Features of the Module «Probability and Statistics» as Part of the Higher Mathematics Course

A. D. Nakhman

Tambov State Technical University, Tambov, Russia

Abstract: The article deals with the problem of providing a natural and logically grounded "embeddedness" of the stochastic module in the general course of higher mathematics. Its solution is proposed both by structural means of constructing mathematical theories (primary concepts, axioms, definitions, theorems), and by means of establishing intra-subject connections. In particular, the connections of standard distributions with the theory of summation of series are demonstrated. It is argued that the practice-oriented orientation of stochastic knowledge and methods is achieved by a "model" approach, that is, by bringing the process of solving problems in accordance with the standard stages of mathematical modeling. Using the example of empirical power-law moments, it is proposed to familiarize students with some modern ideas of mathematical analysis. In particular, an algorithm for reconstructing continuous theoretical distributions based on convergence theorems for mean Fourier–Chebyshev expansions is presented.