

PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY, PANIPAT **DEPARTMENT OF PHARMACY**



Course: B. Pharmacy

LESSON PLAN

Faculty Name: Dr. Sanjeev Kumar Class: B. Pharmacy – Ist Semester

Subject Name: Remedial Mathematics Subject Code: BP-106RMT

Scope of the Subject: This is an introductory course in mathematics. This subject deals with the introduction to Partial fraction, Logarithm, matrices and Determinant, Analytical geometry, Calculus, differential equation and Laplace transform.

Course outcome: Upon completion of this course the student should be able to:

- 1. Know the theory and their application in Pharmacy.
- 2. Solve the different types of problems by applying theory.
- 3. Appreciate the important application of mathematics in Pharmacy

Number of Lectures: 30

Each lecture: 01 hour

No. Image: Constant of the system of the	Lecture	Particular	Remark/Date		
Unit 1: Partial Fraction, Logarithms, Function, Limits and continuity 1. Polynomial, Rational fractions, Proper and Improper fractions 2. Partial fraction, Resolving into Partial fraction 3. Application of Partial Fraction in Chemical Kinetics and Pharmacokinetics 4. Theorems/Properties of logarithms, Common logarithms Characteristic and Mantissa, worked examples, Application of logarithm to solve pharmaceutical problems 5. Real Valued function, Classification of real valued functions 6. Limit of a function, Definition of limit of a function Unit 2: Matrices and Determinant 7. Introduction matrices, Types of matrice, Operation on matrices, Properties of determinants, Properties of determinants, Product of determinants, Minors and co- Factors 9. Adjoint or adjugate of a square matrix, Singular and non-singular matrices, Inverse of a matrix, Solution of system of linear of equations using matrix method 10. Cramer's rule, Characteristic equation and roots of a square matrix 11. Cayley–Hamilton theorem 12. Application of Matrices in solving Pharmacokinetic equations 13. Derivative of a function, Derivative of a constant. Derivative of a product of a constant and a function, 14. Derivative of the sum or difference of two functions, Derivative of	No.				
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	functions		
15.	Derivative of $x^n w.r.t x$, where <i>n</i> is any <i>x</i> rational number		
16.	Derivative of e^x , Derivative of $\log_e x$ Derivative of a^x		
17.	Derivative of trigonometric functions from first principles		
18.	Successive Differentiation, Conditions for a function to be a		
	maximum or a minimum at a point		
Unit 4: Analytical Geometry, Integration			
19.	Signs of the Coordinates, Distance formula		
20.	Slope or gradient of a straight line, Conditions for parallelism and		
	perpendicular of two lines		
21.	Slope of a line joining two points, Slope – intercept form of a straight line,		
22.	Standard formulae, Rules of integration, Method of substitution		
23.	Method of Partial fractions		
24.	Integration by parts, Definite integrals		
Unit 5: Differential Equations, Laplace Transform			
25.	Some basic definitions, Order and degree		
26.	Equations in separable form, Homogeneous equations		
27.	Linear Differential equations, Exact Differential equations		
28.			
29.	Properties of Laplace transform, Laplace Transforms of elementary functions, Inverse Laplace transforms		
30.	Laplace transform of derivatives, Application to solve Linear differential equations		
Revision	· · · · ·		
31.	Revision of previous question papers		
32.	Revision of previous question papers		
33.	Revision of previous question papers		
34.	Revision of previous question papers		
35.	Revision of previous question papers		

Teacher in-charge

HOD

Principal