PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY
PANIPAT
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES

LESSON PLAN

Subject Name: - Calculus and ODE

Branch/Semester: -2nd Sem. **Subject Code: - BS-136**

Sr. No.	Lecture No.	Description of Topic	Lecture plan date	TARGET OUTCOME
		Unit 1:First order ordinary differential equations and differential equations of higher orders:		CO1,2,3
1	L1	Exact Differential equation	19/04/21	
2	L2	Linear Differential equation	20/04/21	
3	L3	Bernoulli's equations	21/04/21	
4	L4	Euler's equations	22/04/21	
5	L5	Equations solvable for p	23/04/21	
6	L6	Equations solvable for y	26/04/21	
7	L7	Equations solvable for x	27/04/21	
8	L8	Clairaut's Equation	28/04/21	
9	L9	Second order linear differential equations with constant coefficients	29/04/21	
10	L10	Different methods for finding Particular integral	30/04/21	
11	L11	Different methods for finding Particular integralcont….	03/05/21	
12	L12	Different methods for finding Particular integral cont….	04/05/21	
13	L13	Method of variation of parameters	05/05/21	

14	L14	Method of variation of parameters	06/05/21	
15	L15	Cauchy Linear differential equations.	07/05/21	
Break from 08/05/2021 – 12/05/2021				
16	L16	Cauchy Linear differential equations.	13/05/21	
17	L17	Legendre's linear differential equations.	14/05/21	
18	L18	Legendre's linear differential equations.	17/05/21	
19	**Test of Unit 1**		18/05/21	
	Unit 2: : Multivariable Calculus (Integration):			**CO1,2,4**
20	L19	Double integrals (Cartesian)	19/05/21	
21	L20	change of order of integration	20/05/21	
22	L21	Evaluation of double integrals in polar coordinates	21/05/21	
23	L22	Evaluation of Triple integral	24/05/21	
24	L23	Change of variables (Cartesian to polar) for double integrals	25/05/21	
25	L24	Change of variables (Cartesian to polar) for triple integrals	26/05/21	
26	L25	volume of solids of revolution cartesian curve	27/05/21	
Ist Sessional from 28/05/2021 – 31/05/2021				
27	L26	volume of solids of revolution polar curve	01/06/21	
28	L27	volume of solids of revolution for parametric curve	02/06/21	
29	L28	volume of solids of revolution for parametric curve	03/06/21	
30	L29	volume of solids of revolution between two solids	04/06/21	
31	L30	Surface area of revolution for cartesian form	07/06/21	

32	L31	Surface area of revolution for parametric form	08/06/21	
33	L32	Surface area of revolution for polar form	09/06/21	
	Test of Unit 2		10/06/21	
	Unit 3: Vector Calculus:			**CO1,2,5**
34	L33	Introduction, and basics	11/06/21	
35	L34	Scalar and Vector point functions	14/06/21	
36	L35	Gradient of scalar field	15/06/21	
37	L36	Geometrical interpretation of gradient	16/06/21	
38	L37	Directional derivative	17/06/21	
39	L38	Directional derivative	18/06/21	
40	L39	Divergence and physical interpretation	21/06/21	
41	L40	Curl and physical interpretation	22/06/21	
42	L41	Solenoidal and Irrotational vector	23/06/21	
43	L42	Properties of Gradient, Divergence and curl	24/06/21	
44	L43	Integration of vector, Line integral	25/06/21	
45	L44	Surface and Volume Integral	28/06/21	
46	L45	Green's Theorem in the plane	29/06/21	
47	L46	Stoke's Theorem	30/06/21	
2^{nd} Sessional from 1/07/2021 – 5/07/2021				
48	L47	Gauss Divergence Theorem	06/07/21	
	Unit 4: Complex Variable:			**CO1,2,6**
49	L48	Differentiation, Cauchy-Riemann equations	07/07/21	
50	L49	analytic functions, harmonic functions	08/07/21	

51	L50	harmonic conjugate	09/07/21	
52	L51	elementary analytic functions(exponential, trigonometric, logarithm)	12/07/21	
53	L52	Properties of elementary analytic functions	13/07/21	
54	L53	Contour integrals	14/07/21	
55	L54	Cauchy-Goursat theorem (without proof)	15/07/21	
56	L55	Cauchy Integral formula (withoutproof)	16/07/21	
57	L56	Taylor's series	19/07/21	
58	L57	zeros of analytic functions	20/07/21	
59	L58	singularities	21/07/21	
60	L59	Laurent's series	22/07/21	
61	L60	Residues, Cauchy Residue theorem (without proof)	23/07/21	
62	L61	Problem based on Cauchy Residue theorem	26/07/21	
63	L62	Revision	27/07/21	
	Test of Unit 4		02/08/21	
3rd Sessional from 03/08/2021 – 05/8/2021				