Microeconomics

Level: Bachelor of Arts
Year: I
Code: Econ. 421

Full Marks: 100
Pass Marks: 40
Teaching Hours: 150

Course Objectives

After completion of this course, students will be able to understand, explain and explore the concepts, tools and methods of micro economics and its applications. This course will lay a strong foundation on microeconomics for further advance level of studies in Economics.

Units	Contents	Hours
I: Introduction	Concept of Economics; Principles of Economics: role of economics in decision making and interaction of people ; way of thinking as an economist; Central Problems of Economics; Methodologies of Economics: Inductive and deductive; Microeconomics: Concept, Types of Microeconomic analysis: positive and normative, static, comparative static and dynamics, short-run and long-run, Goals of microeconomic policy: Efficiency and Equity; Microeconomic Models: Concepts, assumptions and applications.	15
II: Consumer Behaviors	Utility analysis : Concept of cardinal and ordinal utility; Cardinal utility: assumptions, consumer's equilibrium, criticisms Ordinal utility analysis: indifference curve and its properties; Marginal rate of substitution; budget line ; consumer's equilibrium , Income-Consumption curve ; Price-consumption curve ; Price effect, Income effect and substitution effects for normal, inferior and Giffen goods; Decomposition of price effect into income effect and substitution effect (Hicks and Slutsky approach); Derivation of ordinary demand curves;	25
III: Producer Behaviors	Concept of production function; Production with a single variable input- law of variable proportion; Production with two variable inputs; Isoquants; Marginal rate of technical substitution and elasticity of substitution; expansion path and returns to scale; Product transformation curve and its properties ;Producer's equilibrium	25
IV: Cost of Production	Different concepts of costs: Total, marginal and average costs, fixed and variable costs Short run and long run cost curves: Short run and long-run average cost curves; marginal cost curves; economies of scale and cost curves; Shift in cost curves.	15
V: Product Pricing in Competitive Markets	Perfect competition: Concept and features; Short-run and long-run equilibrium in a competitive market Supply curve of firm and industry in short run and long-run; change of technology and the long run supply curve of industry.	10
VI: Product pricing	Monopoly: concept and features; price and output determination	15

in Monopoly	under monopoly in short run and long run, markup pricing. Price discriminating monopolist; degrees of price discrimination; welfare cost of monopoly; multi-plant and bilateral monopolist.	
VII: Product Pricing in Monopolistic Competition	Monopolistic competition: concept and features; Price and output determination under monopolistic competition in short-run and long-run. Excess capacity under monopolistic competition; Monopolistic competition and role of advertising	10
VIII: Employment and Pricing of Input in Competitive Market	Profit Maximization in relation to factor uses; Demand curve for single variable input and several variable inputs; Input supply Determination of equilibrium price of factors and employment; Effect of minimum wage laws on employment	10
IX: Employment and Pricing of Input under Imperfect Competition	Input demand and supply under monopoly and monopsony market; determination of equilibrium price and employment. Minimum wage laws and trade unions; Labor exploitation under monopoly and monopsony	15
X: General Equilibrium and Welfare	Partial and general equilibrium analysis; Efficiency in production, consumption and product-mix Concept of social welfare; compensation criteria; social welfare function	10

References

1. Maddala G.S. and Miller E. (1989). Microeconomics: Theory and Application, 14th Indian Reprint, McGraw Hill Education (India) Private Limited
2. Salvatore D. (2003). Microeconomics: Theory and Applications, Oxford University Press, New Delhi
3. Mankiw G.N. (2012). Principles of Microeconomics 6th Edition, 3rd Indian Reprint, Cengage Learning India Private Limited, New Delhi
4. **Varian H. R. (2010). Int**ermediate Microeconomics: A Modern Approach, W. W. Norton & Company, Inc., 500 Fifth Avenue, New York, N.Y. 10110
5. Koutsoyianis, A. (1979). *Modern Microeconomics.* London, Macmillan.
6. Pindyck, R. Daniel, L. & Mehta, P. L. (2012). *Microeconomics.* 7ed. Pearson Prentice Hall.
7. McConnell CR & S. Brue, (2002). *Economics: Principles, Problems and Policies.* New York, McGraw Hill.
8. Watson, D.S. & Getz, M. (1995). *Price Theory and Its Uses.* Delhi, AITBS.
9. Baumol, W.J. (1978). *Economic Theory and Operations Analysis.* Delhi, Prentice Hall of India.
10. Browning & Browning (1994). *Microeconomic Theory and Applications.* New Delhi, Kalyani Publishers.
11. Lipsey, R.G. & Chrystal KA. (1999). *Principles of Economics.* New York, Oxford University Press.
12. Samuelson, P.A. (1999). *Economics.* London, McGraw Hill International Book Company.
13. Wilson, J.H& Clark, J.R. (1995). *Economics.* New York, McGraw Hill.

Mathematics and Statistics for Economics

Level: Bachelor of Arts
Year: I
Code: Econ. 422

Full Marks: 100
Pass Marks: 40
Teaching Hours: 150

Course Objectives

After the completion of this course, student will be familiarize with basic skills of Mathematics and Statistics so that they will be able to understand and explain quantitative aspects of economic theories. The course will lay foundation for understanding concepts of Mathematical and Statistical methods required for advance study in Economics.

Group - A: Mathematics		Hrs.
Unit - I Review of Fundamentals	Sets, Vectors, Real Number system, Relation and Functions, Limit & Continuity, Logarithms, Permutation and Combination	15
Unit - II Differntiation	Differentiation of function with single variable: Rules of differentiation, Higher order derivatives, Differentiation of function with two or more variables: Partial derivatives, Total differentials, Total derivatives, Homogenous function, and Euler's theorem. Maxima and Minima of a function with one and two variables Economic Applications: Marginal Utility, Marginal revenue, Marginal cost, Elasticity, Partial elasticity, Revenue and Profit Maximization	20
Unit – III Integration and Dynamic Analysis	Indefinite Integrals: Nature of integrals, Basic rules of integration, Rules of operation, Rules involving substitution, Definite integrals, Definite integral as an area under the curve, Economic Applications: Calculation of TR, TU, and TC from MR, MU, and MC, Consumer's and Producer's surplus, First order difference and differential equation with constant coefficient and constant term.	20
Unit - IV Linear Algebra	Matrices: Meaning and types of matrices, Matrix operation: Addition, Subtraction, Multiplication, Transpose of a matrix Determinants: Meaning of determinants, Properties of determinants Rank of a matrix, Inverse of a matrix, Solution of linear equation system up to 3 variables, Cramer's rule.	20
Group - B: Statistics		
Unit - V Review of Central Tendency and Measure of Dispersion	Review of Central Tendency: AM, Median, Mode, HM, GM, Weighted mean, Measure of Dispersion: Range, Mean deviation, Standard deviation, Variance, Coefficient of variation, Lorenz curve, Gini-coefficient, Concept of moments, Kurtosis, Skewness and their measurement by using moments.	10
Unit – VI Probability and Probability Distribution	Basic concept of probability and probability distribution: Concept of probability, Addition and multiplication theorems, Conditional probability, Bayes theorem. Random Variable: Expected value, Discrete probability distribution and continuous density function of single random variable, Mean and Variance. Probability Distribution: Binomial distribution and Normal distribution.	18

Unit – VII Correlation and Regression Analysis	**Correlation Analysis:** Correlation and causation. Types of correlation: positive, negative, partial, multiple measurement of correlation coefficient, Scatter diagram, Karl Pearson's coefficient of correlation, Spearman's rank correlation. Correlation coefficient of bivariate frequency table. **Regression Analysis:** Meaning, Difference between correlation and regression, Simple linear regression model, Least square method, Two lines of regression (Y on X and X on Y).	20
Unit – VIII Analysis of Time Series	Meaning and importance of time series, Components of time series, Measurement of Trend: Graphic method, Semi - average method, Moving average method, Least square method.	10
Unit - IX Index Numbers	Meaning, Characteristics, Importance, Uses and Classification of Index Numbers. Types of Index Numbers: Price, Quantity and Value Index Numbers. Special Purpose Indices: Cost of living index, Wholesale price index, Consumer price index. Proporties of good index number, Problems in constructing index numbers.	10
Unit - X Official Statistics and Computer Applications	Official statistics and various publications from MoF, NRB, NPC and CBS etc. Use of Computers: Data tabulation and graphic presentation of data (Students are encouraged to interpret relevant published data using Excel).	7

References

Chiang A. and Wainwright, K. (2005). *Fundamental Methods of Mathematical Economics*. 4th ed. New York: McGraw Hill.

Hoy, M., Livernois J., McKenna C., Rees R. and Stengos, T., (2011). *Mathematics for Economics,* 3rd ed. Massachusetts: MIT Press.

Gupta, S. (2014). *Statistical Methods*. 43rd ed. New Delhi: Sultan Chand and Sons.

Lind, D. A., Garchal, W. G., and Wathen, S. A., (2006). *Basic Statistics for Business and Economics.* 5th ed. New York: McGraw Hill.

Bhusal, T. P. (2012). *Mathematics and Statistics for Economics,* Dreamland Publication, Kathmandu.

Gupta, S. and Kapoor, V. (2000). *Fundamentals of Mathematical Statistics: A Modern Approach*. 10th ed. New Delhi: Sultan Chand and Sons.

Lipschutz, S. and Lipson, M. (2011). *Schaum's Outline of Theory and Problems of Probability*. New York: McGraw Hill Professional.

Monga, G. (2002). *Mathematics and Statistics for Economics*. Noida: Vikas Publishing House Pvt Ltd. India.

Spiegel, M. and Stephens, L. (2011). *Schaum's Outline of Theory and Problems of Statistics*. New York: McGraw Hill Professional.

Yamane, T. (1968). *Mathematics for Economists; An Elementary Survey*. 2nd ed. New Delhi.: Prentice-Hall.