

MATH 102: Introduction to Probability Theory and Statistics

An introduction to probability theory with applications to statistics: basic combinatorics, permutations and combinations, sample space, events, mutual exclusivity, independence, conditional probability, Bayes' theorem, random variables, distribution, expectation, variability, Chebyshev's theorem, joint distribution, binomial distribution, normal distribution, Central Limit Theorem, estimation of and confidence intervals for binomial parameter, Bayesian approach to inference. Further topics may include theory of sampling, covariance, correlation, least squares, regression. Note: this is not a statistical methods course of the type that may be expected in areas such as health or social sciences, though it provides a good foundation for such courses.

Units: 3

Program: [Mathematics](#)