SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar
Bachelor of Computer Application
Semester – II
US02SBCA21 : Mathematics
(w.e.f June 2018)

Credits : 2
Lectures per week   : 2
All units carry equal weightage.

Unit	Description in detail
I	**Vectors and Matrices** Vectors in Rn, dot product and norm. Matrix addition and scalar multiplication, Matrix multiplication, transpose of matrix, square matrices: Diagonal, upper and lower triangular, symmetric, skew symmetric, orthogonal matrices. Determinants of matrices up to order 3.
II	**Graph Theory** Graph, multigraph, degree of vertex, paths, connectivity, subgraph, connected components, cut points, bridges, Special graphs: complete, regular and bipartite graphs, matrices and graphs.
III	**Planar Graphs and Trees** Planar graphs, Maps and regions, Euler's formula, Nonplaner graphs, coloured graphs, colors and maps, trees.
IV	**Elementary Data Analysis** Discrete and continuous frequency distribution, cumulative frequency distribution, graphical representation, Measures of central tendency: Mean, Median, Mode.

Basic Text & Reference Books :-

1. S.Lipschutz and Marc Lars Lipson : Discrete Mathematics, Schaum's series (International edition,1992).
2. Vinay Kumar: Discrete Mathematics (BPB Publication, First edition - 2002)
3. S. C. Gupta, Fundamentals of Statistics, Himalaya Publishing House, 2004