U.G. 1st Semester

Paper: ECO101C (Core)
Introductory Microeconomics

Credits: 5 = 4 + 1 + 0 (64 Lectures)

Unit1: Review of basic concepts (16)

Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output; the basic competitive model; prices, allocation of resources, efficiency and perfect competition the production possibility frontier, reading and working with graphs. ; Property rights, prices and market failure; incentives and information; rationing; opportunity sets.

Unit 2: Demand Analysis: (24)

Consumers optimal position, Consumption and income/price changes, demand for all other goods and price changes; income and substitution effects; labour supply and savings decision -choice between leisure and consumption. Slutsky equation; buying and selling; choice under risk and inter-temporal choice; revealed preference. The demand curve; elasticity and its application; consumer surplus; controls on prices; taxes and the costs of taxation.

Unit 3. Production and costs: (24)

Production, Costs and Perfect Competition Technology; isoquants; production with one and more variable inputs; Laws of return: returns to scale and returns to variable factor; short run and long run costs under perfect competition. The Edgeworth Box, Pareto efficiency, production possibility curve; elasticity of substitution, linear programming: simplex method, duality.

Readings

- Karl E. Case and Ray C. Fair, Principles of Economics, 9th Ed.; Pearson Education Inc.,

- Daniel Rubinfield and Robert Pindyck, Micreoeconomics, Pearson Education; Eighth edition (latest edition)

- N. Gregory Mankiw, Economics: Principles and Applications, India edition by SouthWestern, a part of Cengage Learning, Cengage Learning India Private Limited, 4 thedition, 2007.

- Hal R. Varian, Intermediate Microeconomics A Modern Approach, W. W. Norton & Company, Inc.

- Christopher Snyder & Walter Nicholson, Microeconomic Theory Basic Principles and Extensions, Cengage; 11 edition (2014)

Paper: ECO102C (Core)

Mathematical Methods for Economics-I
Credits: 5 = 4+1+0 (64 Lectures)

Unit 1: Preliminaries: **(12)**

Sets and set operations; relations; functions- Types and graphs; Range; Domain; Limit and continuity of a function; Equations and Identity; sequences and series; Number system; Convergence and divergence.

Unit 2: Differentiation: (16)

Concept of Derivative, Basic rules of Differentiation ,Partial and total Differentiation, Differentials and Derivatives , Chain Rule of Differentiation, Applications of Differentiation – Elasticity of Demand, cost and revenue functions finding Marginal Revenue Functions from Average Revenue Function, Relationship between AC and MC, Application to Comparative static analysis of Market Model and National Income Model

Unit 3: Single Variable Optimization: (12)

Geometric interpretation of optimization- local and global optima; Unconstraint optimization with single explanatory variable- economic applications; Cost Revenue, Tax Revenue, Profit and Firm's Equilibrium

Unit 4: Integration: **(8)**

Integration of a function – Basic rules of Integration, simple numerical problems.

Unit 5: Matrix and Determinants: **(16)**

Elements of Matrix algebra- Definition, Types of Matrices, Matrix operations- Addition of Matrices Subtraction of Matrices, scalar multiplication, Matrix multiplication, Transpose of a Matrix, Rank of a Matrix.

Determinants – Definition , Matrix Inversion , properties of Determinants – solution of simultaneous equation system- Cramer's Rule, Application to partial equilibrium market

Model: Simple National Income Model

Readings:

- A. C. Chiang & K. Wainwright (2005) Fundamental Methods of Mathematical Economics, Mcgraw Hill Education.
- K.Sydsaeter P. Hammond, Mathematics for Economic Analysis, Pearson Educational Asia: Delhi,2002.
- Prof. S. Barua, (2000), Basic Mathematics and its Economic Applications, Macmillan.

Paper: ECO103M (Modular Elective)
Introductory Microeconomics

Credits: 4 = 3+1+0 (48 Lectures)

Unit 1: Exploring the subject matter of Economics (12)

Why study economics? Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output;

Unit 2: Basic concepts: (12)

Market mechanism and price determination; demand and supply analysis: concept of elasticity and consumers' surplus

Unit 3: Theory of consumer behaviour: (12)

The household sector- preference- indifference analysis- optimal choice; impact of income and prices on optimal choice

Unit 4: Theory of Production : (12)

Production functions and cost functions; producer's equilibrium and expansion path.

Readings:

- N. Gregory Mankiw (2002), *Principles of Economics* 4th Edn, Thompson.
- Karl.E. Case and Ray C. Fair (2002), *Principles of Economics* 6th Edn, Pearson.
- Robert. S., Pindyck and D.I. Rubinfeld (2012). *Micro Economics*. Pearson Education.
- H.L. Ahuja (2018), *Modern economics,* Sultan Chand & Co.