



## **B.Ed(4 Years) Elementary Education**

| Code     | Subject Title                   | Cr. Hrs | Semester |
|----------|---------------------------------|---------|----------|
| EDE- 151 | Economics I (Basic Mathematics) | 3       |          |
| Year     | Discipline                      |         |          |
|          | Elementary Education            |         |          |

### **Aims**

This course acts as a foundation for the following semesters. The course aims to help the students increase their proficiency in Economics by enhancing their knowledge in the subject.

### **Objectives**

Upon the successful completion of this course the students will be able to:

- Understand and explain the foundations of Economics
- Explain the functions and equations
- Describe the Derivatives
- Clarify the Maxima and Minima of Functions
- Apply their knowledge in different situations
- Develop a sense of understanding the trends and issues of Basic Mathematics

### **Syllabus**

#### **1. Functions and Equations**

- i. Functions: Relation vs Function Variable. Constants and Parameters.
  - Types of Function: Linear and Non-Linear; Exponential and Logarithmic. Graphical Presentation of Function. Examples from Micro and Macro Economics.
- ii. Equations: Equation vs Identities. Solution of Linear, Quadratic and Simultaneous Equations. Equilibrium Analysis in Economics; Partial Market Equilibrium; Linear and Quadratic Models. Equilibrium in National Income

#### **2. Derivatives:**

The Concept of Derivatives. The concepts of limit and its relevance to Derivatives. Slope vs Elasticity of a functions Rules of Differentiation; A Constant, A Power, Sum- difference, Product and Quotient Function Rule. The Derivation of Marginal Quantities in Economics. The Calculations of Elasticity of Demand and Supply.

#### **3. Maxima and Minima of Functions:**

Optimum values vs. Extreme Relative Maxima and Minima, point of Inflexion, Criteria for Relative Maxima and Minima. First order conditions and second order condition. Constrained Optimization. Problems of Optimization in economics: Profit Utility and Revenue Maximization. Cost Minimization. The Equilibrium of a Consumer and a Firm. The least cost combination of Inputs.

#### **Text Books/ Reference Material**

- Chiang, A. C., & Wainwright, K. (2005). *Fundamental Methods of Mathematical Economics*: McGraw-Hill.
- Rader, T. (2014). *Theory of Microeconomics*: Elsevier Science.
- Sen, A. (2000). *Microeconomics: theory and applications*. OUP Catalogue.
- A Hamid Shahid Text Book for B.A Part I,II, Ilmi Publishers, Lahore
- Abdul Ghani Ch. Rehbar-e-Muashiat. Qurashi Publisher, Lahore.
- Muhammad Hussain Ch. Dr. Nazriat-e-Muashiat.