



Subject: Business Mathematics - BCOFA11302

Type of course: Major (Core)

Prerequisite:

A strong grasp of fundamental mathematical concepts, including arithmetic, algebra, geometry, and trigonometry, is essential. Proficiency in mathematical operations, equations, functions, and graphs is crucial for problem-solving and data analysis. Additionally, familiarity with algebraic manipulation, mathematical symbols, and basic statistical concepts is valuable for practical applications in corporate mathematics.

Rationale:

Business Mathematics is an essential component of the Bachelor of Commerce program, equipping students with the mathematical acumen and analytical skills vital for informed decision-making in the complex realm of business and commerce, fostering a mindset for problem-solving and contributing to organizational growth.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks			Total Marks
CI	T	P		SEE	CCE		
			MSE		ALA		
4	0	0	4	100	30	70	200

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; V – Viva; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

4 Credits * 25 Marks = 100 Marks (each credit carries 25 Marks)

SEE 100 Marks will be converted in to 50 Marks

CCE 100 Marks will be converted in to 50 Marks

It is compulsory to pass in each individual component.



Continuous Assessment:

(For each activity maximum-minimum range is 5 to 10 marks)

Sr. No	Active Learning Activities	Marks
1	Assignment: Faculty will provide questions and students will calculate questions and problems related business mathematics and have to upload on Moodle.	10
2	Simulation Exercises: Faculty will provide company's name and student will use MS Excel tools to simulate business scenarios where mathematical calculations are necessary and have to upload on Moodle.	10
3	Group Projects: Faculty will assign group projects that require students to collaborate and apply Business Mathematics to solve a specific problem or analyze a business-related dataset and have to upload on Moodle.	10
4	Interactive Online Quizzes: Faculty will provide 20 questions quiz and students will solve it on Moodle.	10
5	Student choice activity: In this activity student can choose any activity on the basis on their own choice which relevant to subject and have to upload on Moodle.	10
6	Personal Budgeting: Students will Create a household budget for a month, considering different income sources (e.g., salary, allowances) and expenses (e.g., rent, utilities, groceries) and have to upload on Moodle.	10
7	Attendance	10
Total		70

Course Content:

Sr. No	Course content	Hrs.	% Weightage
1	Introduction to Business Mathematics <ul style="list-style-type: none"> • Introduction to Business Mathematics • Sets and Functions • Matrices and Determinants 	15	25
2	Financial Mathematics <ul style="list-style-type: none"> • Simple and Compound Interest • Time Value of Money • Discounting and Annuities • Depreciation and Appreciation 	15	25



3	Probability and Statistics <ul style="list-style-type: none"> • Probability Theory • Probability Distributions • Measures of Central Tendency and Dispersion • Sampling and Estimation 	15	25
4	Linear Programming and Optimization <ul style="list-style-type: none"> • Introduction to Linear Programming • Simplex Method • Transportation and Assignment Problems • Optimization Techniques 	15	25

Suggested Specification table with Marks (Theory):100

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	30%	30%	10%	10%	-

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Apply mathematical concepts and techniques to solve business-related problems
CO2	Understand and utilize financial mathematics principles in financial decision-making.
CO3	Apply probability and statistical techniques to analyze and interpret business data.
CO4	Formulate and solve optimization problems using linear programming techniques.
CO5	Demonstrate proficiency in mathematical tools and techniques for business analysis.

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

- [1] "Business Mathematics" by N.P. Bali and P. Nagpal
- [2] "Financial Mathematics for Business" by R.D. Sharma
- [3] "Business Mathematics and Statistics" by Andre Francis
- [4] "Introduction to Operations Research" by Frederick S. Hillier and Gerald J. Lieberman

