KARACHI UNIVERSITY BUSINESS SCHOOL
UNIVERSITY OF KARACHI

BBA - II (Hons.)

Course Title : **BUSINESS MATHEMATICS - II**

Course Number : **BA (H) - 322**

Credit Hours : **03**

Objective

The objective of this course is to make the students feel comfortable in business environment where there is an increasing use of quantitative analysis. The course emphasizes the application of mathematical techniques to cope up with the modern advancements and orientation according to modern requirements. The today's business students will be the decision maker's tomorrow and shall be better equipped if they are familiar with these concepts. Such familiarity can assist them in being better 'critics' and 'users' and hopefully better decision makers.

Course Contents

1. **Introduction to Basic Concepts**
   1.1 Real and Complex Number System
   1.2 Co-ordinate System in Two Dimensions, Simple Cartesian Curve, Function and Graphs
   1.3 Limits of Functions and Techniques for Finding Limit
   1.4 Continuous and Discontinuous Function and Their Graphical Representation
   1.5 Tangent: Line, Secant Line, Normal Line, Slope of Curve and Rules for finding them.

2. **Differentiation**
   2.1 The Chain Rule
   2.2 Higher Order Derivatives
   2.3 Differentiation of Logarithmic Functions
   2.4 Exponential and Trigonometric Functions.

   Optimization: Methodology and Application
   3.1 Concavity and Inflection Points
   3.2 Identification of Maxima and Minima
   3.3 The First and Second Derivative Tests and Critical Points
   3.4 Curve Sketching and Restricted Domain Considerations
   3.5 Revenue, Cost and Profit Applications
   3.6 Marginal Approach to Profit Maximization.

4. **The Integral Calculus**
   4.1 The Anti derivative Concept
   4.2 Rules of Integration
   4.3 Integration by Parts, Integration of Trigonometric Functions
   4.4 Differential Equations

4.5   Definite Integrals

4.6   Definition, Properties and Application of Definite Integral to Areas — Areas between function and x — axis and areas between curves.

5. Linear Programming.
5.1   Graphical Solutions
5.2   Region of Feasible Solution
5.3   Corners-Point Method and Application of Linear Programming
5.4   The Simplex Method.

6. Transportation Models, Assignments Models

6.1   Solution to Transportation Model and Assignment Model

Recommended Books:

1.   Budnick Frank S., Applied Mathematics for Business Economics and Social Sciences, McGraw Hill, 1993,
2.   Lawson Michel and Hubbord Stephen and Paul Pugh, Maths and Statistics for Business, Longman Singapore Publishers, 1993.
3.   Mizrahi Abe and Sullivan Michel, Mathematics for Business and Social Sciences - An Applied Approach, John Wiley and Sons, 1995.
4.   L. Hoffmann D. and G. Bradley L., Calculus for Business and Social Sciences, McGraw Hill New York, 1989.