Paper Cade: BCADSC 2.5	**Paper Title:** Numerical and Statistical Methods	**Teaching Hours:** 5 Hrs / Week
Total Teaching Hours: 60Hrs	**Marks:** Th-80+IA-20	**Credits:** 3

Unit 1: Floating point representation:

Introduction to floating point numbers , floating point binary , floating point storage and its storage format,normalized floating point form(decimal) , exponent form(binary),floating point arithmetic (decimal)

12 Hrs

Unit 2:Numerical Solution of Non-linear Equations:

Introduction and solutions of algebraic and transcendent equations , methods of finding solution of non-linear equations- Bisection method, False Position method, Secant method, Fixed point iteration method and Newton-Raphson method. General discussion on convergence of these methods (No Mathematical derivations) **12 Hrs**

Unit 3: Solution of System of Simultaneous linear Equations:

Introduction and methods of solving of solving system of linear equations- Gauss elimination method, Gauss-Jordan, LU Decomposition method and Gauss-Seidal iteration method, Eigen values and Eigen vectors of a square matrix. **12Hrs**

Unit 4: Statistical investigation and Data representation :

Origin and development, Definition, Importance and scope of business Statistics, Meaning and definition of data, Methods of data collection. Types of data proportions, ratios and rates; building, cleaning and administering databases in SPSS. *Significance* of diagrams and graphs, Types of diagrams-one dimensional or Bar Diagrams, Two dimensional or area diagrams, pictograms and cartograms. Graphs of frequency distribution- Histogram, frequency polygon, Frequency curve, gives or cumulative frequency curves.

12hrs

Unit 5: Measures of central tendency and Measures of dispersion:

Definition of averages, objectives of averages, requisites of ideal averages.Types of averages- A mean, median, Mode, Harmonic mean, Geometric Mean – Definition computation, merits and demerits, Application in Business. Definition and properties of Ideal Measure of dispersion, Absolute and Relative Measures of dispersion-Range and co-efficient of range, Quartile and co-efficient of Q.D., Average Deviation(AD) and co-efficient of A.D., Standard Deviation and co-efficient of S.D. and co-efficient of variation. **12 hrs**

References:
1. S.S. Sastri, Introductory Methods of Numerical Analysis, PHI (New Delhi) 2001.
2. Balaguruswamy E, (1988), Computer Oriented Statistical and Numerical Method, Macmillan India Ltd.
3. Medhi J. 1992, Statistical Methods (An Introductory Text), New Age International.
4. Business Statistics by - J K Sharma , Pearson Publication.

Additional Reading:
1. M.K. Jain, S.R.K. Iyenger and R.K. Jain, Numerical Method for Scientific and Engineering Computation, Wiley Eastern (1998).
2. V. Raja Raman Computer oriented numerical methods, PHI Publication
3. Gupta S. C.and Kapoor V. K. 2005 Fundamentals of Mathematical Statistics, S. Chand and Sons, New Delhi.
4. Gupta S. C.and Kapoor V. K. 2005 Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.