short Run supply by a Price taking firm. Profit maximization and input demand. The controversy over the profit maximization hypothesis. Cost minimization. relationship between cost and production curves.
- Topic 7: The Theory of Market Behaviour**
7.1:
Perfect competition: The Perfectly competitive market:
The assumptions of the Model: Short run equilibrium of the price taker firm: Long run equilibrium of the price taker firm:

Equilibrium of the industry: Mathematical Derivation of Equilibrium Prices and Quantity: Difference between Perfect and Pure Competition; Price and Output Decision. Mathematical derivation of Price and Quantity.

7.2:

Monopoly: Monopoly & its Basics:

The negatively sloping demand curve: Short run equilibrium, Long Run Equilibrium:

Price discrimination: Bi-lateral Monopoly: Multiplant Monopoly:

Comparison with perfect competition: Monopoly and Price Distribution. Monopoly and Price Discrimination. Mathematically Price and Quality Solution.

7.3:

Monopolistic competitive conditions: The historical setting of the theory of monopolistic competition, Characteristics of Monopolistically competitive firms. The concepts of industry & group:

The basic Chamberlain theory of Monopolistic competition.

Comparison with pure competition & monopoly.

Mathematical Derivation of Price and Output Decision under Monopoly.

7.4:

Oligopolistic conditions: A simple statement of the problem of oligopoly: Models of Non-collusive Oligopoly: Cournot, Bertrand, Chamberlin, Sweezy & Price Leadership Collusive model of oligopoly: cartels & price leadership models.

Mathematical Derivation of Price and Quantity Determination.

Monoposony and Buying Power; influence on Price.

Topic 8:

Game Theory

Description of a Game Theory. The Payoff Matrix of a Game. Nash Equilibrium. The Prisoner's Dilemma. Sub-game Perfect Equilibrium: Sequential Equilibrium. Application of Game Theory. Cournot Equilibrium. Bertrand Equilibrium. Quantity Leadership (Stackleberg Model) Price Leadership. Collusion (Cartel). Conjectural Variation. Stackleberg Case.

Topic 9:

Pricing of Factors of Production

Short Run Demand for one Variable Input. Input price Elasticity.

The Short run Demand Curve. Variable inputs. Market demand Curve for an Input: The Price of fixed Factors: Rents & Quasi-rents. The Supply Curve of Labour: Wage Determination, Role of Unions.

Topic 10:

General Equilibrium

Assumptions of the 2 X 2 X 2 models. Edge Worth Box diagram, Pareto Optimality; Equilibrium conditions.

Concept of Contract Curve, Static Properties of A General Equilibrium Model.

General Equilibrium and the Allocation of Resources. Arrow's Impossibility Theorem.

Topic 11:

Welfare Economics

Meaning of Economic welfare. Criteria of social welfare. Welfare Maximization.

Welfare Maximization and perfect Competition. Market failure and public goods/social goods. Externality analysis. Anti-trust Policy and regulations.

Topic 12: Uncertainty and risk Analysis

Concept of expected utility & its theorem. Uniqueness of expected utility function. Affine function. Risk aversion and Risk loving in Risk neutral. Arrow Pratt measure of (absolute) risk aversion. Measurement of risk aversion. Global Risk aversion. Arrow Pratt measure of relative risk.

Recommended Books:

1. Ferguson, C.E & Gould, J.P, Microeconomic Theory. Macmillan, (Latest Edition).
2. Henderson, J.M & Quandt, R.E., Microeconomic Theory*. N.Y Melliwra H A Book Co.
3. Koutsoyiannis, A., Modern Microeconomics*, London, Macmillan, (Latest Edition).
4. Layard and Walter A.A., Micro-Economics*, McGraw Hills, (Latest Edition).
5. Varian Hal R., Micro Economics Analysis*, Norton & Company, New York, 1992.
6. Walter Nicholson, Microeconomic Theory: Basic Principles and Extensions (6th edition).

Additional Readings:

1. Baumol, W.J., Economic Theory and Operations Analysis, Prentice Hall (Last Edition).
2. Hirshleifer Jack, Price Theory and Applications*, Prentice Hall (Latest Edition).
3. Kameischon, D.T.R., Readings in Microeconomics, New York, The world publishing co., (last Edition).
4. Stiglor, G.T., The Theory of price, N.Y Macmillan, London. (Last Edition).
5. Silberberg E., The Structure of Economics, A Mathematical Analysis, McGraw Hill, (Latest edition).

(* Strongly Recommended)

MACRO-ECONOMIC THEORY

Note: Part A consists upon intermediate level material while in Part B advanced literature will be covered. Mathematical Approach may be adopted in Part B.

Part A:

Topic:1 Introduction and National Income

The Development of Macroeconomics, Actual vs. Potential Output, Analytical Approach to Macroeconomics. Circular Flow of National Income, Measurement of GNP: Expenditure Approach, Product Approach / Income Approach, GNP as measure of welfare. Leakages and Injections: Saving and Investment and their Role. Nominal and Real Variables.

Economic Models, Exogenous and Endogenous Variables and their Functional Relationships. Leading and Lagged variables. Measuring Unemployment: Oken's Law. How to build simple Macroeconomic Models, Price Indices; Inflation Indexes, Deflation and Stagflation. Introduction to Keynesian and Classical School of Thoughts.

Topic:2 Income Determination

Firm's Demand for Factors of Production, Production Function, Demand for Labor and Capital: Marginal Product of Factors and their Demand. Labor Market and its Equilibrium. Demand for Goods and Services: Aggregate Demand and its Components: Consumption, Investment, Government Spending and Net exports. Equilibrium of Aggregate Demand and Supply: Mathematical Solution and Equilibrium. Saving and Investment Balance. Derivation of Simple Multiplier, Tax Multiplier. Inclusion of Imports and Multiplier.

Topic:3 Theories of Consumption and Their Implications

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.

Topic:4 Saving and Investment

Definition and Kinds of Investment; Autonomous and Induced etc. Determinants of investment. Present Value Criteria for Investment. Investment Demand and Output Growth. Tobin's Q-Theory. Lags in Investment Demand. Derivation of IS-curve, Shape of IS-curve. Volatility of Investment. Investment Demand and Fiscal Policy. Shifts in Investment Demand Curve and output determination.

Topic:5 Money Market: The Demand and Supply of Money

Money Demand and its Determinants, Regressive Expectation Model. Portfolio Balance Approach, Empirical Estimation of Income and Interest Elasticities. Supply of Money, Determinants of Money Supply. Measurement of Money Supply and its implications, Instruments of Monetary Policy.

Interest Sensitivity of Money Supply. Quantity Theory of Money and its Critical Review. Fischer effect, Money, Prices and Inflation. Derivation of LM Curve and its Slope. LM Curve and Money Market Equilibrium. Interaction of IS-LM and Equilibrium.

Topic:6. Aggregate Demand, Supply and Stabilization Policy

Keynesian Models: Liquidity Trap. Effectiveness of Policy and Price Rigidity. Slope of Aggregate Supply and Demand Curves. Liquidity Trap. Grand Aggregate Demand Curve. Interaction of IS-LM and Determination of output: Short-run and Long-run analysis: Aggregate Demand and Supply and their Slopes. Slope of IS-LM in Short-run and Long-run. Vertical / Horizontal Shapes of these Curves. Classical and Keynesian Models. Shocks to Aggregate Demand and Supply and Stabilization Policy. Supply Side Economics. Stagflation and Stabilization Policies, Shocks to IS-LM and its Outcomes and Policy Implications. Short-run – Long-run Philip Curves. Long-run and Vertical Aggregate Supply Curve. Ineffectiveness of Keynesian Policies, Technical Change and Shift in Vertical Aggregate Supply Curve.

Recommended Books:

1. Branson, William H., (1979), *Macroeconomic Theory and Policy*, Harper and Row Publishers, New York / London.
2. Branson, William H., and Litvack James M., *Macroeconomics**, (Latest Edition), Princeton University.
3. Glahe, Fred R., (Latest Edition), *Macroeconomics, Theory and Policy*, Harcourt Brace Jovanovich Inc.
4. Mankiw, Gregory N., (2000) *Macroeconomics**, Worth Publishers, New York.
5. Peel D. and Minfow P., (2002). *Advance Macroeconomics*, Edward Elgar, Cheltenham, U.K.
6. Romer, David, (2001). *Advanced Macroeconomics**, McGraw Hills, New York / London.
7. Sargent, Thomas J., (1988) *Rational Expectations and Inflation**, Harper and Raw Publishers, New York / London.
8. Rosalind Leveic and Alexander Rebores, *Macro-economics: An Introduction to Keynesian Neo-Classical Controversies*; Macmillan (Latest edition).
9. Denison, Edward F. 1985. *Trends in American Economic Growth, 1929-1982*. Washington: The Brookings Institution.

* Strongly Recommended

Additional Reading:

1. Ball, Laurence, Mankiw, N. Gregory, and Romer, David. 1988. "The New Keynesian Economics and the Output-Inflation Tradeoff." *Brookings Papers on Economic Activity*, No. 1, 1-65, Reprinted in Mankiw and Romer (1991).
2. Barro, Robert J. 1976. "Rational Expectations and the Role of Monetary Policy." *Journal of Monetary Economics* 2 (January): 1-32.
3. Barro, Robert J. 1989. "Interest-Rate Targeting." *Journal of Monetary Economics* 23 (January): 3-30.
4. Barro, Robert, J., and Gordon, David B. 1983b. "Rules, Discretion and Reputation in a Model of Monetary Policy." *Journal of Monetary Economics* 12 (July): 101-121. Reprinted in Persson and Tabellini (1994).
5. Bernheim, B. Douglas. 1987, "Ricardian Equivalence: An Evaluation of Theory and Evidence." *NBER Macroeconomics Annual* 2: 263-304.
6. Blanchard, Olivier J. 1984. "The Lucas Critique and the Volcker Deflation." *American Economic Review* 74 (May): 211-215.
7. Fischer, Stanley. 1993. "The Role of Macroeconomic Factors in Growth." *Journal of Monetary Economics* 32 (December): 485-512.
8. Friedman, Milton, 1968. "The Role of Monetary Policy". *American Economic Review* 58 (March): 1-17.
9. Genberg, Hans. 1978. "Purchasing Power Parity under Fixed and Flexible Exchange Rates." *Journal of International Economics* 8 (May): 247-276.

MATHEMATICAL ECONOMICS

- Topic 1: The Nature of Mathematical Economics**
Ingredients of mathematical models. Derivations: Equation of a straight line and its forms: Two point, intercept, point slope and slop intercept. Types of functions: constant, polynomial, rational, non-algebraic. Relationships and functions. Indices & their rules. Functions of more than two independent variables. Logarithms & the rules of logarithms.
- Topic 2: Equilibrium Analysis in Economics**
A linear partial equilibrium market model. The effect of an excise tax in a competitive market. Non linear market model. General Market Equilibrium. Equilibrium in a linear National Income Model.
- Topic 3: Linear Models and Matrix Algebra**
Theory of matrix multiplication. Laws of matrix operations. Types of matrices: Square, identity, null, idempotent, diagonal, transpose and their properties. Conditions for non singularity of a matrix. Minors and cofactors. Determinant & its properties. Solution of linear equations through Gaussian method, Cramer's rule and Inverse of a matrix method. Properties of inverse of a matrix. Use of matrix approach in market & national income models.
- Topic 4: Input-Output Analysis**
Input-output model, its structure and its derivation. The use of input output model in Economics.
- Topic 5: Differentiation**
Rules of differentiation. Differentiation of a function of one variable. Sum-difference, product, quotient, chain, power, inverse, logarithmic & exponential functions Combinations of rules. Higher order derivatives. Economic applications of derivative. Concept of maxima & minima, elasticity and point of inflection. Profit & revenue maximization under perfect competition, under monopoly. Maximizing excise tax revenue in monopolistic competitive market, Minimization of cost etc.
- Topic 6: Partial & Total Differentiation**
Partial differentiation & its rules. Higher order & cross partial derivatives (young's theorem). Total differential & total derivatives. Implicit functions rule of differentiation. Optimizing cubic functions & their economic application.
- Topic 7: Economic Applications of Partial & Total Differentiation**
Comparative static analysis: a linear Partial equilibrium market model, a linear National Income model. Partial elasticities. Production functions Analysis. Maximization & Minimization of unconstrained functions & their economic applications: Profit maximization by a multi-product firm under perfect Competition & monopoly, Price discrimination, Multi-plant monopoly, input decisions etc.
- Topic 8: Optimization: Constrained & Extrema**
Free and constrained optimization, extrema of a function of two variables: graphical analysis, Lagrange method. Utility maximization & Cost minimization. Homogenous Production function, Cobb Douglas Production function. Jaccobian determinants. CES Production Function. Translof Function.

Topic 9: Linear Programming

Ingredients of linear Programming. Graphical approach, simplex method, economic application of linear programming. Concept of primal & dual. Duality theorems. Solving of Primal via dual. Economic interpretation of a dual.

Recommended Books:

1. Chiang, A. C., *Fundamental Methods of Mathematical Economics*, McGraw Hills, (Latest Edition).
2. Baumol W. J., *Economic Dynamics*, Macmillan, (Latest edition).
3. Budnick, Frank, *Applied Mathematics for Business, Economics and Social Sciences*.
4. Dowling E. T., *Mathematics for economists*, Schum Series (latest edition).
5. Weber E. Jean, *Mathematical Analysis, Business and Economic Applications (Latest Edition)* Harper and Row Publishers, New York.

STATISTICS FOR ECONOMISTS

- Topic 1: Introduction**
 Descriptive and inferential statistics; Variable and constant, population and sample, parameter and statistic; The four basic activities in statistics: Designing a plan for data collection, Exploring the data, Estimating an unknown quantity, Hypothesis testing; Type of measurement scales: Nominal, Ordinal, Interval and Ratio; Types of data: Univariate, Bivariate and Multivariate data, Primary and secondary data, Quantitative data and qualitative data, Time series, Cross-sectional and pooled data; Significant digits and rounding off numbers; Errors: Biased and unbiased.
- Topic 2: Presentation of Data and Measure of Central Tendency**
 Introduction; Classification; Tabulating numerical data: The frequency distribution, The cumulative frequency distribution, The relative frequency distribution, The percentage frequency distribution; Graphic and diagrammatic representation: Bar chart, Pie chart, Histograms, Frequency curves and Histograms; Histograms by Hand: Stem-and-leaf.
 Measure of central tendency; Introduction; Types of Averages: Mean: Arithmetic mean, Geometric mean, Harmonic mean, Trimmed mean and Winsorized mean; Quintiles: Median, Quartiles, Deciles, Percentiles; The mode; Box plot and detailed box plot; Empirical relation between Mean, Median and Mode; The cumulative distribution function: Finding the percentile ranking for a given number, Finding the percentile for a given percentage; Summary measures and type of data.
- Topic 3: Measures of Dispersion, Skewness and Kurtosis**
 Absolute and relative measure of dispersion; Different measures of dispersion: The Range, Quartile deviation, Mean deviation, Variance and standard deviation: Definition and interpretation of variance and standard deviation, Computation of variance and standard deviation, Step deviation method or coding method, Coefficient of variation, Standardized variable, Properties of standard deviation and variance; Skewness: Karl Pearson's coefficient of skewness, Bowley's coefficient of skewness; Kurtosis.
- Topic 4: Probability and Probability Distribution**
 A survey of probability concepts: Classical probability, Empirical concept, Subjective probability; Some rules of probability: Rules of addition, Rules of multiplication; Tree diagrams; Conditional Probability, Bayes Theorem; Counting rules: The multiplication formula, The permutation formula, The combination formula.
 Discrete probability distribution, Random variables, Discrete random variable, Continuous random variable; The mean, variance and standard deviation of a probability distribution; Binomial probability distribution, and its computation. Cumulative probability distributions, Properties of Binomial probability distribution.
 The normal probability distributions: Properties of normal distribution, Applications of the standard normal distribution, Areas under the normal curve, Finding areas under the normal curve; The normal approximation to the binomial; Continuity correction factor.
- Topic 5: Survey Sampling and Sampling Distributions**
 Sampling the population, Advantages of sampling, Representative samples, Sample design and sample survey, Sampling frame, Probability and non-

probability sampling, Sampling with and without replacement, Sampling and non-sampling error, sampling bias; Probability sampling and non-probability sampling methods; Sampling distribution of the mean; The central limit theorem; Sampling distribution of differences between means; Sampling distribution of sample proportion; Sampling distribution of differences between proportions.

- Topic 6: Estimation and Confidence Intervals**
 Point estimates and confidence intervals; Estimation by confidence interval: Confidence interval estimate of a population mean (Known Variance), Confidence interval estimate of a population mean (Unknown Variance) Confidence interval for differences of means, Confidence interval for differences of means; Confidence interval for population proportion, Confidence interval for differences between proportions; One sided confidence interval; Sample size for estimating population mean.
- Topic 7: Hypothesis Testing**
 One sample test of hypothesis; One Sample; One tail and two tails tests of significance; Testing for a population mean with a known population standard deviation: Two-tailed test, one-tailed test; P-Value in hypothesis testing; Testing for a population mean: Large sample, Population standard deviation unknown; Testing hypotheses about population proportion when sample size is large; Type II error.
 Testing of two Sample Hypothesis: Population means, Population proportions; comparing populations with small samples.
- Topic 8: Chi Square Applications**
 Introduction; Goodness-of-fit test: Equal expected frequencies; Goodness-of-fit test: Unequal expected frequencies; Limitations of Chi square; Using the goodness-of-fit test to test for normality; Contingency Table Analysis.
- Topic 9: Analysis of Variance**
 Introduction, The F distribution; Comparing two population variances; ANOVA assumptions; ANOVA test; Inferences about pairs of treatment means; Two-way analysis of variance.
- Topic 10: Simple Linear Regression and Correlation Analysis**
 Scatter diagram; Standard methods for obtaining regression line: (i) Inspection, (ii) Semi average, (iii) Least squares principle; Assumptions underlying linear regression; Measures of variation: Standard error of the estimate, Coefficient of determination; Prediction in Regression Analysis; Interpolation verses extrapolation; Correlation analysis; Scatter diagram; The coefficient of correlation: Properties/characteristic of coefficient of correlation, Correlation and causation; The relationship among the correlation coefficient, the coefficient of determination and the standard error of estimate; Inference about the slope and correlation coefficient; t-test for the slope, F- test for the slope, t-test for correlation coefficient; Estimation of the mean values and predication of individual values; Confidence interval and predication interval estimate; Rank correlation.
- Topic 11: Multiple Linear Regression and Correlation Analysis**
 Multiple linear regression model, Interpretation of partial regression coefficients; Estimation of multiple linear regression model with two explanatory variables by using Least squares principle, Matrix approach, Deviation form; Pitfalls and problems in multiple regression: Multicollinearity, Variable selection, Model misspecification; Multiple standard error of estimate; Coefficient of multiple

determination (adjusted and unadjusted); Evaluating the regression equation: Using a scatter diagram, Correlation matrix, Global test, Individual variable significance test, Qualitative independent variables; Multiple regressions in terms of linear correlation coefficients; Multiple correlation and partial correlation; Nonlinear regression models; Dealing with nonlinear relationship and unequal variability.

Topic 12:**Applied Statistics**

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: Secular trend; Cyclical variation, Seasonal variation, Irregular variation; Smoothing the annual time series and using it in forecasting: Moving averages, Weighted moving averages, Exponential smoothing; Using trend and seasonal component in forecasting; Time series and forecasting; The multiplicative model, Calculating the seasonal indexes, De-seasonalization the time series, Using deseasonalized time series to identify trend, Seasonal adjustments, Model based on monthly data, Cyclical component; Modeling cyclic behavior using box-Jenkins ARIMA processes; Using regression analysis in forecasting; Qualitative approach to forecasting: Delphi method, Expert judgment, Scenario writing, Intuitive approaches; Choosing an appropriate forecasting model; Some observations on time series analysis.

Recommended Books:

1. Lind, Douglas A., Marshal, William G. and Mason, Robert D., *Statistical Techniques in Business and Economics (11th edition)*. Boston: McGraw Hill, 2003.
2. Chaudhry, Sher Mohammad and Kamal, Shahid, *Introduction to Statistical Theory (7th edition)*. Lahore: Ilmi Kitab Khana, 2002.
3. Siegel, Andrew F., *Practical Business Statistics (5th edition)*. Boston: McGraw Hill, 2003.
4. Newbold, Paul, Carlson, William L. and Thorne, Betty M, *Statistics for Business and Economics (5th edition)*. New Jersey: Prentice Hall, 2002.
5. Keller, Gerald and Warrack, Brian, *Statistics for Management and Economics (5th edition)*. Boston: Duxbury Thomson Learning, 2000.

Additional Readings:

1. Berenson, Mark L., Levine, David M. and Krehbiel, Timothy C., *Basic Business Statistics: Concepts and Applications (9th edition)*. New Jersey: Prentice Hall, 2004.
2. Barron, Michael M., *Statistics for Economics Accounting and Business Studies (Latest Edition)*, New York, Prentice Hall.
3. Carlson, William L. and Thorne, Betty, *Applied Statistical Methods for Business Economics and Social Sciences (Latest edition)*. New Jersey: Prentice Hall.
4. Moore, David S., *The Basic Practice of Statistics (2nd edition)*. New York: Freeman, 2000.

ISLAMIC ECONOMICS

Note: The instructor concerned may assign additional and latest literature on the subject matter. The references provided at the end of the course are just helping literature. Students must consult additional literature on each topic.

- Topic 1: Introduction: Islamic Economics**
- i) Nature, and Importance of Islamic Economics. Islamic Economics Versus Economics of Secular Economy and Mixed Economic System.
 - ii) Brief Introduction of Basic Values of Islam; Taqva, Halal and Haram, Justice, Benevolence, Equality, Brotherhood and Cooperation as Determinants of Economic Behaviour and Policies.
- Topic 2: Major Economic Thoughts: Contribution of Scholars**
Contribution of some Earlier Muslim Scholars in the Development of Islamic Economics (Imam Abu Yousuf, Imam Abu Ubaid Al Qasim,, Ibn-e-Khaldoon, Imam Ibn-e-Taimiah, Shah Waliullah Dehlvi, Baqar-al-Sadar).
- Topic 3: Islamic Economic System**
Silent features of Islamic Economic System; objectives, Economic Freedom, Property and Ownership Rights. The Concept of Equality and Efficiency. The Relative Importance of Capital and Labour. Priority to Basic Needs. Concepts of Ownerships and Implication. Welfare and income Distribution.
Comparison of Islamic Economic System with Capitalism and Socialism, with respect to above cited principles / values of Islam.
- Topic 4: Microeconomics in Islamic Framework**
The Consumer Behaviour in Islam. Utility, Moderation, optional Consumption Behaviour.
Organization of Production and Behavioural Theories of Firms.
Objectives and Behaviour of Firm in Islamic Economy. Business Ethics in Production and Marketing. Hoarding and Gains.
Market Structure – Monopoly and Competition, Resource Allocation in Islamic Environment and Cartels. Concepts of Fair Trade.
Stockists / Wholesales, determination of Prices and Rate of Normal Profit Meeting of Losses. Price Mechanism and State Role in Regulation of Markets.
- Topic 5: The Modes of Financing In Islam**
Modarba and Musharka
Types of Bai. (Bai-Salam, Bai Muajjal, Morabaha.)
Saving and Investment in Islam. Investment of Savings for Gains.
- Topic 6: Distribution in Islamic Economy**
Islamic Stress on Circulating of Wealth. Steps against Concentration of Wealth. Social Justice in Islam. Rights of Labour, Distributive Justice
Use of Land and Other Natural Resources and their Rewards. Role of State in Distribution of Wealth.
- Topic 7: Some Basic Macroeconomic Concepts**
Consumption, saving and Investment Functions in Islamic Environment.
Determents of Islamic Consumption Function, Concept to Help others, Welfare and Religious believes. Zakat and Usher.

- Topic 8: Demand and Supply of Money and Banking**
 Gold Money, Paper Money and Credit Money.
 Western Justification of interest. Islamic Concept of Riba, its Implications and Alternatives.
 Functions of Commercial Banks in Islamic Framework.
 Central Banking and Monetary Policy in Islamic Framework.
 Central Banking and Monetary Policy in Islam.
 Inflation Vs. Design of Capital Market.
 Monetary Policy in an Islamic Framework.
- Topic 9: Zakat, Social Justice and State**
 Meaning of Zakat, Nisab, Introductory Hints about items of Zakat.
 Distributive Role of Zakat and Social Justice. Zakat as a tool in Fiscal Policy.
 Economic Role of Islamic State. Welfare consumption and limits.
 Revenue and Expenditure Items in Modern Islamic States. Beneficiaries of Zakat.
 The Tax Policy of Islam. Nature and Scope of Fiscal Policy in Islamic State (Taxation Policy). Expenditure Principles. Burden of Taxes.
- Topic 10: Economic Planning and Development**
 Concepts and Objectives of Economic Development in Islam. Resources for Development. Nature of Economic Planning in Islam.
- Topic 11: The Islamisation Process In Pakistan**
 The Islamisation of Banks. Implementation of Zakat / Usher in Pakistan.
 A brief Survey of Changes in Economic Structure and Conditions Since the Holy Prophet (regarding Transport / communication, Business Forms, Production of Goods, Money and Banking).
- Topic 12: New Emerging Issues and Challenges**
 Current Situation and Proposed Changes. Islamic View of International Economic Institutions and Modes of International Cooperation. Islamic View of Globalization. Quality Identification of Goods, Merits and Trade. Fair Prices Vs. Market Price etc.

Recommended Books:

1. Islamic Economics: Theory and Practice, A Comparative Study, M.A. Mannan, Cambridge, Hodder and Stoughton, 1986 (or latest ed.)
2. Islamic Economics: Dar A.H & M.. Akram Ilmi Kitab Khana, Lahore (latest ed.)
3. Macro Consumption Function in an Islamic Economic Framework, M. Fahim Khan, International Centre for Research In Islamic Economics, King Abdul Aziz Univ, KSA.
4. Ahmad, Khurshid, (latest edition), Fiscal Policy and Revenue Allocation in Islam, International Islamic University, Islamabad.
5. Anf A.Q. Mannan M.A. (1995), Developing a System of Financial Instruments IRTI, Islamic Development Bank, Jeddah.
6. Badawi, Imam Abu Abaid Al-Qasim Muhammad A. Zaki, Kitab ul Amwal: , Zakat and Social Justice, Islamic Council of Europe, London, 1979.
7. Chapra T M., The Economic System of Islam, University of Karachi, 1991.
8. Chapra, Umer, Monetary Policy in an Islamic Economy, in Money and Banking in Islam, Institute of Policy Studies, Islamabad.
9. Ghazanfar S.M., (2003), Medieval Islamic Economic Thoughts, Routledge Publishers.
10. Khan M. Fahim, (1995), Human Resource Mobilization Through the Profit, Loss Sharing Based Financial System, IRTI, Islamic Development Bank Jeddah.

Scheme of Studies

M.A. Economics

11. Khan, Tariq ullah, (1996), Practice and Performance of Mudarba, A case study of Pakistan, IRTI, Islamic Development Bank, Jeddah.
12. Khurshid, Ahmad, Elimination of Riba: Institute of Policy Studies, Islamabad.
13. Mahdi, M. Ahmad, (1995), Islamic Banking Modes for House Building Finance, IRTI, Islamic Development Bank, Jeddah.
14. Mannan M.A, (1996), Financing Development in Islam, IRTI, Islamic Development Bank, Jeddah.
15. Naqvi Syed Nawab Hyder Ethics and Economics: . Leicester, The Islamic Foundation. 1981.

MAJOR ISSUES IN PAKISTAN ECONOMY

- Topic 1: Overview of Pakistan Economy**
Development Experience, Approaches, Policies and Outcomes. Identification of Issues: The era of 1950's, 1960's, 1970's, 1980's 1990's and 2000's. Structural Change and Sources of Growth. Emergence of Economic Issues, Human Resource Development, Unemployment, Poverty, Income Distribution, Debt, Deficit etc. Growth with limited development in Pakistan.
- Topic 2: Development Planning and Resource Mobilization**
Agricultural Development Policies and Priorities, Major Targets of Develop Plans and Emerging Issues; Neglects and Successes: Mobilization of Domestic Resources; Shortages, Deficits and Role of Foreign Aid. Agricultural Vs. Industrial Development Debate. Agricultural Adequacy.
- Topic 3: Agriculture and Industrial Development: Emerging Issues**
Pattern of Agricultural and Industrial Development, Land Reforms and Its Impacts, the Role of Green Revolution and its Impacts: Present Status. Agricultural Price Policy and Income Tax. Sectoral Terms of Trade.
Industrial Development Policies and Strategies. Development of Large and Small Industries. Value Added: Manufacturing Goods Vs. Primary Goods Production. Agriculture Vs. Industry: Development Debate.
- Topic 4: Sectoral Development, Employment Pattern and Unemployment**
Sectoral Priorities and Development Issues. Human Resource Development and Emerging Issues: Population Growth, Labor Force Participation Rate and Employment Pattern, Unemployment and Underemployment, Forecasting Manpower Needs and Employment. Strategies to combat unemployment. Criteria to Measure Unemployment / Underemployment: Time Criterion, Productivity Criterion and New Index of Unemployment: Application to Pakistan and Empirical Evidences. Good Governness, Social Action Plan and its Impact. Role of Institution in Development. Social Sectors development Vs. High Return Sectors: Growth trade off.
- Topic 5: International Debt and Dependency**
Concepts of Foreign Aid and Debt. Borrowing Vs. Domestic Reserve Mobilization (failure). Size of Foreign Debt, Debt Saving and its Impacts. Strategies to combat with High Debt: Saving Policy, Foreign Trade Promotion, Cutting non-development Expenditures, Rescheduling and its Impacts. Debt Management in Pakistan and Its Impacts. Debt Modeling and Future Implications.
- Topic 6: Poverty and Income Distribution**
Pattern of Income Distribution: Rural and Urban. Definitions and Approaches to Measure Poverty: Income Approach, Expenditure Approach, Basic Needs Approach, Poverty of Participatory Index (POPI). How to Combat Poverty; Growth Strategy, Basic Needs, Labor Intensive Investment: Education / Training etc. and Social Action Plan (SAP) , its Role and Critical Review, Evasion of Policies / Strategies to Combat Poverty and Improving Income Distribution: Critical Evaluation. Neglect of Human Resource Development. Child Labor. Factors Productivity Issues.

Topic 7: Inflation, Foreign Trade Deficit and Emerging Issues
Sources of Inflation in Pakistan. Policies to Combat Inflation and their Impacts. Trade Performance, Instability and its Impacts. Policies to Combat Deficit and Trade Instability. WTO and Its Impacts. Reforms and Further Needs. Expected Impacts of WTO and Challenges. Terms of Trade Issues, Market Access and Health Related Rates.

Recommended Books:

1. Aslam M., *Perspective on Development Planning In Pakistan*, Allied Book Centre, Lahore, 2001-2002.
 2. Chaudhary M. Aslam and Ahmad Eatraz: *Globalization, WTO and Trade Liberalization in Pakistan*, FerozSons, Lahore (2004).
 3. Chaudhary M. Aslam, *Human Resource Development and Management in Pakistan*, Ferozsons, Lahore (1989).
 4. Ishrat Hussain, *Pakistan: The Economy at the Cross Roads – Past Policies and Present Imperatives*, Oxford Univ. Press, Karachi, 1988.
 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. ----- *Human Development In South Asia, Annual Report*.
 8. Saeed, Khawaja Amjad, *The Economy of Pakistan*, Karachi: Oxford University Press, 2004.
 9. Zaidi, Akbar, (1999), *Issues in Pakistan Economy*, Oxford Univ., Press, Karachi.
 10. *World Development Reports*, World Bank.
- (Note: Teacher(s) must assign latest research papers pertaining to each topic)

INTERNATIONAL TRADE THEORY

A) International Trade Theory

- Topic 1. Importance and Bases of Trade**
 Why Study International Economics? The Changing World and Interdependence: Basis of Trade, Gains from Trade. Absolute Advantage, Comparative Advantage, Overview of Comparative Advantage and Pattern of Trade. Offer Curves and Free Trade Equilibrium. Disagreements on Free Trade: Overview of Emergency of International Trade Issues. The Elasticity of Exports Demand and Balance of Payment. Substitution and Income Effects, Impacts of Rise in Exports Demand.
- Topic 2. Growth and Trade**
 International Trade and Shift in Production Function, Immerizing Growth, Output Growth and Terms of Trade (T.O.T) / Deterioration: Uniform Growth at given T.O.T. The Transfer Problem: Marshall Plan and Transfers, Transfer of Resources: Neutral Case.
- Topic 3. Technology and Factor Endowment**
 Ricardian Trade Model, World Production and Gains. Comparative Cost and Trade Pattern. National and World Gains from Trade. International Wage differentials and Productivity. Technical Progress and International Gains. WTO and Gains from Technical Progress: Impacts on Prices. Equilibrium Production and Consumption: Non-traded and Tradeables, Costs, Marginal Physical Product and Production Possibilities. Production Possibilities with Diminishing Returns, Increasing Opportunity Cost. Free Trade and Income Distribution, Relative Demand, Supply and Pattern of Trade. Dutch Disease and its application.
- Topic 4. Factor Endowment and Heckscher – Ohlin Theory**
 Output and Factors Rewards in 2*2 Model. Factor Intensity Comparison. Heckscher- Ohlin (H.O) Model, The Role of Demand, Factor's Prices and Commodity Prices, Factor Price Equalization, and Factor Intensity Reversal. Newly Industrializing Countries (NIC's) and Footloose Production Process. NIC's and H.O Theorem. The Product Cycle, Critical Analysis of Traditional Trade Theories. Rypecksy Theorem and its critical review.
- Topic 5. Markets, Cartels and International Trade**
 Monopoly and Import Competition, Export Opportunities. Product Differentiation and Monopolistic Competition. Dumping / Discrimination and WTO, Competitiveness and Market Share, Gains from Migration. WTO and Factor's Movements and the Commodity Movement.
 Multinationals Firms and Foreign Direct Investment, Transfer of Capital, Technology, Skill and other Gains, Transfer of Resources and Transfer Problem.
- Topic 6. Tariff, Quota and Trade Policies**
 Tariff and Small Country: Effects of Tariff, Price and Demand for Imports, Welfare impacts. Impacts of Tariff on Government Revenue, T.O.T Production and Welfare. Impact of Tariff on Domestic and World Welfare. The Optimal Tariff. Tariff and Distribution of Income. Brief Introduction of Tariff and WTO Laws, Tariff and Second Best Choice, Subsidies and Quota, Voluntary Quota, Growth with Protection vs. Free Trade Gains and WTO.

Managed Trade, Quantitative Restrictions, Voluntary Export Restrictions and Their Impacts. Trade Diversion and Preferential Arrangements. WTO: Injury, Anti-dumping Duties, Tariff and B.O.P Support. Success and Failure of WTO Agenda.

B) International Monetary Economics and Finance

- Topic 7. Foreign Exchange Market and Exchange Rate Determination**
 Foreign Exchange Rates (F.E.R): What it represents? Real, Nominal and Effective Rates. Determinants of Foreign Exchange Rate. Efficient F.E.R Market. Dynamic Theory of Interest and Exchange Rate. The Theory of Spot Exchange Rate Determination. Capital Flow and Speculations. Forward Exchange Market, Interest Arbitrage, Interest Parity Theory, Speculators, Hedgers and Traders, Forward Exchange Rate Policy.
- Topic 8. Purchasing Power Parity, Exchange Rates and Balance of Payments (B.O.P)**
 Purchasing Power Parity (PPP): Non-Trade Goods, Balance of Payment Effect. Test of Exchange Rate Instability. Impacts of F.E.R. Rate Instability. B.O.P: Income Absorption Approach to B.O.P. Elasticities of Exports and Imports and Impact on B.O.P. The Marshall- Lerner Conditions. Monetary Approach to B.O.P. Monetarist Critique to the Keynesian Closed Economy Model. B.O.P. Effects of Stabilization Policies. Empirical Tests of Monetary Approach to the B.O.P. WTO and B.O.P Support. Adjustment with Short-run capital Flow. Methods dealing with undesired Short-run Capital Flow.
- Topic 9. Open Economy: Monetary and Fiscal Policy**
 Monetary and Fiscal Policies: Internal and External Balance. Monetary and Fiscal Policy with Fixed Exchange Rates. Problems of Small Country: Fixed Exchange Rate, Free Floating Exchange Rate, Managed Exchange Rate and Critical Review of The Fiscal – Monetary Mix Models. Fiscal Policy and Temporary Payment Imbalances. Monetary Policy and Permanent Payments Imbalances, A Random Walk Model of Payment Imbalances. Critical Review of the Modern Theory and Adjustment Mechanism.
- Topic 10. International Institution: Trade, Capital and B.O.P.**
 Introduction of International Institutions, Role and Major Activities of IMF. IMF Credit Facilities. Loan Mechanism, Value of SDRs. The Optimum Quantity of Reserves, Optimum Interest Rate. Euro-Dollar, Dollar Exchange and Impacts. Role of IMF in B.O.P Support and Stabilization.
- Topic 11. International Movements of Factors and Welfare: Impacts / Issues**
 Facts on International Capital Flow: ASEAN Crisis and Role of International Institution and Criticism. Motive for Capital Movement: Return and Risk Diversification. Why disagreement on International Movement of Labour? Welfare Impacts of Labour Movements. Factors of Production and Price Equalization Issues. Losses of National Sovereignty. Can Developing Countries Compete and Gain from Trade: Terms of Trade due to Demand Pattern and its Impacts. What Counts for wage Differential Between Primary Goods Producer and Value Added Goods Producer, Competitiveness Issue. WTO: GATT and Emergency of WTO. Why necessary to Join WTO? WTO: Expected Impacts on Trade, Liberalization and B.O.P; Special Status of Developing Countries and Net Food Importing Countries. Protections under WTO Rules. Are Free Trade

Gains more than Restricted Trade? Gains for whom; how much and how long?
Centre-Periphery Theory.

WTO Rules: Sanitary, Phytosanitary, Dumping, Anti-Dumping etc Rules and
Emerging New Issues and Their Impacts.

Topic 12.**Major Contemporary International Economic Issues:**

WTO: GATT and Emergency of WTO. Why necessary to Join WTO? WTO:
Major Trade Rules and Their Expected Impacts on Trade, B.O.P Deficit. WTO
and Fair Trade / Free Trade. Free Trade will it be? Issue of "Are Free Trade
Gains more than Restricted Trade"? Emerging Regional Trading, Blocks,
Special Preference and their Impacts. Issues relating to the Contributions of
International Financial Institutions and Their Evaluations. Is there need to
Reform International Institutions?

Monetary Integration and Their Impacts. Terms of Trade Issue. International
Debt Problem, Growth and Competitiveness. Issues of Developing Countries:
Level of Development, Competitiveness and Trade Stability: World Income
Distribution and Free Trade.

Recommended Books:

1. *Caves Richard, E., and Jones Ronald W., World Trade and Payments: An Introduction, Latest Editions. Little, Brown and Company, Boston, Toronto.*
2. *Chacholiades, Miltiades, International Trade Theory and Policy (Latest Edition). McGraw Hill Book Company, New York, London.*
3. *Donomick Sal Vatore B., International Economics (Latest Edition), Prentice Hall.*
4. *Grubel Herbert C., International Economics, (Latest Edition) Richard D. Irwin Inc., Homewood, Illinois.*
5. *Peter Holinder & Thomas A., Pugel., International Economics. 9th Edition 1996.*
6. *Sodersten B. and Geoffry Read., (1994). International Economics, MacMillan Press Ltd.*
7. *The Global Competitiveness, Report 1999, World Economic Forum, Oxford University Press, Oxford, New York.*
8. *World Bank. World Development Report, 1986. Oxford University Press.*

Additional Readings:

1. Baldwin Robert L. and Richardson David J., (1986). International Trade and Finance, Little Brown and Company, Boston, Toronto.
2. Moran Theodore H., (1985). Multinational Corporations: The Political Economy of Foreign Direct Investment. *Lexington Books. Toronto, Massachusetts.*
3. *Krugman and Obstfeld, International Economics: Theory and Policy, Addison Willey (1998).*

ECONOMETRICS: THEORY AND APPLICATIONS

- Topic 1: Introduction**
Definition and scope of econometrics, Econometric models vs. Statistical models
Ingredients of econometric modeling
Specification, estimation, verification or evaluation and forecasting.
- Topic 2: The Classical Linear Regression Model**
- (a) **The Simple Linear Regression Model (SLRM)**
Estimation of SLRM by Ordinary Least Squares (OLS)
Interpretation of Estimated Coefficients and their Economic Meanings.
- (b) **The Multiple Linear Regression Model (MLRM)**
Estimation of MLR model by OLS and its assumptions
Interpretation of estimated coefficients and their economic meanings,
Computation of elasticities and standardized coefficients
Using R^2 as a measure of 'Goodness of Fit' and some problems with its use.
- (c) **The General Linear Regression Model (GLRM)**
Estimation of GLRM by OLS through Matrix Approach
Var-Cov matrix of estimated coefficients.
- (d) **Evaluating an Estimated Linear Regression Model**
Testing the significance of individual coefficients.
Testing the significance of the model as a whole.
- Topic : 3 Multicollinearity**
What is Multicollinearity? Distinction between perfect Multicollinearity and less than perfect Multicollinearity (Multicollinearity problem). Consequences of Multicollinearity problem, methods for detection of Multicollinearity problem. Remedial measures for Multicollinearity problem.
- Topic: 4 Heteroskedasticity**
What is Heteroskedasticity and what are its causes? Consequences of Heteroskedasticity for OLS estimation. Methods for detection of Heteroskedasticity. Remedial measures for Heteroskedasticity.
- Topic: 5 Autocorrelation**
What is Autocorrelation and its Causes? Consequences of Autocorrelation for OLS estimation. Methods for detection of Autocorrelation. Remedial measures for Autocorrelation.
- Topic 6: Forecasting with a Single Equation Regression Model**
What is forecasting and what are its various types? Important features of a good forecast. Variance of unconditional forecast error.
Variance of conditional forecast error. Measures for evaluating the forecasting power of a model.
- Topic 7: Errors in Variables, Time as a Variable, Dummy Variables, Grouped Data, Lagged and Distributed-Lag Variables**
Errors in variables. Time as a variable. Dummy variables. Estimation from grouped data. Exogenous lagged variables. Endogenous lagged variables.
Methods of estimation of lagged models.

- Topic 8: Identification**
The problems of identification. Implications of the identification state of a model. Formal rules for identification. Identifying restrictions. Tests for identifying restrictions. Identification and Multicollinearity.
- Topic 9: Simultaneous Equations Models**
Why Simultaneous Equation Models? Various Types of simultaneous equation Models. The identification problem. Checking the identification state of a model or of a particular equation in the model by Order Condition, bogus equation and reduced form approaches. Identification and methods of estimation.
- Topic 10: Consistent Estimation of Parameters of Simultaneous Equations Models**
Indirect Least Square Estimation. Two-stage Least Squares Estimation. Instrumental variables method of estimation.
- Topic 11: Varying Coefficient Models:**
Causes of Coefficient Variation. Randomly Varying Coefficient Models. Systematically Varying Coefficient Models.
- Topic 12: Time Series Econometrics**
ARIMA Models. Comparison of forecasts based on ARIMA and Regression Models. Unit Roots and Co-integration. Dummy Trap and its detection.

Recommended Books:

1. Gujarati, D. Basic Econometrics, 3rd Edition, McGraw Hill, 1993
2. Intrilligator Econometric Model, Techniques and Applications, N. J. Printice Hall, 1978.
3. Johnston, J. Econometric Models, McGraw Hill, 1984
4. Koutsoyiannis, A. Theory of Econometrics, McMillan, 1978
5. Maddala, J.S. Econometrics, McGraw Hill, New York, 1978
6. Wonnacot, R.J. Econometrics, John Wiley, New York & Wonnacot, E.
7. Madnani, G.M.K Introduction to Econometrics Principles and Applications, (Latest Edition)
8. Pindyck & Econometric Models & Economic Forecasts, 3rd
9. Rubinfeld Edition, McGraw Hill Inc. 1992.
10. Maddala, J. & Kim Unit Roots, Co-integration and Structural Change, Cambridge University Press, 1998.
11. Griffiths, Judge, The Theory and Practice of Econometrics, John Willey and Sons, Latest edition.

Research Articles:

1. Abadir (2002) Notation in Econometrics: a proposal for a standard. *Econometric Journal*, Vol. 5, issue 1, pages 76-96.
2. Abadir and Jan R. Magnum (1993) OLS Bias in a Nonstationary Autogression, *Econometric Theory*, Vol. 9, issue 1, pages 81-93.
3. Don Andrews (2003). A Bias-Reduced Log-Periodogram Regression Estimator for the Long Run, Memory Parameter, *Econometrica*, 71, (2), 675-712.
4. Gunnar, Bardsen, (1999), *Economic theory and econometric dynamics in modeling wages and prices in the United Kingdom*, *Empirical Economics*, 24, (3), 483-507.
5. Joshua, Angrist, (2001), *Estimation of Limited Dependent Variable Models with Dummy Endogenous Regressors: Simple strategies for Empirical practice*. *Journal of Business and Economic Statistics*, 19, (1), 2-16.
6. Luc, Bauwens, (1994), *Estimating End Use Demand: A Bayesian Approach*. *Journal of Business and Economic Statistics*, 12, (2), 221-31.
7. Manuel, Arellano, (1992), *Female Labour Supply and On-the -Job Search: An Empirical Model Estimated Using Complementary Data Sets*. *Review of Economic Studies*, 59, (3), 537-59.
8. Stephen, Roy, Bonal, (1991), *Some Tests of specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equation*. *Review of Economic Studies*, 58 (2), 277-97.

DEVELOPMENT ECONOMICS: THEORY AND POLICY

Note: Students are expected to study latest editions of the recommended books. At least two research papers pertaining to each topic must be comprehended. Each topic must be prepared and analyzed critically. Any aspect of the topics may be asked in the examination. The course content provides a guideline. Students must prepare critical review of topics.

Part: A Theoretical Foundations and Sector Specific Issues:

Topic: 1 Scope and New Developments

Definitions: Economic Development and Growth, Identification of Development variables. Scope and Significance of Development Economics. Characteristics of LDC's. Measurement of Economic Development and Growth. Per Capita Income approach, Quality of Life Index / HDI etc. Historical overview of world development and emerging major issues pertaining to Less Developed Countries (LDC's). Why the whole world is not developed?

Topic: 2 Major Theories of Development

Classical and Neo-classical Theories, Adam Smith and Competitive Capitalism, Vicious Circle of Poverty, Stages of Economic Growth, Balanced and Unbalanced Growth, Big Push Theory. Dependency Theory, Structuralist's View Point. Endogenous Growth Theory: New growth Theory. Income Convergence/ Divergence, New Growth Theory. Market Friendly Approach.

Topic: 3 Agriculture and Industry

Agriculture vs. Industry: Development Debate. Lewis' Model of surplus Labor. Rains' Fei Model and its critical review. Transforming Agriculture, Underemployment problem. Role of Agriculture: Market for Industrial Output, Provision of Input, food, Complementarity, productivity growth. Terms of Trade Issue and Subsidies, etc. and Competitiveness. Land Holdings, Green Revolution and its Performance. Need for Industrialization. Industrialization and its financing mechanism. Problem of Sectoral Dualism. Why Green Revolution? The Spread of Green Revolution in Pakistan and its Status / Contributions.

Topic: 4 Population, Education and Human Capital

Demographic Transition, Human Resources as a source of growth and their contributions. Investment in education and returns. Models of Employment & Unemployment: Time Criterion, Productivity Criterion and New Index etc., and Employment generation Strategies/Techniques.

Part B: International Development Issues and Debates

Topic: 5 International Debt, Aid / Assistance

Why international borrowing? Two Gap Model, Aid commitments and disbursement. Sources of borrowing. Debt Cycle Theory/Stages. Debt Burden: Debt Servicing, Debt Laffer Curve, Debt buy back etc., Latin American Debt Crises, ASEAN Crises, Debt Problem of LDC's and South Asia, Debt Overhang and threat to growth. Policies to combat debt problem: Forecasting debt and solution for debt burden, saving mobilization/Domestic resource mobilization, Debt rescheduling etc. Debt Modeling and Forecasting Future Implication.

Topic: 6 WTO, Liberalization and International Trade

Trade vs. Aid. Liberalization of Trade and its impacts/gains etc., Foreign Exchange Constraints and Balance of Payment deficit. Role of GATT and its Failure. WTO and LDC's. Trade Instability, Distribution of gains from Trade liberalization. Regional Trade Associations (RTA's): their role and contributions. Basis for trade and benefits: Gains from Trade: Static and Dynamic Gains. Comparative Advantage, Revealed Comparative Advantage and Competitiveness. Trade as an engine of growth. Product Cycle. Determinants of exports growth. Transfer of Technology: Sources & Need. Technology Centered Development and Appropriate technology issue.

Topic: 7 Transnational Corporations (TNC'S), FDI and Development

Transnational Corporations (TNC's): Objectives, Role and Contributions, Long term cost of TNC's. Transfer of Technology: Ways and Means. Global integrated production system: TNC's and Globalization, Foreign Direct Investment (FDI) and Its Determinants/Role. Foreign Direct Investment (FDI) and TNC's. Flow of FDI and its contributions.

Topic: 8 Poverty and Income Distribution

Definitions and Measurement of Poverty/Poverty Line. Poverty concepts/definitions. Absolute Poverty, Relative Poverty, Income approach, Expenditure approach, Basic needs approach, Poverty of Opportunities Index (POPI) and Calorie-based approach etc. Poverty Indicators. Poverty by socio-economic groups. Sources, impacts and policies to combat poverty. Strategies and tools to combat poverty. Growth and Income Inequality in the world. Empirical evidences on poverty. Redistribution with growth. How to combat income inequality. Basic Needs, Social Action Programs and Poverty alleviation.

Topic: 9 Environment and Development

Model of Environment and Economic Activity. Market Based Approach and Externalities. Deforestation and Renewable Resources, Measuring environment values. Deforestation and Macroeconomic Environment. Industrialization and its environmental cost, Use of Pesticides and Environmental Impacts. Natural resources degradation. Cost of Pollutions/Environmental degradation. International awareness about environment, production and need for Reforms. Economic thoughts and Environment. International Agencies: Environmental concerns and programs. Urbanization and environmental issues. Sustained development, Ecology and economic progress.

Topic: 10 Growth Models

Harrod-Domer Model, Technical Change and growth Model, Kaldor's Model of Distribution, Joan Robinson's Model of capital accumulation, Model of Steady State Growth. Saving-Investment and Golden Rules.

Recommended Books:

1. Balasubramanyam V. and Lall, S. (1992, eds), *Current Issues in Development Economics*. McMillan, London.
2. Chaudhary M. Aslam and Hamid, A., (1999). *Human Resource Development and Management in Pakistan*. Ferozsons, Lahore.
3. Chenery H. B. and Srinivasen. *Hand Book of Development Economics,* vol. I & II*, Amsterdam (1988, eds.). North Holland.
4. Cypher J. M. and Dietz James L., (2004), *The Process of Economic Development*, Routledge. Tayl or Francis Group, London/New York.

Scheme of Studies

M.A. Economics

5. Ghatak Subarta, (2003), *Introduction to Development Economics*, Routledge, Taylor and Francis Group, London/New York.
6. Herrick B. and Kindleberger C., (latest eds.). *Economic Development*. McMillan, New York.
7. Hirshman A. O., (1960). *Strategy of Economic Development*, Yale University, Press.
8. Jones H. G., *An Introduction to Modern Theories of Economic Growth*, (Latest Edition), McGraw Hills.
9. Mahboob-ul-Haq Center for Human Development (MHCHD). *Human Development in South Asia*, Annual Reports, Islamabad.
10. ----- (1999), *A Profile of Poverty In Pakistan*, (In Collaboration with UNDP).
11. Meier Gerald M., *Leading Issues in Economic Development*, (Latest Issue), Oxford University Press.
12. Thirlwall, A.P., (2003), *Growth and Development*, With Special Reference to Developing Economies 7th edition, Palgrave Publisher.
13. Todaro M. P., *Economic Development in the third World*. Latest Edition, Heinemann, London.
14. UNDP, *Human Development Reports*, Annual Reports.
15. Van Den Berg H., (2001), *Economic Growth and Development*, * McGraw Hills.
16. William, Easterly, *Growth without Development*, A Case Study of Pakistan, World Bank.
17. World Bank, *World Development Reports*, Annual reports, 1986, 1987, 1990, 1991, 1992, 1994, 1995, 1998/99, 2000/2001 and 2004.
18. Yotopolous Pan A. and Nugent Jeffery B., *Economics of Development*, Empirical Investigation (Latest Issue). Harper and Row Publishers, London/New York.

RESEARCH METHODOLOGY

Importance of Research Methodologies. Research techniques in social sciences and their limitations. Theory and basis of research. Empirical and theoretical research. Stages of research process. Identification of problem/issue, data, theory and estimation and related problems. Thinking, Field Research Designs; the process of field research, Exploratory Research, Casual Inference. Methods of communication in survey. Vision survey and communication techniques. Art of asking questions and getting quality information. Preparation of Research Proposal Questionnaire, Sample Design; the Nature of Sampling, Measurement and Scaling; Measurement, 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, Observation, Experimentation and Simulations; Experimentation and Simulation. Choice of Research Technique, 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. Vision Survey: Interpretation of Replies. Data Presentation and Analysis: Elements of Analysis, Data Preparation, Special Data Problem, Tabulation, Data Presentation, and Data Analysis. Report Writing; the Questions and analysis of Research Proposal. Organization of Research Paper. How to format and Write country Research Report. Executive summary and abstract of a report. Conclusion and its basis. Evaluation of Research Work. The Research Report, Research Report Format, Writing and editing of research Report.

Recommended Books:

1. Birchenhall C. and Grout P., (latest edition), *Mathematics for Modern Economics*, Herifaq Publishers, New Delhi.
2. Holt, Rinehart and Winston, *Holt-Sounders Japan Ltd. Tokyo (Latest edition)*.
3. Johnson, Glenew *Research Methodology for Economists: Philosophy and Practice*, McMillan Publishing Co. (Latest edition).
4. Kidder Louise H., *Research Methods in Social Relations*.
5. Lambert, P., (1985) *Advanced Mathematics for Economists. Static and Dynamic Optimization*, Basil Black Well.
6. Neuman W. Lawrence, (1997) *Social Research Methods, Qualitative and Quantitative Approaches*, Allyn and Bacon; Boston.
7. Sckaran *Business Research Methods*
8. Uma, Sekarn, (1992), *Research Methods for Business. A Skill Building Approach*, John Willey & Sons, Inc.
9. Young Pauline V., (latest edition), *Scientific Social Survey and Research*, Prentice Hall Inc.
10. Zikmund William, G., (1994), *Business Research Methods*, The drydem Press.

ADVANCED MATHEMATICAL ECONOMICS

- Topic 1: Complex Number and Circular Functions**
Imaginary and Complex Numbers. Complex Roots. Circular Functions. Properties of Sine & Cosine functions. Euler Relations. Alternative Representation of Complex Numbers.
- Topic 2: Integral Calculus**
Dynamics and Integration. The Nature of Indefinite Integrals, Basic Rules of Integrations & Rules of Operation. The Substitution Rule and the Rule of Integration by Parts. Definite Integrals. Major Properties of Definite Integral. A Definite Integral as an Area Under a Curve. Improper Integrals. Economic Applications of Integrals – Finding Total Functions from Marginal Functions, Investment & Capital Formation, Present Value of Cash Flow. Present Value of a Perpetual Flow, Domar Growth Model.
- Topic 3: Differential Equations: Continuous Time: First Order Linear Differential Equations**
Meaning and Definition; Homogenous & non-Homogenous Cases. Solution of First Order Linear Differential Equation with Constant Coefficient & Constant Term and its Verification. Economic Application: Dynamics of Market Price. Solution and its Verification of First Order Differential Equation with Variable Coefficient and Variable Term. Exact Differential Equation, its Solution and Verification. Non-linear Differential Equations of the First Order and First Degree. Bernoulli Equation, Separable Variables. The Qualitative Graphic Approach. Concept of Phase Diagram, types of Time Paths and their Dynamic Stability. Economic Application: Solow Growth Model.
- Topic 4: Differential Equations: Higher Order Differential Equations**
Solution and Verification of Second order Linear Differential Equations with Constant Coefficient and Constant term-Distinct Real Roots, Repeated Real Roots and Complex Root Cases. Dynamic Stability of Equilibrium. Economic Applications. A Market Model with Price Expectations. The Interaction of Inflation and Unemployment. Solution of Higher order Differential Equations with Constant Coefficient and Constant Term. Convergence and the Routh Theorem.
- Topic 5: Difference Equations; Discrete Time: First Order Difference Equations**
Solution and its Verification of First Order Difference Equations. The Dynamic Stability of Equilibrium. Economic Applications – The Cobweb Model, A Market Model with Inventory. Nonlinear Difference Equations – The Qualitative-Graphic Approach. Phase Diagrams Types of Time Path. A Market with a Price Ceiling.
- Topic 6: Higher Order Difference Equations**
Solution and Verification of Second-Order Linear Difference Equations with Constant Coefficients and Constant Term-Distinct Real Roots, Repeated Real Roots and Complex Roots cases. The Convergence of the Time Path. Economic Applications, Samuelson Multiplier-Acceleration Interaction Model. Inflation and Unemployment in Discrete Time. Higher Order Linear Difference Equations

and their Solutions. Convergence and Schur Theorem Again. The Solution of Simultaneous Differential Equations.

- Topic 7: Non-Linear Programming**
 The Nature of Non Linear Programming Non-Linearities in Economics. Kuhn Tucker Condition. Interpretation of Kuhn Tucker Condition. Kuhn Tucker Sufficiency Theorem: Concave Programming. Arrow Enthoven Sufficiency Theorem: Quasiconcave Programming. Economic Application-Utility Maximization, Least Cost Combination. Solving a Nonlinear Program via the Kuhn-Tucker Conditions.

Recommended Books:

1. Chiang A.C. *Fundamental Methods of Mathematical Economics McGraw Hill (3rd Edition) 1984.*
2. Dowling Edward T. *Mathematics for Economics Schaum Series, 1981.*
3. Glass Colin J. *An introduction to Mathematical Methods in Economics McGraw Hill.*
4. Haung David, S., *Introduction to the set of Mathematics in Economic Analysis Graphical Approach, Simplex Method, Economic Application of linear Programming N-Y John Wiley and Sons, latest edition.*
5. Hoy M., Livermois J, Rees R, Stengos T., *Mathematic for Economics, 1996. AddisonOWesley Publishers limited.*
6. Weber E. Jean, *Mathematical Analysis, Business and Economic Application (latest edition), Harper and Row Publishers, New York.*
7. Yamene, Taro, *Mathematics for Economists, Prentice Hall, latest edition.*

Additional Readings:

1. Allen R.G.D., *Mathematical Economics, London, Macmillan English Language Book Society.*
2. Edey & Peacock, *National Income and Social Accounting London, Hutzchinson University Library, 3rd Edition.*

MONETARY THEORY AND POLICY

- Topic 1: **Introduction and Development of Monetary Mechanism**
Evolution of Money and Payment System. Definition of Money
Function of Money & Measurement of Money. Demand for Money & Supply of Money. Definitions of Money, M1, M2, M3, L etc.
- Topic 2: **Role of Money in the Economy**
Debate on neutrality and non-neutrality of Money. Classical Dichotomy and Keynesian Integration of Nominal and Real Sectors. Role of Money in the IS-LM Framework. Money in Aggregate Demand & Aggregate Supply Analysis.
Keynesian Vs. Monetarist views of Equilibrium Output, Employment and Prices.
- Topic 3: **Demand for Money**
Quantity Theory of Money. Transaction Theories of Demand for Money. Portfolio Theories of Demand for Money. Baumol – Tobin Model of Cash Management. Friedman's Restatement of Quantity Theory of Money:
Empirical Evidence on the Demand for Money.
- Topic 4: **The Money Supply Process**
Monetary Base, Keynesian Liquidity Preference Framework, Friedman's Modern Quantity Theory of Money. Multiple Deposit Creation: Introducing the Money Supply Process. Determinants of the Money Supply: Exogenous and Endogenous. Understanding Movements in the Monetary Base, Money Multiplier. Velocity of Money and its variability. Explaining Depositor and Bank Behaviour: the Complete Money Supply Model. Regressive Expectation Model.
- Topic 5: **The Conduct of Monetary Policy: Central Bank**
Structure and Functions of Central Bank. Independence of Central Bank and its role in Economic Growth. Tool of Central Bank for Money Control. Monetary Base. The Conduct of Monetary Policy: Goals and Targets. Tools of Monetary Policy: Three Major Tools of Monetary Policy. Required Reserve Ratio, Discount Window Loans and Open Market Operation. Advantages and Disadvantages and Impact Analysis of each Policy Tool. Central Bank as a lender of last Resort. Financial Intermediaries. Monetization of Public Debt. Ineffectiveness of Stabilization Policies. Targeting interest rate and inflation.
- Topic 6: **Money & Interest Rates**
Determinants of interest rates. Kinds of Interest Rates. The Behavior of Interest Rates. Understanding & Measuring the Interest Rates.
Real & Nominal Interest Rates, Theories of Interest Rate Determination.
The Risk and Term Structure of Interest Rates. The Distinction Between Interest Rates and Returns. Maturity & Volatility of Bond Returns.
Portfolio Choice: the Theory of Asset Demand.
- Topic 7: **Money and Inflation**
What is Inflation & Causes of Inflation? Demand – pull Inflation, Cost – push Inflation, Stagflation & Hyperinflation. Inflation as a Monetary Phenomenon
The Philips Curve and Accelerating Inflation. Inflation in Pakistan: Sources and Managing Policies. Sources of Inflation in Pakistan: Spiracle Evidences. Policies to Combat Inflation in Pakistan.

Topic 8: Monetary Policy in International Framework
Money Demand and Empirical Evidences. Money in Growth Models. Inflationary Spiral. Current Issues in Monetary and Financial Sector Reforms. Conduct of Monetary Policy in Fixed and Flexible Exchange Rates. Perfect Mobility of Capital and Money Control, Effectiveness of Policy. Impact of Reserves on B.O.P and Exchange Rates. Targeting exchange rate. Managed Exchange Rate System and Monetary Policy. Targeting Inflation. Exchange Rate and Balance of Payment.

Recommended Books:

1. Bennett T. McCallum, (1989), *Monetary Economics, Theory and Policy*, McMillan.
2. Fredric S. Mishkin, (1995), *Financial Markets and Money*, Harper & Row Publishers.
3. Laider, David E.W (1996), *The Demand for Money: Theories, Evidence and Problems (Fourth edition)*, Harper & Row, Publishers, New York.
4. Miller, R. L. and David VanHose, (2001), *Money, Banking & Financial Markets*. South Western, Singapore.
5. Mishkin, Frederic S., (2001), *The Economics of Money, Banking and Financial Markets*. (Sixth edition). Addison Wesley, New York.
6. Vanish K., *Monetary Theory*, (2000), Vikas Publishing House, Delhi.
7. Patinkin Don, *Money, Interest and Prices*, Harper and Row Publishers, (Latest Edition).

PUBLIC SECTOR ECONOMICS

- Topic 1: **Introduction and Role of Public Sector**
The Economic Functions and Public Goods: Allocation of Resources, Redistribution of Income and Wealth and Stabilization. Pricing Public Goods.
- Topic 2: **The Theory of Public Goods**
Fiscal Principles and Concepts: The Traditional Principle of Tax Neutrality is Expended Principle of Fiscal Neutrality. Exhaustive Vs. Non-Exhaustive Public 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; Income Elasticity of a Tax Integral Fiscal Non-Neutrality. Tax Efforts and Tax Collection Performance in Pakistan.
- Topic 3: **Public Revenue and Taxes**
The Economic Case for the Public Sector to Allocate Resources: Market Imperfections, Decreasing Costs of Production, Public Goods and Externalities. Pricing Decreasing Cost Industry.
- Topic 4: **The Theory of Public Goods**
Public and Private Goods, Pure Public Goods, Should Public Sector be Produced Vs. Private Goods? Semi Public Goods, Merit Goods, Free Rider Problem, Externalities and Public Policy.
- Topic 5: **Distributional Equity in Taxation**
The Ability to pay and Economic benefits (received), Cannons of Taxation, The Optional Income Tax Approach. Optimum Tax and Revenue Collection.
- Topic 6: **Tax Structure of Pakistan**
Various Kinds of Taxes and their Objectives / Performance in Pakistan. Income and Sales Taxes, Excise and Custom Duties, Export and Import Taxes, Tax Reforms in Pakistan and their Impacts.
- Topic 7: **Tax Shifting and Incidence**
General Equilibrium Vs. Partial Equilibrium: Tax Incidence Analysis. Determinants of Tax Shifting under Partial Equilibrium Conditions. Impacts of Tax Shifting on Price.
- Topic 8: **Fiscal Policy: Public Expenditure and Budget**
Theories of Public Expenditures, Wagner's Law, Efforts of Public Expenditures. Components of Public Expenditures in Pakistan, Sources and Direction of the Growth of Public Expenditures. Kinds of Budget, Surplus, Deficit and Balanced: Preparation of Budget Cycle in Pakistan, Development and Non-Development Budget and its Patterns. Zero Based Budget, Planning, Programming Budgeting System.
- Topic 9: **Inter – Government Fiscal Relations**
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.

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Topic 10: Development Finance

Fiscal Policy in a Developing Economy, Tax Structure of LDCs, Role of Deficit Financing. Fiscal Policy in Pakistan and its Impacts.

Topic 11: Public Debt

Need and Burden of Public Debt: Domestic and Foreign. Debt Modeling and Forecasting Debt Needs. Optional Debt. Debt Modeling and Offer Curve, Problem of Debt Servicing, Structure of Public Debt in Pakistan: Internal and External Debt Problem of Pakistan. Ricardian View of Public Debt.

Recommended Books:

1. Bernard P. Herber, (1999), *Modern Public Finance*.
2. Chellieah R.J. (Latest eds.), *Fiscal Policy in Less Developed countries*.
3. David N. Hyman, (1996), *Public Finance, A Contemporary Application of ---*. Harcourt Brace College Publishers.
4. Govt. of Pakistan, *Economic Survey, Yearly Publication, Ministry of Finance, Economic Advisory Wing, Islamabad*.
5. Rosen and Harvey S., (1999), *Public Finance, McGraw Hill*.
6. Musgrave R.A. and B.P., *Musgrave (Latest Eds.), Public Finance in Theory and Practice, McGraw Hill*.
7. Stiglitz E., (2000), *Economics of The Public Sector, W. W. Norton & Co.*

MANAGERIAL ECONOMICS

- Topic 1: Nature, Scope and Overview of Managerial Economics**
The Nature and Scope of Managerial Economics. The Managerial decision making process. Theory of the firm. Profit maximization, Cost Minimization. Economic optimization. Economic relations of variables. The Incremental concept in Economic Analysis. Demand, Supply and Equilibrium.
- Topic 2: Demand Analysis, Estimation and Forecasting**
The Basis for Demand. The Market Demand function. Demand sensitivity analysis: Elasticity, Price Elasticity of Demand with Managerial applications. Income Elasticity of Demand with Managerial applications. Application of Regression Analysis: Demand estimation. Demand forecasting.
- Topic 3: Production and Cost Analysis**
Production functions. Total, Marginal and Average Product. Revenue and Cost in Production. Production function estimation. Productivity Measurement. Homogenous and Homothetic Production Function. Short run and long run cost curves. Learning curves and application. Cost-value-profit analysis. Cost estimation.
- Topic 4: Linear Programming**
Production planning for a single product Production planning for a multiple products. Graphic specification and solution. Simplex method of solution. The dual in linear programming. Shadow prices in linear programming.
- Topic 5: Decision Making Under Risk and Uncertainty**
Introduction. Risk Analysis of Decision Alternatives. Adjustment for Risk in Decision Making. The Expected Value Criterion. The Standard Deviation Criterion. The Coefficient of Variation Criterion. The Certainty Equivalent Criterion. The Maxima and Maximax Criterion. The Decision Tree and Joint Probabilities. Optimal decision Strategy. Limit Pricing and Preventing entry.
- Topic 6: Pricing Analysis and Decisions**
A Review of Market Structures and Basic Pricing Models. Perfect Competition. Monopoly. Monopolistic Competition. Oligopoly. Selected Pricing Models. Marginalist Pricing. Mark up pricing. New Product Pricing. Oligopoly Model. Contestable Markets. Pricing Strategies for Firms and Market Power. Monopolistic Competition. Price Discrimination, Monoposony and Price Product.
- Topic 7: A Critique of Traditional Theory of the Firm**
Full Cost Pricing Model. Mark-up Pricing Model. Problem fro Marginal Price-formula. Limit Pricing Models.
- Topic 8: Managerial Theories and Models of the Firm**
Baumol's Theory of Sales Revenue Maximization. Marris's Model of Managerial Enterprise. Williamson's Model of Managerial Discretion Topics, Behavioral Model by Cyert and March.

- Topic 9: Public Sector Production and Pricing of Goods.**
Public and Private Goods and their pricing mechanism. Decreasing cost Industry and pricing. Externalities and Market Pricing issues. Rent seeking and control. Government Policy and International Trade, tariff and pricing. Import Competitiveness and tax, International pricing Techniques / Strategies.
- Topic 10: Capital Budgeting and Investment**
Pre-requisites of Capital Budgeting. Investment Criteria and Decisions. Cash flow estimation, Internal Rate of Return, Profitability-Index Criterion and other criterion. Optimal Capital Budget.

Recommended Books:

1. Douglas, E. J., *Managerial Economics*, Prentice Hall, (1990).
2. Hirschey, M. *Managerial Economics*, (10th edition) U.S.A. Thomson South-Western, (2003).
3. Hirschey, M. and J.L. Pappas; *Fundamentals of Managerial Economics*, Dryden Press, (1998).
4. Kent P, and P Young., *Managerial Economics: Economic Tools for Today's Decision Makers.*, (4th Edition) Pearson (2003).
5. Keat, P., and P., Young, *Managerial Economics*, MacMillan, (1992).
6. Koutsoyiannis, A., *Modern Microeconomics*, MacMillan, (1979).
7. Mansfield E., (1998), *Managerial Economics, Theory, Application and Cases*. W. W. Norton & co.
8. Michael R., Baye, (2000), *Managerial Economics and Business Strategy*, McGraw Hills.
9. Pappas, James, Brigham Eugene F and Hirschey Mark., (latest edition), *Managerial Economics*, Dryden Press, Chicago.
10. Salvatore, D. *Managerial Economics*, McGraw Hill, (2001).
11. Thomas, Maurice., *Managerial Economics: In a Global Economy* (7th Edition) New York: McGraw Hills, (2002).

Additional Readings:

1. Goering, Gregory E. "Managerial Style and the Strategic Choice of Executive Incentives." *Managerial & Decision Economics* 17 (January/February (1996)), 71-82.
2. Chevalier, Judith A., and Scharfstein, David S. "Capital-market Imperfections and Countercyclical Markups: Theory and Evidence." *American Economic Review* 86 (September; 1996): 703-725.
3. Kehoe, Michael R. "Quality Uncertainty and Price in Monopoly Markets." *Journal of Industrial Economics* 44 (March 1996): 25-32.
4. Swaney, James A. "Comparative Risk Analysis: Limitations and Opportunities." *Journal of Economic Issues* 30 (June 1996): 463-473.
5. De Fraja, Gianni. "Entrepreneur or Manager: Who Runs the Firm?" *Journal of industrial Economics* 44 (March 1996): 89-98.
6. Chambers, Marcus J., and Bailey, Roy E. "A Theory of Commodity Price Fluctuations." *Journal of Political Economy* 104 (October 1996): 924-957.
7. Hackl, Peter, and Westlund, Anders H. "Demand for International Telecommunication: Time-varying Price Elasticity." *Journal of Econometrics* 70 (January 1996): 243-260.
8. Islam, Towhidul, and Meade, Nigel. "Forecasting the Development of the Market for Business Telephones in the UK." *Journal of the Operational Research Society* 47 (July 1996): 906-918.
9. Gardner, Everett S., and Ivancevich, John M. "Productivity in the US and and Japan." *Interfaces* 24 (November-December 1994): 66-78.

ENVIRONMENTAL ECONOMICS

- Topic 1: Introduction and Awareness**
What is Economics of Environment. Historical Framework for Environmental Protection. Participants in the Environmental Debate. The Biosphere and its inhabitants, Ecological State of the World. Issues of Global Concern. International Awareness: Developed and Developing World and Environmental Concerns. Kyoto Protocol and Developed Countries.
- Topic 2: The Economy and Environment**
Natural Resource Economics: Exhaustible and Renewable. Balance Growth and Consumption of Natural Resources. Emission, Air Quality, Damages and Types of Pollutants / Pollution. Short Run and Long Run Choices. Pollution Control in the Economy: Mechanism and Responsibilities of Government.
- Topic 3: Environmental Degradation and Policy**
Externalities and Environment. Cost of Environment and Quality. Nature of externalities, Property Rights and Environmental Control. Government Intervention Policies to Internalize Environmental Degradation.
- Topic 4: Analytical Tools: An Environment**
Supply and Demand Issue: Cost of Controlling Environment Benefit – Cost and its Estimation. Willingness to Pay. Technology and Equi Marginal Principles, Marginal Cost and Supply, Economic Efficiency and Markets. Equity and Social Efficiency.
- Topic 5: The Economics of Environmental Quality**
Pollution and Impacts on Human Life, quality of life and Environment Quality, General Models of Pollution Control. Emission Reduction and Equi Marginal Principle. Long Run Sustainability Through Pricing Mechanism.
- Topic 6: Environmental Analysis**
Impact Analysis: Cost Effective Analysis, Benefit, Cost Analysis of Projects. Risk Analysis, Measuring Damages Directly; Pigorian Analysis, The Coase Theorem.
- Topic 7: Environmental Policy Analysis**
Environment and Criterias for Policy Analysis, Centralized Policies, Command and Control Strategy. Incentive Based Strategies, Emission Taxes and Subsidies. Transferable discharge Permits. Political Theories and Environmental Conflict.
- Topic 8: Institutions, Cooperation and Issues**
Dilemma of Waste and Clean up, Energy Politics; Petroleum, Natural Gas and Minerals. Population Issue and Co-operation. Common Space and Cooperation Managing Water Resources: Over utilization, Salinity and Water Logging and Spread of Diseases. Use of Pesticides in Agriculture and Impacts on Human and Animals.

Air Quality and Environmental health Concerns. Regulating Pollution and Protection of global commons. Endangered Specious, Factors and Biodiversity.

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Topic 9: Environment and Pakistan

Emergence of Environment Issue in Pakistan, Industrial Waste, Urban Waste and Agricultural Issues Related to Pesticides use, Salinity and Water Logging. Urban Environmental Issues. Public and Private Efforts to Improve Environment Quality and Impacts.

Air pollution in Pakistan. Public Policies and Awareness to Control Pollution. Environmental Policy and Strategy in Pakistan.

Topic 10: International Environmental Concerns and Issues

The Economics of Global Warming: Paradigms for Decision Making, Environmental Policies and Control of Pollution. Kyoto – Protocol and Issues. International Environmental Agreements. UN and Environmental Cooperation. International Response to Food, Health and Education. Impacts of Awareness Policy.

Recommended Books:

1. Adamson David, I.B., *Developing The World*, Tauris & Co. (1990).
2. Baker Steve, *Environmental Economics*, (2003). Dominant Publisher & Distributors, New Delhi.
3. Barry C. Field, *Environmental Economics, An Introduction*, McGraw Hill (Latest Edition).
4. Baumal William, *Economics, Environmental Policy & Quality of Life*, Prentice Hall (1979).
5. McKer David, *Energy: The Environmental Public Policy, Issues for the 1990's*, Praeger, New York (1991).
6. Switzer J.U. and Gary Brynew, *Environmental Politics*, St. Martins, (1998).
7. The World Bank, *Maintaining The Environment*, (1995).
8. Timothy Dyal and Dong McEachern, *Environment and Politics*, Routledge (1999).
9. Hussen A. (2003), *Principles of Environmental Economics*, Routledge Publishers.

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Logging. Urban
Environment

Water Pollution.

Decision Making,
Ethical and Issues.
Cooperation.
Environmental Awareness

Delhi.

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er, New York

AGRICULTURAL ECONOMICS

- Topic 1: Introduction and Importance of Agriculture**
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 etc.
- Topic 2: Structure and Characteristics of Agriculture in LDCs**
Traditional Agriculture and Productivity. Access to non-labor resources. The Framing Environment: Natural Hazards and Economic Uncertainties. The Food problem. Farm Size and Productivity. Farm Size in Pakistan and Productivity Commercial Farms. Impact of Agricultural Reforms on Farm Size.
- Topic 3: Role of Agriculture in Economic Development**
A framework of Analysis. Product Contribution, Market Contribution, Factor Contribution. Foreign Exchange Contribution. Agriculture vs. Industry Debate of Development.
- Topic 4: Theory of Rent and the Concept of 'Surplus'**
Introduction. 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. Tenuorial Status in Pakistan. Agricultural productivity in Pakistan and use of inputs.
- Topic 5: Agriculture in Dualistic Development Models**
Introduction. The Lewis Model. The Ranis-Fei(FR) Model. The Jorgenson Model. Kelley, Williamson, Cheetham Model. Criticism : Dual Economy Models. Agricultural Adequacy; Mellor's Model.
- Topic 6: Resource Use Efficiency and Technical Change in Peasant Agriculture**
Efficiency of Resource Utilization. Technological Change in Agriculture. Generation of new Agricultural Technology. Factor-biased Technological Change and its Distributional Consequences. Agricultural Technical Change and Agricultural Employment: Empirical Evidences. Agricultural Resources and Technical Change in LDCs: with Special Reference to Pakistan.
- Topic 7: Supply Response**
Introduction. 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.

- Topic 8: Institutional Constraints and Remedial Policies**
 Inequitable Landownership and Land Reform. Capital and Finance in Underdeveloped Agriculture. Marketing Imperfections and Marketing Policy in Pakistan. Measures to Improve Marketing System in Pakistan. Support Price Policy in Pakistan. Determinants of support prices. Impacts of support prices.
- Topic 9: Population and Food Supplies**
 The Classical Model. Contra-Malthusian Model. Ecological Disequilibrium. Synthesis of Population and Food Supply Theories. Malnutrition in Developing Countries like Pakistan and Remedial Manners. Choice of Planning Strategy for Agriculture Development, Agricultural Project Planning.
- Topic 10: Agriculture and International Trade**
 Main Features of Trade in Agricultural Goods. Trade Policies in Developed Countries and their Impacts. Welfare Gains from Price Stabilization. Terms of Trade Issue.
 A Survey of the Literature. Some Measurement Problems. Prebisch's Hypothesis. The Agricultural Self-Sufficiency Argument in Developing Countries like Pakistan. Cartels in Commodity Trade and Welfare Gains and Losses. Integrated Commodity Agreement (ICA) Schemes. The Compensating Financing Schemes in Pakistan. Impact of Policy Measures on Primary Product Trade of Pakistan. Few agricultural goods production and exports to few markets ; Issues and problems of instability in exports. WTO and its implications for Pakistan's agriculture, with special reference to quality, dumping, subsidies, State Trading, Sanitary and Phytosanitary rules and marketing rules etc. Subsidies and Developed Countries.

Recommended Books:

1. Brown, Lester, *The Social Impact of Green Revolution*, New York, The Greogic Endowment for International Peace, 1971.
2. Capstick Margret. *The Economics of Agriculture*, London George Allen Unwin Ltd., latest edition.
3. Chaudhary M. Aslam, (1989), *Agricultural Development and Public Policies*, Izhar Sons, Lahore.
4. Ghatak S., and Ingersent K., *Agriculture and Economic Development*, (Latest Edition), Harvester Press.
5. Johnston, Bruce, F & Fellir Kily. *Agricultural and Structural Transformation, Economic Strategies in late Developing Countries*.
6. Khan Mahmood-ul-Hassan. *The Economics of Green Revolution in Pakistan*, New York, Published 1975.
7. Karamat, A., *Political Economy of Rural Development in Pakistan*, Lahore Vanguard Book House, 1981.
8. Shafi M., (1995), *Pricing of Farm Produce in Pakistan, Objectives, Practices, and Experiences*. Print Associates International, Islamabad.
9. Thorbake Erike. *The Role of Agriculture in Economic Development*, New York, Columbia University Press (1971).
10. Upton Marlin, *Agricultural Production and Resource Use*.
11. Colman D. and Young T., *Principals of Agricultural Economics, Markets and Prices in Less Developed Countries*, (1989), Cambridge University Press.
12. Yujiro Hayami and Vernon W. Ruttan, *Agricultural Development*, John Hopking University Press, London. (Latest edition).

HUMAN RESOURCE DEVELOPMENT AND MANAGEMENT

- Topic 1: Introduction and Issues**
Brief Review of Population Growth and Resource Position: Food, Nutrition etc. Role of Human Resources in Human Development, Neglect of Human Resources and Impact on Development. Optimum Population Growth. Forecast of population and Implications.
- Topic 2: Human Resources and Economic Growth**
Human Development Profiles of Nations: Human Resource Development and Case Study of Japan and ASEAN. Human Development Paradigm: Human Capital Model and Empirical Evidences; Missing People, Health / Birth of Human. Development Index and Implications, Sources of Economic Growth, Role of Human Capital.
- Topic 3: Investment in Human Capital and Returns**
Demand for Education, Social demand, Private demand, Cost Rationale and Demand for Higher Education. Investment in Measurement of Returns to Investment in Education, Human quality and Returns. On Job Training: Cost and Benefits. Returns to Education and its Implications. Determinants of Earnings. Higher Education and Return. Investment in Human Development in Pakistan. Present conditions of Human Resources in Pakistan. Constraints to Human Development in Pakistan. Policies to Develop Human Resources in Pakistan.
- Topic 4: Mobility and Migration of Human**
Migration Decision: Determinants, Migration as Investment, Migration Models. Labor Migration from Pakistan, Earnings / Remittance and Impacts. Migration and Development in Pakistan.
- Topic 5: Women and Human Development**
Determinants of Women's Time Allocation, Female Labor Force Participation. Development of Women; Education and Training. Social Conditions in Less Developed Countries and Earnings of Women. Status of women as development agent in Pakistan. Policies to improve women conditions in Pakistan.
- Topic 6: Health, Nutrition and Human Development**
Poverty and Basic Needs: Impacts on Human Capital. Nutrition Health and Education, Determinants of Child Mortality. Infant Mortality in the World: Empirical Evidences and Trends. Nutrition Demand: Income and Schooling of Women. Health Policies and Human Capital. Provision of Basic Needs in Pakistan. Productivity and Income Distribution.
- Topic 7: Employment, Unemployment and Manpower Forecasting**
Labor market structure. Manpower requirements, Determinants of Employment and Unemployment. Models of Employment. Employment and Unemployment pattern in Developed and Underdeveloped Countries. Criteria to Measure Unemployment, Under-employment. International Definitions, Time Criterion and Productivity Criterion, New Index etc. Unemployment Criteria and Empirical Evidences Pertaining to Pakistan. Extent of unemployment and under-employment in Pakistan. Labor market information system in Pakistan. Forecasting Labor Force and Population, with reference to Pakistan. The Growth of human Resources / Population and Challenges of Employment and Income

Generation. Employment policies and strategies, Sector specific employment Elasticities. Skill development and market demand. Structural change, Industrial demand and adjustment. Improving industrial employment.

Topic 8: International Dialogue: Development Cooperation
 Environment and Human Health, Human Development Potential in the Islamic World. International Institutions and Human Development, Political Diversions, Aid and its Diversions. Liberalization of WTO and Labor Migration Issue. Moral Concepts, World Poverty and International Community / Institutions. New Global Vision: World Income Distribution and Human Development.

Recommended Books:

1. Ansley J. Coal & Edgat M. Hower; *Population Growth and Economic Development in low income Countries, (Latest Edition), Oxford University Press.*
2. Behrnan Jere R, *Human Resource Led Development? (1990). Review of Issues and Evidence, ILO-ARTEP, New Delhi.*
3. Behrnan Jere R. and Schneider, Ryan; *An International Perspective on Pakistan Human Capital Investment in the Last Quarter Century. The Pakistan Development Review, Vol. 32, No.1, Spring 1993, pp 1-68.*
4. Chaudhary M. Aslam and Hamid A., (1999), *Human Development and Management in Pakistan, Ferozsons, Lahore.*
5. Harbinson and Myers, C.A., *Educational Manpower and Economic Growth (Latest Edition), McGraw Hill.*
6. Harbison, Fredrick and Myers, Charles A., (Latest edition), *Education, Manpower and Economic Growth, Strategies of Human Resources Development, McGraw Hills.*
7. *Human Development Report (1991).*
8. Khawaja Saeed Amjad, *HRM-HRD: Personnel Management, Lahore: Institute of Business Management, 2004.*
9. Kemal A.R., *Human Resource Development in the Labor Surplus Economies – An Integrated Approach, in Proceedings Report and Background Papers of the Regional Workshop on Human Resource Development and Utilization: Issues and Policies, Pakistan Manpower Institute, Islamabad (1989).*
10. Mahboob-ul-Haq, *Reflections on Human Development (1998), Oxford, India.*
11. Mincer Jacob, *Family Migration Decision, Journal of Political Economy Vol. 86 #5 (1978).*
12. Rashid, Amjad; *Human Resource Planning, The Asian Experience, ILO, ARTEP, New Delhi (1987).*
13. Schultz T.W., *Investment in Human Capital, American Economic Review, Vol. 51 (March 1961).*
14. T.S. Ashok, I; *The Export of Manpower from Pakistan to the Middle East, 1975-85, World Development, Vol. 10#4, (1982).*
15. Thamarajakshi R., (1988), *Human Resource Policy and Economic Development: Selected Country Studies: Asian Development Bank, Manila, Philippines (1990).*
16. Victor L. Urquidi and Saul T. Rayes, *Human Resources, Employment and Development, MacMillan Press (1983).*
17. Werner, J. m; Desimone L., Randy; Harris Randy L., David M; (2001), *Human Resource Development, Thomson Publisher.*

(Note: Students are advised to consult relevant latest research journals and literature for further study and to update each topic).

ECONOMIC PRINCIPLES, STRATEGIES AND TECHNIQUES OF MARKETING

- Topic 1: Introduction to Marketing**
Key Marketing Concepts, Scope of Marketing, Evolution of Marketing, Importance of Marketing, Marketing as an Exchange Process, Marketing as a Demand Management Tool. Marketing Cost and Price Relationship.
- Topic 2: Supply Chain / Value Chain Management**
Primary and Secondary activities in Supply Chain / Value Chain. Identify and Maximizing linkages within the Various Activities.
- Topic 3: Strategic Marketing Planning Process**
The SMP Process. The BCG Matrix, GE Nine Cell Model and Porter's Generic Strategies Models of SMP.
- Topic 4: International Marketing: The Target Markets & Marketing Mix**
Identify Target Markets. Forecasting Market Demand, The Target Market Strategies, Key Elements of Marketing Mix, Local Vs. International Marketing, International Marketing Strategy and Planning, Organizational Structure of International Markets, Exporting, Contracting, International Corporations and their Marketing Techniques. The Promotional Program, the Key Components of Promotional Mix.
- Topic 5: Product Management**
The Consumer and Industrial Products. Product Planning and Development, Product Adoption and Diffusion, Product Life Cycle, Product Positioning and Differentiation, Product Mix Strategies.
- Topic 6: Marketing Cost, Finance and Cost Management**
Analysis of Cost, Marketing Cost for Products, Reasons for Higher Cost and Methods to Minimize. Abuses and Advantages of Marketing Cost Debate over Legitimacy Solution, Need for Marketing Finance. Kinds of Marketing. Financing. Significance of Prices, Methods of Price Determination. Key Pricing Strategies. Price wars.
- Topic 7: Distribution Management and Market Intermediaries**
Designing Distribution Networks. Channels Conflict and Channel Power. Physical Distribution. The Wholesale Market, Retail Marketing.
- Topic 8: Consumer's and Buyer's Behaviours**
Consumer Motive to Marketing, Models of Consumer, Buyer Behaviour, Influences on Buyer's Behaviour, Industrial Buyer Behaviour. Decision making behaviour.
- Topic 9: Managing Marketing in Various Forms of Competition**
Industrial Analysis, Industry and Market Concepts of Competition, Strategies of Leaders, Challengers, Followers and Nichers. Global Marketing, Industrial Marketing, Services Marketing, Agricultural Marketing.
- Topic 10: Managing Total Marketing Effort**
Key Organizations for Marketing, Market Control, Marketing Audit.

- Topic 11: Segmentation and Targeting**
Significance, Advantages of Market Segmentation, Segmentation Variables, Segmenting Industrial Markets, Effectives of Segmentation, Market Targeting, Strategic Opinion.
- Topic 12: Pricing Strategies and Sales**
Theories of Pricing and Value. Supply and Demand Model, Mark-up Pricing, Dumping, Economic Choice, Pricing and Market Orientation, Market Share, Cost based Pricing, Customer based Pricing Methods, Competitor based Pricing war.
- Short-run and Long-run Pricing, Predicting Future Conditions Forecasting Sales and difference Pricing Policies, Data Analysis and Sales Forecasting, Survey and Price Analysis, Profit and other Motives for Pricing.

Recommended 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.
3. "Marketing" 4th Edition by Evans Burman, McMillan Publishing Co., latest edition.
4. "Principles of Marketing" by R.D. Tousley, Eugene Clark, latest edition.
5. "The Fundamentals of Marketing" 11th Edition by Etzel, Walker & Stanton, McGraw Hill (or latest edition).
6. "The Marketing Management" Millennium Edition by Philip Kotler, Prentice Hall, latest edition.

Reference Journals for Latest Research:

1. *European Journal of Marketing.*
2. *Havard Business Review*
3. *Journal of Business Strategy*
4. *Journal of Marketing Management.*