

## SEMESTER III

### Core I

### 5. Microeconomics I

#### Course Description

The course is designed to provide sound training in microeconomic theory to formally analyze the behavior of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts; this course looks at the behavior of the consumer and the producer and also covers the behavior of a competitive firm.

#### Course Outcomes:

- To develop an understanding of preferences and consumer choice and formally analyze the behavior of individual agents
- To be able to use mathematical tools to facilitate understanding of the basic concepts of Economics.
- To understand the behavior of the consumer and the producer.
- To understand the behavior of a competitive firm.

#### Unit I: Consumer Theory I

Preferences and Utility, Axioms of Rational Choice, Utility, Trades and Substitutions, Indifference curves; Mathematics of Indifference curves, Utility functions for specific preferences, the many good cases; Utility Maximization and choice: the 2-good case (graphical analysis), the n-good case, Indirect utility function, the Lump sum principle, Expenditure minimization, properties of the expenditure function

*LO: This module will enable the students to understand the basic concepts in consumer behavior like utility, choice, optimization, and Indifference curves using mathematical tools; and differentiate between direct and indirect utility, and explain expenditure function and its properties.*

#### Unit II: Consumer Theory II

The Income and Substitution Effects: Demand function, changes in income, changes in goods price- Direct and Indirect Approaches (Slutsky), the Individual's Demand Curve, Compensated (Hicksian) demand curves and functions, demand elasticity, Consumer Surplus, Demand relationships among goods, the 2-good case, substitutes and complements, Net (Hicksian) substitutes, and Complements, Substitutability with many goods

*LO: This module will enable the students to analyze the effects of changes in income and prices on demand; differentiate between Ordinary and compensated demand; explain the concepts of price and income elasticities, and substitutability between goods; and understand the concept of Consumer Surplus*

#### Unit III: Production Theory and Costs

Production Functions: Marginal productivity, Production with One Variable Input (labour) and with Two-Variable Inputs, Isoquant Maps and the Rate of Technical Substitution, Returns to Scale, Elasticity of Substitution, Some Simple Production Functions: Linear, Fixed Proportions; Technical Progress. Definition of Cost and its properties, Cost minimizing input choices (Optimization principles, Expansion Path), Cost Functions and Shift in Cost Curves, Long-Run versus Short-Run Cost Curves

*LO: This module will enable the students to understand concepts like production function in the short run and the long run, isoquants, and substitution between inputs; and explain concepts of cost, and optimization in the short run and long run*

## **Unit IV: Profit Maximization**

The Nature and Behaviour of Firms, Marginal Revenue – Relationship between Average and marginal revenue, Short-Run Supply by a Price-Taking Firm, Profit Functions and its Properties, Profit maximization – General conditions, Input demands

*LO: This module will enable the students to understand the behavior of the competitive firm and concepts like average and marginal revenue; and learn the conditions for profit maximization, properties of profit function*

### **Text Book:**

- ✓ *C. Snyder and W. Nicholson (2012): Microeconomic Theory: Basic Principles and Extensions, 11<sup>th</sup> Edition, Cengage Learning, Delhi, India*

### **Reference Books:**

- ✓ *H. R. Varian (2010): Intermediate Microeconomics: A Modern Approach, 8<sup>th</sup> Edition, W.W. Norton and Company/Affiliated East-West Press (India). The workbook by Varian and Bergstrom may be used for problems*