QURTUBA UNIVERSITY

Of Science and Information Technology

D.I Khan, Peshawar Khyber Pakhtunkhwa, Pakistan.

Course Name	**Business Math's and statistics**
Course Code	**MTH300**
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

1. Business Math's by **Mirza and Mirza** 3rd Edition.
2. Statistics Part I & II by **Sher Mohammad Chaudhary**

WEEK WISE BREAKDOWN

Week	Description
1	**Set** ◊ What does mean by Mathematics and Business Mathematics ◊ Concept of Set ◊ Representation of Set ◊ Kind of Set ◊ Operation on Set ◊ Diagrammatic representation of Set
2 & 3	**Equation** ◊ Concept of Equation ◊ Simple equation and operation on Simple equation ◊ Simultaneous equation and solution of Simultaneous equation ◊ Quadratic equation and solution to quadratic equation by method of o Factorization o Completing square o Quadratic formula ◊ What does mean by factorization ◊ Factorization of first, 2nd and 3rd degree equation by o Rule o Formula o Division
4 & 5	**Algebra, Progression, Series** ◊ Concept of Algebra ◊ Algebraic expression ◊ Operation of Simple Algebraic expression ◊ Simplification of Algebraic expression ◊ What does mean by Progression ◊ Kind of Progression o Arithmetic progression o Geometric progression o Harmonic progression ◊ Practical question on the above Series
6	**Mathematics of Finance** ◊ Percentage ◊ Simple Interest ◊ Simple Discount
7	**Derivates** ◊ Concept of Derivatives ◊ Power rule of Derivatives ◊ Derivative of Algebraic function o by Simple rule o by product rule o by quotient rule
8	**Integration** ◊ What does man by integration ◊ Rule if Integration ◊ Integration of algebraic function ◊ Integration by substitution method
	Two Assignments + Two Test Mid Term Exam

9	**Measure of Central Tendency** ◊ Introduction to measure of Central Tendency ◊ Method for finding measure of central tendency o Arithmetic mean o geometric mean o Harmonic mean o Median o Mode ◊ Define Quartile ◊ Merit and Demerit of each of above measure
10	**Presentation of data** ◊ What does mean by presentation of data ◊ Presentation of data by the following method ◊ Classification ◊ Tabulation ◊ Graphical representation
11 & 12	**Measure of Dispersion** ◊ Concept of measure of dispersion ◊ Absolute relative dispersion ◊ Method for finding measure of dispersion, they are o Range o Quartile deviation o M.D o Variance o Standard Deviation ◊ Merits and Demerits of above measure ◊ Skew ness, Kind of skew ness ◊ Measure of skew ness ◊ Kurtosis ◊ Measure of kurtosis ◊ What does mean by moments
13	**Index Number** ◊ Concept of Index Number ◊ Kind of Index Number ◊ Problem involve in the Construction of whole sale price Index Number ◊ Whole Sale Price Index Number ◊ Main steps in the construction of whole sale price Index Number ◊ Unweighted Index Number ◊ Consumer price Index Number ◊ Steps involve in the construction of consumer price Index Number
14	**Sampling** ◊ Concept of Population, Sample and sampling ◊ Kind of population ◊ Advantages of Sampling over complete enumeration ◊ Probability and non-probability sampling ◊ Various kind of Probability & non-probability Sampling ◊ Sampling & non-Sampling error
15	**Probability** ◊ Concept of Probability ◊ Object and subject approach of probability ◊ Classical empirical and axiomatic definition of probability ◊ Application of probability

16	**Statistical Inference** ◊ Estimation ◊ Testing of Hypothesis
	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.