

# **BUSINESS MATHEMATICS**

The course is designed to give non-intimidating presentation of mathematical concepts, principles and techniques most useful for students in business management. The main objectives of the course are to enhance students' competency in application of mathematics to solve business management problems and to improve their level of quantitative sophistication for further advanced business analysis.

## **1. LINEAR EQUATIONS**

- 1.1. Characteristics of Linear Equations
- 1.2. Graphical Characteristics
- 1.3. Slope - Intercept Form
- 1.4. Point slope form
- 1.5. Two-point form
- 1.6. Determining the Equation of a Straight Line Linear Equations involving more than two variables

## **2. SYSTEMS OF LINEAR EQUATIONS AND THEIR APPLICATIONS**

- 2.1. Introduction
- 2.2. Two variables Systems of Equations.
- 2.3. Gauss – Jordan Procedure
- 2.4. Applications of Linear Equations and Systems of Equations

## **3. MATHEMATICAL FUNCTIONS**

- 3.1 Functions Defined.
- 3.2 The Nature and Notation of Functions
- 3.3 Domain and Range Considerations
- 3.4 Types of Functions.
  - Constant Functions
  - Linear Functions
  - Quadratic Functions
  - Cubic Functions
  - Polynomial Functions
  - Graphical Representation of Functions

## **4. MATRIX**

- 4.1 Introduction to Matrices
- 4.2 Types of Matrices
- 4.3 Matrix Operations
- 4.4 Inverse of Matrix
- 4.5 The Determinant & its Properties

- 4.6 The Method of Cofactors
- 4.7 Cramer's rule

## **5. DIFFERENTIATION AND ITS APPLICATIONS**

- 5.1 Average Rate of Change
- 5.2 Difference quotient
- 5.3 The Derivative
- 5.4 Differentiation
- 5.5 Higher-Order Derivatives

## **6. INTEGRATION AND ITS APPLICATIONS**

- 6.1 Anti Derivatives
- 6.2 Rules of Integration
- 6.3 Additional Rules of Integration

### **TEXT BOOKS**

1. Frank S. Budnick, Applied Mathematics for Business Economics and Social Sciences, McGraw Hill.

### **REFERENCE BOOKS**

1. Ernest F.Haeussler, Jr. Richard S.Paul, Introductory Mathematical Analysis (For Business, Economics and the Life and Social Sciences), Prentice Hall.
2. Louise Swift, Mathematics and Statistics for Business, Management & Finance, Macmillan.