

JIS College of Engineering
(An Autonomous, NAAC 'A' Grade Institution)

Mathematics

Code: BM201

CONTACTS: 3L + 1 T

CREDITS: 4

Course contents

Differential equations: order, degree, solution and formation of a differential equation, standard techniques of solving a linear differential equation with constant coefficients, Cauchy's and Lagrange's linear differential equations with variable coefficients.

Linear algebra: Vector space, subspaces, bases and dimensions, co-ordinates, linear transformation, algebra of linear transformations, isomorphism, representation of transformation by matrices.

Sequence and series: Bounded and unbounded sequences, convergence or divergence of a sequence, behaviour of monotone sequences, algebra of convergent sequences, Cauchy's sequence, Cauchy's general principle of convergence, infinite series – its convergence and sum, series with positive terms and standard tests of convergence (without proof), alternating series, Leibnitz test, absolute convergence, rearrangement of absolutely convergent series, test of convergence of Abel and Dirichlet (without proof).

Books:

1. Engineering Mathematics, Vol:1 & 2, Sastry, PHI
2. Engineering Mathematics, Arumugam, Scitech
3. Higher Engineering Mathematics, Vol.2, Rathore, EPH