II YEAR - III SEMESTER
COURSE CODE: 7BMAA3

ALLIED COURSE - III – ANCILLARY MATHEMATICS III

Unit – I

Partial Differential Equations – Formation of Partial Differential Equations by eliminating arbitrary constants and arbitrary functions – Complete, Particular, Singular and General integral.

Unit – II

Solving Lagrange's linear equation $Pp + Qq = R$,Solution of equations of Standard types $f(p, q) = 0$, $z = px + qy + f(p, q)$, $f(z, p, q) = 0$, $f_1(x, p) = f_2(y, q)$.

Unit – III

Laplace Transform – Definition – Laplace transform of some Standard Functions – problems – Inverse Laplace Transform – Standard formulae – problems.

Unit – IV

Numerical Differentiation – Derivatives using Newton's Forward Difference formula – Derivatives using Newton's Backward Difference formula – Derivatives using Newton's Central difference formula – Maxima and Minima of the interpolating polynomial.

Unit – V

Beta and Gamma functions – Relations between them – Evaluation of multiple integrals using Beta and Gamma functions.

Text Books:

1. Differential Equations and Applications by Dr. S.Arumugam and A.ThangapandiIssac, New Gamma Publishing House, Palayamkottai, Edition 2014.
2. Numerical Analysis with Programming in C by Dr. S.Arumugam, Prof. A.ThangapandiIssac& Dr. A.Somasundara, New Gamma Publishing House, Palayamkottai, Edition, 2013.
3. Calculus Volume II by S.Narayanan and T.K.ManicavachagomPillay, S.Viswanathan (Printers & Publishers) Pvt. Ltd, 2014.

Unit I	Chapter 4 sections 4.1 & 4.2 of (1)
Unit II	Chapter 4 sections 4.3, 4.4 of (1)
Unit III	Chapter 3 sections 3.1 & 3.2 of (1)
Unit IV	Chapter 5 of (2)
Unit V	Chapter 7 sections 2,3,4 &5 of (3)

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