Chung, Kai Lai

A course in probability theory. 3rd ed. (English) Zbl 0980.60001
Orlando, FL: Academic Press. xvi, 419 p. (2000).

This is the third edition of the classical introductory textbook by *K. L. Chung*, see Zbl 0159.45701 for the first edition (1968), Zbl 0345.60003 for the second edition (1974). Besides the addition of some remarks and exercises, the included supplement on measure theory and Lebesgue integration is the main new feature. In its first section the extension of general measures from fields (algebras) to Borel fields (sigma-algebras) is presented using outer measures. Next, uniqueness of the extension and completeness of a measure space are discussed in detail. The results are then used for constructing measures on the real line from a given distribution function. In the last two sections the Lebesgue integral is introduced and its properties, also with respect to the Riemann integral, are discussed.

By adding this supplement the book has become largely self-contained, only assuming basic knowledge in algebra and calculus. For a concise introductory course on integration theory the supplement could serve as a well-compiled draft. In particular, its thorough discussion of completeness of measure spaces and of the Borel covering lemma and the interesting side remarks make it a source of inspiration even for more advanced readers. Some old-fashioned expressions like Borel field for a general abstract sigma field/algebra are to be criticized, but apart from that it remains a delight to read the masterly presentation of K. L. Chung.

Reviewer: Markus Reiß (Berlin)

MSC:

60-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to probability theory