Panipat Institute of Engineering & Technology
Department of CSE-AI&DS
LESSON PLAN

Subject: MBDO

Subject code: BS-CS-AIDS-201A

Semester: 3 sem.

Sr. No.	Lecture No.	Description of Topic	CO Covered	Assignment No.	Teaching Methodology
1	L1	**Unit:1** Introduction, Fourier-Euler Formula	CO1	1	On Board
2	L2	Dirichlet's conditions	CO1	1	On Board
3	L3	Change of intervals	CO1	1	On Board
4	L4	Fourier series for even and odd functions	CO1	1	On Board
5	L5	Half range sine and cosine series	CO1	1	On Board
6	L6	Fourier Integral theorem, Fourier sine and cosine transforms and its properties,	CO1	1	Online video
7	L7	Convolution, Parseval's identity for fourier transforms, Fourier Transform of derivative of a function.	CO1	1	On Board
8	L8	Unit-II: **First order ordinary differential equations:** Exact, linear equations	CO2	2	On Board
9	L9	Bernoulli's equations	CO2	2	On Board
10	L10	Euler's equations, Equations not of first degree	CO2	2	On Board
11	L11	equations solvable for p, equations solvable for y,	CO2	2	On Board
12	L12	equations solvable for x and Clairaut's type.	CO2	2	Group Discussion
13	L13	Second order linear differential equations with constant coefficients,	CO2	2	On Board
14	L14	method of variation of parameters,	CO2	2	On Board
15	L15	Cauchy and Legendre's linear differential equations.	CO3	2	On Board
16	L16	**UNIT-III Solution of polynomial and transcendental equations:** Bisection method	CO3	1	On Board
17	L17	Newton-Raphson method and Regula-Falsi method	CO3	1	On Board
18	L18	Finite differences,	CO3	1	On Board
19	L19	Interpolation using Newton's forward and backward difference formulae.	CO3	1	On Board

20	L20	Interpolation with unequal intervals: Lagrange's formulae.	CO3	1	On Board
21	L21	Numerical differentiation using forward and backward difference.	CO3	1	On Board
22	L22	**Numerical Integration:** Trapezoidal rule	CO3	1	On Board
23	L23	Simpson's 1/3rd and 3/8 rules	CO3	1	Group Discussion
24	L24	Ordinary differential equations: Euler and modified	CO3	1	On Board
25	L25	Euler's methods. Runge-Kutta method of fourth order for solving first order equations.	CO3	1	On Board
26	L26	Runge-Kutta method of fourth order for solving first order equations.	CO4	1	On Board
27	L27	Unit IV: Formulation and classification of optimization problems,	CO4	3	Video lecture
28	L28	overview of analytical solution of unconstrained optimization problems, constrained optimization,	CO4	3	On Board
29	L29	convex set, convex functions, convex optimization problem.	CO4	3	On Board
30	L30	Kuhn Tucker condition,	CO4	3	PPT
31	L31	Search methods: overview of single variable search methods	CO4	3	On Board
32	L32	search methods for multivariable unconstrained problems:	CO5	3	On Board
33	L33	search methods for multivariable unconstrained problems:	CO5	3	On Board
34	L34	optimality criteria,	CO5	3	On Board
35	L35	unidirectional search	CO5	3	On Board
36	L36	direct search methods	CO6	3	On Board
37	L37	evolutionary search methods	CO6	3	On Board