# KARACHI UNIVERSITY BUSINESS SCHOOL
# UNIVERSITY OF KARACHI

| BS (BBA) – V |
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| **Course Title** : **BASIC MATHEMATICS** |
| **Course Number** : **BA(BS) – 511** |
| **Credit Hours** : **03** |

## Objective

The Objective of this course is to provide a clear understanding of basic mathematical concepts and techniques to solve business related issues.
The use of mathematical knowledge has become an indispensable tool in business, government and virtually every organization. Familiarity with basic mathematical tools is essential for students to comprehend the business world around them.

## Course Contents

**1.**
- 1.1.   Preliminaries
- 1.2.   Basic Algebra
- 1.3.   Ratios
- 1.4.   Proportions
- 1.5.   Percentages

**2.**
- 2.1.   Progressions of Sequence and Series and their Application in Business

**3.**
- 3.1.   Linear Equations and Inequalities
- 3.2.   System of Linear Equations
- 3.3.   Linear Functions and Its Application
- 3.4.   Simultaneous Equations
- 3.5.   Break – Even Models

**4.**
- 4.1.   Mathematical Functions in General
- 4.2.   Types of Functions
- 4.3.   Graphical Representation of Functions

**5.**

    5.1.    Quadratic and Polynomial Functions
    5.2.    Application of Quadratic Functions
    5.3.    Rational Functions

**6.**

    6.1.    Exponential and Logarithmic Functions and their Characteristics
    6.2.    Graphical Presentation and applications

**7.**

    7.1.    Matrix Algebra – Introduction to Matrices
    7.2.    Types of Matrices
    7.3.    Matrix Operations and Determinant

**8.**

    8.1.    Introduction to Differentiation
    8.2.    Rules of Differentiation
    8.3.    Average Rate of Change
    8.4.    Instantaneous Rate of Change

**9.**

    9.1.    Mathematics of Finance – Interest and Its Computations
    9.2.    Simple Interest and Compound Interest
    9.3.    Annuities and Their Present Value
    9.4.    Annuities and Their Future Value
    9.5.    Cost Benefit Analysis

## Recommended Books

1.    Budnick, F. S. (1993). *Applied Mathematics for Business Economics and Social Sciences.* London: McGraw–Hill.
2.    Barnett, R. A. & Ziegler, M.A. (2002). *Applied Mathematics for Business, Economics, Life Sciences and Social Sciences.* Boston: Prentice Hall.
3.    Robert, S. (2010). *Business Mathematics.* Dallas: South–Western Cengage.