

***Revised Syllabus of Courses of Bachelor of Management Studies
(BMS) Programme at Semester II
with Effect from the Academic Year 2016-2017***

Elective Courses (EC)

3. Business Mathematics

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Elementary Financial Mathematics	15
2	Matrices and Determinants	15
3	Derivatives and Applications of Derivatives	15
4	Numerical Analysis [Interpolation]	15
Total		60

Sr. No.	Modules / Units
1	Elementary Financial Mathematics
	<ul style="list-style-type: none"> • Simple and Compound Interest: Interest compounded once a year, more than once a year, continuous, nominal and effective rate of interest • Annuity-Present and future value-sinking funds • Depreciation of Assets: Equated Monthly Installments (EMI)- using flat interest rate and reducing balance method. • Functions: Algebraic functions and the functions used in business and economics, Break Even and Equilibrium point. • Permutation and Combination: (Simple problems to be solved with the calculator only)
2	Matrices and Determinants
	<ul style="list-style-type: none"> • Matrices: Some important definitions and some important results. Matrix operation (Addition, scalar multiplication , matrix multiplication, transpose of a matrix) • Determinants of a matrix of order two or three: properties and results of Determinants • Solving a system of linear equations using Cramer's rule • Inverse of a Matrix (up to order three) using ad-joint of a matrix and matrix inversion method • Case study: Input Output Analysis
3	Derivatives and Applications of Derivatives
	<ul style="list-style-type: none"> • Introduction and Concept: Derivatives of constant function, logarithmic functions, polynomial and exponential function • Rules of derivatives: addition, multiplication, quotient • Second order derivatives • Application of Derivatives: Maxima, Minima, Average Cost and Marginal Cost. Total revenue, Marginal revenue, Average revenue. Average and Marginal profit. Price elasticity of demand
4	Numerical Analysis [Interpolation]
	<ul style="list-style-type: none"> • Introduction and concept: Finite differences – forward difference operator – Newton's forward difference formula with simple examples • Backward Difference Operator. Newton's backward interpolation formula with simple examples