CS-06: MATHEMATICAL AND STATISTICAL FOUNDATION OF COMPUTER SCIENCE

Objectives:
- To create awareness of about basic Mathematics and Statistics
- To develop Reasoning ability, Logical ability and Arithmetic ability
- To develop a positive attitude towards learning Mathematics & statistics
- To perform mathematical & statistical operations and manipulations with confidence, speed and accuracy.

Prerequisites:
- Basic knowledge of Mathematics and Statistics

Unit No.	Topic	Details
1	**Determinants**	- Introduction 2 × 2 , 3×3 order determinant - Cramer's method for solving linear equation (Two and Three Variables) - Properties of Determinants - Examples
	Matrices	- Introduction - Different types of matrix(square matrix, column matrix, row matrix, Diagonal matrix, Unit matrix, null matrix) - Transpose of matrix - Addition, subtraction & multiplication of two matrices - Adjoint of a square matrix - Inverse of matrix
2	**Measures of Central Tendency & Dispersion**	- Mean (ungroup data, group data) - Median (ungroup data, group data) - Mode (ungroup data, group data) - Range - Quartiles - Standard Deviation - Typical examples
3	**Arithmetic & Geometric progression**	- Sequence - Series - Arithmetic progression (Definition & Nth term, sum of n terms) - Geometric progression (Definition & Nth term, sum of n terms) - Harmonic Progression - Relation Between AM GM HM (Two Numbers) - Typical examples

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures
Total Lectures 30 + 15 = 45

Course Outcome:
- Able to Understand basics of Mathematics and Statistics
- Able to Develop reasoning ability, logical ability and arithmetic ability
- Able to Develop a positive attitude towards learning Mathematics & statistics
- Able to Perform mathematical & statistical operations and manipulations with accuracy.

Reference Books:
1. Business Mathematics By Sancheti & Kapoor Sultan & Chand
2. Statistical Method By Gupta Sultan & Chand
3. Discrete Mathematical Structures with Applications to Computer Science By J.P. Tremblay & R. Manohar TMH
4. Business Mathematics   :   V.K. Kapoor
5. Business Mathematics   :   Dr Kachot
6. Fundamentals of Statistics   :   S. C. Gupta