MATHEMATICS AND STATISTICS (15PH406)
THEORY 3 hours/week

UNIT -I

Integration:- Integration as inverse process of differentiation, Definite integrals (simple cases). Integration by (i) Decomposition (ii) by substitution (iii) by parts.Integration of Logarithmic,Trigonometric, Algebraic and exponential functions.

UNIT -II

Differential Equations:- Introduction to differential equations, Formation of different equations, Solution of differential equations of first order and first degree by the methods of variable separable, Homogeneous, reducible to homogeneous and linear equations , Reducible to linear equations , Exact differential equations. Differential equations of order greater than one with constant coefficients , Pharmaceutical applications.

UNIT -III

Laplace transforms : Theorem, properties and uses (problems)

UNIT -IV

Statistics -I:- Introduction to statistics, Data collection random and noon -random sampling methods, Sample size, Diagrammatic representation of data, bar, pie, 2-D and 3-D diagrams, Measures of central tendency , Measures of dispersion , Standard deviation , Measures of skewness , Measures of kurtosis , Correlation and regression analysis , Methods of least squares, Probability and events, Probability theorems, Baye's Theorem on probability.

UNIT -V

Statistics- II:- Probability Distributions – Binomial , Poisson and normal distributions (normal curve and properties) , Tests of hypothesis(statistical inference) Standard error, Fudicial (confidence) limits , Tests of significance for small samples-Students tdistribution and t- tests, Paired t-test, chi-square tests and F-test (Pharmaceutical applications).

RECOMMENDED BOOKS:

1.Integral Calculus by Shanti Narayan.
2.Statistical Methods by S.P.Gupta. (S.Chand, New Delhi)
3.Higher Engineering Mathematics by B.S. Grewal. (Khanna Publishers, Delhi)
4.Mathematical Methods by Potter & Gold Berg.(Prentice Hall of India, New Delhi