



Syllabus of MAT 1202

Semester: II Applied Differential Equation

Credits: 05 (4-1-0)

Unit: 1

Review of ordinary differential equation of first order, non linear differential equation of first order and their applications to engineering problems.

Unit: 2

Differential Equations of higher order: Linear differential equations of higher order with constant coefficients, method of variation of parameters; Cauchy's & Legendre's linear equations; simultaneous linear equations with constant coefficients.

Unit: 3

Formation of partial differential equation, Linear partial differential equation of first order, Standard forms, Charpit's method, Homogeneous linear partial differential equations with constant coefficients, Non-homogeneous linear partial differential equations, Method of separation of variables.

Unit: 4

Euler's Formula, Functions having points of discontinuity, Change of interval, Even and odd functions, Half range series.

Unit: 5

Method of separation of variables, solution of heat equation, wave equation, Laplace equation & Poisson's equation.

REFERNECE BOOKS:

1. Advanced Engineering. Mathematics by Erwin Kreyszig (8th edition) – John Wiley & Sons.
2. Higher Engineering. Mathematics by B.S. Grewal (38th edition)-Khanna Publishers.
3. Applied mathematics for Engineers & Physicists by Louis A. Pipes – Mc Graw Hill.
4. Advanced Engineering Mathematics by R.K. Jain & S.R.K. Iyengar – Narosa Publishing House.