Semester: I

Paper Code: UB01CCOH23	Total Credits: 3
Title of Paper: Business Mathematics - I	
Objective : The objective of this course is to familiarize the students with the basic mathematical tools, with an emphasis on applications to business and economic situations.	

Unit No.	Description in Detail	Weightage
1	**Determinant** Definition of determinants, Basic properties of determinants (without proof), Solution of linear equations in two and three variables using Cramer's formula **Set Theory** Sets, subsets, equality of two sets, null set, universal set, Complement of a set, union and intersection of sets, Difference of two sets, venn diagram, De Morgan laws, Cartesian product of two sets	25%
2	**Matrix** Definition of a matrix, types of matrices-Equality, addition, subtraction of matrices, scalar multiplication of two matrices, Multiplication of two matrices, Transpose of a matrix, orthogonal matrix, adjoint of a matrix, inverse of a matrix, Solution of a linear equations in two and three variables using inverse matrix	25%
3	**Limits(without involving trigonometric functions)** Limits of a function, Limits of sum, product and quotient of two functions (without proof) and their uses in evaluating limits $$\lim_{x \to a} \frac{a^x - 1}{x} ,$$ $$\lim_{n \to \infty} \left(1 + \frac{1}{n}\right)^n , \lim_{x \to a} \frac{x^n - a^x}{x - a}$$	25%
4	**Mathematics in finance** Compound interest, nominal and effective rates of interest, continuous compounding, Concept of present value and amount of a sum, Annuity (only for a fixed period of time), present value of annuity, sinking funds (with equal payments and equal time intervals)	25%

Evaluation : Internal : 40 Marks (Theory)
: External: 60 Marks (Theory) – Two Hours Examination

Reference Books:

- Allen R.G.D.: Basic Mathematics, Macmillan, New Delhi.
- Kapoor, V.K.: Business Mathematics, Sultan Chand and sons, New Delhi.
- Loomba, Paul: Linear Programing, Tata Mc Graw Hill, New York.
- Sharma J.K.: Mathematics for Management and computer application, Galgotia Publications Pvt. Ltd, New Delhi.
- Soni, R.S.: Business Mathematics, Pitamber publishing House.
- Vohra N.D.: Quantitative Techniques in Management, Tata McGraw Hill, New Delhi.