**NM Lab List**

Unit 1

1. **Write a C program to find root of nonlinear equation using bisection method**
2. **Write a C program to find root of nonlinear equation using Newton Raphson method**
3. **Write a C program to find root of nonlinear equation using secant method**
4. **Write a C program to find root of nonlinear equation using fixed point iteration method**
5. **Write a C program to evaluate polynomial using Horner Method**
6. **Write a C program that divides a polynomial function by an x - c using synthetic division to find quotient and remainder.**
7. Write a C program to all the roots of non-linear equation using Newton Raphson method

Unit 2:

1. Write a C program to interpolate using Langrange’s method
2. Write a C program to interpolate using Newton’s Divided difference method
3. Write a C program to interpolate using Newton’s Forward difference method
4. Write a C program to interpolate using Newton’s backward difference method
5. Write a C program for linear regression
6. Write a C program for exponential regression
7. Write a C program to implement polynomial regression

Unit 3:

1. Write a C program to calculate derivative using forward difference formula
2. Write a C program to calculate derivative using backward difference formula
3. Write a C program to calculate derivative using central difference formula
4. Write a C program to calculate differentiation using divided difference polynomial
5. Write a C program to find integration using trapezoidal rule
6. Write a C program to find integration using composite trapezoidal rule
7. Write a C program to find integration using Simpson’s 1/3 l rule
8. Write a C program to find integration using Simpson’s 1/3 l rule
9. write a C program to find integration using Composite Simpson’s 1/3 l rule
10. Write a C program to find integration using composite Simpson’s 3/8 l rule
11. Write a C program to find integral value by using Gaussian Integration
12. Write a C program to find integral value by using Romberg Integration

Unit 4:

1. Write a C program for solving system of equations using basic Gauss elimination method
2. Write a C program for solving system of equations using basic Gauss Jordan method
3. Write a C program for matrix inversion using Gauss Jordan method
4. Write a C program for matrix factorization by using Do-little LU decomposition
5. Write a C program to solve system of equations using Jacobi iteration method
6. Write a C program to solve system of equations using Gauss Seidel iteration method
7. Write a C program to calculate Eigen value and Eigen vector using power method

Unit 5:

1. Write a C program to solve ordinary differential equation using Taylor’s series method
2. Write a C program to solve ordinary differential equation using Picard method
3. Write a C program to solve ordinary differential equation using Euler’s method
4. Write a C program to solve ordinary differential equation using Heun’s method
5. Write a C program to solve ordinary differential equation using Runge Kutta method
6. Write a C program for solving system of ordinary differential equations using Euler’s method

Unit 6:

1. Write a C program to solve partial differential equation using Laplace’s equation
2. Write a C program to solve partial differential equation using Poisson’s equation