Statistics and Numerical Techniques
Code: MM 301
CREDITS: 4

Basic Statistics-measure of central tendency, dispersion, Probability, distributionintroduction to mass function, density function, distribution function (Binomial, Poisson, Normal), estimation of parameters (unbiasedness-concept of noise/error, consistency)

Interpolation-Newtons Forward, Backward, Sterling & Bessel's Interpolation formula, Lagrange's Interpolation Integration- Trapezoidal, Simpson's 1/3 rd, Weddel's Rule, Romberg Integration, Gauss-Legendre two & three point formula, Newton Cotes Formula.

Gram-Schmidt orthogonalisation, Tchebycheff polynomial Solution of transcendental equations- Method of Iteration, Method of Bisection, Newton - Raphson Method, Regula-Falsi method, Secant Method.

Solution of system of linear equations- Gauss Elimination Method, Gauss-Jacobi, Gauss-Seidel, LU factorisation, Tri-diagonalisation.

Inverse Interpolation.

Least Square Curve fitting- linear & non-linear Solution of Differential Equations- Picard's method, Euler-modified method,Taylor's Series method, Runge-Kutta method, Milne's Predictor-Corrector method.