(January 2019 to April 2019)
Subject: DSE-2 (Numerical Analysis)
Semester-VI
Department of mathematics, Ram Lal Anand College

Week	Course Content
07 Jan-10 Jan	Significant digits, Types of error, definition of order of convergence, Terminal conditions.
13 Jan-17 Jan	Root finding methods: Bisection method, Secant method, Regula-Falsi method.
20 Jan-24 Jan	Newton Raphson method for finding roots, Newton's method for solving nonlinear sytems.
27 Jan-31 Jan	Gauss elimination method, Gauss Jordan method, Gauss Thomas method for tridiagonal systems.
03 Feb-07 Feb	Iterative methods: Jacobi and Gauss-Siedel methods for finding approximate solution for linear system of equations.
10 Feb-14 Feb	Finite difference operators, Interpolation techniques: Lagrange's method, Newton's backward and forward difference method.
17 Feb-21 Feb	Numerical differentiation for first and second order derivatives.
24 Feb-28 Feb	Numerical integration: Trapezoidal and Simpson rule, Newton Cotes formulas.
02 Mar-06 Mar	Extrapolation methods: Romberg integration and Gaussian quadrature.
16 Mar-20 Mar	Methods for finding approximate solutions for ordinary differential equations: Euler's method, modified Euler's method.
23 Mar-27 Mar	Methods for finding approximate solutions for ordinary differential equations: Heun method, Mid-point method.
30 Mar-3 April	Runge-Kutta second methods: Heun method without iteration, Mid-point and Ralston's method.
6 April-10 April	Classical Runge-Kutta method of order four.
13 April-17 April	Finite difference methods for linear ordinary differential equations.
20 April-28 April	Revision of syllabus.