Subject Code:	NS1001	**Course Title**	Mathematics-I
Contact Hours	L-3, T-1, P-0	**Credit**	4
Programme	B.Tech	**Semester**	I
Pre-requisites	NIL		

Evaluation scheme	Quiz I (15%), Mid term (30%), Quiz II (15%), End term (40%)

Module 1: *Calculus of Functions of One Variable:*   **[21 H]**
Real Numbers, Functions, Sequences, Limit and Continuity, Differentiation : Review, Successive differentiation, Chain rule and Libnitz Theorem, Rolle's and Mean Value Theorems, Maxima/Minima, Linear and Quadratic approximations, Error estimates, Taylor's Theorem, The Riemann Integrals, Improper Integrals, L'Hospital's rule, Infinite series, Tests of convergence, Absolute and Conditional convergence, Taylor and Maclaurin series.

Module 2: *Calculus of Functions of Several Variables:*   **[14H]**
Scalar fields, Limit and Continuity, Partial derivatives, Chain rules, Implicit differentiation, Directional derivatives, Total differential, Tangent planes and Normals, directional derivative, Maxima/Minima and Saddle points, Constrained maxima and minima, Double Integrals, Change of variables.

Module 3: *Vector Calculus:*   **[7H]**
Vector fields, Divergence and Curl, Line Integrals, Green's Theorem, Surface Integrals, Divergence Theorem, Stoke's Theorem and applications.

Text/Reference books:
1. Calculus and Analytic Geometry by G.B. Thomas and R.L. Finney,
2. Introduction to Real Analysis by R. G. Bartle and D. R. Sherbert.