B.E SEMESTER – III (IT)
IT301 MATHEMATICS – III
(In force from June 2006)

TEACHING SCHEME:	EXAM SCHEME:
THEORY 04 HRS/WEEK	THEORY 100 MARKS(3 HRS)
PRACT 0 HRS/WEEK	PRACT - MARKS
	TW/VIVA - MARKS
TOTAL 04 HRS/WEEK	TOTAL 100 MARKS

FOURIER SERIES

Periodic Functions. Dirichlets Conditions. Fourier Series, Euler's Formulae, Fourier Expansion Of Periodic Functions With Period 2 Pai Fourier Series Of Even And Odd Functions, Fourier Series Of Periodic Functions With Arbitrary Periods, Half Range Fourier Series, Harmonic Analysis.

LAPLACE TRANSFORMS

Motivation, Definition, Linearity Property, Laplace Transforms Of Elementary Functions, Shifting Theorem Inverse Laplace Transforms, Laplace Transforms Of Derivatives And Integrals, Convolution Theorem, Application Of Laplace Transforms In Solving Ordinary Differential Equations, Laplace Transforms Of Periodic ,Unit Step and Impulse Functions.

ORDINARY DEFFERENTIAL EQUATIONS

Linear Differential Equations Of Higher Order With Constant Coefficients. Method Of Variation Of Parameters, Higher Order Linear Differential Equations With Variables Coefficients(Cauchy's And Legendre Forms), Simultaneous Linear Differential equations, Models For The Real World Problems And Their Solutions
In Particular, Modeling Of Electric Circuits, Deflection Of Beams, Free Oscillations, Resonance, Solution Of Bessel And Legendre Equations By Series Method, Definition And Properties Of Bessel's Function , Legendre's Polynomials And Properties Like Recurrence Relations, Orthogonality.

PARTIAL DIFFERENTIAL EQUATIONS

Formation Of Partial Differential Equations, Directly Integrable Equations, Models Of Engineering Problems Leading To First Order Partial Differential Equations . Langrange's Equations. Solutions Of Special Type Of First Order Differential Equations. Homogeneous Linear Equations With Constant Coefficients, Application Of Partial Differential Equations, Boundary Value Problems And Method Of Separation Of Variables, Modeling Of Vibration Of A Stretched String - One Dimensional Wave Equations.

NUMERICAL METHODS

Motivation, Errors, Truncation Error, Rounded Error, Absolute Error, Relative Error And Percentage Error, Solution Of Algebraic And Transcendental Equations By Newtonraphson, Bisection, False Position And Iteration And Extended Iteration Methods, Convergence Of These Methods.

REFERENCE BOOKS:

1) Higher Engineering Mathematics, {By Dr. B.S.Grewal}
Khanna Publishers, New – Delhi
2) Engineering Mathematics - Vol I,II {By Prof. Wartikar & Wartikar}
Pune Vidyarthi Griha,Pune
3) Engineering Mathematics Vol I & II {By S.S.Sastry}
Printice Hall Of India ,New Delhi
4) Engineering Mathematics { By Dhavan & Shrivastav}
Danpat Rai & Sons , New Delhi
5) Mathematics For Engineering Students, { By P.D.S. Verma}
Kalyani Publishers,Ludhiyana & Delhi
6) A Text Book On Engineering Mathematics,Laxmi {By N.P.Bali}
Ashok Saxena & Iyengar Publication(P) Ltd. New-Delhi
7) Engineering Mathematics Vol I & II {Kandasamy, Thilagavathi & Gunavathi}
S. Chand & Co. (Pvt) Ltd, New -Delhi
8) (A) A First Course In Mathematics For Engineers.
(B) Mathematics For Engineers
(C) Advanced Mathematics For Engineers.Prasad Mudranalaya, Beli Avenue,
Allahabad {By ChandrikaPrasad}
9) Engineering Mathematics Vol I II III IV { By Kumbhojkar G.V. }
C. Jamnadas & Co. Bombay
10) Engineering Mathematics - Vol I { By Majmudar T. }
New Central Book Agency (P) Ltd, 8/1 Chintamani Das Lane,Calcutta.
11) Advanced Engineering Mathematics {By Erwin Kreyszig}
Wiley Eastern Ltd, New Delhi (Fifth Edition),