MATHEMATICS & STATISTICS
Paper Code: BCMMDC502T

Full Marks: 50
Total Credits: 3 [45 Hours]
TOTAL CLASS HOURS: 45 [LECTURE HOURS 30 & TUTORIAL HOURS 15]
[Internal assessment – 50 Marks; Semester-end Examination – 50 Marks]

Unit-1: Set Theory   [05 L]*
Definition of Set and its presentation. Different types of Sets- Null Sets, Finite & Infinite Sets, Subsets, Universal Set, Power Set etc. Set Operations- Laws of Algebra of Sets, Venn diagram.

Unit-2: Basic Mathematics for Finance   [15 L]
Functions and their types – linear, quadratic, polynomial, exponential, logarithmic; Concepts of limit and continuity of a function. Concept of differentiation; Rules of differentiation – simple standard forms. Maxima and Minima of functions (involving first and second order differentiation) relating to cost, revenue and profit. Different types of Interest Rates, concept of Present Value – Present Value and Annuity, Compounding & Discounting, amount of Annuity – Valuation of Simple Loans.

Unit-3: Basics of Statistics   [05 L]
Collection, classification of data, Primary & Secondary data, Tabulation of data, Graphs and charts, Frequency distribution, Diagrammatic presentation of frequency distribution.

Unit-4: Measure of Central Tendency & Dispersion   [10 L]
Measures of Central Tendency including arithmetic mean, geometric mean and harmonic mean: properties and applications; mode and median. Measures of Variation: absolute and relative. Range, quartile deviation and mean deviation; Variance and Standard deviation: calculation and properties.

Unit-5: Bivariate Analysis   [10 L]
Simple Linear Correlation Analysis: Meaning, and measurement. Karl Pearson's coefficient and Spearman's rank correlation. Simple Linear Regression Analysis: Regression equations and estimation. Relationship between Correlation and regression coefficients.

Suggested Readings
- Ghosh and Saha, Business Mathematics and Statistics, New Central Book Agency (P) Ltd.
- M. Raghavchari, Mathematics for Management, Tata McGraw-Hill.
- S. Baruah, Basic Mathematics and its application in Economics, McMillan.
- R. S. Bhardwaj, Mathematics for Economics and Business, Excel Books.
- P. K. Giri and J.Banerjee, Introduction to Business Mathematics, Academic Publishers.
- R.G.D. Allen, Mathematical Analysis for Economists, McMillan.
- G. C. Beri, Business Statistics, Tata McGraw-Hill.
- J. K. Sharma, Business Statistics, Pearson Education.
- Nag and Nag, Advanced Business Mathematics and Statistics
- D. Sengupta, Application of Calculas, Books & Allied.
- Dr. Ranjit Dhar, Business Mathematics & Statistics, Dishari.

- J. Chakrabarti, Business Mathematics and Statistics, Dey Book Concern.
- Maity and Ghosh, Calculus, Central.
- Singh J. K., Business Mathematics. Himalaya Publishing House.
- N.G. Das, Statistical Methods in Commerce, Accountancy and Economics
- Hazarika, Padmalochan. A Textbook of Business Mathematics. S. Chand
- Trivedi, Business Mathematics, Pearson
- Sanyal & Das, Introduction to Linear Programming, U.N. DHUR & SONS PVT. LTD.

*L = 1 Lecture Hour
** Includes Tutorial Hours
………………………