

**PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY  
PANIPAT**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
LESSON PLAN**

**Subject Name: - Mathematics - III**

**Branch/Semester: - CSE / 3<sup>rd</sup> Sem.**

**Subject Code:- BS-205 A**

<b>Sr. No.</b>	<b>Lecture No.</b>	<b>Topics To Be Covered</b>
1	L 1	Introduction of fourier series, Fourier-Euler Formula.
2	L 2	Conditions for fourier expansion, fourier expansion for discontinuous function.
3	L 3	Conditions for fourier expansion, fourier expansion for discontinuous function.
4	L 4	fourier series of arbitrary interval.
5	L 5	fourier series of arbitrary interval.
6	L 6	Fourier series for even and odd functions.
7	L 7	Half range sine and cosine series.
8	L 8	Practice of fourier series
9	L 9	Fundamentals of sequence & series.
10	L 10	Sequence and series
11	L 11	Convergence and divergence of series
12	L 12	Comparison test for convergence of series.
13	L 13	Comparison test for convergence of series.
14	L 14	D'Alembert's Ratio test
15	L 15	D'Alembert's Ratio test
16	L 16	Cauchy root test.
17	L 17	Logarithmic test.
18	L 18	Raabe's test.
19	L 19	Practice questions
20	L 20	First order ordinary differential equations.
21	L 21	linear and Bernoulli's equations.
22	L 22	linear and Bernoulli's equations.
23	L 23	Exact differential equations

24	L 24	Exact differential equations
25	L 25	Euler's equations.
26	L 26	Equations not of first degree: equations solvable for p.
27	L 27	equations solvable for y.
28	L 28	equations solvable for x and Clairaut's type.
29	L 29	Second order linear differential equations with constant coefficients.
30	L 30	Complementary function & particular integral of linear ODE with constant coeff.
31	L 31	Complementary function & particular integral of linear ODE with constant coeff.
32	L 32	Method of variation of parameters.
33	L 33	Cauchy and Legendre's linear differential equations.
34	L 34	Practice questions
35	L 35	Multiple Integration.
36	L 36	Double integrals (Cartesian)
37	L 37	change of order of integration in double integrals.
38	L 38	Change of variables (Cartesian to polar).
39	L 39	Application of double integral in areas.
40	L 40	Application of double integral in volumes.
41	L 41	orthogonal curvilinear coordinates.
42	L 42	orthogonal curvilinear coordinates.
43	L 43	Simple applications involving cubes & spheres.
44	L 44	Simple applications involving cubes & spheres.
45	L 45	applications involving rectangular parallelepipeds.
46	L 46	Practice questions
47	L 47	Introduction of vectors, Scalar and Vector point functions.
48	L 48	Gradient with its properties.
49	L 49	Directional derivative.
50	L 50	Divergence with its properties.
51	L 51	Divergence with its properties.
52	L 52	Curl with its properties.
53	L 53	Line integrals, surface integrals.
54	L 54	Green, Stokes, Gauss theorem,