

Sr. No.	Lecturer/Lab	Name of the topic	%Syllabus Covered	Date of topic
1	Week-1 1,2,3	Rank of a matrix, elementary transformations, elementary matrices.		
2		Inverse using elementary transformations, normal form of a matrix.		
3	Week-2 1,2,3	Consistency of System of linear equations. Symmetric, skew-symmetric, and orthogonal Matrices.		
4		Eigenvalues, eigenvectors, Eigen bases, properties of eigen values.		
5	Week-3 1,2,3	Cayley-Hamilton Theorem and its applications.		
6		Diagonalization of matrices.		
7	Week-4 1,2,3	Functions of two or more variables, partial derivatives.		
8		Total derivative.		
9	Week-5 1,2,3	Derivative of composite and implicit functions.		
10		Homogeneous functions, Euler's theorem.		
11	Week-6 1,2,3	Definition of definite integrals and their problems.		
12		Improper integrals and their problems.		
13	Week-7 1,2,3	Beta and Gamma functions and their properties.		
14		Relation between Beta and Gamma function,		
15	Week-8 1,2,3	Reduction formula for Gamma function.		
16		Applications of definite integrals to evaluate surface areas and volumes of revolutions in Cartesian coordinates.		
17	Week-9 1,2,3	Rolle's theorem, Lagrange's mean value theorem, Cauchy mean value theorem.		
18		Taylor's and Maclaurin theorems with remainders.		
19	Week-10 1,2,3	Indeterminate forms and L'Hospital's rule.		
20		Maxima and minima.		
21	Week-11 1,2,3	Jacobian, Taylor's and Maclaurin's theorem for function of two variables.		
22		Maxima, minima and saddle points of functions of two variables.		
23	Week-12 1,2,3	Method of Lagrange multipliers.		
24		Differentiation under the integral sign.		
25	Week-13 1,2,3	Introduction to sequence and Infinite series, Test for convergence/divergence, Comparison test.		
26		D'Alembert's ratio test, Cauchy Root test, Raabe's test, Cauchy integral test, Logarithmic test.		
27	Week-14 1,2,3	Alternating series, Absolute convergence and conditional convergence.		
28		Taylor's series, series for exponential, trigonometric and logarithmic functions.		
29	Week - 15	Query and Solution		