

MA-501A Advanced Course in Mathematics (WR,TR):

2L-1T-0S/ 3credits

Statistics and Probability: Probability theory, Baye's theorem, Binomial, Poisson and normal distributions, testing of hypothesis, Chi square test- goodness of fit, independence of two variables, student's t-test, analysis of variance: F-test, correlation and regression, coefficient of correlation, rank correlation ,lines of regression.

Numerical Analysis: Interpolation, finite differences-forward, backward and central differences, Newton's formulae for forward differences and backward differences; Stirling's formula for central differences, Numerical differentiation and integration- Simpsons one-third, Simpsons three- eighth rules and trapezoidal rule, Numerical solution of ODE of I order: Euler's method ,modified Euler's method and Runga Kutta 4th order method, Milne's method.