HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

SYLLABUS

B.E. SECOND YEAR

ELECTRONICS & COMMUNICATION

(In Force June 2006)

SEMESTER - III

EC301: ENGINEERING MATHEMATICS

Teaching Scheme		Examination Scheme				
Theory Hrs.	Practical Hrs.	Theory Hrs.	Theory Marks	Pract./ Viva Marks	Term Work Marks	Total Marks
4	---	3	100	---	---	100

SYLLABUS

- **FOURIER SERIES:**
  Definition of periodic function and its importance in communication engineering, Expansion of function in Fourier series, half range sine and cosine series.

- **DIFFERENTIAL EQUATIONS:**
  Formulation of differential equation, General particular solutions, Solutions of order and first degree equations, linear differential equations of higher order, Partial differential equations and their solutions.

- **MATRICES:**
  Introduction to matrix algebra, Additional multiplication of matrices, Adjoin of matrix, inverse of matrix, Special types of matrices, rank of matrix, solutions of linear algebra eqn. by matrix method.

- **COMPLEX VARIABLE:**
  Analytical functions, Cauchy-Riemann eqns., Harmonic functions, Line integral, Cauchy's theorm and cauchy's integral, Simple forms of conformal transformations with applications of the solutions of two dimensional problems.

- **LAPLACE TRANSFORM:**
  Definition, Laplace transform of elementary function, derivation, integrals, Application of Laplace transform to the solution of ordinary and linear differential eqns.

- **FINITE DIFFERENCES AND DIFFERENCE EQUATIONS:**
  Finite differences, Interpolation, Newton's and Langrange's formula, Difference eqn. with constant co-efficient, solutions of ordinary and partial differential eqn. with boundary conditions by finite difference method.

REFERENCE BOOKS:

1. Applied Mathematics Vol. I & II by P.N.Wartiker & J.N.Wartiker
2. Higher Engineering Mathematics by Dr.B.S.Grewal.
3. Engineering Mathematics - I. by Shrivastava
4. Text Book of Engg. Mathematics by A.B.Mathur & V.P.Jaggi
5. Higher Engineering Mathematics by K.R.Kachot