QURTUBA UNIVERSITY

Of Science and Information Technology

D.I Khan, Peshawar Khyber Pakhtunkhwa, Pakistan.

Course Name	**Business Math's**
Course Code	**MTH101**
Semester	**First**
Credit Hours	**03**
Total Weeks	**16/18**
Total Hours	**48/54**
Total Marks	**100**
Pre-requisite	**None**

Course Objectives

- The purpose of the course is to provide the student with a mathematical basis for personal and business financial decisions through eight instructional modules.
- The course stresses business applications using arithmetic, algebra, and ratio-proportion and graphing. Applications include payroll, cost-volume-profit analysis and merchandising mathematics.
- The course also includes Statistical Representation of Data, Correlation, Time Series and Exponential Smoothing, Elementary Probability and Probability Distributions. This course stresses logical reasoning and problem solving skills.

Grading Criteria

Distribution	Weight
Quizzes, Assignments, and class participation	10
Mid Term	20
Final Term	70
Total	100

Recommended Books

- Business Mathematics by Mirza by Mohammad Hassan and Mohammad Ali Mirza 3rd Edition.

WEEK WISE BREAKDOWN

Week	Description
1	**Basic Algebra** ◊ Basic algebraic operations ◊ Factorization of algebraic factions ◊ Algebraic factions
2	◊ Set ◊ Definition of set ◊ Forms of set ◊ Operation of set ◊ Kinds of sets ◊ Diagrammatic representation of set
3	**Equations** ◊ Simple equation and its solution ◊ Simultaneous equations ◊ Solution of two equations in two unknowns ◊ Solution of three equations in three unknowns ◊ Solution of two equations in three unknowns
4	**Quadratic equations** ◊ Solution of quadratic equations by ◊ Factorization ◊ By completing the square ◊ Solution by quadratic formula
5&6	**Sequences & Series** ◊ What do mean by sequence & series ◊ Arithmetic & Geometric sequence/series ◊ General term of Arithmetic & Geometric sequence/series ◊ Practical questions
7	**Derivatives** ◊ Definition and concept of derivative ◊ Rules of differentiation
8	◊ 2^{nd} order derivatives ◊ Marginal analysis and derivatives
	Two Assignments + Two Test Mid Term Exam
9	◊ Maxima, minima and point of inflection
10	◊ Application of maxima, and minima in business ◊ Cost minimization
11	◊ Profit maximization ◊ Most economical order quantity
12	**Integration** ◊ Definition and basic concept of integral ◊ Rules of integration of integration formulas. ◊ Integration by change of variable application of integrals. ◊ Evaluation of definite integrals and application of definite integrals
13	**Mathematics of Finance–1** ◊ Percentage mark up ◊ Simple interest & percentage value

	◊ Simple discount
14	**Mathematics of Finance- 2** ◊ Compound interest ◊ Compound amount ◊ Depreciation by reducing Balance method
15&16	**Mathematics of Finance- 3** ◊ Annuities ◊ Formula for sum of annuities ◊ Sinking fund for repayment of Debt. ◊ Amortization of debt.
Two Assignments + Two Test+ Presentation	**Final Term**

Learning Outcomes:

- Define basic terms in the areas of business calculus and financial mathematics.
- Explain basic methods of business calculus, types of different equations helpful for business administration and their basic applications in practice.
- Solve problems in the areas of business calculus, simple and compound interest account, use of compound interest account, loan and consumer credit.
- Connect acquired knowledge and skills with practical problems in economic practice.