	Parul University **Faculty of Engineering and Technology** **Parul Institute of Engineering and Technology** **Department: Artificial Intelligence and Data Science**

Name of the teacher: Poonam K. Saravag **Subject Name: Probability, Statistics, and Numerical Methods (303191251)**		**Hours/Week: 4 Hours**
Sr. No.	**Name of Topic**	**Planned Date**
CH 4	**Solution of a System of Linear Equations and Roots of Algebraic and Transcendental Equations**	**7**
25	Gauss-Jacobi method	24/11/2025
26	Gauss Seidel method	24/11/2025
27	Bisection method	27/11/2025
28	Regular falsi method	28/11/2025
29	Newton Raphson method	1/12/2025
30	Derivation by using Newton-Raphson methods	1/12/2025
31	Rate of convergence	4/12/2025
CH 5	**Finite Differences and Interpolation**	7
32	Finite Differences	5/12/2025
33	Relation between operators	8/12/2025
34	Interpolation- Newton's forward interpolation	8/12/2025
35	Interpolation- Newton's Backward interpolation	11/12/2025
36	Lagrange's formula for unequal intervals	12/12/2025
37	Newton's divided difference method	15/12/2025
38	Newton's divided difference examples	15/12/2025
CH 6	**Numerical Integration and Numerical solution of Ordinary Differential Equations**	7
39	Trapezoidal	18/12/2025
40	Simpson's $\frac{1}{3rd}$ formulae	19/12/2025
41	Simpson's $\frac{3}{8th}$ formulae	22/12/2025
42	Gaussian quadrature formulae	22/12/2025

43	Taylor series method	26/12/2025
44	Euler method and Euler's Modified Methods	29/12/2025
45	Runge-Kutta method of order two & four	29/12/2025
CH 1	**Correlation, Regression and Curve Fitting:**	11
1	Correlation and its types	1/1/2026
2	Karl-Pearson method for correlation	2/1/2026
3	Regression line X on Y	5/1/2026
4	Regression line Y on X	5/1/2026
5	Rank Correlation (Non-repeated)	8/1/2026
6	Fit a straight line	9/1/2026
7	Fit a second-degree parabola	12/1/2026
8	Fit a second-degree parabola	12/1/2026
9	Fit an exponential curve	16/1/2026
10	Fit an exponential curve	19/1/2026
11	Fit a Power Curve	19/1/2026
CH 2	**Probability and Probability distributions**	13
12	Probability basic examples	22/1/2026
13	Mutually Exclusive events, independent events, and other events	23/1/2026
14	Conditional probability	29/1/2026
15	Bayes' Rule	30/1/2026
16	Expected value of random variable	2/2/2026
17	Variance of random variable	2/2/2026
18	Discrete and continuous Random Variables	5/2/2026
19	Independent Random Variables	6/2/2026
20	Expectation and Variance of discrete andContinuous random variable	16/2/2026
21	Probability Distribution and their Properties	16/2/2026
22	Binomial Distribution	19/2/2026

23	Poisson distribution	20/2/2026
24	Normal Distribution	23/2/2026
CH 3	**Testing Of Hypothesis**	15
46	Population and sample, Null hypothesis and alternating hypothesis	23/2/2026
47	Type-1 and Type-2 Errors	26/2/2026
48	Level of significance and critical region, One-tail and two-tailed	27/2/2026
49	Test of significance: Large Sample test for single proportion	2/3/2026
50	Test of significance: difference of proportion	2/3/2026
51	Single Mean	6/3/2026
52	Difference of Means	9/3/2026
53	Difference of Standard Deviations	9/3/2026
54	Test for single mean (t-test)	12/3/2026
55	Difference of Means (t-test)	13/3/2026
56	Paired t-test	23/3/2026
57	Test for Ratio of variances	23/3/2026
58	Chi-square test for goodness of fit	27/3/2026
59	Independence of attributes	27/3/2026
60	Confidence interval	27/3/2026