AMBALA COLLEGE OF ENGINEERING AND APPLIED RESEARCH, AMBALA
Department of Applied Sciences and Humanities

Subject: Applied Mathematics II **Semester: 2nd**

Subject Code: B24-BSC-110 **Lecture per Week: 03**

Theory Mark: 70 **Tutorials per Week: 01**

Sessional Marks: 30 **Practical:**

Lesson Plan

Name of Faculty: Ms. Baljinder Kaur **Discipline : B.Tech**

Semester : 2nd **Subject : Applied Mathematics II-**

Lesson Plan Duration: 15 Weeks (From Feb-June, 2025)

Workload (Lecture/week (in hours): L-3, T-1, P-0

Lesson Plan

Week	Theory	
	Lecture Day	**Topic(including assignment /test)**
1st	1st	Matrices introduction
	2nd	Basic operations on matrices
	3rd	Matrix addition and substraction
2nd	4th	Matrix multiplication
	5th	examples on matrix operations
	6th	Linear system of equations
3rd	7th	minor, cofactors, adjoint and transpose
	8th	inverse of matrix
	9th	Rank of matrices by determinant method and by elementary operations
4th	10th	Cramer's Rule
	11th	example based on rank and cramer's rule
	12th	Gauss elimination

5th	13th	Gauss Jordan elomination method
	14th	Test
	15th	Ordinary differential equations: Introduction
6th	16th	order and degree of the differential equation
	17th	Formation of differential equation
	18th	Solution of the differential equation
7th	19th	Solution of the differential equation with variables separable and differential equations reducible to variable separable form
	20th	order and degree of the differential equation
	22nd	Formation of differential equation
8th	22nd	Solution of the differential equation
	23rd	Solution of the differential equation with variables separable and differential equations reducible to variable separable form
	24th	exact differential equation
9th	25th	equations reducible to exact differential equations
	26th	linear and Bernoulli's equations
	27th	Introduction to higher orders
10th	28th	Solution of second and third order differential equations with constant coefficients
	29th	Complementary functions
	30th	Particular integrals
11th	32nd	Different methods to find particular integral
	32nd	Complete solution
	33rd	Multivariable Calculus:Partial derivatives
12th	34th	Total differential
	35th	Chain rule for differentiation,
	36th	Partial derivatives of higher orders, Homogeneous functions
13th	37th	Euler's theorem on homogeneous functions, differentiation of an implicit function
	38th	Jacobian
	39th	Maxima and minima of a function
14th	40th	Lagrange's method of undetermined multipliersPartial derivatives

Ms. Baljinder Kaur

Assistant Professor

APS Department