Course Description

This course is designed so as to provide the fundamental tools from probability theory which are necessary for statisticians.

We cover

(a) The fundamental (asymptotic) properties of probability
(b) Moments of random variables and important inequalities
(c) Fundamental theory of distributions (discrete and continuous)
(d) Elements of multivariate distributions (focusing on the elliptic family)
(e) Elements of convergence for sequences of random variables and applications
(f) Characteristic functions, sums of independent random variables and the central limit theorem
(g) Elements of the theory of Markov chains.

References

Jacod and Protter, Probability Essentials, Springer

A N Yannacopoulos, Course notes