

# Computer Oriented Numerical methods and Statistics

## UNIT I (8T)

Floating Point Arithmetic - Errors, Significant digits and Numerical Instability, Roots of Algebraic Equations - Bisection Method - Method of False Position - Newton Raphson Method.

## UNIT II (12T)

Interpolation and Approximation–Lagrange & Newton; Interpolations- Finite Difference Operators, Interpolating; Polynomials using finite differences, Simpson`s 1/3rd rule ,Trapezoidal method.

## UNIT III (20T)

Basics statistics: Measures of central tendencies - Mean, Median, Mode, Geometric mean and Harmonic mean. Measures of dispersion - Range, quartile deviation, Lorenz curve. Mean deviation and standard deviation.

## UNIT IV (20T)

Curve fitting- Principles of least squares, fitting of straight lines. Correlation (Bivariate case only) Pearson`s coefficient of correlation. Rank correlation and Regression analysis. Probability theory: Random experiment. Sample point, sample space, events, union, intersection and compliment of events.

## UNIT V (20T)

Random variables and probability distribution, Discrete and continuous random variables- density function- distribution- density function.