

# NATIONAL UNIVERSITY



## Syllabus Department of Economics

**One Year Preliminary to Master's Course**  
Effective from the Session: 2016-2017

# National University

Subject: Economics

Syllabus for One-Year Preliminary to Master's Course

Effective from the Session: 2016-2017

<b>Paper Code</b>	<b>Paper Title</b>	<b>Credits</b>
412201	Microeconomics	4
412203	Macroeconomics	4
412205	Basic Mathematics	4
412207	Basic Statistics	4
412209	Economic History of UK, USA, China, Japan and Russia	4
412211	Development Economics	4
412213	Industrial Economics	4
412215	Environmental and Resource Economics	4
412216	Viva-Voce	4
	<b>Total =</b>	<b>36</b>

## Detailed Syllabus

<b>Paper Code</b>	412201	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Microeconomics</b>			

### Paper Objective

Upon completion of this Paper, students will know the structure and underlying assumptions of the standard models used in microeconomic analysis and how the models' predictions change when the standard assumptions are relaxed. They will be able to identify and solve constrained optimization problems, to demonstrate facility with the calculus-based methods used to analyze microeconomic problems, to explain in non-technical terms the fundamental economic intuition associated with the standard models.

### Paper Contents

**1. Theory of Consumer Behavior (Consumer preferences, Budget constraints and consumer choices):** Utility (Cardinal and Ordinal Utility, Marginal utility and law of diminishing marginal utility), Axioms of consumer preferences (completeness, Reflexivity, Transitivity and Non-saturation), Indifference Curve (Properties, Indifference maps, Different shapes of indifference curve, Corner solutions, Utility functions), Budget equation and Budget line, Consumer's Equilibrium, Rotation and shift in budget line and changes in consumer equilibrium, Price effect, Income effect and Substitution effect, Separation of price effect into income and substitution effect for normal and inferior goods- Hicks and Slutsky's methods, Price consumption curve and derivation of demand curve, Income consumption curve and derivation of Engel curve, Marshallian or ordinary demand curve, Compensating or Hicksian demand curve, Derivation of Marshallian and Hicksian demand functions from the constraint utility maximization and cost minimization problems, Law of equi-marginal utility or utility per taka spent and consumer equilibrium. Application of indifference curve, Consumer surplus, Gains from trade and excess burden of tax etc., Superiority of indifference curve analysis and marginal utility analysis, Revealed preference theory.

**2. Theory of Production (Production technology, cost constraints and Input choices):** Production function, shortrun vs longrun, Production with one variable, average and marginal products, Law of diminishing returns, Stages of production, Iso-quants (Properties, Iso-quant maps, Input flexibility, different shapes of iso-quant), returns to scale, cost of production, opportunity cost, sunk costs, Fixed costs and variable costs, Fixed vs sunk costs, Marginal and average costs, user cost of capital, cost minimizing input choice, and Techniques of Production, Iso-cost line, Producer's equilibrium, Changes in Iso-cost line, Expansion path and longrun costs, Derivation of input demand and cost curve, ridge-lines and optimum economic region of production, Economies and diseconomies of scale, Economies and diseconomies of scope, Homogeneous, non-homogeneous and linear homogeneous production functions, some special production functions, Cobb-Douglas and CES production functions, Euler's theorem adding up problem,

**3. Perfect and Imperfect Competition:** a) Short and long run equilibrium of firm and industry under perfect competition, Economic and normal profits, Profit maximization, Derivation of short and long run supply curve, elasticity of market supply, Economic rent, Returns to scale and shapes of the long run supply curve, Perfect competition, economic efficiency and welfare. b)

Monopoly market, TR, AR, MR and elasticity of demand, Monopolist's Short and long run output decisions, rule of thumb for pricing, shift in demand, Effect of a tax, multiplant firm, monopoly power, Measuring monopoly power, sources of monopoly power, Elasticity of market demand, social costs of monopoly power, rent seeking, Price regulation, Supply curve under monopoly, Natural monopoly, Bilateral monopoly, Price discriminating monopoly, 1st, 2nd and 3rd degree price discrimination, Condition for profitable price discrimination, Monopoly and perfect competition compared, Monopsony, Monopoly and monopsony compared, Monopsonist's price and output decisions, Sources of monopsony power, (c) Oligopoly and Monopolistic competition.

**4. Factor market:** Factor market Vs. Product market, Demand for factor/ Derived demand, Basic concepts relating factor market, VMP MRP, AFC, MFC, Relationship between VMP and MRP under perfect competition and monopoly in the product market, Relationship between AFC and MFC under perfect competition and monopsony in the factor market, Employer's Equilibrium/determination of factor price and optimum use of factors and different structure of product and factor market, Bilateral monopoly again, Derivation of short and long run factors demand curve with or without internal effect, Backward bending labor supply curve, Labor exploitation, trade union.

**5. Input – Output Analysis: The structural nature of input – output table – a hypothetical example.** The assumption of input – output model – the technological matrix – inverting the Leontief matrix solution model – Hawkins – Simon condition for feasible demand. Samuelson's substitution theorem. Open and closed input – output model – indecomposable and decomposable input – output model.

**6. General and Partial Equilibrium:** The concept of equilibrium, Partial and general equilibrium, General equilibrium model, Walras-Cassel model, 2x2x2 Model, Stable and unstable equilibrium, Marshall and Walrasian view, Existence, uniqueness and stability of equilibrium, Comparative differences between general and partial Equilibrium.

**7. Welfare Economics:** Concept of welfare and its determinants, Pareto optimality assumption and marginal conditions, 2x2x2 Model, Pareto optimality under perfect and imperfect competition, Externalities and Pareto optimality, Indivisibility of commodity and Pareto optimality, Public goods and Pareto optimality, Pareto optimality and distribution of wealth, Efficiency Vs. equality, Pareto superior and Pareto non-comparable, Problem of indeterminateness of Pareto optimality, Social welfare function, Characteristics of social welfare indifference curve, Removal of indeterminateness-bliss point, Second best theorem, Arrow's Impossibility theorem, New welfare Economics, The principle of compensation, Kaldor-Hicks Scitovsky's criteria, Scitovsky's Paradox or reversal test, Double criterion, Pareto optimality and compensation principle compared.

#### **Books Recommended:**

1. Koutsoyiannis, Modern Microeconomics.
2. Lipsey, R. Positive Economics, Weidenfeld and Nicholson.
3. Michael Parkin, Microeconomics, (Latest edition), Pearson Education Inc. Latest Edition.
4. N. Gregory Mankiw, Principles of Microeconomics, (4/e), Thomson South-western Printed, 2007
5. Paul A. Samuelson & William D. Nordhaus, Economics, (18/e), Tata McGraw Hill Publishing Company Ltd., 2005.
6. Robert S. Pyndick, Daniel L. Rubinfeld and Prem L. Mehta, Microeconomics, 7th edition.

<b>Paper Code</b>	412203	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Macroeconomics</b>			

### Paper Objective

To introduce students to basic measures of aggregate-level economic performance such as AD, AS, unemployment, the money supply, and to present the major (competing) theories of national income and employment, inflation as well as the policy recommendations to which the alternative theories give rise.

### Paper Content

- 1. An Overview of AD-AS Model:** Factors determining AD and AS; AD curve and AS curve implied by the Classical and Keynesian views;
- 2. Goods Market:** Simple Keynesian income determination model: Mathematical and Graphical; Various concepts of the multiplier: simple and extended; Theory of acceleration.
- 3. Consumption and Investment:** Absolute, Relative, Permanent and Life-cycle Hypothesis; Types of investment; Determinants of investment; PV criterion and MEI; Desired capital stock; Capital stock adjustment; Investment decision-making; TPV, NPV and IRR methods; Investment demand and output growth.
- 4. Money Market:** Quantity theories of money; Demand for money; Types of demand for money; Money supply; Interest rate & money supply; Interaction of demand for and supply of money; Interest rate sensitivity of transaction demand for money; Square root formula of Baumol-Tobin model, Friedman's model.
- 5. IS-LM Model:** Deriving the IS curve from the Goods Market; Deriving the LM curve from the Money Market; Putting IS and LM Together; Simultaneous equilibrium in the goods and money markets; **Deriving the AD curve;** Changes in equilibrium; Monetary and fiscal policy in the IS-LM model; Liquidity trap and crowding out effect
- 6. Labour Market and Aggregate Supply:** Demand for and supply of labour; Expectations and Aggregate Supply (AS); Introduction to formation of expectations; Supply side disturbances; Wage Determination in the labour market: Full Employment, Unemployment and Over Employment Equilibrium; Equilibrium unemployment;
- 7. Macroeconomic Equilibrium:** Putting AD and AS Together; Monetary and fiscal policy in the static model.
- 8. Inflation, Unemployment and Phillips Curve:** Short Run and Long Run

### Book References

1. Rudiger Dornbusch, Stanley Fischer, and Richard Startz. Macroeconomics. New Delhi: McGraw Hill.
2. Richard T Froyen. Macroeconomics: Theories and Policies. New Delhi: Pearson Education.
3. Michael Parkin. Macroeconomics. Addison-Wesley.

<b>Paper Code</b>	412205	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Basic Mathematics</b>			

### **Paper Objectives**

This Paper focuses on the development of understanding of basic concepts and principles of mathematics used in the area of business and economics. The Paper gives ideas of calculus to solve business and economics problems.

### **Paper Contents**

**1. Review of Some Core Concepts:** Nature of Mathematical Economics; Real Number System; Even, Odd, Prime, Composite Numbers; Fractions; Exponents; Variables, Constants and Parameters; Importance of Model Building, etc.

**2. Concepts of Sets:** Some Basic Definitions- Set, Elements, Finite, Infinite, Null, Unique, Equal, Equivalence, Subset, Comparability, Disjoint, Power, Family and Universal Sets; Venn Diagrams; Representation of Set-Basic Operation; Union, Difference and Intersection; De' Morgan's Law; Idempotent Law, Identity Law; Partition of Set.

**3. Elementary Static Analysis:** Meaning of Equilibrium; Partial Equilibrium in Markets; National Income Analysis and its Solution.

**4. Function, limit and Continuity:** Concept of function, classification and type, and their diagrammatic representation, graphs of the function, slope, intercept, graph of linear function, quadratic, cubic function, inverse function, and two variable function. Limit of a function, continuity of a function, exponential function, Rules for Logarithms; Common Logarithms; Calculation of Logarithm of a Number; Natural Logarithm.

**5. Equation System:** Solution of Equations; Simultaneous Equation System; Solution of Simultaneous Equation Systems with Specific Applications to Economic Problems; Inequalities.

**6. Geometry:** Cartesian Co-ordinate System; Distance between Two Points, Straight Line; Application of Linear Equations.

**7. Elementary Differential Calculus:** Derivative, slope of a curvilinear function, differentiation, higher order derivatives, concavity, convexity, curve sketching, inflection point, total derivative, partial derivative, total differential, partial differential, implicit and inverse function rule, differentiation of logarithmic and exponential function.

**8. Optimization:** Optimum value and extreme value, relative extremum values, first order and second order derivatives tests, optimization of multivariable function.

### **Books Recommended**

1. Alpha Chiang. Fundamental Methods of Mathematical Economics. Fourth Edition. McGraw Hill.
2. Edward Dowling. Schaum's Outline to Mathematical Economics. Third Edition. McGraw Hill.

<b>Paper Code</b>	412207	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Basic Statistics</b>			

**Paper Objectives and Outcomes:**

This Paper introduces the use of statistical methods and tools in evaluating data for business and economics decision making. The Paper is designed to explain statistical techniques to decision-making situations & how to interpret the results. Throughout the learning session the students will be able to apply statistical techniques with the help of business and economics data.

**Paper Contents:**

**1. Introduction to Statistics:** Population and Sample; Discrete and Continuous Variables; Random Variables; Statistical Methods; Scope, Importance, and Limitations of Statistics.

**2. Collection and Presentation of Data:** Data Sources; Methods of Collecting Data; Designing a Questionnaire; Types and Principles of Classification; Tabulation of Data; Arranging Data Using the Data Array and the Frequency Distribution; Construction of a Frequency Distribution; Graphical Representation of Quantitative and Qualitative Data (Histogram, Ogive, Pie-chart, Bar Diagram and Frequency Polygon etc.).

**3. Measures of Central Tendency:** Computation, Application, Advantages and Disadvantages of Different Measures of Central Tendency; Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode; Relationship between Mean, Median and Mode.

**4. Measures of Dispersion:** Definition, Importance and Computation, Application of Different Measures of Dispersion (Absolute and Relative)-Range, Quartiles, Percentiles, Inter-Quartile Range, Mean Deviation, Standard Deviation, Variance, and Coefficient of Variation, Properties of Standard Deviation.

**5. Moments, Skewness, and Kurtosis:** Concepts and Measures of Skewness, Moments and Kurtosis; Moments of Group Data; Population Moment.

**6. Correlation and Regression Analysis:** Types of Correlation-Coefficient of Correlation; Limitations of Correlation; Measures of Correlation; Relationship between Correlation and Regression; Definition of Regression; Scatter Diagram; Method of Least Square; Estimating with Regression Line.

**7. Index Number:** Index Number and Three Index Numbers-Price, Quantity and Value Indices; Methods of Constructing Index Numbers-Unweighted Aggregates Index, Weighted Aggregates Index; Shifting Bases of Index Numbers; Issues in Constructing an Index Number.

**Books Recommended:**

1. Prem Mann. Introductory Statistics. Any Late Edition. Wiley
2. Murray Spiegel and Larry Stephens. Schaum's Outline of Statistics. Any Late Edition. McGraw Hill.
3. Paul Newbold, William Carlson and Betty Thorne. Statistics for Business and Economics. Any Late Edition. Prentice Hall.

<b>Paper Code</b>	412209	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Economic History of UK, USA, China, Japan and Russia</b>			

### Paper Objective

This Paper would help to provide wider view of development through teaching the history from the global perspective.

### Paper Contents

- 1. U.K. :** Economic history of pre-industrial Revolution. Industrial Revolution – Causes and consequences, Second world war and its effects on U.K.’s economy. Socialist ideas in economic management – recent changes in Economic Policy.
- 2. U.S.A :** Civil war and consequences. Economic Supremacy from World War I, Big business, Great depression, New Deal – Rise of Monetarism – Economic Role of U.S. in Free World.
- 3. People’s Republic of China :** Chinese Commune System – Land Reform and agricultural development, Attempts towards modernization of economy and industrialization. New thought of liberalization and decontrol of economy.
- 4. Japan :** The Meije Restoration. Japanese small scale industries, Zaibatsu, Industrialization of Japan, Role of State, Banking, Economic reconstruction of Japan after World war II, Japan as a new economic power.
- 5. Russia :** Russian feudal economic structure prior to October revolution; October revolution – New economic policy. The introduction of Five Year Plans; Soviet strategy of Industrialization; lesson to be drawn from the experience of Russian industrialization strategy, Causes of the fail of Soviet socialist economy.

### Books Recommended :

1. Falkner : American Economic History
2. Alien : Economic History of Japan
3. Southgate : Economic History of Great Britain
4. Knowels : Industrial Revolution in U.K.

<b>Paper Code</b>	412211	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Development Economics</b>			

### Paper Objective

The goals of this Paper are for every student to describe the characteristics of and the special challenges facing developing nations, explain alternative theories of economic growth and evaluate their ability to explain the growth experiences of less-developed countries. Discuss the



domestic problems that developing nations face assesses the seriousness of these problems, and evaluate the effectiveness of various policies designed to deal with domestic issues. Appreciate the value of empirical evidence in expanding our knowledge within economics.

**Paper Contents;**

1. **Concepts of Development:** Nature of development economics and its emergence & evolution.
2. **Global Development Mapping:** Growth, poverty, industrialization; Human development; Trade concept of third world; Developing economies; Underdeveloped economies; Least developed economies and backward economies.
3. **Economics of Growth:** Capital, labour and technology; Kuznet’s six characteristics of modern economics growth
4. **Development Models:** Classical, Marx and Schumpeter
5. **Growth Models and Linear Stage Theories:** Harrod-Domar; Neoclassical and endogenous growth theories; Rostow-Lewis model
6. **Growth Strategies:** Big-Push; Balanced and unbalanced growth; Export-led versus substitution strategies
7. **Structuralist Theories of Development**

**Recommended Books:**

1. Michael P Todaro and Stephen C Smith. Economic Development. New Delhi: Prentice Hall
2. Polly Hill. Development Economics on Trial. The Anthropological Case for a Prosecution. Cambridge: Cambridge University Press.
3. Joan Robinson. Aspects of Development and Underdevelopment. Cambridge: Cambridge University Press.
4. M Grillis, D Wight, H Perkins, M Roemer, and DR Snodgrass. Economics of Development.

<b>Paper Code</b>	412213	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Industrial Economics</b>			

**Objective**

This Paper introduces students to the terminology and tools of analysis of industrial organization. In addition, the Paper ‘Industrial Economics’ will provide an overview of the range of specialized topics addressed by the industrial economics literature like growth, profit maximization, optimum size of a firm, industrial concentration, integration, merger, diversification, location etc.

**Paper Contents**

1. **Conceptual Issue:** Importance and Scope of Industrial Economic, Concept of a plan, firm and industry and their interrelationship. Business Organization: a) Private Sector Vs. Public Sector, b) Types of Private Sector Ownership, c) Types of Public Sector Organizations.

2. **Objectives of a firm:** Growth, profit and sales maximization and nature of interrelationships between different objectives. Determinations of optimum size of the firm, Growth rate and cost curve of firm
3. **Measurement of optimum size of a firm:** Stigler's hypothesis and Survivor Technique, Economics of scale and Survivor Technique.
4. **Industrial Concentration:** Types of Concentration: Average concentration, Market concentration. Measurement of Market Concentration, Concentration Curve, Concentration ratio, Lorenz curve, Hirschman HerfinJahl index, Lerner index.
5. **Integration:** Concept and types of integration, Stigler's life cycle hypothesis on vertical integration, Vertical integration and monopoly.
6. **Diversification:** Typology of diversification: Lateral diversification : Convergent lateral diversification, divergent lateral diversification, Diagonal diversification, Conglomerate diversification.
7. **Location:** Weber's theory of least transportation cost, Location of industry and regional development, Growth pole theory of F. Perroux and regional industrial development.

**Books Recommended :**

1. J. S. Bain : Industrial Organization
2. Douglas Needham : Economic Analysis and Industrial Structure.
3. R.R. Birthwal : Industrial Economics
4. E.T. Penrose : The Theory of the Growth of a Firm
5. W. Isard : Location and Space Economy
6. Amarjit Singh & A.N. Sadhu : Industrial Economics
7. D. Needham (eds) : An Introduction to Industrial Economics
8. Report of the Task Force : Bangladesh Development strategies for the 1990`s. Vol Two
9. Azizur Rahman Khan : The Strategy of Development in Bangladesh.

<b>Paper Code</b>	412215	-----	<b>Credits: 4</b>	<b>Class Hours: 120 hrs.</b>
<b>Paper Title:</b>	<b>Environmental and Resource Economics</b>			

**Objective**

Students will be able to apply economic theory to environmental sustainability, to understanding the conflict between market forces and environmental integrity, to develop critical understanding of different ways in which economic decisions, market forces and government policies can affect environment and to develop critical understanding how consumer market and business initiative can lead a way into sustainable environment

**Paper Contents**

1. **The Evolution of Environmental and Resource Economics:** The Approach to the Economic Analysis of Natural Resources and the Environment Economic Paradigms and Environment, Fundamental Features of Economic Approaches to Natural Resource and Environmental Issues.

2. **The Sustainable Economy:** Origin and Concepts of Sustainability and the Issues related to Sustainable Development.
3. **Ethics and Environment:** Ethical Foundations for Environmental Economics, Rationale and Principles of Discounting Environmental Value and A Critique of the Discounting Methods and Principles.
4. **The Efficient and Optimal Use of Environmental Resources:** Property Rights, Common Property Resources and Environmental Resources, Efficiency Issues, Environmental Resources and Markets, Externalities and Public Policies.
5. **Theory of Efficient and Optimum Use of Renewable and Non-Renewable Resources:** Fundamental Principles and Models of Renewable and non-renewable natural Resources.
6. **The Economics of Pollution:** Sources, Types and Levels of Population Problems, Pollution Control Policies and Implications for growth and equity.
7. **Valuing the Environment:** Environmental Demand Theory, Measuring the Costs of Provision, Total Economic Value, Benefits of improving an environmental amenity, Methods: productivity loss, defensive, mitigating, travel cost, hedonic pricing and contingent valuation, Valuation and Policy Relevance.

#### Reading Lists

1. Baumol, W. J. & Oates, W. E, 2000. *The Theory of Environmental Policy*. Cambridge University Press.
2. Field, B. C. and Field, M. K. 2006. *Environmental Economics*. McGraw-Hill/Irwin.
3. James R. Kahn, 2004, *The Economic Approach to Environmental and Natural Resources*. Thomson – Southwestern.
4. Kolstad, C. D. 2010. *Environmental Economics*. Oxford University Press.
5. Nick Hanley, Shogren ,J.F. and White, B. 2007. *Environmental Economics: In Theory and Practice*. Palgrave Macmillan.

<b>Paper Code</b>	412216	-----	<b>Credits: 4</b>
<b>Paper Title:</b>	<b>Viva-Voce</b>		