VIKRAMA SIMHAPURI UNIVERSITY::NELLORE
I YEAR OF FOUR YEAR B.TECH DEGREE COURSE
(COMMON TO ALL BRANCHES)

(With effect from the Academic Year 2010-2011)

10MA101 Engg Mathematics-I

Hours /week	:4 Hrs	Sessional Marks	: 40
Credits	:8	End Examination Marks	: 60

UNIT – I

Matrices: Rank of Matrix- Consistency of system of linear equations- Matrix as a linear transformation- Eigen values and Eigen vectors- Cayley – Hamilton's theorem- Diagonalization of matrix- Quadratic forms

UNIT – II

Differential Calculus: Rolle's Theorem and mean value theorems- Taylor's and maclaurin's series- maxima and minima of a function of two variables- curve tracing , curvature involutes and evolutes

UNIT – III

Integral Calculus: Double and triple integrals- change of order of integration- change of variables- simple applications to areas and volumes. Beta and |Gamma functions.

UNIT-1V

Vector Calculus: Gradient – Divergence, curl and related propertiews- Laplacian and second order operators- line, surface and volume integrals- potential function- Green's theorem, stoke's theorem and Gauss Divergence theorem (without proof)- Verification of Green's , stoke's and Gauss Divergence theorem.

UNIT-V

Partial Differential Equations: Formation of partial Differential Equations- Solutions of partial Differential Equations- Equations solvable by direct integration- first order linear partial differential equations- Lagrange's linear equations- method of multipliers.

Text Books:

1. Higher Engineering Mathematics – B S Grewal
2. Engineering Mathematics- B V Ramana
3. Elementary Engineering Mathematics – B S Grewal

Reference Books:

1. Advanced Engineering Mathematics- H K Das
2. Advanced Engineering Mathematics- N P Bali & M Goyal