

SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc (Mathematics)
Semester: III
Syllabus with Effect from: June-2012

Paper Code: US03EMTH05	Total Credit: 2
Title Of Paper: Calculus & Algebra - I	

Unit	Description in detail	Weighting (%)
I	Indeterminate forms; L'Hospital's rule and examples.	
II	Partial derivatives; Euler's theorem on homogeneous functions of two and three Variables its application and examples; .	
III	Different types of matrices associated with a given matrix -transpose Conjugate and Toe conjugate transpose of a matrix ; Some specialTypes of Matrices-square, row, column, diagonal , scalar , unit Zero,Triangular symmetric, skew-symmetric, Hermitian and skew- Hermitian matrices ; Sub matrices of a matrix .	
IV	Determinant and Minors of a matrix ; Reversal law for the trans-pose of a product ; Associative law for matrix multiplication ; Distributive law; Characteristic matrix and characteristic equation of a matrix ; Cayley-Hamilton theorem.	

Basic Text & Reference Books:-

- Shanti Narayan, Differential Calculus ,Ninth edition,S.C.Chand and Co.
- Shanti Narayan and Mittal , A text book of Matrices ,S.C.Chand and Co.
- D. J. Karia, N. Y. Patel, B. P. Patel, M. L. Patel, Introduction to calculus and differential equations.
- S.Grewal, Higher Engineering Mathematics.

