

College of IT and Management Education

Lesson plan

Sub : COMPUTER ORIENTED NUMERICAL METHODS(MCA 104)

Branch : MCA

Semester : 1st Semester MCA

Name of the Faculty : Pranab Kumar Mohanty

Total Credit Point: : 4

Total number of classes: 40

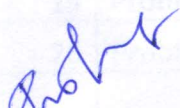
Sl. No.	TOPIC PLANNED	SESSION
	MODULE-I	10 Hours
1	Computing Arithmetic.	1
2	Computing Arithmetic.	1
3	Significant Digits and Numerical Instability.	1
4	Root finding methods-Bisection.	1
5	Newton Raphson	1
6	Secant and RegulaFals	1
7	Methods for multiple roots.	1
8	Problem discussion.	1
9	Problem discussion.	1
10	Problem discussion.	1
	MODULE-II	10 Hours
11	System of Linear Algebraic Equations and Eigen value problems	1
12	Gauss Elimination.	1
13	LU Decomposition	1
14	Jacobi.	1
15	Gauss-Seidel	1
16	SOR method.	1
17	Interpolation and Approximation-spline approximation-Linear.	1
18	Quadratic and Cubic.	1
19	Problem discussion.	1
20	Problem discussion.	1
	MODULE-III	10 Hours
21	Differentiation and Integration-Richardson's extrapolation.	1
22	Ordinary differential equations.	1
23	Euler method.	1

24	Modification of Euler's method.	1
25	Runge-Kutta method of order four.	1
26	Predictor-Corrector methods	1
27	Boundary Value Problems	1
28	introduction to numerical solutions of Partial Differential Equations.	
29	Problem discussion.	1
30	Problem discussion.	1
	MODULE-IV	10 Hours
31	Flowchart and Algorithms of root finding methods.	1
32	Flowchart and Algorithms of root finding methods.	1
33	C -Program Implementation of root finding methods.	1
34	Flowchart and Algorithms of Solution of system of linear equation.	1
35	Flowchart and Algorithms of Solution of system of linear equation.	1
36	C -Program Implementation of Solution of system of linear equation.	1
37	Flowchart and Algorithms of Ordinary differential equations	1
38	Flowchart and Algorithms of Ordinary differential equations	1
39	C -Program Implementation of Ordinary differential equations	1
40	Problem discussion.	1


Text book: Numerical Methods for Scientific and Engineering Computation by M.K. Jain, SRK Iyengar and R.K.Jain

Reference books:

- 1.Numerical Methods for Engineers by S.C. Chopra and Raymond P. Canale.
2. Introductory Methods of Numerical Analysis by Sastry
- 3.Numerical Analysis by E.W. Cheney and D.R.Kincaid


Faculty


course Coordinator


Principal