PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY
Department of Applied Sciences and Humanities

Faculty Name: Dr. Jugmendra Singh **Subject Name: Multivariable Calculus and Linear Algebra**
Year/Semester: 1st/1st **Subject Code: BS-134A**

LESSON PLAN

Description of Topic	Lecture no.	Lecture plan date	Methodology	Target outcome
Unit IV : Basic of Matrices	1	22/8/23	Lecture Method	CO 1, CO 5
Rank of a Matrix	2	23/8/23	Lecture Method	
Elementary transformation	3	24/8/23	Lecture Method	
Elementary matrices	4	25/8/23	Lecture Method	
Gauss Jorden method for finding the inverse using elementary transformation	5	28/8/23	Lecture Method	
Normal form of a matrix	6	29/8/23	Lecture Method	
Linear dependence of vectors	7	31/8/23	Lecture Method	
Linear independence of vectors	8	1/9/23	Lecture Method	
Consistency of linear equation	9	4/9/23	Lecture Method	
Linear transformation	10	5/9/23	Lecture Method	
Orthogonal transformation	11	6/9/23	Lecture Method	
Eigen values and Eigen vectors	12	8/9/23	Lecture Method	
Properties of Eigen values	13	11/9/23	Lecture Method	
Caley Hamilton theorem	14	12/9/23	Lecture Method	
Caley Hamilton theorem application	15	13/9/23	Lecture Method	
Test I	16	14/9/23		
Unit III : Differentiation	17	15/9/23	Lecture Method	
Multivariable Calculus (Differentiation): Taylor series	18	18/9/23	Lecture Method	

Series for exponential, logarithmic function	19	19/9/23	Lecture Method	CO2, CO3
Series for trigonometric function	20	20/9/23	Lecture Method	
Partial Derivatives,	21	21/9/23	Lecture Method	
Total derivative	22	22/9/23	Lecture Method	
Chain rule for differentiation	23	25/9/23	Lecture Method	
Homogeneous function	24	26/9/23	Lecture Method	
Eulers theorem	25	27/9/23	Lecture Method	
Jacobian	26	3/10/23	Lecture Method	
Maxima and minima	27	4/10/23	Lecture Method	
Saddle points	28	5/10/23	Lecture Method	
Method of Lagrange multipliers	29	6/10/23	Lecture Method	
Test II	30	10/10/23		
Unit I Calculus: Evaluation of definite and improper integrals	31	11/10/23	Lecture Method	CO1, CO2
Beta function and its properties	32	12/10/23	Lecture Method	
Beta function and its properties	33	13/10/23	Lecture Method	
Gamma function and its properties	34	16/10/23	Lecture Method	
Gamma function and its properties	35	17/10/23	Lecture Method	
Application of definite integrals to evaluate surface areas	36	18/10/23	Lecture Method	
Application of definite integrals to evaluate surface areas	37	19/10/23	Lecture Method	
Application of definite integrals to evaluate volume of revolution	38	20/10/23	Lecture Method	
Application of definite integrals to evaluate volume of revolution	39	23/10/23	Lecture Method	
Rolle's Theorem	40	25/10/23	Lecture Method	
Application of Rolle's Theorem	41	30/10/23	Lecture Method	
Mean value theorems	42	31/10/23	Lecture Method	

Application of Mean value theorems	43	2/11/23	Lecture Method	
Indeterminate forms	44	3/11/23	Lecture Method	
Indeterminate forms	45	6/11/23	Lecture Method	
L' Hospital's rule	46	7/11/23	Lecture Method	
Test III	47	8/11/23		
Unit II : Convergence of sequence and series	48	9/11/23	Lecture Method	CO2, CO3
Convergence of sequence and series	49	16/11/23	Lecture Method	
Test of convergence	50	17/11/23	Lecture Method	
Comparison test	51	20/11/23	Lecture Method	
D'Alembert's ratio test	52	21/11/23	Lecture Method	
Logarithmic test	53	23/11/23	Lecture Method	
Cauchy root test	54	24/11/23	Lecture Method	
Raabes test	55	1/12/23	Lecture Method	
Power series	56	4/12/23	Lecture Method	
Fourier series: Introduction	57	5/12/23	Lecture Method	
Fourier-Euler formula	58	6/12/23	Lecture Method	
Drichelet condition	59	7/12/23	Lecture Method	
Change of intervals	60	8/12/23	Lecture Method	
Fourier series for odd function	61	9/12/23	Lecture Method	
Fourier series for even function	62	12/12/23	Lecture Method	
Half range sine series	63	14/12/23	Lecture Method	
Half range cosine series	62	15/12/23	Lecture Method	
Test IV	64	18/12/23		
Revision	65	19/12/23	Lecture Method	

Revision	66	20/12/23	Lecture Method	
Revision	67	21/12/23	Lecture Method	
Revision	68	22/12/23	Lecture Method	

*****Highlighted part represents Content beyond Syllabus topics

* Quizzes on Saturdays

(COURSE INCHARGE)