JHARKHAND Rai University
UGC RECOGNISED UNIVERSITY
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Lesson Plan & Tracking

Programe : B.Tech	**Session : 2022-23**	**Year : 1st Year**	**Sem: I**
Course: Mathematics I			
Name of the Faculty: Wakil Kumar	**Commencement Date:29/8/2022**	**Date of Closure:**	

Lecture No.	Week	Unit	Topics to be Covered	Blended Mode			Date	Duration	Tracking of Lectures	Related Course Outcome	Signature of Faculty	Signature of HoD	Remark (if any
				ICT Tool/Platform/ LMS	Resources	Activity							
1	1	1	**Module 1:** Matrices: System of linear equations										
2		1	Rank of a matrix,rank-nullity theorem										
3		1	Symmetric, skew symmetric and orthogonal matrices										
4	2	1	Eigen values and eigenvectors										
5		1	Diagonalization of matrices										
6		1	Cayley-Hamilton Theorem										
7	3	1	Orthogonal transformation										
8		1	Cramers rule										
9		2	**Module 2:** Calculus: Rolle's Theorem, Mean value theorems										

10	**4**	2	Taylor’s and Maclaurin theorems with remainders;										
11		2	Indeterminate forms and L'Hospital's rule										
12		2	Evalution of definite and improper integrals - Continues										
13	**5**	2	Evalution of definite and improper integrals										
14		2	Beta and Gamma functions and their properties - Continues										
15		2	Beta and Gamma functions and their properties.										
16	**6**	3	**Module 3:** Multivariable Calculus (Differentiation): Partial derivatives										
17		3	directional derivatives, total derivative										
18		3	Tangent plane and normal line										
19	**7**	3	Maxima, minima and saddle points										
20		3	Method of Lagrange multipliers.										
21		4	**Module 4:** Multivariable Calculus (Integration): Multiple Integration: Double integrals (Cartesian)										
22	**8**	4	change of order of integration in double integrals										
23		4	Change of variables (Cartesian to polar),										

24		4	Applications: areas and volumes										
25	**9**	4	Triple integrals (Cartesian)										
26		4	orthogonal curvilinear coordinates										
27		4	Simple applications involving cubes and sphere.										
28	**10**	5	**Module 5:** Sequences and series: Convergence of sequence and series, tests for convergence										
29		5	Power series, Taylor's series										
30		5	series for exponential, trigonometric and Logarithm functions										
31	**11**	5	Fourier series										
32		5	Half range sine and cosine series, Parseval’s theorem.										
33			Revision										
34	**12**		Revision										
35			Revision										
36			Revision										