**COs of CPCS 212 Numerical Computations**

CO1 : Explain the basic structured programming concepts of MATLAB environment.

CO2 : Understand the different numerical methods for Interpolation.

CO3 : Solve various Interpolation methods.

CO4 : Solve various Numerical Integration and Differentiation Rules.

CO5 : Solve different Numerical Solution of Ordinary Differential Equations.

CO6 : Explain the concept of Statistical Methods and solve the problems.

CO7 : Develop the program using MATLAB on various Rules/Methods.

**PI’s of CPCS 212 Numerical Computations**

1. Describe the basic concepts of MATLAB. (SO1)
2. Describe the various numerical methods for Interpolation. (SO1)
3. Compute various Interpolation methods like - Newton’s Gregory Forward Interpolation Formula, Newton’s Gregory Backward Interpolation Formula, Central Difference Interpolation Formula, Gauss’ Forward Difference Formula, Gauss’ Backward Difference Formula etc. (SO2)
4. Compute various Numerical Integration and Differentiation Rules like - Trapezoidal Rule, Simpson’s One-third Rule, Simpson’s Three-Eighth Rule etc. (SO2)
5. Compute different Numerical Solution of Ordinary Differential Equations like - Euler’s Method, Taylor’s Method, Runge-Kutta Methods etc. (SO2)
6. Describe the concept of Statistical Methods and Solve the problems based on Curve Fitting and Regression Analysis. (SO2)
7. Write the program using MATLAB on various Rules/Methods. (SO6)