P.B. SIDDHARTHA COLLEGE OF ARTS & SCIENCE

Siddhartha Nagar, Vijayawada – 520 010
Reaccredited at 'A+' level by NAAC
Autonomous&ISO 9001:2015 Certified

Title of the Course: NUMERICAL METHODS LAB
Semester : II

Course Code	22MA2L1	Course Delivery Method	Blended Mode
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	6	Semester End Exam Marks	70
Total Number of Lecture Hours	90	Total Marks	100
Year of Introduction : 2020-21	Year of offering : 2022-23	Year of Revision: 2022-23	Percentage of Revision :5%

Objectives: The objective of this course is to develop the computational skills of the students to solve various mathematical problems by numerical techniques using C programming.

CO-NO	COURSE OUTCOME	BTL	PO	PSO
CO1	solve algebraic and transcendental equation using an appropriate numerical method arising in various engineering problems efficiently	**K3**	**1**	**2**
CO2	solve linear system of equations using an appropriate numerical method arising in computer programming, chemical engineering problems etc efficiently	**K3**	**7**	**2**
CO3	Approximate a function using an appropriate numerical method in various research problems up to desired level of accuracy	**K3**	**3**	**2**
CO4	Analyse and evaluate the accuracy of common numerical methods.	**K3**	**7**	**2**
CO5	Ability to use approximation algorithm in real world problem.	**K3**	**1**	**1**

LIST OF PROGRAMS:

1. Bisection method. (CO1, K2)
2. False position method(Regula-Falsi Method). (CO1, K2)
3. Newton -Raphson method. (CO1, K2)
4. Secant method. (CO1, K2)
5. Gauss elimination method. (CO2, K3)
6. Gauss-Jordan method. (CO2, K3)
7. Gauss-Seidal method. (CO2, K3)
8. Lagrange's method. (CO3, K3)
9. Difference table method. (CO3, K3)
10. Trapezoidal method. (CO4, K4)
11. Simpson's 1/3 rule. (CO4, K4)
12. Simpson's 3/8 rule. (CO4, K4)
13. Euler's method. (CO5, K5)
14. Taylor Series method. (CO5, K5)
15. Runge-Kutta method. (CO5, K5)
16. Modified Euler's method. (CO5, K5)

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