Unit	**BCA412: Computer Oriented Numerical and Statistical Method**
I	Significant digits, floating point representation of numerals, arithmetic operations with normalized floating point number–addition, subtraction, multiplication and division, errors in numerical computation. Pitfalls in computing.

II	Initial approximation of roots, Descate's rule of sign, Iterative Methods - Bisection, Regula-Falsi, Newton Raphson, method of successive approximations, Concepts of roots synthetic division , value and values of derivative of a polynomial by synthetic division.
III	Solution of ordinary differential equations - Taylor's method, Euler's method, RungeKutta second and fourth order method, Picard's method, modified Euler's method. Numerical Integration - Introduction, Trapezoidal rule, Simpson's 1/3 and 3/8 rule.
IV	Solution of simultaneous linear equation: Gauss elimination method, Pivoting, ill conditioned equations, Refinement of solution, Gauss Seidal iterative method. Curve fitting - Method of least squares, fitting of straight lines, polynomials, exponential curves.
V	The basic concepts: Variables and Attributes, Statistics, Population and sample, complete enumeration vs sample surveys, probability and purposive sampling, simple random sampling Frequency distributions: Frequency distributions, histograms, Frequency polygons, frequency curves, cumulative frequency, distributions, ogives, Measure of Central Tendency, Median, mode, arithmetic mean